

SECRET

R.A.F. NARRATIVE

(First Draft)

THE MIDDLE EAST CAMPAIGNS

VOLUME II

OPERATIONS IN LIBYA AND THE WESTERN DESERT

JUNE 1941 - JANUARY 1942

AIR HISTORICAL BRANCH (1)

AIR MINISTRY

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CONTENTS

PART I

INTRODUCTORY - PRE-"CRUSADER" PERIOD

	<u>Page</u>
Implications of France's Defection and Italy's Entry into the War	1
Success against the Italians	1 - 2
Early Air Effort	2 - 4
Co-operation with Army in Early Period	4 - 5
Deterioration of our Situation	5
Criticism of the Air Effort	5 - 7
Direction of Air Effort after "Battle-axe"	7
Chronology May 1940 - Mid-June 1941	8

PART II

TRENDS OF GENERAL PLANNING IN LONDON
(Mid-June to November 1941)

Survey of Strategic Situation after "Battle-axe"	9
Preliminary Survey	9 - 11
The Implied lull	11 - 12
P.M's Early Directions on Employment of the Air Forces.	12 - 13
Meeting of Defence Committee.	13 - 14
Defence Committee's Appeal for an Offensive in September 1941.	15
C.-in-C. Advises against September Offensive.	15 - 16
Resources Required (according to M.E.J.P.S.)	16
Re-call of C.-in-C. and A.O.C.-in-C. M.E., for Consultation late July 1941.	16 - 17
C.-in-C. Again Advises Delay, mid August 1941.	18
Review of Relative Strengths, late August 1941.	18 - 19

	<u>Page</u>
P.M.'s Further Directions on Employment of the Air Force.	20
Relief of Australians in Tobruk.	20 - 21
Relative Air Strength Controversy, October 1941.	21 - 22
Political Difficulties, October 1941.	22
Revised Figures for Air Strengths, late October 1941.	22
Assurance of Air Superiority given to New Zealand Government.	23

PART III

REINFORCING AND RE-ORGANISATION OF R.A.F. MIDDLE EAST

(Mid-June - November 1941)

SECTION ONE - REINFORCING

Supply Routes.	25
Reinforcement Policy.	25 - 27
Supply Factors Affecting Proposed Reinforcements.	27 - 29
Reinforcing Aircraft received in M.E.	29
Factors which Limited Increase in Effective Strength.	30
M.E. Aircraft Strength, June - October 1941.	31 - 32
Improved Aircraft Position in Squadrons " "	32
Aircrew Reinforcement.	33
Inadequate Reinforcement of Ground Personnel.	35

SECTION TWO - RE-ORGANISATION OF M.E. COMMAND.

Office of the Minister of State established in Cairo.	36
"Ad hoc" Organisation, June to September.	36
A.O.C.-in-C. Requests Review of M.E. Organisation.	36 - 38
X Additional Subordinate Commands.	<u>38 - 39</u>
Abandonment of Proposal for East Africa Command.	39
Formation of Nucleus Groups.	39
Formation of Naval Co-operation Group.	39
Formation of 205 Group.	40
Proposed Organisation of Mobile Self-contained Wings.	40
C.M.S.O.'s Branch and No. 206 Group.	40 - 42
Revised Arrangements for C.M.S.O. and No. 206 Group.	42
Command Headquarters Re-organisation.	43

Page

Maintenance and Supply Problems.	43 - 44
Supply of New Aircraft for "Crusader".	44
Repair Organisation in Depth.	45
Repair and Salvage Units and Air Stores Parks.	45

SECTION THREE - TRAINING.

Inadequacy of Operational Training during 1941 Lull.	46
Previous O.T.U. Position.	46 - 48
Further development in M.E. O.T.U.'s.	48 - 49
Inspector General's Report on Operational Training September 1941.	50 - 52
Limited Development in Operational Training Autumn 1941.	52 - 53
Further development hampered.	53
Training in Squadrons.	54
Inadequate Training in Tactics.	55
General.	55 - 56

SECTION FOUR - ARMY CO-OPERATION.

Revision of System of Air Support for the Army.	56
Formation of No. 253 Wing.	56
Further Study of Air Support Problems.	57
M.E. Directive on Direct Air Support.	57 - 58
Characteristics of Direct Air Support Bombing.	58
Application of Direct Air Support.	59 - 60
Allotment of A.S.C.'s., Tentacles and F.A.S.L.'s.	60
Selection of Targets.	60
Availability of Aircraft.	61
Indicating the Target.	61
Recognition Signals.	61
Modification of A.S.C. for "Crusader".	62

PART IV

REVIEW OF AIR OPERATIONS ASSOCIATED WITH THE LIBYAN CAMPAIGN
(Mid-June - Mid-October 1941)

Scale and Direction of Bomber Effort.	63 - 64
Classification of Supply Targets.	64

	<u>Page</u>
Bombing of Production Centres and Ports of Embarkation.	64 - 65
Strikes on Shipping at Sea as Currently Reported	66 - 67
Bombing of the North African Arrival Ports etc.	67 - 69
Total Enemy Shipping Losses as Currently Assessed.	69 - 71
Confirmed Enemy Shipping Losses (Identified Vessels)	71 - 72
Shipping Losses as Reported by Vice-Admiral Weichold.	72
Role of the Western Desert Fighters.	73 - 75
Enemy's attack in September.	75 - 76
General Failure of Enemy's Bomber Offensive.	76 - 77
Enemy's Main Bomber Aims.	77
Enemy's Bomber Action and Our Defensive Measures.	77
Blockade of Tobruk.	77 - 78
G.A.F. Attacks in the Canal Zone.	78
Reduction in Pressure on Alexandria.	79
Slight Enemy Effort Against Lower Egypt.	80
Ineffective Effort by I.A.F. Against Malta.	81
Sporadic Attacks in the Eastern Mediterranean.	81
Slight I.A.F. Effort against Isolated Positions.	81
Comparative Aircraft Losses.	82
C.-in-C's Tribute to the Navy and the Air Force.	82
Chronology of Pre-Crusader Period.	83

PART V

PHASES ONE AND TWO OF CRUSADER PROJECT

SECTION ONE - "CRUSADER" OUTLINE PLAN.

Brief Summary of Aims of "Crusader" Offensive.	85
Essence of the Army Plan.	85
General Air Plan.	85 - 86
Factors Affecting Attainment of Air Aims.	86 - 87
Comparative Air Force Strengths.	87
Other Factors Affecting the Attainment of Air Aims.	89 - 90

/SECTION TWO

SECTION TWO - THE PREPARATORY PHASE

Allocation of Forces to A.O.C., Western Desert for "Crusader".	90 - 91
Increased Fighter Force.	91
Fighters for Special Duties.	91 - 92
Strengthening of Medium Bomber Force.	92
Additional Western Desert Reconnaissance Units.	92 - 93
Air Transport.	93
Non-Flying Units.	93
General Maintenance Project.	93 - 94
Aircraft Issued to Squadrons during Phase One.	94
Increased Mobility.	94
Air Operational Plan for Phase One.	95
Features of Enemy's Supply System.	95
Task of Fighters during Phase One.	96
Reconnaissance Commitments.	96 - 97
Photographic Check on Enemy Air Bases.	97 - 98
Bomber Tasks during Phase One.	98
Bomber Effort from Malta.	98
Possible Modifications of Air Plans to Meet Enemy Counter Moves.	99
Operations and Training during Preparatory Period.	99
Weakness of Our Fighter Force.	99 - 101
Protective Commitments of Fighters during Phase One.	101 - 102
Fighter Training and Re-organisation.	102 - 103
Reconnaissance Activity.	103
Difficulties of Photographic Reconnaissance.	104
Bomber Effort during Preparatory Period.	105
Increased pressure on Benghazi.	105
Disappointing Performances by Fortresses.	106 - 107
General Results of Air Offensive against Benghazi.	107
Attacks on Other Cyrenaican Supply Targets.	107 - 108
Attacks on Western End of Enemy's Supply Lines.	108 - 109
Shipping Strikes to Prevent Enemy Supplies reaching North Africa.	109

	<u>Page</u>
Enemy's Shipping Losses as Currently Reported (October)	110
Confirmed Enemy Shipping Losses (Identified Vessels)	110
Vice-Admiral Weichold's Comments.	110
Attacks on Enemy Airfields and Landing Grounds in Cyrenaica.	111
Further Training of Egyptian-Based Blenheim Squadrons.	112 - 113
Ineffectual Enemy Air Effort.	114 - 115
Phase One Balance Sheet.	115

SECTION THREE - PHASE TWO.

The Ground Situation.	116
The Army Plan.	117
Date of the Offensive.	118
Eighth Army Concentration.	118
Phase Two Air Aims.	119
Construction of Landing Grounds.	119
Other Considerations.	120 - 122
Communications.	122
Movement and Locations of Air Forces.	122
Allocation of Tasks - Phase Two (Part One)	123 - 124
Plans for Sabotaging Enemy Airfields.	124
Operations Phase Two (Part One) 13th - 17th November.	125
Attacks on Airfields and Landing Ground.	126
Failure of Plan to Sabotage Enemy Landing Grounds.	127
Bombing of Enemy Supply Targets.	127
Proposed tasks for End of Phase Two.	128
Revised Direct Air Support Arrangements.	129
Call to Battle - Message from P.M. to C.-in-C., M.E.	130
Deterioration of the weather on Eve of the Offensive.	130
Crusader D.-Day.	130
Reduced Enemy Air Operations.	132

PART VI

PHASE THREE (THE BATTLE)

Anticipated Situation, Phase Three.	133
Move of the Fighter Force to Maddalena.	133
Envisaged Air Commitments for Phase Three.	133
Employment of Radio-Jamming Wellingtons.	134
Our Initial Success.	134 - 135
Air Superiority (19th and 20th November)	135 - 137
Close Support for the Army (19th and 20th November)	137 - 138
Finale and Debut (last appearance of the Flying Fortress and first appearance of the Hurricane Bomber)	138
Special Operations.	138 - 139
Malta Hits Enemy Supply Organisation.	139
Negligible Enemy Air Attacks during 19th and 20th November.	140
Disasters at Sidi Rezegh (21st - 23rd November)	140 - 141
Tactical Reconnaissance for 30 Corps (21st - 23rd November)	142
The Tobruk Sortie.	142
Advance of 13th Corps (21st - 23rd November)	142
General Military Situation. Evening 23rd November.	143
Satisfactory Air Situation (21st - 23rd November)	144 - 145
Features of Fighter Activity (21st - 23rd November)	145 - 147
Attacks on Enemy Airfields (21st - 23rd November)	147 - 148
Direct Support Bombing (21st - 23rd November)	148 - 149
Need to escort Bombers over Battle Area.	149 - 150
The Enemy's Counter-Stroke 24th November.	150 - 151
Temporary withdrawal of Fighter Squadrons 24th - 25th November.	151 - 153
Air Effort on 24th November.	153 - 154
Enquiry into the scale of Day Bomber Effort on 24th November.	154 - 156
Capture of Gialo.	156 - 157
Decision to continue the Offensive, and Change of Command of Eighth Army.	157 - 158

	<u>Page</u>
Improvement in Military Situation (25th - 27th November 1941)	158
The Enemy's Counter-Stroke peters out.	158 - 161
Failure of Enemy's Counter-Stroke.	161
New Zealanders make Contact with Tobruk Garrison (during night of 26th/27th November)	161 - 162
Scale and Direction of Air Support (25th - 27th November)	162 - 163
Air Battle of 25th November.	163 - 164
Low Flying Fighter Attacks (25th - 27th November)	164 - 165
Direct Support Bombing (25th - 27th November)	165
(a) Against Rommel's Marauding Columns	165 - 166
(b) Support for 70th Division and New Zealand Brigade.	166
(c) Attacks on Columns Retiring to Sidi Rezegh Area.	167
Counter Air Force Operations (25th - 27th November)	168
Bombing of Naples Renewed (Night 27th/28th November)	168
Enemy Recaptures Sidi Rezegh (30th November)	169 - 170
Air Reconnaissance (28th November to 2nd December)	170 - 171
Air Operations Hampered by Bad Weather (28th November to 2nd December)	171 - 172
Features of the Fighter Operations (28th November to 2nd December)	172 - 174
C.O.'s of S.A.A.F. Fighter Squadrons Replaced.	174
Reduced Bomber Support (28th November to 2nd December)	174 - 175
The Wellington Effort against Benghazi and Derna. (Nights 28th/29th November - 1st/2nd December)	175 - 176
Enemy Air Force Participation (21st November - 2nd December)	176
Shipping Strikes.	177
(a) As Currently Reported.	177 - 178
(b) Confirmed Enemy Shipping Losses (Identified Vessels)	178
(c) Vice-Admiral Weichold's Estimates.	178
Preparations for attacking E1 Aden and New Organisation of Eighth Army.	178 - 179
Air Marshal Tedder's Views on the Situation. (early December)	180 - 181
The Last Enemy Thrusts Eastwards (3rd and 4th December)	181 - 182

	<u>Page</u>
Enemy Falls Back to El Adem - Bir el Gubi line (5th December)	182 - 183
Night Bombers Directed Against Battlefield Targets (Beginning night 3rd/4th December)	183 - 184
Ground Action Leading to Relief of Tobruk.	184 - 185
Scope of Direct Air Support (3rd-8/9th December)	185 - 187
Restrictions on Use of Day Bomber Force on Direct Support Continues.	188
Further Attacks on Derna (8th December)	188
Malta Continues Bombing of Naples. (Bombing Operations 3rd - 8th December)	189
Air Combats (3rd - 8th December)	189 - 192
Strengthening of the Luftwaffe in the Mediterranean.	192 - 193
The Enemy's Withdrawal to Gazala and our Arrangements for the Advance. (8th - 12th December)	193 - 194
Tactical Air Reconnaissance (9th - 12th December)	195
Ground Operations during the Advance to Gazala (8th - 12th December)	195 - 196
Restrictions on Air Support (9th - 12th December)	196 - 197
The Fighter Force Moves Forward.	198
Restricted Western Desert Bombing Operations (9th-night 12th/13th December)	198 - 200
Malta "Takes Eye off the Libyan Ball".	200
Attempt by Marylands to Interfere with JU.52 traffic (11th - 12th December)	201 - 202
Increased Success of the Me.109 and Counter-measures taken (9th - 12th December)	202 - 205
The Enemy's Stand at Gazala (13th - 16th December)	205 - 207
Our Fighter Superiority (13th - 16th December)	207 - 208
Restricted Bomber Effort During Battle of Gazala (13th - 16th December)	209 - 210
Bomber Effort from Malta.	210 - 211
General Features (from the Air Aspect) of the Campaign (1st November - 16th December)	211 - 214

PART VII

PHASE FOUR. THE PURSUIT

The Pursuit to Agedabia.	215
Ground Operations. (17th - 26th December)	215 - 216
7th Armoured Division's Advance.	216

	<u>Page</u>
Guards Brigade's Operations at Antelat and the "Bencol" plan.	216 - 218
Tactical Air Reconnaissance (17th - 26th December)	218 - 219
Fighter and Day Bomber Forces move up (17th - 26th December)	219 - 220
Analysis of Effective Air Effort (17th - 26th/27th December)	220 - 222
Features of the Western Desert Fighter Activity. (17th - 26th December)	222 - 224
Need for Organised Fighter Defence of Lines of Communication in view of proposed "ACROBAT" Operation.	224 - 225
Direct Support Bombing (17th - 26th December)	225 - 226
Bomber Attacks by Aircraft Operating under A.H.Q. Western Desert, on Enemy Airfields and Landing Grounds (17th - 26th December)	227 - 228
Evidence of Enemy Aircraft Losses Provided by Examination of Captured Landing Grounds.	229
Last Attacks on Benghazi During "Crusader" Advance (17th/18th - 19th/20th December)	229
Factors which limited the Western Desert Air Effort (17th - 26th December)	230
I. Inadequate Information from the Army.	230
II. Factors limiting the Air Power which could be made available.	230 - 232
Malta's offensive effort and Factors Restricting it. (17th - 26th/27th December)	232 - 234
Beginning of Diversion of Air Forces to the Far East.	234 - 235
Strikes on Enemy Merchant Shipping in December.	235
(A) (i) As currently reported and assessed.	235 - 236
(ii) Enemy Shipping Losses Assessment Committee's Estimates.	236
(B) Confirmed Losses of Enemy Merchant Shipping.	236
Comments by Vice-Admiral Weichold.	236
Convoy Movements Between Malta and Egypt during December 1941.	237

SECTION TWO OPERATIONS AT AGEDABIA.

Memorandum of A.O.C., Western Desert, on the R.A.F. Aspects of affecting the continuance of the present advance to include the capture of Tripolitania (operation "ACROBAT") (27th December 1942)	237 - 241
Ground Operations Around Agedabia (26th December 1941 - 6th January 1942)	241 - 242
Tactical Air Reconnaissance (26th December - 6th January)	242 - 243

	<u>Page</u>
Unsatisfactory Supply and Administrative Situation in Western Cyrenaica, and Delay in Re-opening Benghazi.	243
Continued Low Scale Enemy Air Effort in Libya and Increased Pressure on Malta.	243
Scale of Fighter Effort (26th December - 6th January)	244
Features of Fighter Action in Cyrenaica - Including First Operations by Kittyhawks.	245 - 248
Limited Direct Support Bombing (26th December - 6th January)	248 - 252
Malta's Offensive Effort Further Restricted (26th December - 6th January)	252 - 254
Brief Appreciation of the Effect of Air Action During the Halt at Agedabia.	254
The Reduction of Bardia (Mid-December to 2nd January)	255 - 258
 <u>SECTION THREE OPERATIONS AT AGHEILA.</u>	
The Enemy Retires to El Agheila (Ground Situation 7th - 11th January)	259 - 260
Chiefs of Staff again Warned of Possible Consequence of Further Diversion of Forces to the Far East (Early January)	260
Increase in Enemy Air Activity - Including the Use of CR.42s. as Fighter Bombers (First half of January)	260 - 261
Unsatisfactory state of Aircraft Serviceability of Western Desert Air Force.	262
Features of the Fighter Activity.	262 - 264
Limited Bomber Effort (7th - 11th/12th January)	264 - 265
Army Agree in Principle to Need for Identifying Vehicles.	265
First Operational Sortie by a Liberator in the Middle East (night of 11th/12th January)	265 - 266
Bad Weather Limits Operations from Malta.	266
The Lull at Agheila (12th - 20th January)	266 - 267
The Importance of Tactical Air Reconnaissance, During the Lull at Agheila and its Curtailment through Bad Weather (12th - 20th January)	267 - 268
Weakness of Western Desert Force.	269 - 270
Scale and Allocation of Fighter Effort During the last Nine days of the "Crusader" Advance, (12th - 20th January)	270
Offensive Fighter Force Established at Antelat (Second week in January)	270
Scheme to Introduce System of R.D.F. Warning at Belandeh Prevented by Enemy Advance.	271
Continued Success of Me.109 "Jumping Tactics" in the Forward Area (12th - 20th January)	271 - 272

Page

Projected Re-formation of No.211 Group for Defensive Fighter Commitments (15th January)	272 - 273
Passing of Convoy to Malta (16th - 19th January)	273 - 274
Cessation of Day Bomber Effort in Forward Area.	274 - 275
Night Bombing Restricted by Lack of Fuel in Forward Area (Night 12th/13th - 20th January)	275 - 277
Bad Weather Restricts Offensive Operations by Malta - based Aircraft (Night 12th/13th - 20th/21st January)	277 - 278
The Capture of Sollum and Halfaya (11th - 17th January)	278
Strikes against enemy Merchant Shipping during January '42.	279
(a) As currently reported and assessed.	279
(b) Confirmed Losses of Enemy Merchant Ships.	280
(c) Comments by Vice-Admiral Weichold.	281

SECTION FOUR THE AIR DEFENCE OF EGYPT AND THE LEVANT.

14th October 1941 - 20th January 1942.	
(a) The Suez Canal Zone.	281
(b) Lower Egypt.	282 - 284
(c) Eastern Mediterranean.	284
Our Base Virtually Immune from Air Attack.	284
The Air Defence Mission (Egypt) Reports and Recommendations.	284 - 286
Extent of Progress made by March 1942 following Recommendations made by the Evill Mission.	287

PART VIII

CONCLUSION

General.	289 - 290
Positive Gains as a Result of "Crusader".	290
Air Aspect - General.	290 - 291
Scales of Effort. ("Crusader" offensive Period)	291 - 292
Comparative Losses.	292 - 293

	<u>Page</u>
Fighter Operations.	293
Reconnaissance.	294 - 295
Air Support.	295 - 297
M.E. Training Pamphlet (Army and R.A.F.) No. 3 A.	297
Miscellaneous.	298 - 301

INDEX TO SKETCH MAPS

The sketch maps are based on maps appended to reports written shortly after the event by Wing Commander L.T.W. GEDDES, O.B.E. of Army Co-operation Command, attached as R.A.F. Liaison Officer to H.Q.13 Corps, and Wing Commander Gordon Finlayson, D.S.O., Senior Operations Officer, A.H.Q. Western Desert.

	<u>TO</u>	<u>PAGE</u>	<u>PAGE</u>
Situation Evening of 19th November 1941.		134	
Initial Success and First Capture of Sidi Razegh 22nd November 1941.		141	
Raid by Enemy Columns 24th November 1941.		150	
First Relief of Tobruk (as at 27th November)		161	
The Second Siege of Tobruk (5th December 1941)		183	
Final Relief of Tobruk (7th December 1941)		184	
The German Action at Gazala (15th December 1941)		205	
Enemy's Initial Position as at 0900 hours 17th December 1941		215	
Enemy Withdrawal.		216	
Deadlock Before Agadabia (1st January 1942)		242	

LIST OF APPENDICES

- APPENDIX A. Brief Note on Entry of the Germans into the Mediterranean Theatre.
- " B. Joint Planning Staff's Appreciation of the situation in the Middle East.
- " C. Arrangements in the Middle East for Inter-Service Liaison on High Level in 1941.
- " D. Signal to C.A.S. from A.O.C.-in-C. on Changed Situation in Eastern Mediterranean etc. 20/6/41.
- " E. "Strategic Situation in the Middle East". Review by M.E. Joint Planning Staffs, July 1941.
- " F. Strengths of Our Own and Enemy's Ground and Air Forces as requested by Prime Minister. (Summary of COS. (41) 176(o)).
- " G. Summary of "Appreciation of the German Air Force in the Mediterranean at the end of October, 1941". (A.C.A.S.(I) to C.A.S.)
- " H. Appreciation of the Axis Air Forces in the Mediterranean as at 1st November, 1941. (A.C.A.S. (I) to C.A.S.).
- " I. Arrivals of Aircraft in the Middle East from U.K. and U.S.A. (and Details of Aircraft Dispatched from Assembly Units at Takoradi, Lagos and Port Sudan).
- " J. Aircraft Serviceability (Middle East including Malta) as at 20/6/41, 15/8/41 and 10/10/41.
- " K. Middle East (including Malta). Aircraft Position in Squadrons as at 15/6/41, 15/8/41 and 15/10/41.
- " L. Maintenance Organisation in the Middle East at the time of the "Crusader" Offensive, November 1941 - January 1942.
- " M. Rate of Growth of Aircraft Serviceability in Middle East before and during "Crusader" offensive. (C.N.S.O.'s Graph).
- " N. Air Ministry's Proposed Aircraft Establishment, and Output of Middle East Operational Training Units. (October 1941).
- " O. Middle East (Army and R.A.F.) Directive on Direct Support - Communications for Air Support Control.
- " P. Monthly Total Tonnages of Enemy Merchant Shipping Losses in the Mediterranean - 1st June 1941 to 31st January 1942.
- " Q. Aircraft State of Squadrons (excluding the Fleet Air Arm) concerned directly or indirectly with the "Crusader" Operations as at 15th November 1941.
- " R. G.A.F. Orders of Battle in the Mediterranean as at 15/11/41 and 13/12/41. (Compiled from Enemy Records).
- " S. Disposition of Italian Air Force Units in Libya 18th November 1941. (Supplied by Italian Air Ministry).
- " T. Disposition of Italian Air Force Units in Libya 18th December 1941. (Supplied by Italian Air Ministry).
- " U. Order of Battle Middle East Command (excluding A.A.H.Q. East Africa) as at 11/11/41.

/V.

- APPENDIX V. Location of Units Administratively and/or Operationally Controlled by Air Headquarters Western Desert (Issued by A.H.Q./A.A.H.Q., W.D.) As at 29/10/41, (II) P.M. 17/11/41, (III) 22/11/41, (IV) 11/12/41, (V) 25/12/41, (VI) 7/1/42, (VII) 16/1/42.
- " W. Employment of Air Transport During the Western Desert Operations November 1941 to February, 1942.
 - " X. Non-Flying Units under A.H.Q. W.D. as located prior to the offensive.
 - " Y. Distribution of Responsibility of A.S.P.'s and R.S.U's.
 - " Z. The Enemy Supply System in Libya. (Diagram attached).
 - " A(i) Photographs taken in Libya between 5/10/41 and January 1942.
 - " B(i) Airfields and Landing Grounds - Egypt and Western Desert (Eastern Area).
 - " C(i) A.A. Layout, Eighth Army.
 - " D(i) Brief Report on Communications in the Western Desert Operations. 1941 - 1942.
 - " E(i) Air Support Control. General Layout Eighth Army giving actual Wings and Frequencies used.
 - " F(i) Use of R.D.F. during Operations in Western Desert and Libya. November 1941 - January 1942.
 - " G(i) Fighter Operations and Tactics in the Libyan Campaign. November 1941 - January 1942. (Report by Commanding Officer 258 Wing).
 - " H(i) Details of operations by aircraft of the Middle East Command (18th November 1941 - 20th January 1942).
 - " I(i) Enemy Aircraft Operational Casualties - Middle East/Mediterranean Command (18th November 1941 - 27th January 1942).
 - " J(i) R.A.F. and Dominion Air Forces Operational Casualties Middle East Command (1st November 1941 - 31st January 1942).
 - " K(i) Notes by Chief Meteorological Officer, H.Q. R.A.F. M.E.
 - " L(i) Monthly Totals Allied Merchant Shipping Sunk in Mediterranean and Gulf of Suez June 1941 - January 1942.
 - " M(i) Classification of Naval casualties in the Mediterranean. (1st June 1941 - 17th November 1941).
 - " N(i) State of Aircraft Middle East Command as at 1st January 1942.

VOLUME II

LIBYA (Mid-June 1941 - Late January 1942)

PART I INTRODUCTORY - PRE-CRUSADER PERIOD

By mid-June, 1941, when the general planning of the British offensive, later called "Crusader", was initiated, the pendulum of Western Desert warfare had already swung to and fro in all three times.

To mark the stage then reached in the African and Mediterranean struggle as a whole it is sufficient to recall a few of the main events and trends of the earlier period.

Less than a fortnight after Italy's opportunist entry into the war (10th June, 1940) the capitulation of France transformed the Mediterranean strategic situation. With the virtual elimination of the French fleet and our denial of all ports, except precariously-held Valetta, between Gibraltar and Alexandria, the balance of sea power changed to Britain's detriment. In particular, our short reinforcing route to the Middle East - and the Empire's main life-line - could no longer be maintained, and recourse was necessarily made to the alternative long way round the Cape, with its attendant time-lag and strain on shipping resources. Thereafter, such use of the Mediterranean sea ways as was possible at various times by either side was increasingly governed by the extent of the air power wielded from the Mediterranean littoral and islands. So far as aircraft reinforcing was concerned British difficulties were far greater than those confronting the enemy. The latter's reinforcement aircraft could utilise a line of well-equipped airfields. British long-range aircraft had to fly over long and hazardous routes and short-ranged aircraft had first to be shipped to African ports and then flown from various depots which were subsequently established at Takoradi and Port Sudan.

On land the implications of France's defection were no less striking. Preparations for a possible war with Italy had presupposed the powerful aid of French forces stationed in North-west Africa and Syria. Compliance with Pétain's cease fire order by the Commanders in these areas meant that (a) the whole weight of the Italian ground and air forces in Libya, which had largely been committed to the task of holding the French forces concentrated in Tunisia, could be diverted eastwards against Egypt, and (b) in addition to the uncovering of Palestine's northern flank, the French divisions in Syria, "which constituted the general reserve of the Middle East for assistance to Turkey or Greece, or for the defence of Egypt, if required, could no longer be counted on".

Success Against the Italians

At the beginning of the war with Italy, consequently, the Commander-in-Chief, Middle East (General Sir Archibald Wavell) estimated that the armies at his disposal in all areas under his control (1) were outnumbered five to one by

/the

- (1) By Army Council instructions dated 3rd February 1940, the C.-in-C., M.E. was placed in command of all British land forces in (or afterwards therein) Egypt, Palestine and Transjordan, Cyprus, the Sudan, Turkey, the Balkans, East Africa (i.e. the territories comprising the command of the G.O.C., who retained, however, responsibility for the administration of his forces) and British Somaliland.

C-in-C's
Despatch
(August 1939 to
November 1940)
para. 23

Idem the enemy. "Very little equipment had been sent to the
paras. 14 Middle East and no single unit or formation was fully
and 15 equipped".

In spite of the continued disparity in strength, all went well, in the main, for British arms, aided by the air effort indicated later, until March, 1941.

In the Western Desert, after the Italians had failed to take advantage of their superior resources, (1) a British offensive begun in December, 1940, resulted in our troops establishing themselves to the east of Agheila, with Benghazi and Tobruk held in the rear. By March, also, on the East African front our campaign in Eritrea was drawing to a victorious end, and further south the fall of Addis Ababa was imminent. In the Eastern Mediterranean a naval base had been established at Suda Bay, Crete, and an expeditionary force despatched to the mainland to help Greek resistance.

General Wavell's juggling of his small forces - aided by a similar competent handling of our limited naval and air forces - had up to that point proved outstandingly successful. Vast territories had been wrested from Italian control and disproportionate casualties inflicted. All was well, in effect, so long as our adversaries remained the previously over-rated Italians. (2)

Early Air Effort

The handling of the R.A.F., Middle East, required particular skill, as this single force combined, albeit on a minor scale, the functions exercised by the several Commands at Home, and operated over wide areas (3) where communications were inadequate, climatic conditions often unfavourable, and industrial help limited.

/At

C-in-C's (1) General Wavell declared that the reason for this "was due
Despatch firstly to our Air Force, who in spite of inferior numbers
(August 1939 to November everywhere took and kept the initiative".
1940) para. 50

- (2) The judgment passed in the "Army Report on Lessons of the Operations in the Western Desert, December, 1940", applied generally to the whole Italian effort during this early period. "The operations have been conducted against an enemy, who with very few exceptions, has proved himself to be generally lacking in soldierly qualities..... who has displayed little courage, initiative or determination..... quickly gives way to demoralization".
- (3) By Air Council Instructions dated 11th June, 1940, the command of A.O.C.-in-C., M.E. extended over all R.A.F. units in the Army areas mentioned in footnote 1, page 1, plus Iraq and adjacent territories, the Mediterranean and Red Seas and Persian Gulf. The A.O.Cs Aden, Iraq and Mediterranean (Malta) exercised local administrative control in direct communication with Air Ministry. (ME.12).

AM S.43159 In spite of representations to their C.O.S. by the Army
(115B) and Air Cs.-in-C. the Admiralty declined to adopt a unified
A.C.A.S.P. command in the Mediterranean and Red Sea, the two areas
55/2 Part 2 remaining the responsibility of C.-in-C., Mediterranean, and
C.-in-C. East Indies Station, respectively. Naval unification
under C.-in-C., Med., was not effected until December, 1943.

ME.12

At the outbreak of the war with Italy the Air Officer Commanding-in-Chief, Middle East (Sir Arthur Longmore)(1) was charged (in conjunction with the Naval and Army Commanders) primarily with the defence of Egypt and the Suez Canal and the maintenance of communications through the Red Sea - the latter constituting the last leg of the Cape reinforcing route. This "did not preclude the possibility of air forces..... being employed in the execution of such other plans..... approved by the Chief of Staff from time to time". "Such other plans" were continually forthcoming, involving, in particular, air force participation in the whole series of African and Mediterranean campaigns.

A.O.C.-in-C's
Despatch

When hostilities began in Africa the A.O.C.-in-C. had at his disposal in the whole Middle East Command in round figures a strength of 250 aircraft against an estimated total of 570 Italian aircraft in Libya and Italian East Africa alone. Further strong enemy contingents in Sardinia, Sicily and the Dodecanese were strategically placed to take part in Mediterranean operations, while the main strength of the Regia Aeronautica remained in Metropolitan Italy. The reinforcing of the enemy's squadrons in Libya, moreover, which clearly was the vital theatre of war, presented a much simpler problem than that confronting the British Commander.

A.C.M.
Longmore's
Memoirs

As regards the aircraft involved in the first phase of operations the Gladiator fighter was an even match for the Italian C.R.42, but the S.79 bomber had greater endurance qualities, longer range and carried a heavier bomb-load than the Blenheim I.(2) Of the obsolescent aircraft which made up the Middle East strength the Lysander, in particular, was unsuited for its Army Co-operation role. The later addition of Hurricanes and Wellingtons to the force provided aircraft of a (then) modern type.

A.O.C.-in-C's
Despatch

The primary defensive task allotted to the R.A.F. was not interpreted as implying a passive role. It was decided that David should harass Goliath from the start. Accordingly, the air effort was largely directed to offensive action against the enemy's air bases, repair organisation, ports and shipping, in order to limit the enemy's power to strike and seize the initiative. In addition, the Army was afforded as full support as possible, and strategic reconnaissance for Naval, Army and Air information was carried out as far as the limited resources permitted.

/The

- (1) Sir Arthur Longmore was appointed A.O.C.-in-C. 13th May, 1940. Air Marshal A.W. Tedder took up his duties as D.A.O.C.-in-C. on 10th December, 1940; he acted as A.O.C.-in-C. from 3rd May, 1941, when Sir A.Longmore was recalled to U.K.; and was officially appointed to command 1st June, 1941.
- (2) In the course of our first Desert offensive, however, it became clear that the S.79 suffered from various technical failures due to faulty sparking plug design, and the employment of petrol of a low octane value. In the early stages also the Italians failed to fix air cleaners to their aircraft engines.

II J6/3
p.11

The general success achieved by the Air Force up to March, 1941, is incontestable. By that date the Italian Air Force had been so reduced in Libya that it no longer constituted a serious threat. It should be noted, however, that the German Air Force had already assumed the leading enemy role in Cyrenaica at a time when commitments in Greece had reduced our strength and reinforcements were inadequate. In Italian East Africa our air forces had "virtually knocked out the enemy air", in spite of the fact that the former were made up largely of obsolescent aircraft. In Malta, the Regia Aeronautica had been held off by a handful of fighters,⁽¹⁾ but during the last month of the phase under immediate review (February 1941) the intensive effort of Sicilian-based German squadrons was making it evident that the Island urgently needed fighter reinforcements if it was to be retained as an offensive base. The small air force in Greece, meanwhile, had established a considerable degree of local air superiority on the Albanian front against the numerically superior Italian aircraft.

As in the case of the land operations the incompetence of the Italian air forces was a large contributory factor to the R.A.F.'s success. In addition to technical defects the Italians' defensive policy of maintaining fighter patrols over their bases and M/T columns wore out their fighter units and an inadequate maintenance organisation prevented making good the consequent wear and tear. Thus 1,100 Italian aircraft were abandoned on their airfields during our first Cyrenaican advance due to technical faults and damage inflicted by R.A.F. attacks. A similar fate befell the Italian East African air forces for which reinforcing and supply of spare parts presented a far greater problem than in Cyrenaica.

Co-operation with the Army in the Early Period

The establishment of air superiority reduced interference with our troops by the Italian air force to a minimum, but it was realised at a very early stage "that co-operation between the ground and air forces in all stages of any operation" needed "the closest study".

In this connection, however, it should be remembered that the Army, not unnaturally, tended to cite the intimate support rendered by the Luftwaffe in the early campaigns of the war, but often ignored the fact that its success was due not merely to the close association of the German Air Force with the military machine, but to the lack of effective opposition and consequent lesser effort required to achieve air superiority, isolate the battle areas and reduce the opposing build-up.

/The

(1) From the outbreak of hostilities to the end of February, 1941, the Malta fighter force claimed the destruction of 96 enemy aircraft for the loss of sixteen aircraft and eleven pilots.

AHB II J6/49/6
Covering letter
of AOC-in-C in
forwarding to
A.M. A/V/M
Elmhirst's
"Lessons
learned during
Air Operations
in the W.D.
(August '40 to
February '41)

AHB II J61
Report by No. 203
A.I.L. Section
(December 1940)
Appendix A

The outstanding debut, so far as the R.A.F. was concerned, was the immobility of our operational units, except Army Co-operation squadrons, due to their organisation on a static basis: they lacked sufficient transport and personnel to operate efficiently under Desert conditions. Other essentials lacking included a reporting and warning organisation for R.A.F. facilities and sector control in the front line for fighter and A.A. defence; and mobile A.A. defences for the defence of airfields taken during an advance.

For the Army's part, adequate information as to our troops' position and line of advance was often not forthcoming - due, in part, to poor communications - and means for readily identifying our troops and vehicles were lacking. It was evident that, "if no information comes back efficient close support cannot be expected..... A pilot must know the whole situation".

Deterioration of Our Situation

The entry of the Germans into the Mediterranean Theatre (Appendix A) resulted in a deterioration of our position, as our commitments in Greece involved the dispersion of our limited forces at a time when the enemy (apart from Abyssinia) was being reinforced.

By the end of April, 1941, effective resistance had ended in Greece, our Western Desert forces had been obliged to fall back to the Egyptian border, leaving a beleaguered garrison in Tobruk, and Malta had received a (then) record hammering from the air.⁽¹⁾ Beyond our vulnerable northern flank, also, trouble was brewing for us in Iraq, Syria and Persia.

During the next seven weeks further British defeats ensued, but these were mitigated to some extent by other successes. On the debit side, Crete was lost and an attempt to relieve Tobruk (Operation "Battle-axe") failed. To our credit, the Abyssinian campaign was all but won, an Iraqi uprising was crushed, a start was made with the occupation of Vichy-controlled Syria and the fortress-base of Malta reinforced by Hurricanes, remained battered but inviolate.

Criticism of the Air Effort

In all the areas involved the R.A.F. played its part; above all, the successful defence of Malta was almost entirely due to its efforts.

In connection with the Army defeats, and the consequent Naval losses incurred in the evacuation of Crete, however, the air participation came in for considerable adverse criticism.⁽²⁾ It was true that the R.A.F. did not then

/possess

- (1) 6,728 tons of bombs were dropped on the island in April alone.
- (2) Apart from the criticism of the Army and Navy the British Ambassador to Egypt also expressed the view that the R.A.F. was neglecting to provide adequate air support. A.O.C's correspondence with C.A.S. etc. enclosure 51A). "Political circles" at Home, also were "on the look-out" after Crete "for any failure on the part of R.A.F. to afford close support". (Idem enclosure 91A).

AOC-in-C's
Correspondence
with C.A.S. 57A

possess anything approaching "the highly refined organisation" which the Germans had developed for communicating between close support aircraft and forward troops. On the other hand, the R.A.F.'s counter air force operations, directed to securing air superiority, and attacks on the enemy's lines of communication and supplies designed to weaken his army activity carried out beyond the soldiers' view - were apt to be overlooked or taken for granted. (1)

AOC.-in-C's
Correspondence
with C.A.S. etc.
Enclos. 107A

In Greece the efficient close support rendered by the Luftwaffe to the numerically superior and better equipped German ground forces certainly helped the enemy to win the battle in the manner then all too familiar. This success in army co-operation activity, under most favourable conditions, tended to obscure the fact from Army eyes that in spite of "vast air superiority the Germans did not entirely protect their troops from bombing and completely failed to stop the movement of ours from north to south". (C.A.S.'s signal X.316 19/6/41 to A.O.C.-in-C., commenting on the C.-in-C's adverse remarks in his O.74021 18/6/41).

Idem
Enclos. 54A

The fundamental cause of the lack of R.A.F. support in Greece (in the last phase) and, more obviously, in Crete was our inability to hold or protect the bases necessary for the employment of our air forces. Similarly, the effective cover of the Fleet engaged in the evacuation of the island was rendered impracticable. Yet this obvious prerequisite for air action was apt to be lost sight of under the mass of side issues raised, and misconceptions even led to the advocacy of separate air components for the Army and Navy, on the grounds that the R.A.F. organisation could not cope with these supposed specialist commitments. (2) The crux of the matter was that the Middle East campaign in its entirety was "primarily a battle for aerodromes". (3)

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Enclos. 108A
idem
enclos. 110A

In the course of the "Battle-axe" operation in mid-June, 1941, the R.A.F. (contrary to its usual offensive policy and rather against the better judgment of the A.O.C.-in-C.) provided, at the particular request of the Army, an "air umbrella" to afford protection to our attacking troops from the enemy's air. The enemy inevitably found "some holes in the umbrella" and this led to more Army criticism.

/The

A.O.C's
Correspondence
with C.A.S. etc.
enclos. 92A

- (1) The A.O.C.-in-C. in a signal to C.A.S. on 11th June, 1941, said, "Sometimes forgotten that attacks on rear L.of C. (in W.D.) during past two months which have contributed very considerably to restricting enemy air action are largely new development only practicable through improvisation with Hurricanes etc., yet Beresford-Pierse two days ago signalled Wavell saying the 'failure' to continue these attacks through Crete evacuation was 'deplorable'. I have dealt with this. Having been given jam and cream Army now complain that they do not always have both".
- (2) This point of view was put to the A.O.C.-in-C. by Lord Mountbatten "after he had got blown out of the sea or rather into it by a JU.87". The A.O.C.-in-C. pointed out the fundamental reason why effective air power could not be wielded and told him that he "did not see how we could conceivably afford the luxury of dividing up our available air forces into penny packets". Further demands for air components by the C.-in-C., M.E. and C.-in-C. Med. are mentioned on pages 11 and 12.
- (3) Later, Gen. Auchinleck apparently came to the same conclusion, and told "a meeting of senior officers that the primary role of the Army was to secure and maintain air bases as far forward as possible so that we could strike at the enemy's communications and bases and at the same time deny the enemy air bases within effective range of our main bases".

A.O.C-in-C's
Correspondence
with C.A.S. etc.
Enc. 57A
Idem. Enl. 164A

Idem
Enclos.108A

The A.O.C.-in-C. put forward a strong case that the failure to provide effective air support rested mainly with the Army. There was an almost complete lack of information from the ground and Army Headquarters had great difficulty in even giving the bomb-line. Further, the Army failed to comply with the arrangements made for communication and recognition between the ground and air.

Idem
Enclos.110A

It was fully realised, however, that the existing organisation for providing close support was "amateurish in (the) extreme", the basic problem being one of communications.

Direction of Air Effort After "Battle-axe"

A.O.C.-in-C's
Correspondence
with C.A.S.
Enclos.101A

By 18th June it was evident that the situation in the Desert was stabilised again. It was necessary, therefore, to revert to a more economical use of the air forces. The low flying attacks of the previous few days, which had helped "very considerably if not vitally to extricate our land forces from critical position" had "necessarily been expensive in personnel and material". The fighter strength in the Western Desert had been built up "by attaching half squadrons from units which were re-forming and re-equipping in Delta". It was now necessary that these squadrons should be properly formed as trained fighter units, particularly as it was estimated that half their casualties received in the "Battle-axe" operation was due to inexperience.

idem

Accordingly, Air Marshal Tedder issued fresh directives for the employment of his main operational forces. In particular, the A.O.C., No.204 Group, in the Desert, (Air Commodore R. Collishaw) was now allotted as his primary task the "interruption of enemy lines of communications, subject, of course, to what action may be required to maintain air superiority."

CHRONOLOGY OF PRE-"CRUSADER" PERIOD

I. MAY 1940 - MID-JUNE, 1941

1940	Events in Middle East Command	Events in Other Theatres
10th May		Germany invaded Holland, Belgium and Luxemburg. Mr. Winston Churchill became Prime Minister. Evacuation of Dunkirk completed.
4th June		Germans crossed the Seine.
10th June	Italy declared war on Great Britain and France.	Germans occupied Paris. Franco-German Armistice signed.
14th June		Opening of 84 day period known as the Battle of Britain.
21st June		U.S.A. gave G.B. 50 destroyers in return for certain bases. Night air blitz on G.B. began.
8th August		
3rd September		
7th September		
13th September	Italians captured Sidi Barrani.	
27th September		Germany, Italy and Japan signed Tripartite Pact. German forces entered Rumania.
7th October		
28th October	Italian forces invaded Greece.	
20th November		Hungary signed Tripartite Pact.
23rd November		Rumania signed Tripartite Pact.
9th December	British offensive in Cyrenaica opened.	
16th December	British offensive in Italian East Africa began.	
1941		
22nd January	British captured Tobruk.	
1st February	British captured Agordat (Eritrea).	
7th February	British captured Benghazi.	
11th March		Lease-lend Law enacted in U.S.A.
25th March	Harrar (Abyssinia) captured by British.	Yugoslavian Government signed Tripartite Pact.
26th March	Keren (Eritrea) captured by British.	
27th March		Revolution in Yugoslavia.
28th March	British naval victory off Cape Matapan.	
1st April	British entered Asmara (Eritrea).	
3rd April	British evacuated Benghazi. Retreat to Sollum began.	
6th April	Addis Ababa liberated. Germans invaded Greece.	Germans invaded Yugoslavia.
8th April	British occupied Massawa (Eritrea).	
13th April		Germans occupied Belgrade. Russia and Japan signed pact of neutrality.
27th April	Germans occupied Athens.	
2nd May	British evacuation of Greece completed. Iraqi revolt began.	
16th May	Amba Alaagi (Abyssinia) captured.	
30th May	Germans invaded Crete by air.	
31st May	Armistice signed in Iraq.	
1st June	British evacuation of Crete completed.	
8th June	British and Free French invaded Syria.	
15th June	British operation to relieve Tobruk opened: failed after three days.	

PART II

TRENDS OF GENERAL PLANNING IN LONDON

(Mid June to November, 1941)

Immediately it was apparent that the "Battle-axe" operation in the Western Desert had failed the Chiefs of Staff (Admiral of the Fleet Sir Dudley Pound, Field Marshal Sir John Dill and Air Chief Marshal Sir Charles Portal) reviewed the situation in order to determine future strategy. Their meeting of 18th June, 1941, may be taken as the starting point for the protracted planning which ultimately led to the launching of the "Crusader" offensive.

Actually, five months intervened between this initial, exploratory planning and the renewal of the Western Desert conflict: months during which a cautious policy of re-organising, training and reinforcing was adhered to in spite of Cabinet impatience at the continued delay in joining the battle.

In this section some of the main trends of the general planning in London are set down in their chronological sequence. Points considered by the Defence Committee and/or Chiefs of Staffs respecting the strategic situation, review of strengths, general employment of forces and political issues affecting war operations only are considered.

The R.A.F.'s particular policy in regard to the building up of the Middle East air forces and the latter's preparations and detailed plans provide themes for subsequent parts of the narrative.

Preliminary Survey

C.O.S. (41)
215th Meeting

In the course of the Chiefs of Staff's meeting of 18th June a minute was received from the Prime Minister and Minister of Defence (Mr. W.S. Churchill) suggesting that our right flank in the Middle East should be reinforced in order to ensure the success of the current operations in Syria. Before deciding on this or possible alternative courses of action the C.O.S. decided to consider appreciations of the Middle East situation by the Commanders-in-Chief (Admiral Sir Andrew Cunningham, General Sir Archibald Wavell until 7th July 1941 and then General Sir Claude Auchinleck, and Air Marshal A.W. Tedder). The Commanders were requested to comment particularly on the policies for Syria, Tobruk and Cyprus and the provisioning of Malta. Meanwhile, the Joint Planning Staff was also instructed to examine and report on the same lines.

J.P. (41) 467.

The J.P.S.'s appreciation (1) considered Germany's possible future strategy, our own position in the Middle East, and proposed a policy. The enemy's moves obviously depended on the period of time and on the extent to which he was committed on his Eastern Front. It was considered that for the time being the Germans' concentration against Russia (2) ruled out any major move by them in the Middle East, except by the forces then in Cyrenaica, and these were deemed insufficient for a deep thrust into Egypt. The minor operation of an attack on Tobruk was considered probable and perhaps imminent. If the Germans could attain their aim in

/Russia

(1) A summary of this appreciation is given at Appendix B.
(2) Germany invaded Russia 22nd June, 1941.

Russia, however, forces could be released for initiating major moves elsewhere. So far as the Middle East was concerned, in this eventuality, it was judged that the threat to Egypt would still be most menacing from the west, but attacks might be staged from Syria (if not completely wrested from Vichy control), via the Caucasus or through Anatolia (as Turkey would be not able to resist German pressure). In addition, an attack on Malta might be launched, either in connection with operations for closing the Straits of Gibraltar or for the purpose of reducing our threat to Axis' sea communications to North Africa.

With regard to our own position in the Middle East, it was pointed out that owing to our recent heavy losses in A.F.V's another offensive could not be mounted in the Desert until substantial tank reinforcements were received. While our build-up was in progress, it was recommended that the enemy's lines of communication should be attacked, particularly by air action. In view of Malta's importance as a base for these attacks (and as an air staging post), it was urged that the island should be made self-supporting for as long as possible. Provisioning the island was considered impracticable from the east, but the temporary absence of the Luftwaffe from Sicily was thought to provide a chance of effecting it from the West. On the vexed question of Tobruk⁽¹⁾ the J.P.S. advised (as a heavy enemy air assault seemed unlikely to develop before our intended offensive was launched) that no decision should be taken about evacuation until the extent of Germany's commitment on the Russian front was clear. In the meantime, as soon as our defensive position in the Western Desert was firmly established, it was recommended that all forces which could be spared should be transferred to bring the Syrian campaign to an end.⁽²⁾ The security of Cyprus was regarded as complementary to the holding of Syria, and its denial to the enemy also prevented a further extension of enemy air action against our shipping. It was considered that the strategic position of the island warranted a strengthening of its garrison, provided that this did not lessen our ability to undertake operations in Libya.

The Joint Planning Staff, accordingly, proposed the following policy - "as we see it in London":-

- (a) Establish a secure defensive position in the Western Desert.
- (b) Complete the occupation of Syria.
- (c) Attack the enemy's lines of communication with and in Libya.
- (d) Reinforce Malta as soon as possible from the west.
- (e) Defer the decision on the holding of Tobruk.

As soon as the occupation of Syria was satisfactorily completed:-

- (f) The Cyprus garrison should be strengthened, subject to requirements in the Western Desert.

/(g)

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- (1) The advantages and disadvantages attached to our holding of Tobruk are summarised at Appendix B para.15.
 - (2) In the event, General Wavell made use of troops from Iraq to increase the pressure on Syria towards the end of June. The Vichy forces capitulated 14th July '41.

- (g) The offensive in the Desert should be resumed as soon as adequate forces were available.

J.P.(41) 545
C.O.S.(41)417

In general the Commanders-in-Chief's views corresponded to those of the J.P.S. Particularly was this the case in respect of the policies proposed for the Western Desert, Tobruk, Syria and Cyprus. Details were also given of the Army's defensive plan for the Desert and Delta and it was suggested that the principal danger during the following two or three months might be intensive enemy air action against Egypt⁽¹⁾. To meet this threat there was then a reasonably adequate force of fighters, but a deficiency in anti-aircraft guns.

C.O.S.(41)417

To cover our northern flank it was considered that not only was the consolidation of Syria necessary, but, in the event of a Russian collapse, we should be prepared to bomb the Caucasus oil organisation. To safeguard the necessary airfields in northern Syria and Iraq it was considered advisable to forestall the enemy in southern Anatolia, although Turkish collaboration was unlikely. Another suggested measure was the advisability of obtaining the expulsion of all German non-diplomatic nationals from Persia.⁽²⁾ As a complement to the defence of Syria, it was reported that plans were in progress for the laying down of three airfields and satellites in Cyprus, and that it was intended to despatch one division to strengthen its defence.

Contrary to the J.P.S.'s recommendation the Cs-in-C., declared that the comparative lull in the Mediterranean offered the least favourable conditions for sending supplies to Malta.⁽³⁾

The Cs.-in-C., recognised that the clearing of Eastern Cyrenaica remained "our paramount offensive requirement", but success in that operation was believed to depend on favourable relative tank and air strengths. In particular, the C.-in-C., M.E., stated that two (preferably three) armoured divisions and a motorised division were needed. In the meantime at least two months were considered necessary for essential training and re-equipping. For the air forces, also, training was regarded as an urgent necessity.

A.O.C.-in-C's
Correspondence
to C.A.S. etc.
Enclos.

The Implied Lull

The necessity for the re-organisation, reinforcing and training of the land and air forces, and, above all, General Auchinleck's insistence on a great increase in armour implied that a number of months were likely to pass before another Desert offensive could be mounted.

/The

- (1) The extent of the air action which materialised and our protective measures are considered on pages 76 to 82.
- (2) This endorsed the recommendation already made to the Foreign Office in Cairo telegram No.2064 30.6.41. At the end of August, 1941, it was found necessary to quell opposition in Persia by force of arms. On 17th September, 1941, Teheran was occupied by British and Russian forces.
- (3) Nevertheless, a convoy was passed through from the West, reaching Malta 24th July. Another large convoy reached Malta in September.

J.P.(41) 545

The Joint Planning Staff, commenting on the C.-in-C's requirements, stated that it was unlikely that he could have more than one armoured division and one army tank brigade ready for action before 1st October, a second armoured division before December, and probably could not start forming the third before the New Year (1942).

A.O.C's
Correspondence
with C.A.S. etc.
Enclos. 104A
C.O.S.(41) 220th
Mtg. Item 6.

During the inevitable lull it was clear that the defence of the Middle East devolved more and more on the R.A.F. In particular, the interruption of enemy sea communications could be accomplished only by air and submarine action (1). "Nearly everything depended on our bombing effort being able to prevent the enemy build-up in Cyrenaica." (2)

Prime Minister's Early Directions on Employment of the Air Forces

While the interchange of telegrams between the C.O.S. and the Cs.-in-C., was in progress, the Prime Minister was also in direct communication with General Auchinleck.

C.O.S.(41) 417
Annex I.

In addition to reviewing the situation and stating his requirements on the lines already indicated, the C.-in-C., M.E., stressed the importance of the air factor in such a way as to imply a triple control of the air forces. (C.-in-C's telegram O.1527 4.7.41.). (3) He declared that the "second essential" for a successful Desert offensive (after armour requirements had been met) was "adequate and suitably trained air components at disposal of Army for all its needs, including fighters, medium bombers, tactical reconnaissance and close-support on the battle-field." The "third essential" was co-operation with the Fleet, including "constant air support by air forces which must be at disposal of the Navy (4) and additional to those required for close-support of Army and for long-range strategic air operations".

/Air

- (1) The A.O.C.-in-C's views at this time on the interruption of enemy sea communications and securing our own are given at Appendix D.
- (2) The paramount importance to the enemy of securing his shipping routes to Libya is clearly indicated in Vice Admiral Weichold's Report on "The War at Sea in the Mediterranean". The Admiral wrote: "All material down to the merest nail had to be shipped across the sea for the Colony did not possess an industrial capacity of its own". (AHB1 S.10 Part I para.62.).
- (3) Air Marshal Tedder had a "long and useful private talk with Auchinleck" on the latter's telegram and the P.M's reply O.64 Susan (M.O.5) 6.7.41. "Result this and other talks I feel there is every hope of smooth and close collaboration." This would hardly have been the case if General Auchinleck really wished to exercise operational control of part of the Middle East Air Force. A previous less amicable conversation with Lord Mountbatten has already been referred to in footnote (2) page 6.
- (4) The Naval request for a "Coastal Command" continued to be pressed. The agreement reached in September, 1941, is considered on pages 39 and 40.

A.O.C's
Correspondence
with C.A.S. etc.
A.O.C's 112
17.7.41. to
C.A.S.
Enclos. 128A

C.O.S. (41) 417
Annex 1.

Air Ministry's reaction to this rigid and uneconomic employment of the Air Force was typified by the uncompromising minute of D.D. Plans (0), "We cannot agree that the formation of what will, in effect, be three separate air forces is either possible or desirable in the Middle East."

D.O. (41) 51st

The Prime Minister, after being reminded of the basic principles of the use of air power, as understood by the R.A.F., made it clear to the C.-in-C., M.E., that although the full power of the air was to be directed to winning the land battle, this did not imply a local employment and

air forces. "I feel that for all major moves your (the Army's) plan must govern the whole air force through the Middle East, that the Air Force has its own dominant role to play and must not be frittered away in umbrellas for the Army as it seems to have in the land battle." (O.64 Susan (M.O.5) 6.7.41.)

Directive by the Prime Minister on the use of the Air Force is mentioned on page 20.

Defence Committee (Ops.)

(1) The Defence Committee (Ops.) of the War Cabinet met to decide on our next moves in the Middle East. The minutes (C.O.S. (41) 138 (0)) and twelve personal copies were sent to the Prime Minister and General Auchinleck.

The two key telegrams of the series were the Prime Minister's O.64 Susan (M.O.5), 6.7.41. (mentioned above) and the C.-in-C's. Susan 1533, 6.7.41.

The Prime Minister's telegram stressed the point that in the Middle East commitments the Western Desert is the "decisive theatre" - important consideration of the Nile Valley and the need to strengthen Cyrenaican airfields to enable the Air Force to resume more effective action against the enemy supplies. It was estimated in London that the enemy would have 500 cruiser, infantry and American tanks by September as well as a "large number of armoured cars." So far as the Desert was concerned it was thought that we should have air superiority by July and August and at least part of the success of that date much depend on the continuance of the offensive and the extent to which German squadrons were withdrawn from the Eastern Front. Accordingly, the Air Force could not see that conditions for launching the Desert would be better after September than at present, which was considerably worse.

General Auchinleck agreed that he would probably have been mentioned, but after the need for conserving resources in the Tobruk was met the number for the main force would not exceed 350. He also agreed that air would be counted on, assuming that the enemy did not attack Syria and/or Iraq. The C.-in-C.,

/expressed

(1) The Syrian Armistice was signed three days before.

expressed the doubt whether Tobruk could be held after September: the position would be particularly aggravated if the enemy captured Sidi Barrani⁽¹⁾, as this would limit the protection that the Air Force was giving to Tobruk. In respect of Cyprus, the C.-in-C., stated that he had decided to adhere to his predecessor's plan of reinforcing the island with one division.

In view of the C.-in-C's statements, the Prime Minister proposed to the Defence Committee that an offer should be made to General Auchinleck of 150 of our latest cruiser tanks (to reach Egypt by mid-September) to make up his total of 500 ready for action if this would enable him to deliver a strong offensive in the Desert by the end of September. Moreover, he suggested that shipping should be "scraped up" to allow the sending of 60,000 men in a convoy to reach Egypt before the end of August. These could be regarded as reserves and allow General Auchinleck to use his existing forces in the proposed September battle.

In the discussion which followed the Prime Minister's proposed offer, the Lord Privy Seal (Mr. C. Attlee) and the Prime Minister of New Zealand (Mr. Fraser) agreed that an offensive should be launched in September and considered that the C.-in-C. over-emphasised the threat from the North. The First Lord of the Admiralty (Mr. A.V. Alexander) stood for even prompter action, saying that we should strike in Cyrenaica within four weeks and thus take the initiative before the Germans wrested it from us. This action would, in particular, encourage the Russian in their struggle.

In commenting on the air situation the C.A.S. reminded the committee that the increase in our Middle East air strength would depend on the extent to which the American aircraft schedule was fulfilled and, the number of R.A.F. personnel included in the Middle East convoys. He believed that we could increase our relative air strength up to the end of September and possibly maintain it thereafter, although this depended on the Eastern Front situation. The C.A.S. emphasised the fact, however, that a month spent in training by the new squadrons might well double or even treble their operational value.

As a result of the meeting the Defence Committee agreed that (a) the Prime Minister should make his proposed offers to the C.-in-C., Middle East, and (b) expressed the view that the threat to Cyprus did not appear to justify the increased Army garrison contemplated.⁽²⁾

/Appeal

C.-in-C's
Despatch
July to
October '41)
para. 26

- (1) On 14 September '41, it may be noted, the enemy actually did advance to test our strength and dispositions above the Sollum escarpment and by nightfall reached the Rabia area. By 17th September our troops had returned to their previous positions, after our columns and aircraft had inflicted disproportionate losses on the enemy.
- (2) So far as the R.A.F. was concerned at this time it was ruled "that measures to ensure retention of Cyprus must take priority over offensive in Desert". (C.A.S. : X 356 17/7/41 to A.O.C.-in-C. A.O.C.'s correspondence with C.A.S. etc. Enclos. 136A).

Appeal for an Offensive in September

COS/(41)142(0)

In accordance with the Defence Committee's decision, two telegrams were sent to the Middle East Command - one by the C.O.S. to the three Commanders-in-Chief (No.148 19/7/41) and, the other by the Prime Minister personally to General Auchinleck (Serial No.T.411 19/7).

The C.O.S., referring to General Auchinleck's statement that it might not be possible to hold Tobruk beyond September, said that it appeared that our only chance of re-taking Cyrenaica was to launch an attack by the end of that month. If this offensive could be launched, 150 cruiser tanks would be despatched to reach Suez 13th - 20th September, and arrangements would be made to send 40,000 men in the next convoy (W.S.11). The C.-in-C. would also be left to decide what else he most needed from the resources available at Home. It was pointed out that if the attack could not be made by the end of September the C.O.S. would not be justified in the involved breaking up of the 1st Armoured Division in Britain before it was certain that a German invasion of Britain was not forthcoming that year.⁽¹⁾

The Prime Minister in his telegram pointed out that a month had passed since "the failure at Sollum" and presumably another month would pass in training. He thought it would be justifiable "to fight a hard and decisive battle in the Western Desert before the situation changed to our detriment" and "to run those major risks without which victory has rarely been gained." Other points raised included the Defence Committee's concern about the proposed "bottling-up" in Cyprus of the 50th Division, "the only complete, fresh British Division in the Middle East"; the Prime Minister's belief that a possible German offensive against Syria, Palestine and Iraq from the north could not develop before the end of September; and that German infiltration and intrigue in Persia might be a more imminent danger.⁽²⁾

C.-in-C. Advises Against September Offensive

COS(41)150(0)

General Auchinleck, however, refused to be tempted to an early renewal of the Desert struggle against his and his Middle East advisers' better judgment, maintaining that the means at his disposal in late September would still be inadequate. He considered that an attempted offensive in the circumstances would only lend to a further delay in expelling the enemy from Cyrenacia. Another factor he again stressed was the possibility of a German drive against Syria through Anatolia, which was thought in the Middle East to be a likely move during the first half of September. Regarding the particular point of sending the 50th Division to Cyprus, he said that he could supply his detailed reasons if requested, but he hoped that he would be allowed complete discretion concerning such disposition of his forces. Accordingly, the C.-in-C. gave as his immediate intentions :-

Idem.

(a) Consolidate the position in Syria and Cyprus.

/(b)

- (1) The C.O.S. made a firm offer, omitting any reference to the possibility of not being able to spare the tanks, as first suggested by the Prime Minister.
- (2) The Anglo-Russian occupation in August, 1941, removed this threat.

- (b) Press on with reorganisation and regrouping.
- (c) In consultation with the Intendant General expedite the reorganisation and modernization of the rearward service of supply, movements and repair.
- (d) Carry on with the training and equipping of armoured formations without which an offensive would be impossible.
- (e) Reconnoitre and plan extensively for an offensive in Libya.

Resources Required (according to M.E. J.P.S.)

COS(41)154(0)

Meanwhile, a review by the Middle East Planning Staff, with "particular reference to the resources available and with the object of resuming the offensive at the earliest moment" was submitted for the Chiefs of Staff's consideration. (Appendix E). The general conclusion reached was that the Army and R.A.F. were deficient of the resources required to meet the commitment involved for the security of our base in Egypt and Palestine, which included the need for a major offensive in North Africa as soon as possible. The Naval resources were regarded as adequate for purely defensive duties only.

So far as R.A.F. requirements were concerned, these were put at 90 squadrons, totalling 1,554 aircraft. As at 15th August it was considered that $48\frac{1}{2}$ squadrons would be available, leaving a debit balance of $41\frac{1}{2}$ squadrons. It was realised that the achieving of the 90 squadron mark was beyond the bounds of possibility so far as our next offensive was concerned, but the estimate clearly indicated that the R.A.F. resources, as previously, would have to be carefully husbanded in order to meet major commitments.

Recall of C.-in-C. and A.O.C.-in-C., M.E. for Consultation

With the apparent deadlock reached in determining even an approximate date for the launching of our offensive, the Defence Committee decided to recall the C.-in-C., M.E., for consultation.

A.O.C.-in-C's
correspondence
with C.A.S. etc.
Enclos. 143A.

It was suggested at first that the A.O.C.-in-C. should also be recalled, but at that particular time the Inspector General of the R.A.F. was visiting the Middle East and the C.A.S. was of the opinion that Air Marshal Tedder should personally attend to the redistribution and training of the air forces then in hand in consultation with the Inspector General.

Idem.
Enclos. 144A,
145A and 146A.

The A.O.C.-in-C. and the Inspector General, however, were of the opinion that consultations on the land strategy "should not at any time be divorced from the parallel problems of the air strategy in the Middle East." Accordingly, the Prime Minister agreed that the A.O.C.-in-C. should also be present at the consultations.

/At

W.M. (41) 76th
Conclus. Min. 2
Confidential
Annex.

At the meeting of the War Cabinet on 31st July, both the C.-in-C and the A.O.C.-in-C., M.E. again gave their up-to-date appreciations of the situation in the Middle East. (1)

The C.-in-C. stated that Abyssinia and Somaliland had then virtually ceased to be an operational area. Syria was being consolidated and before mid-August Cyprus would have a complete division and ancillary units and should be able to resist any likely large scale enemy attack. In Libya the position was a stale-mate. We still did not possess sufficient armour to open an offensive. He considered that the enemy's supply-line was precarious due to the action of the R.A.F. and Navy. The enemy appeared nervous and apparently believed that we were about to launch an attack. The Tobruk Garrison was in good heart and held supplies and rations for two months, while further supplies were being put in regularly. The C.-in-C. considered that there was not much chance of Tobruk being taken by assault and he was not apprehensive on the source of enemy air attacks. The position there might be difficult, however, if the enemy could build up large air forces in Cyrenaica. Meanwhile, the defences west of the Delta and the re-organisation and reconstitution of formations were proceeding steadily.

Air Marshal Tedder emphasised that our primary object at that time was the throttling of enemy communications to North Africa. In addition, our air attacks on enemy airfields were reducing the effort of his torpedo-carrying aircraft and dive-bombers. He informed the Cabinet that the building up of the Air Force after the losses and disorganisation resulting from Greek operations had been made good. On the other hand, there was a big air commitment in covering the convoys into Tobruk and it was necessary to maintain standing patrols, which, although an undesirable expedient, were "fairly successful".

So far as the position in Cyprus was concerned, there was at that stage one fighter squadron on the island and arrangements were in hand for two more to go if necessary.

General Auchinleck and Air Marshal Tedder later consulted their respective Chiefs of Staff and Heads of Departments on their own particular problems. (2)

/C.-in-C.

A.O.C.-in-C's
correspondence
with C.A.S. etc.
Enclos. 154A.
Idem.
Enclos. 164C.

- (1) The Middle East Commanders also attended a C.O.S. Meeting with the Prime Minister at Chequers on 2nd August. On that occasion, however, the main discussions were concerned with help to Turkey.
- (2) Air Marshal Tedder wrote afterwards that the only thing that worried him about the visit home was his "failure to get across with the need for a Middle East Office in England". The C.A.S. stated that it was agreed that the A.O.C.-in-C's representative in D.S.M. should have direct access to A.M.S.O. This actually did not fulfil the A.O.C.-in-C's need for a powerful advocate in Air Ministry on Middle East requirements.

C.-in-C. Again Advises Delay

Mid-August still found the C.-in-C., M.E., counselling delay in resuming the Desert conflict and the Prime Minister urging the necessity for speed. In particular, General Auchinleck in his telegram 1549 Susan 18/8/41 answering the Prime Minister's 0.78 18/8/41 stated that "Success will depend upon our ability to destroy the enemy armoured forces and by our mobility to exploit our initial success to the full." As regards our own armour and its maintenance he regarded the latter as the limiting factor. "I have to chose", he said, "between a problematical success early in October or a probable complete success early in November. The other factor is the enemy may succeed in reinforcing appreciably during October which I consider to be unlikely. I have no hesitation in advocating patience and the big object."

The C.-in-C now agreed, however, that an enemy attack from the north - which had previously been a major consideration in determining our next move in the Middle East - was unlikely that autumn.

Review of Relative Strengths

In his telegram of 18th August, General Auchinleck also gave details of his own and the enemy's dispositions and an estimate of the enemy's strength. To test the accuracy of the appreciation of the situation as understood in the Middle East and to obtain a clearer appraisal of relative ground and air strengths in late August, October and early November, the Prime Minister instructed his adviser, General Sir Hastings Ismay, to obtain full details on these points from the War Office and Air Ministry. Details of the findings are given at Appendix F.

In respect of armour at General Auchinleck's disposal the tanks in units (excluding Tobruk) and his immediate reserve were estimated as 406 on 1st September 556 on 1st October and 767 on 1st November. These figures assumed 25% of the armour withheld in experimental or instructional establishments or repair shops. German tank strength was put at 224 in the Tobruk and frontier areas, as estimated by the C.-in-C. If reinforcements had arrived since the "Battle-axe" operation, for which there was no reliable evidence, the total could reach 370 tanks or 69 more than the C.-in-C. estimated in that eventuality. To this strength had to be added an appreciable Italian strength (Appendix F para.IVB). It was believed that enemy ground forces on the North African mainland could not be appreciably reinforced during October, as it was calculated that reinforcements could not start to leave Italy until the middle of that month. These reinforcements, moreover, could not be brought forward in time to be employed in Eastern Cyrenaica by early November. So far as an armoured division was concerned the date of reinforcements might be even later, as it would have to be withdrawn from the Eastern Front and refitted in Germany before despatch.

/Relative

COS(41)176(0)

Relative first-line strengths of aircraft of modern types as at 23rd August were put at 608 for the R.A.F., 171 for the G.A.F. and 425 for the I.A.F. (plus 225 in Sicily and Pantelleria). On 1st October it was expected that the total R.A.F. strength would number 716 aircraft and 844 by the beginning of the next month. Serviceability was reckoned at 75% of the above strengths for the R.A.F. and 65% for the enemy.

The estimates of tank and aircraft strengths seemed to point to early November as a favourable time for launching our new offensive. As shown in Part 4, however, the estimates of British strengths for "~~Cander~~" operations in early November proved over optimistic. ^{Crusader}

Improved Strategic Situation

COS(41)238(0)

It was evident in early September that the situation in the Middle East was more favourable for us than it had been at any time during the previous two months. Tentative planning in July had assumed that the Russian resistance would not last long. The Minister of State in Cairo (Mr. Oliver Lyttleton) in setting out a questionnaire on strategic matters to the three Middle East Commanders-in-Chief on 9th September expressed the general opinion then prevailing thus:

"It appeared difficult to me at the time (in early July) to see how any practicable plan could be fitted in in point of time. There was a short time in which to strike the enemy, and we were unable to strike in under a comparatively long one..... It is now surely on the cards that we can deal a shattering blow to the enemy in the Western Desert and still have time to transfer our troops to the north-east theatre before the Spring." (1)

/Meanwhile

COS(41)193(0)

CAS Folder 1716

W.M. (41)96th
Conclusn.Min.1
Confidential
Annex

COS(41)238(0)

- (1) An imminent German threat from the north was still, however, a possibility. General Smuts, Prime Minister of South Africa, for example warned Mr. Churchill that a "reported Bulgarian concentration in Thrace and movement of Italian forces to Samos..... appear to point to German move through Thrace and Anatolia to attack us in Egypt as soon as Russian situation permits. Attack from Western Desert would continue but may become subsidiary to former". He counselled "affording Turkey every possible help" in order to forestal the attack in Anatolia by Turkey's cooperation. (Prime Minister's Personal telegram serial No.T.547 7/9/41). The C.O.S. expressed the view that rumours were being spread by the enemy of an attack on Turkey in order to produce a submissive frame of mind prior to trade negotiations. Meanwhile, the military and air attachés in Ankara were engaged in staff conversations with the Turkish General Staff. These were first planned on a higher level (by Cs-in-C.) but a "leakage" stopped this. The Foreign Secretary (Mr. A. Eden) later in the month said that the Turks had made up their minds that they would not be attacked before the winter of '41 but were concerned with what might happen in the Spring. He thought the Turks should be made the best offer of assistance to the Turks as soon as possible. Air Marshal Tedder (in answer to the Minister of State's questionnaire of 6th September) stated that he thought that the most awkward move the enemy could make would be to hold us in Cyrenaica, by withdrawing, say, to Derna and then striking from the north.

Meanwhile, preparations continued in the Middle East with the object of launching an offensive in the Desert in early November.

Prime Minister's Further Directions on Employment of Air Force

The whole question of the employment of the air force in support of the projected land offensive had, in the meantime, been thrashed out between the Prime Minister and the C.O.S.

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Enclos. 165A.

The Prime Minister ruled that the air forces should be used according to the accepted R.A.F. principles. He intimated that General Auchinleck would be provided with an adequate supply of Bofors guns to protect his columns, assembly points etc. "Nevermore must the ground troops expect, as a matter of course, to be protected against the air by aircraft. If this can be done it must only be as a happy make-weight and a piece of good luck. Above all, the idea of keeping standing patrols of aircraft over our moving columns should be abandoned. It is unsound to 'distribute' aircraft in this way and no air superiority will stand any large application of such a mischievous practice. Upon the military Commander-in-Chief of the Middle East announcing that a battle is in prospect, the Air Officer Commanding-in-Chief will give him all possible aid and irrespective of other targets, however attractive..... The Army Commander-in-Chief will specify to the Air Officer Commanding-in-Chief the targets and tasks he requires to be performed, both in the preparatory attack on the rearward installations of the enemy and for air action during the progress of the Battle. It will be for the A.O.C.-in-C. to use his maximum force against these objects in the manner most effective. This applies not only to any squadrons assigned to Army Co-operation permanently, but also to the whole air force available in this theatre..... As the interests of the two Cs.-in-C. are identical it is not thought that any difficulty should arise. The A.O.C.-in-C. would naturally lay aside any routine programmes and concentrate on bombing the rearward services of the enemy in the preparatory period. This he would do not only by night, but by day attacks with fighter protection. In this process he will bring about a trial of strength with enemy fighters, and has the best chance of obtaining local command of the air What is true of the preparatory period applies with even greater force during the battle."

Relief of Australians in Tobruk

Meanwhile, the decision of the Commonwealth of Australia to insist on the continuance of the relief of the Australian troops in Tobruk, imposed a strain on our air and sea resources which might have jeopardised the success of our intended offensive.

The first request for the relief was made by the Australian Government on 20th July, when it was urged that as the Syria campaign had ended and there was a lull in Desert operations the opportunity should be seized of aggregating all the Australian troops in the Middle East into one force in accordance with the original arrangements between the Home and Commonwealth governments.

/Accordingly,

COS(41)450

C.-in-C's
Despatch
July -
October '41
para.30

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Enclos.170A.

WM/41 93rd
Conclus.Min.3
Confid.Annex

C.-in-C's
Despatch
July -
November '41
para.30

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Enclos.196A.

Idem
Enclos.202A.

Idem
Enclos.204A.

Appendix H and
A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Enclos.206A.

Accordingly, a plan was drawn up by which the Polish Independent Brigade should replace the 18th Australian Infantry Brigade and the 18th Cavalry (Indian Army) during the moonless period in August and the 70th (6th) Division relieve the 9th Australian division during the two following moonless periods. The first relief was carried out with complete success between 19th and 29th August. The three Cs-in-C. in the Middle East then recommended the discontinuance of the relief as it imposed a gratuitous strain on the Royal Navy and R.A.F. and handicapped the latter in attaining air superiority in readiness for our Desert attack.

Mr. Churchill on receiving the Cs-in-C's recommendation warned the Australian Prime Minister (Mr. Fadden) of "the grave consequences which might ensue not only to the Australian forces but to our future plans". The Commonwealth Government insisted, however, on the withdrawal of the Australians remaining in Tobruk. Although the decision was regarded as "a lamentable one" the War Cabinet had no alternative but to comply with the Commonwealth Government's request and inform the Middle East Cs-in-C. to implement it.

The relief of most of the 9th Australian Division was successfully completed in the two moonless periods between 18th and 28th September and 12th and 26th October. This left only one Australian infantry battalion as part of the Tobruk garrison.

Relative Air Strengths Controversy

As the time approached for the launching of our long delayed offensive the C.A.S. requested the A.O.C.-in-C to submit his outline plan for the "Crusader" operation (as our intended attack had then been named), with particular reference to relative air strengths. Meanwhile, the A.C.A.S.(I) (Air Vice-Marshal Medhurst) was instructed to prepare an appreciation of the Axis Air Forces in the Mediterranean theatre as at the end of October (Appendix G).

The A.O.C.-in-C. informed the C.A.S. that it was concluded in the Middle East that we would have definite numerical superiority in mechanised forces but would be numerically inferior in the air. It was estimated that if no German reinforcements were sent, the enemy would have at his disposal for the battle 300 German and 350 Italian aircraft: if the Russian front was established by mid-October the estimated figures would rise to 420 for German aircraft and 370 for Italian. The A.O.C.-in-C. hoped to concentrate approximately 500 aircraft, including heavy bombers operating from Malta. Limiting factors in sending further squadrons to the Desert was the immobility of several squadrons and the shortage of trained fighter pilots.

The C.A.S. found Air Marshal Tedder's comparison of strength "most depressing and..... unjustifiably so." He urged improvisation to make use of the non-mobile squadrons and stated that reinforcements of fighter pilots had been sent which should arrive in time to take part in the battle. He also considered that the A.O.C.-in-C was counting many enemy aircraft which were most unlikely to take part in the battle and in North Africa. At the Air Ministry at this time it was considered that 128 German and 237 Italian serviceable aircraft would be available for operations in the battle area for an intensive period of three weeks.

/It

It was agreed, however, that long-ranged forces based in Greece and Crete could provide a supporting effort.

The A.O.C.-in-C. replied that he was ruthlessly stripping all other areas and formations to put the maximum forces in the Desert. He set little store on numerical comparisons of strengths and stated that "Serviceability, reserves, supply, morale, are vital factors in any real comparison." He concluded, "I'm not satisfied I cannot do more but I will not promise until I am sure I can effectively keep promise. I will not put dummies in shop window for D-Day. Our battle is joined now, and my object is to maintain and exercise the pressure to attain air superiority before the Army move".

Idem
Enclos.

After consultation with the other Cs-in-C. and his A.O.C's, Air Marshal Tedder considered on 15th October that he would probably have at his disposal for "Crusader" operations approximately 600 I.E. aircraft.

Political Difficulties

Idem
Enclos. 208A.

In the meantime the A.O.C.-in-C's preliminary comparison of strengths had "unfortunately raised acute political difficulty". The New Zealand Government, with memories of Greece and Crete still rankling, had asked His Majesty's Government for an assurance that the Army would have air superiority and the Prime Minister felt unable to give the necessary assurance in view of the air strengths figures originally submitted by the A.O.C.-in-C. (1)

The Prime Minister decided that the process of assessing strengths by the interchange of telegrams between the C.A.S. and A.O.C.-in-C. would not enable him to give the assurance the New Zealand Government required and ruled that it was essential politically for a "very senior officer" to go out to Egypt immediately and investigate on the spot. The C.A.S., accordingly, decided to send the V.C.A.S. (Air Chief Marshal Sir Wilfred Freeman) to clear up the matter. (2)

Revised Figures

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Enclos. 214A.

On 20th October the V.C.A.S. and the A.O.C.-in-C. agreed on the following figures for comparative air strengths in Cyrenaica:-

/British

- (1) The Prime Minister assumed that the A.O.C.-in-C meant that we should not have air superiority. The A.O.C.-in-C. pointed out that, "What I did say was so far as I could see we would not have numerical superiority which is quite a different thing". (A.O.C.-in-C's Correspondence with C.A.S. etc. Enclos. 212A.).
- (2) The C.A.S. regretted the intrusion and made it clear that the "unfortunate development" in no way affected his "absolute confidence" in Air Marshal Tedder's "ability and determination to win". (A.O.C.-in-C's Correspondence with C.A.S. etc. Enclos. 208A). Air Marshal Tedder for his part welcomed the V.C.A.S.'s visit. (Idem. Enclos. 209A and 212A).

British Forces 660, Axis Forces 642 (including 435 Italian)⁽¹⁾
The probable serviceability of the forces on D-Day was put at 528 for the British forces and 385 for the Axis. All the Axis forces were stated to be in the "shop window": the R.A.F. expected "to have approximately 50% reserves behind the counter". The increase in the R.A.F. strength was achieved by stripping Iraq, Palestine, Cyprus, Aden and Delta "of all except negligible units of no operational value". The figures were agreed with General Auchinleck, "who did not doubt we would gain air superiority even if we did not have actual superiority in numbers".

Assurance Given to New Zealand Government

C.A.S.
"Crusader"
Folder C-in-C's
cipher 1579
17/10/41.
Tele No.CS/138
Susan to
Prime Minister

General Auchinleck was thus able to inform the Prime Minister that "if New Zealand forces are committed to the battle I am satisfied that the measure of support by tanks and aircraft which I intend they shall have is sufficient and adequate for the tasks which they will be called upon to perform".

Accordingly, the Prime Minister was able to assure the New Zealand Government to the above effect.

The Stage Set

C-in-C's
Despatch
November '41
to August '42
p.44

Preparations in the Middle East considered from the Air Force aspect in Parts 3 and 4 had now reached their final phase. At the C-in-C's conference of 3rd October a firm date - 11th November - had been decided on as the "Crusader" D-Day. Unanticipated delays, however, caused by the unreadiness of certain military formations resulted in a further week's delay before the battle was joined.

(1)
This figure purposely took no note of Axis Forces in Southern Italy, Sicily, Sardinia and the Eastern Mediterranean, although the A.O.C.-in-C. was still of the opinion that some of these forces would be available for operations when "Crusader" was in full swing. The actual comparative strengths at the outset of the offensive (28th November) are given on pages 87 and 88.

- 25 -
PART III

REINFORCING AND RE-ORGANISATION OF
R.A.F. MIDDLE EAST

(Mid-June - November, 1941)

In this part of the narrative are considered some of the main aspects of the build-up and reorganisation of the Middle East Air Force from mid-June to November, 1941.

The detailed build-up of the force under the control of A.H.Q. Western Desert, specifically designed for the "Crusader" Offensive, is considered separately in Part Five.

SECTION ONE - REINFORCING

Supply Routes

In considering the reinforcing of the Middle East in 1941 it must ever be borne in mind that our forces had to be maintained at vast distances from their United Kingdom base and supplementary sources of supply in America.

As the crow flies Cairo is well over 2,000 miles from London. Our shortest reinforcement route - that followed by long-range aircraft via Gibraltar and Malta - was considerably longer and our main sea supply-line for general purposes - around the Cape of Good Hope and through the Suez Canal - excluding the detours imposed by the U-boat menace exceeded 14,000 miles and generally implied a three months time-lag.

To shorten the delay involved in using the long sea route for the deliveries of fighters and medium (later reclassified light) bomber type aircraft the Western African Reinforcement Route had been put into operation in the autumn of 1940.⁽¹⁾ The use of this route involved the shipping of crated aircraft⁽²⁾ to the Gold Coast, their erection at Takoradi and subsequent flight, via Khartoum, to Egypt. Until the summer of 1941 the route catered for aircraft (both British and American types) shipped from Britain and American aircraft shipped direct from the United States. For the remainder of 1941 Takoradi received only Blenheims and Hurricanes. American short-range aircraft were then shipped to Port Sudan, where they were erected⁽³⁾ and flown to Egypt. A subsidiary erection centre was already in existence at Kasfaracet, in the Canal Zone, to deal with the comparatively few crated aircraft arriving at Suez.

Arrangements for the storage, servicing and distribution of the reinforcement aircraft are mentioned on page 44.

Reinforcement Policy

In mid-May 1941, the C.A.S. intimated to the A.O.C.-in-C., M.E., that the Defence Committee had approved his programme of reinforcement of the Middle East Command, which aimed at raising the

/ effective

- (1) The first consignment of aircraft (six crated Blenheim IVs and six crated Hurricanes) arrived at Takoradi on 5th September.
- (2) On occasion, also, fighters and F.A.A. aircraft were sent by aircraft carrier and flown off at Takoradi.
- (3) The erection centre (afterwards named 117 M.U.) was formed w.e.f. 5/7/41 (H.Q. M.E. O.R.B. July 1941 Admin. and Org. Appendices).

CS.8732

Expansion
and Rein-
forcement
M.E. Command
D.W.O. Aspect
Enclos. 23A.

S.10713

effective strength in modern types of aircraft to 40½ squadrons⁽¹⁾ by 15th July and subsequently to 50 squadrons. The plan was based on the maximum reinforcements of aircraft to equip squadrons then formed or forming in the Middle East, using the personnel and equipment available for them en route. The total I.E. aircraft of the 40½ squadrons force was 692: this envisaged force did not include certain other existing squadrons which the C.A.S. did not think could be re-equipped with modern types and made effective by the target date.

CS.9747
Expansion and Reinforcement M.E. Command Policy D.W.O. aspect Enclos 12A.

The changed situation in the Eastern Mediterranean after the abortive "Battle-axe" operation in mid-June, however, necessitated a further expansion. (See Appendix D for A.O.C.-in-C's appreciation, with which the C.A.S. fully concurred). On 3rd July, the C.A.S. informed Air Marshal Tedder of a revised programme which aimed at raising the M.E. force equipped with modern types to 62½ squadrons⁽²⁾ (including four transport squadrons but excluding F.A.A. units). The revised programme included, inter alia, the introduction of Beaufighters and Beauforts. The programme was to be regarded as a target only and could not be taken as authoritative, nor could a date for completion or priority of each part then be fixed. The scheme would, moreover, be subject to adjustment, depending on availability and flow of types, wastage etc. and was, as in the case of the 40½ squadron project, based on the maximum reinforcement of aircraft to equip squadrons already formed or forming in the Middle East Command, using the personnel and

/ equipment

(1) The composition of the force was envisaged as:-

5 Wellington	(H.B.)	Squadrons I.E.	20.	Total a/c	100
7 Blenheim	(M.B.)	Squadrons I.E.	20.	" "	140
3 Maryland	(M.B.)	Squadrons I.E.	20)	" "	84
1½ Maryland	(G.R.)	Squadrons I.E.	16)	" "	256
13 Hurricane	(F)	Squadrons I.E.	16)	" "	112
4 Hurricane	(A.C.)	Squadrons I.E.	12)	" "	
7 Tomahawk	(F)	Squadrons I.E.	16	" "	
Grand Total					692 I.E. Aircraft.

(2) (a) This "Interim Target Programme" was envisaged as follows:-

15 Hurricane (F) Squadrons 16 I.E. Total A/C 240.
 7 Tomahawk (or later types) (F) squadrons 16 I.E. Total A/C 112
 2 Coastal Beaufighter Squadrons 16 I.E. Total A/C 32
 2 Night Fighter Beaufighter Squadrons 16 I.E. Total A/C 32.
 17 Med. Bomber Squadrons (Blens, Marylands & later types)
 20 I.E. Total A/C 340
 2 Beaufort Squadrons 12 I.E. Total A/C 24
 5 Wellington Sqds. 20 I.E. Total A/C 100.
 6 A.C. Squadrons (Hurricanes or other types) 12 I.E. Total
 A/C 72.
 1½ Maryland (G.R.) Squadrons 16 I.E. Total A/C 24.
 1 Sunderland (G.R.) Squadron 6 I.E. Total A/C 6.
 4 Transport Squadrons 16 I.E. Total A/C 64.
 Total Squadrons 62½ Grand Total I.E. A/C 1,046.

(b) During September and October, also, the advisability of sending out to the Middle East complete fighter squadrons in addition to the 62½ squadrons programme was considered. The proposals varied from the sending of 17 squadrons from the U.K., 13 from the U.K. and 4 to be made up from M.E. resources, and 10 from the U.K. and 4 to be made up from M.E. resources. It was hoped that these squadrons could be added to the M.E. strength in the spring of 1942 and there was no possibility of their being in action for the "Crusader" offensive. (C.O.S. (41) 196(O) 10/9/41, C.O.S. (41) 200(O) 14/9/41 and A.O.C./77 Part I. Enclos. 15/8).

equipment at hand or en route, except for additional personnel to be sent to Malta and specialist personnel and equipment for the Beaufighter and Beaufort Squadrons.

Meanwhile, the implications of the expansion were being studied at Air Ministry.

C.S. 0215/41 The D.W.O. (Air Commodore Whitham) pointed out to the C.A.S. M.E.Capacity that the proposed expansion involved a situation similar to that of for Develop- the rapid expansion of Coastal Command undertaken to meet the ment - Policy Battle of the Atlantic commitments. The choice rested between Encls. 1A. producing a force of the maximum efficiency or of raising one with the greatest possible initial equipment. "I suggest", the D.W.O. said, "that our experience with Coastal Command showed most decisively that if the first-line is expanded beyond the capacity of the Command to handle the force and build up its machinery for so doing, the result is thoroughly unsatisfactory. Although to the outward observer it would be very impressive to see the Middle East progressively expanded from 40½ squadrons to 60½ squadrons, to 74 squadrons and even, as Middle East rather to my surprise themselves suggest to 90 squadrons, (1) I feel that undue first-line expansion would be definitely detrimental not only to the real efficiency of the Middle East, but would be a serious hindrance to our development in the United Kingdom, without compensating gains overseas. Air Commodore Whitham believed (24th July) that if there was no pressure to expand further it would be "quite a high ideal" to achieve a really efficient 60½ squadron force by 31st March, 1942. His own "ideal" was to go ahead with the 1,000 first-line aircraft force while the Middle East planned to organise for maximum mobility in the force.

Owing to the turn of events, supply difficulties etc., the actual course of reinforcement followed this general aim rather than the set target force.

Supply Factors Affecting Proposed Reinforcement

Some of the important supply factors affecting the raising of the target force were as follows:-

(a) Fighters

Idem &
C.S. 9747
Encls. 6A.
7A, 11A.

(i) Single Engined Fighters The Hurricane I was then going out of production and care had to be exercised in deciding the proportion of Hurricane II production which should be sent to the Middle East, owing to the requirements at Home. It was thought possible to send out 120 - 150 monthly, which was expected to be sufficient to maintain 15 squadrons with a wastage calculated at 50% per month ("a high figure when a long period was considered"). It was necessary, moreover, to accelerate the supply from America of Kittyhawks to the maximum, as these types were due to replace the Tomahawks. In this connection much depended on the absence of production and "teething" troubles.

(ii) Beaufighters To help to establish the two Coastal Beaufighters the personnel of No. 252 Squadron remaining at Coastal Command were to be sent to the Middle East and eight aircraft with crews were to be despatched monthly from Coastal Command to

/ maintain

(1) Actually 90 squadrons was estimated by the M.E. J.P.S. in July as the required force to meet all commitments: it was not put forward as a target force (See Appendix E).

maintain the squadrons already in the Middle East. (1) The sending of the two Fighter Command type Beaufighter squadrons had to be held in abeyance pending their availability and the despatch of G.C.I. equipment. In addition to the availability of Beaufighters the establishment of the squadrons was bound up with "the facilities during the winter for flying them out to the Middle East".

(b) Medium (later reclassified light) Bomber Types

From America the supply of Marylands had ceased and that of the Baltimores (their replacement) was seriously delayed. In order to bridge the gap it was necessary that every Blenheim that could be spared and for which another type could be substituted should be sent to the Middle East. (2) In addition, Boston 111s were to be allotted to the Middle East. It was considered unlikely that the proposed medium bomber programme could be fulfilled by the Spring of 1942.

(c) Heavy (later reclassified Medium) bombers

Provided the delivery of Wellingtons by air via Gibraltar and Malta continued to be practicable it was thought possible to achieve and keep up the proposed force of five squadrons. It was necessary, however, to introduce Wellington 11s as far as possible as the Wellington I had not proved altogether satisfactory under summer conditions in the Middle East. Supplies of Wellington 11s for the Middle East would, however, for some months be limited. Bomber Command had first claim on these aircraft (A.O.C.-in-C's correspondence with C.A.S. etc. Part I Encls.150A). Efforts made to increase the bomber force, by calling on a suitable American type ferried across the South Atlantic, proved impracticable prior to "Crusader". (3)

(d) Beauforts

The two squadrons for the Middle East were to be formed with as little disturbance as possible to Coastal Command by gradually withdrawing personnel and equipment from the squadrons at Home. It was decided that sufficient equipment to enable one of the two proposed squadrons to drop torpedoes was enough: the normal role of the two squadrons was expected to be a bombing one and equipment for one squadron would be sufficient to enable them both to be operated occasionally as torpedo squadrons.

/ (e)

(1) Air echelons of Nos. 252 and 272 Squadrons had already been sent out to the M.E. "under emergency arrangements". In July, 18 aircraft of the two detachments were left and were functioning as one squadron "using the small number of men and limited spares and ammunition which we have been able to filter out". (CS.9747 Encls.7A).

(2) The D.W.O. pointed out, however, that the supply of Blenheims would become increasingly difficult. (CS 10215/41 Enclos.1A).

(3) D.C.A.S., D.O.O., D.B.Ops. and D.W.O. came to the conclusion in late August that until the Spring of 1942 they had "to make the best of Wellington ICs and IIs in the Middle East, as there was at that time no satisfactory alternative heavy bomber available. The B.25 (Mitchell) had an inadequate range and the B.26 (Marauder) was at that time "a failure". (Later, after "Crusader", these became available as medium/light bombers). The introduction of Halifaxes would involve the disadvantage of maintaining the complete supplies from U.K. which, at that time, was impracticable. For future policy it was decided to make arrangements with America for the adoption of the B.24 (Liberator) as the future heavy bomber type. Arrangements were made for a few Liberators to be despatched to the Middle East for trial. (C.S.9747 Enclos.20A). It may be noted that the A.O.C.-in-C. also persevered with a few B.17s (Flying Fortresses), but without success (See page 106):

(e) Transport Aircraft

The raising of the Middle East Transport aircraft force from two to four depended on the availability of aircraft - particularly from America. This expansion could certainly not be achieved in time for "Crusader" operations.

Reinforcing Aircraft Received in Middle East

Figures
supplied by
C.S.B.I.
Appendix 4

(a) From U.K.

The following totals of aircraft including F.A.A. aircraft were reported as received by the Middle East Command from the United Kingdom during the months June to October, 1941:-

June: 422 aircraft (including 183 Hurricanes, 145 Blenheims, 36 Wellingtons and 36 Fulmars).
July: 263 aircraft (including 90 Hurricanes, 80 Blenheims, 25 Wellingtons and 15 Albacores).
August: 263 aircraft (including 151 Hurricanes, 61 Blenheims, and 23 Wellingtons).
September: 344 aircraft (including 154 Hurricanes, 81 Blenheims, 28 Wellingtons, 22 Tomahawks, 21 Albacores, and 16 Beaufighters).
October: 189 aircraft (including 78 Blenheims, 59 Wellingtons and 43 Hurricanes).

Full details of arrivals according to types are given at Appendix 1. Arrivals of aircraft from the United Kingdom during the "Crusader" period are also given.

Idem.

(b) From U.S.A.

The arrivals in the Middle East Command from the United States of America during the months June to October, 1941, were reported as follows:-

June: 10 aircraft (5 Marylands and 5 Tomahawks).
July: 138 aircraft (including 96 Tomahawks and 27 Martlets).
August: 107 aircraft (including 100 Tomahawks).
September: 82 aircraft (including 55 Tomahawks and 24 Bostons).
October: 35 aircraft (including 32 Bostons).

In particular, the American schedule in respect of medium (later reclassified light) bombers could not be fulfilled. Estimates arrived at in June put the allocations of Bostons 111s from July to October, inclusive, at a total of 240 aircraft and it was hoped to start re-equipping with Baltimores in August. In the event, only 56 Bostons were received by the Middle East during the months mentioned and Baltimores only began to filter in from November onwards.

C.S.9747
Enclos 3A

Appendix 1

Full details of arrivals according to types are given at Appendix 1. The acceleration of the rate of supply during the "Crusader" period is also shown.

/ Factors

Factors Which Limited Increase in Effective Strength

The reinforcing aircraft received in the Middle East were not in all instances immediately ready to increase the first-line. The various limiting factors are considered in detail in the narrative "Repair and Maintenance", Chapter 17, but it is pertinent to mention some of them in broad outline:-

(1) Crated aircraft had to be erected: the delay involved in this process varied according to the facilities and personnel available at various times.

(2) There was a shortage of spares in the Middle East for the new types of aircraft. Moreover, when stocks of the required items were received there was no adequate organisation to deal with their sorting and allocation. Maintenance and repair was, accordingly, extremely difficult and such unsatisfactory measures as the "cannibalising" of damaged aircraft to secure aircraft fit for operational use had to be resorted to.

(3) In some instances aircraft were delivered without their necessary operational equipment (Known as columns 7 and 9); until this was available the aircraft were simply "flying machines" and useless for operational employment.

(4) The speed with which aircraft could be cleared from the erection crates and flown along the reinforcement routes to the operational area depended on the availability at various times of ferry pilots.

(5) Aircraft ferried across the arduous Takoradi reinforcing route in many cases needed complete overhauls before they were fit for operations. Owing to the lack of engine spares at certain times aircraft were sometimes out of action for considerable periods.

(6) Certain American types of aircraft, particularly the Tomahawk, had marked "teething troubles" in the early stages, which necessitated modifications and delayed their allocation to squadrons.

(7) The repair organisation in the Middle East had almost broken down. There were insufficient Repair and Salvage Units in the forward area; due to the potential menace from the air the excellent facilities of the Aboukir depot were dispersed before comparable arrangements had been made elsewhere; there was a lack of capacity to deal with the increased repair commitments and a shortage of trained personnel. The measures taken to improve the maintenance system in the Command are considered on pages 40 to 46.

The above, and other limiting factors, prevented the Command's aircraft strength being increased to the degree that one might have expected from the rate of reinforcement. So far as the first-line was concerned, care had to be taken to avoid expansion beyond the capacity⁽¹⁾ to operate it efficiently. At no time was Air Marshal Tedder prepared to "put dummies in the shop window". (Page 22 refers).

/ M.E. Aircraft

(1) This "capacity" depended on many factors including availability of airfields, sufficient trained aircrews, adequate repair and maintenance facilities and personnel in the appropriate areas, personnel and organisation for effective operational and administrative control, and adequate equipment and supplies of all kinds.

M.E. Aircraft Strength, June - October 1941.

In spite of the limiting factors stressed in the preceding section, a great increase in aircraft strength was achieved.

Weekly
Aircraft
Serviceability
State (M.E.)
(See Appendix
J for full
Details).

(A) Aircraft Held in Middle East Command

As at 20th June, the Director of War Organisation reported the serviceability state of aircraft of operational type held by the Middle East Command (excluding S.A.A.F. aircraft in East Africa and F.A.A. aircraft) as follows:-

Egypt, Sudan and Levant: 607 modern type⁽¹⁾ aircraft.

(424 serviceable or able to be made serviceable within 14 days - Cat A, and 183 unserviceable and likely to take up to three months to be made serviceable - Cat. B).
163 obsolete aircraft (117 Cat. A and 46 Cat.B).

Malta: 74 modern type aircraft (65 Cat.A and 9 Cat.B)
Iraq: 14 modern type aircraft (11 Cat.A and 3 Cat.B)
15 obsolete aircraft (14 Cat.A and 1 Cat.B)
Aden: 1 modern type aircraft (Cat.B)
22 obsolete aircraft (19 Cat.A and 3 Cat.B)

Nearly two months later (15th August) the increase in aircraft held and improvement in serviceability⁽²⁾ was clearly marked:-

Egypt, Sudan and Levant: 902 modern type aircraft (693 Cat.A and 209 Cat.B)
217 obsolete aircraft, of which 33 could be regarded as transport aircraft, (146 Cat.A and 71 Cat.B)

Malta: 130 modern type aircraft (113 Cat.A and 17 Cat.B).
Iraq: (excluding aircraft transferred temporarily from Egypt):
29 modern type aircraft (26 Cat.A and 3 Cat.B) and 40 obsolete aircraft (all Cat.A).

Aden: 1 modern type aircraft (Cat.B) and 20 obsolete aircraft (16 Cat.A and 4 Cat.B).

Idem.

A few days before the opening of the preparatory air operations for "Crusader" (10th October) a further improvement was reported:-

Egypt, Sudan and Levant: 1,311 modern type aircraft (1,072 Cat.A and 239 Cat.B)⁽³⁾ 95 obsolete aircraft (89 Cat.A and 36 Cat.B). 45 transport aircraft, including obsolete bomber types, (38 Cat.A and 7 Cat.B).⁽⁴⁾

Malta: 151 modern type aircraft (143 Cat.A and 8 Cat.B).

/ Iraq:

- (1) Aircraft which were not entirely outmoded are classified as "modern type" in this section.
- (2) The reorganisation of the maintenance system is mentioned in the next Section.
- (3) In addition, there were approximately 110 cased Tomahawks and 13 cased Bostons at Port Sudan.
- (4) In addition, 10 Loadstars had been lent to B.O.A.C.

Iraq: 38 modern type aircraft (all Cat.A) and 27 obsolete aircraft (26 Cat.A and 1 Cat.B).

Aden: 14 modern type aircraft (12 Cat.A and 2 Cat.B) and 15 obsolete aircraft (14 Cat.A and 1 Cat.B).

Thus the number of modern type operational aircraft⁽¹⁾ held in the Middle East Command (excluding S.A.A.F. aircraft in East Africa and F.A.A. aircraft), which were serviceable or capable of being made serviceable within a fortnight, increased during the period 20th June to 10th October, from approximately 500 to approximately 1,265.

(B) Improved Aircraft Position in Squadrons

The influx of aircraft into the Command resulted in a progressive increase in the number of squadrons and their strength.

As at 15th June the 34 $\frac{1}{2}$ formed squadrons and various detachments⁽²⁾ located in Egypt, the Sudan, the Levant, Iraq and Aden had a total strength of 549 aircraft, of which 419 were of modern type (130 Hurricane Is, 48 Tomahawk Is, 19 Beaufighters, 91 Blenheim IVs, 52 Marylands, 69 Wellington ICs, 3 Wellington Is and 7 Sunderlands) and the remainder were obsolete types, some of which were used as transport aircraft. The Malta strength was reported to total 53 aircraft (23 Hurricane IIs, 18 Hurricane Is, 8 Marylands, 3 Wellington ICs and 1 Beaufighter).

Two months later (15th August) R.A.F. and Dominion Squadrons formed or in process of forming in Egypt, the Sudan, the Levant, Iraq and Aden totalled 49, with a strength of 722 aircraft, of which 550 were of modern type (220 Hurricane Is, 83 Tomahawk Is, 18 Beaufighters, 40 Blenheim IVs, 83 Marylands, 94 Wellington ICs, 6 Wellington Is and 6 Sunderlands); as previously, some of the remaining obsolete aircraft were available as transport aircraft. Malta's aircraft strength had increased to 127 aircraft (65 Hurricane IIs, 12 Hurricane Is, 24 Blenheims IVs, 10 Marylands, 11 Wellington ICs and 5 Beaufighters).

At the commencement of the preparatory air operations for "Crusader" (15th October), R.A.F. and Dominion Squadrons⁽³⁾ (excluding air transport units) formed or in process of forming in Egypt, the Sudan, the Levant, Iraq and Aden totalled 52. The aircraft strength was reported as 846, of which 780 were of modern type (278 Hurricane Is, 51 Hurricane IIs, 87 Tomahawks IIs, 20 Beaufighters, 141 Blenheim IVs, 73 Marylands, 85 Wellington ICs, 23 Wellington IIs, 6 Wellington Is, 9 Beauforts and 7 Sunderlands). Malta's strength was reported as 170 aircraft (83 Hurricane IIs, 3 Hurricane Is, 5 Beaufighters, 33 Blenheim IVs, 22 Wellington ICs, 7 Wellington IIs, 3 Wellington VIIIs and 14 Marylands).

Most of the Middle East squadrons equipped with modern aircraft were available for offensive action against the enemy. Factors which prevented certain squadrons being used offensively at various times included:- the need of air protection for rear bases, withdrawals for the purpose of training and re-equipping, the immobility of a few squadrons and withdrawals to help with operational training.

/ The

- (1) Excluding transport aircraft.
- (2) Excluding the F.A.A.
- (3) R.N. (F) Squadron (Hurricane Is) is included as this squadron operated under the control of A.H.Q., Western Desert.

The build-up of the Middle East Air Force specifically for the "Crusader" offensive is considered in Part Five of this narrative.

Aircrew Reinforcement

The arrangements for the operational training of aircrew in the Middle East are considered in detail in Part Three, Section Three, of this narrative. In general, crews for the Wellingtons, G.R. aircraft, Beaufighters and, later, Beauforts were supplied from the United Kingdom. The Middle East was responsible for the training of the aircrew for single-engined fighters, medium (later reclassified light) bombers and Army Co-operation aircraft.

A.O.C. 126
S.62742/AOA

The training resources of the Middle East, however, proved inadequate for the Command's needs, particularly in respect of fighter pilots. On 14th September, for example, the Middle East (excluding Malta) was 80 pilots below establishment in formed fighter squadrons and "the reserve was nil". "You will see", the A.O.A. (A.V.M. Maund) informed the A.O.C.-in-C., "that our position is such that we can hardly maintain ourselves during exceptionally quiet periods, and I have to advise you that we are not in a position or even in sight of being in a position to maintain ourselves should a battle arise".

O. Ops. 1 ME. 37
WX. 3525 and
A.O.C.-in-C's
correspondence
with C.A.S. etc.
Part 2 Encls.
216B, 230A and
232A.

At various times, therefore, trained aircrew had to be despatched from the United Kingdom in order to ensure that the Middle East squadrons were sufficiently manned to carry out prolonged operations. In particular, special reinforcements of fighter and Army co-operation pilots were despatched by quick routes in order to participate in the "Crusader" offensive. Middle East was responsible for the onward transmission of the pilots by air from Takoradi or Gibraltar, and in respect of these travelling by the West African Reinforcing Route was instructed to use as many of the pilots as possible on ferrying Hurricanes to Egypt. Thus, 75 fighter pilots⁽¹⁾ left Takoradi by air for the forward area between 25th October and 6th November; 55 fighter pilots, two Army Co-operation Wing Commanders and 12 A.C. pilots left Takoradi by air (half of them ferrying aircraft) between 11th and 23rd November; 15 were flown to Egypt in a Sunderland on 3rd November; 20 were sent to Gibraltar, arriving there in early November; and some 30 more were despatched to Takoradi in mid-November. The fighter pilots were all trained and in some cases specially selected and included a proportion of flight commanders or potential flight commanders.

O. Ops. 1 ME. 37
A.M. report X
5026 30/11 and
passim.

In December arrangements were made for a further 30 fighter pilots and 15 A.C. pilots to be despatched via Gibraltar and 100 via Takoradi. Air Ministry's action in sending these substantial reinforcements in fighter pilots removed the A.O.C.-in-C's anxiety that he would not be able to replace the casualties expected in the early stages of the battle.

Idem CS.10967

As an interim arrangement for the first three months of 1942 two O.T.Us in England were to despatch 80 fighter pilots per month to the Middle East and Fighter Command 20 experienced pilots per month. In the event, the heavy calls on the Middle East to despatch fighter pilots to the Far East necessitated a far greater reinforcement from the United Kingdom.
/Inadequate.

(1) The C.A.S. informed the A.O.C.-in-C., M.E. that this reinforcement should raise his pilot strength in operational fighter squadrons to about 600. (A.O.C.-in-C's Correspondence with C.A.S. etc. Part 2 Encls. 204A).

Inadequate Reinforcement of Ground Personnel

The restrictions imposed by limited shipping resources inevitably prevented the despatch to the Middle East of the full quota of ground personnel necessary to operate the proposed increased Air Force with complete efficiency. At this stage, also, the Minister of Defence (Mr. Churchill), burdened with the manifold considerations involved in waging war with insufficient resources, not unnaturally, tended to underestimate the numbers of ground personnel needed to operate a highly specialised force in unfavourable conditions. (1)

In mid-September Mr. Churchill charged the Chiefs of Staff with "the unbridled use of ground personnel" and stated that "a searching enquiry must be held into the establishments, which on their present scale will ruin our war effort."

The circumstances in which the above-mentioned trenchant minute was written require some explanation in order to see it in its true perspective. Towards the end of August Mr. Churchill conceived a plan for the despatch of two complete regular divisions from England to the Middle East, in addition to the planned reinforcements, in order to establish sufficient forces in the event of help being required by the Russians in the following months. For the transport of the two divisions he made a personal appeal to President Roosevelt for American ships to embark the men at British ports. It was found, however, that the projected American shipping could not be fitted in with the British convoys to enable all the previously planned Army and R.A.F. reinforcements to be sent. In early September there were 160,000 personnel awaiting movement to the Middle East to complete the projected programme, not counting the additional shipping involved in the decision to increase the Middle East's fighter programme by 17 squadrons (page 26 footnote 2(b)). It was considered preferable to utilise the American ships for meeting these commitments rather than for the conveyance of the extra divisions. The U.S. transports brought the available shipping capacity available up to the end of 1941 to about

/ 125,000 men.

(1) A note on the Ground Personnel behind Squadrons in the M.E. sent by the A.O.C.-in-C. to the C.A.S., 29/9/41, stressed the following:-

- (a) R.A.F. in the M.E. had no great civilian organisations as in England to aid repair work; therefore strengths of depot and repair organisations were inevitably high.
- (b) In the M.E. the great majority of aircraft had to be unloaded, erected and flown across Africa. Takoradi route absorbed 3,000 personnel, Port Sudan erection Depot etc. 1,000 and that at Basra would absorb 2,800.
- (c) Squadrons operated far from repair depots and required more personnel than squadrons at Home.
- (d) Need for mobility and flexibility meant basic organisations had to exist in all potential theatres of war.
- (e) Communication was almost entirely by wireless. Thus establishment for signals personnel in the M.E. was 6,500. The observer and warning system was provided almost entirely by the R.A.F.; the establishment for W.O.Us and R.D.F. was 3,700.
- (f) Higher incidence of sickness.

A.O.C.-in-C's
correspondence
with C.A.S. etc.
Part 2 Encls.
184B.

C.O.S. (41)
200(0) 14/9/41

C.O.S. (41)
27th Mtg. (0)
Min. 5 25/8/45.

C.O.S. (41) 313th
Mtg. Item 2
Plans 419141

C.O.S. (41) 196(0)
10/9/41

C.O.S. (41) 200(0)
14/9/41

125,000 men. Our needs were for 187,300 men, namely, 142,100 for the Army (in the M.E., Iraq, India, Malaya and W. Africa); 23,000 for the R.A.F. in the Middle East to raise and maintain the 60½ squadron programme, 12,000 for the extra 17 fighter squadrons and 5,000 for the R.A.F. India and Malaya; and 4,500 for the Royal Navy and 700 for the Royal Marines. The C.O.S., therefore, proposed that the convoys should comprise 35,000 personnel for R.A.F. requirements in the Middle East (including the 17 fighter squadrons), 85,000 to complete the Army forces then in the Middle East (and not to send the two extra divisions) and 5,000 for the Royal Navy (including Marines), making the total of 125,000 personnel. The C.O.S.'s proposal brought forth the accusation of wasteful use of R.A.F. ground personnel already quoted and an instruction that only 20,000 R.A.F. personnel should be included in the convoys up to the end of the year. Not unnaturally, Mr. Churchill was angered by the suggestion that the American transport requested by him, personally, for a definite purpose should be put to routine uses and the preference shown for R.A.F. requirements directed his attention to the large number of ground personnel involved. (1)

C.O.S. (41) 205(0)
17/9/41

In answering the Prime Minister's accusation Air Chief Marshal Sir Charles Portal stated that there was a carefully devised machinery to determine all R.A.F. Middle East establishment to prevent any undue inflation and, in addition, there was at that time an Air Ministry party of specialists in the Middle East reviewing all establishments. The 62½ squadron scheme, due for completion by the end of March 1942, included a total of 163 units other than the squadrons concerned. Up to date the approved establishment was for 4,536 officers and 64,700 airmen, giving a total of 69,236 personnel; with the addition of necessary units for flexibility, the approved requirements were for 73,736 personnel. The strength of R.A.F., Middle East, on 16th September including personnel en route, amounted to 56,615. With the 20,000 personnel allowed by the Prime Minister the strength, ignoring war wastage etc. would be 76,615 by the 1st March 1942. This fell short by 19,011 of the 80 (79½) squadron scheme and took no account of the essential need to support the Empire Air Training scheme in South Africa, nor did it allow for men for India and the Far East. An appeal was made for 25,000 instead of 20,000 men to be sent so that the Middle East could be expected to achieve the 62½ squadron programme by March 1942; so that flexibility could be provided; and that a further increase to 72½ squadrons (including 6 squadrons sent from Home) could be achieved.

In the event, it was found impracticable for the American transports to ply to England and the two divisions were transported to Canada and conveyed thence by American ships. Other factors, including events in the Far East, also changed the projected Middle East reinforcement programmes. The controversy over the sending of the two divisions, however, served to point out the imperative need for adequate ground personnel behind the squadrons and the shortage of such personnel in the Middle East in the latter half of 1941.

/ SECTION TWO

(1) Mr. Churchill in his strong minute to General Ismay for the C.O.S. also wrote:- "We are planning to place 80 squadrons in the Middle East by the spring of 1942 (i.e. including the proposed additional 17 fighter squadrons). There are already 45,000 Air Groundmen there and it is now proposed to add 40,000 more (note:- actually this figure included 5,000 for the Far East), making a total of well over 1,000 for every squadron of 16 aircraft first-line strength." (C.O.S. (41) 200(0) 14/9/41).

SECTION TWO. REORGANISATION OF THE MIDDLE EAST COMMAND

It was clear that the reinforcing of the air forces in the Middle East would not in itself ensure the effective fulfilment of the many commitments of the R.A.F. in the Middle East theatre. A thorough reorganisation was necessary in order to ensure flexibility of control and adequate maintenance and training of the increased forces.

The reorganisation to make the fullest use of the air resources, it should be noted, was part of the general scheme to exploit to the full all Middle East resources. To this end in the early summer of 1941, the Office of the Minister of State (Mr. Oliver Littleton) had been established in Cairo and an Intendant General (General R.H. Haining) appointed under the Minister of State's general supervision to deal with supply and maintenance problems and direct rearward organisations for the administration of shipping, ports, railways and roads.⁽¹⁾ The Intendant General was instructed to collaborate with the Royal Air Force and Fleet Air Arm in their repair work in order to ensure economical use of resources." To help with the problems associated with the ever-mounting American supplies to the Middle East, also, several American missions were sent to that theatre. In particular, in early June Mr. Harriman (President Roosevelt's envoy) and a small team of experts enquired into the arrangements that existed or were planned "for the reception of American munitions of all kinds" and reported back both to the U.S. and H.M. Governments; and in September General Brett, U.S.A.A.F., (who had been sent to Air Ministry "to co-ordinate British and Allied Governments' air requirements") gathered information on the spot on the M.E. air aspect, particularly with regard to the implementing of American help promised in the creation of aircraft depots, airfield construction and repair and maintenance of American aircraft.

Ad Hoc Organisation June to September.

During the period from the end of "Battle-axe" in mid-June to September, 1941, the varied and changing commitments (both actual and potential) of the Air Force in the Middle East were still met largely by a series of improvisations. In respect of maintenance, in particular, considerable headway had been made in creating an organisation in depth, although in certain instances by unorthodox methods. The time had come for an authorized reorganisation of the whole Command in order to eliminate as far as possible ad hoc organisation.

A.O.C.-in-C. Requests Review of M.E. Organisation.

After discussion with the Inspector General (Sir E. Ludlow-Hewitt), who from mid-July had been studying the problems of the Command and tendering advice, Air Marshal Tedder on 6th September reported to the Under-Secretary of State for Air that it was "urgently necessary to review the organisation of the Command." Weaknesses had to be removed in order "to render it fit to control the extensive air operations which probably lie ahead."

/ The

- (1) A good account of the Army reinforcing, reorganisation and reconstruction during the 1941 lull is given in General Auckinleck's first Despatch as C.-in-C., M.E. In particular in the forward area the Desert railway was extended to Bir Mischeifa. Water sources at Fuka and Buq Buq were developed and the construction of a water pipe-line from Alexandria was begun.

The A.O.C.-in-C. pointed out that since the existing establishment organisation of H.Q., R.A.F., M.E., was approved the Command had increased 50% and further considerable increases were in train. (1) Owing partly to that growth and partly to communication difficulties the Command was more and more taking over responsibilities far outside those of a normal operational command, and was performing functions which in the United Kingdom were dealt with by Air Ministry and even by M.A.P. The A.O.C.-in-C's proposed reorganisation of the Headquarters rested on the following principles:-

- (1) The Deputy A.O.C.-in-C. was "in somewhat same relationship to the A.O.C.-in-C. as V.C.A.S. is to C.A.S."
- (2) In view of the growth of the maintenance problem the maintenance organisation should be separate from the A.O.A.'s branch.
- (3) The need of a Training Staff.
- (4) The need for strengthening the Air Staff to provide for the maintenance of effective control of operations, as experience had shown that as operations swing from one theatre to another "some considerable degree of co-ordinating control" from the main Headquarters was essential.
- (5) The need for strengthening the Personnel Branch.

With regard to the lower formations the A.O.C.-in-C., reaffirmed that localised formation headquarters in each main area had been and were necessary. The weakness of the organisation, however, was that all Groups and Wings had been, and to a great extent still were, localised; that is, they were designed for and consequently tied down to a specific locality. The result was that in the war of movement, fundamentally characteristic of the Middle East Command, improvisations had constantly to be made. (2)

The A.O.C.-in-C., proposed that the following principles should be accepted in order that the "foundation of the basic operational organisation" could be laid in each theatre to cope with changes in the strategic situation.

- (1) A localised command should be established in each main area - the Western Desert, Levant, Iraq and East Africa and a Group in the Delta be localised for air defence. This would involve the following steps:-

- (a) No. 204 Group being raised to Western Desert Command.

/ (b)

(1) A request by M.E. on 3rd May, 1941 (S.51771/AOA) that a local establishments committee should be formed was turned down by Air Ministry (Signal X83, 21st June, 1941) which promised that the Air Ministry Establishment Committee should visit the Command to investigate the problem. Certain Powers, however, were delegated to the Command to revise establishments to meet local needs but total increases were limited to 5% of the established number of posts for each rank up to Wing Commander and any action taken was to be notified to Air Ministry for approval immediately and with full explanations. These concessions did little more than officially sanction a procedure which was already of necessity in unofficial practice; they were of negligible advantage to the Command and added a burden by requiring immediate and full justification for each and every change in the Command establishment.

(2) "No. 202 Group had to be sent to the Western Desert, which left the Delta without any Group Headquarters; a Group Headquarters had to be improvised for Cyrenaica, but at short notice 202 Group had to go back to the Desert, and 204 Group improvised for the Delta. A Headquarters had to be improvised for Greece and as the forces there increased, two Wing Headquarters had to be improvised - these at the last minute in the middle of a critical phase of operations. A Wing had to be improvised for Crete Similar improvisations have been needed to meet the situation in Iraq, Syria and Cyprus."

(A.H.B. V D/38 p.23)

- (b) The formation of a Command in the Levant, its H.Q. being at Beirut and moving forward if the campaign developed on the Northern Front. It should have a localised subordinate group - at that time H.Q. Palestine and Trans-Jordan.
 - (c) The combination of No. 203 Group and A.H.Q., East Africa into a Training and Maintenance Command. This was considered necessary as all operational training was to take place in that area and centralised control was essential; in addition, extensive maintenance units were being set up there.
 - (d) The establishment of a nucleus group in Iraq in the Mosul area.
- (2) Mobile self-contained Wing headquarters should be formed, so that squadrons could be switched from one theatre to another complete with their own operational organisation. For fighters and medium bombers mobile wing headquarters should be established for each three squadrons. It was also proposed to organise two heavy bomber stations in the Canal Zone as mobile Wing headquarters.

Visit of R.A.F. Establishments Committee

In order to investigate the various proposals for reorganisation and decide on establishments for those agreed to by Air Ministry, an A.M. Establishments Committee (with Air Commodore S.E. Storrar as Chairman) was sent to the Middle East. After a review of West African organisation and a discussion with the Inspector General at Khartoum, the Committee arrived in Cairo on 13th September and began discussions with the A.O.C.-in-C.

Idem p.4.

The A.O.C.-in-C. desired that the proposals for the reorganisation of H.Q., R.A.F., M.E. should be considered before dealing with the lower formations, but the Establishments Committee held the view that until it knew the extent of the commitment it was impossible to assess the staff required to control it. Moreover, the Committee felt that if decentralisation could be achieved, it might be possible to reduce the Headquarters' staff. This subsequently proved to be impracticable.

The Committee visited all main areas of the M.E. Command in the course of the next two months and establishments were allowed for far-reaching reorganisation. In general, the A.O.C.-in-C's main requirements were met (albeit in some respects too late to affect "Crusader" operations), although certain modifications were agreed on. The main clashes occurred on the question of the maintenance organisation.

Additional Subordinate Commands

Idem p.7 and
H.Q. R.A.F. M.E.
O.R.B. Oct. '41.
Admin and Org.
Appendix H.

It was agreed, in view of No. 204 Group's increased responsibilities and size and the fact that the Eighth Army had recently been formed in the Western Desert, that the Group should be given subordinate Command status. Accordingly Advanced and Rear H.Q. 204 Group combined with effect from 9th October, to form Air Headquarters, Western Desert, with A.V.M. Coningham remaining in command. (1)

/ In

(1) A.V.M. Coningham had succeeded Air Commodore Collishaw as A.O.C. Western Desert on 12th July, 1941.

A.H.B. V D/38
p.8.

H.Q. R.A.F. M.E.
O.R.B. Nov. '41.
Admin. and Org.
Appendix I.1.

In following out the policy of decentralisation it was decided that a Command was also necessary in Egypt, where H.Q., R.A.F., M.E., was itself acting as a local Command. "This meant that the staff was thinking on two distinct levels and because it was forced to centralise in Egypt there was a strong tendency to over-centralisation in matters affecting other areas." It was agreed, therefore, to set up a subordinate Command in place of No.202 Group. A.H.Q., Egypt was formed, accordingly, at Cairo with effect from 1st December, with Air Commodore T. Elmhirst, commanding, to organise the air defence of Egypt, and was given full control over all R.A.F. units in Egypt except those in Nos.201 and 205 Groups and limited in certain respects for those in No.206 Group. The functions of these particular groups are considered later.

Idem. Appendix W.

In Palestine, A.H.Q., Levant was formed with effect from 1st December, in place of H.Q., R.A.F. P. & T.J. Jerusalem was decided on as its location instead of Beirut as previously suggested. Air Commodore L.O. Brown remained in command. Thus, during the "Crusader" operations there existed the following subordinate Commands under H.Q., R.A.F., M.E.:— A.H.Q., Western Desert; A.H.Q. Mediterranean (Malta); A.H.Q., Egypt; A.H.Q. Iraq; A.H.Q. Levant and A.H.Q. Aden.

Abandonment of Proposal for East Africa Command

Idem p.7.

The A.O.C.-in-C.'s proposals had included the establishment of a subordinate Command in East Africa. It had first been considered that a Command should be formed at Khartoum with a group in Kenya and another in Aden. Then, when the Army East African Command was formed in Kenya, it was proposed that a parallel R.A.F. Command should be set up there. Air operations, however, were almost at an end in East Africa by the conclusion of 1941 and the policy was that Kenya should be devoted almost entirely to O.T.U. training while the Sudan, apart from a squadron then at Kifra, would contain only maintenance units. On the other hand Aden's commitments, although small, were operational. Accordingly, the idea of an East African Command was dropped and the existing organisation retained except that the staffs of the Sudan and Kenya Groups (Nos.203 and 207) were remodelled to allow principally for maintenance and training, respectively.

Nucleus Groups

A.H.B. V D/38
p.7.

In view of the frequent need in mobile warfare for new formation Headquarters, it was decided to form nucleus groups in the Western Desert, Egypt, Levant and Iraq. These groups were to provide the A.O.C.'s with subsidiary formations to which they could delegate command of units which had to be detached; alternatively, the Group might be required to assume command of the units in the area in the event of the Air Headquarters being transferred to another theatre of war.

H.Q. R.A.F. M.E.
O.R.B. Nov. '41.
Admin and Org.
Appendix D.

In particular, a Nucleus Group was formed in the Western Desert, at Maaten Bagush, with effect from 5th November.

Formation of Naval Co-operation Group.

Idem. Appendix P
and A.O.C.-in-C's
correspondence
with C.A.S. Pt.II.
Encls.179A and
192A.

In October the repeated and insistent request of the C.-in-C., Mediterranean, backed by the Admiralty, for a M.E. Coastal Command to meet the air requirements of the Navy was met by a compromise. The existing No.201 Group was reformed at Alexandria as No.201 (Naval Co-operation) Group with effect from 20th October, with Air Commodore E.H. Slatter in command. Its primary function was the conduct of operations over the sea and co-operation with the Mediterranean Fleet. The allocation of operational units to the Group was to be decided

from time to time by the A.O.C.-in-C., after consultation with the two other Cs.-in-C. The strategic plan for the employment of the Group was to be arranged by the A.O.C.-in-C., M.E., and the C.-in-C., Mediterranean. It was laid down however, that the A.O.C.-in-C., was the "authority ultimately responsible for the employment of all the available air forces under his command in the best interests of all three services."

At the time of its reformation No.201(N.C.) Group comprised:- Nos.39 (Marylands, later Beauforts), 203 (Blenheims, later Beauforts), 230 (Sunderlands), 252 (Beaufighters), 272 (Beaufighters) 2 (Jugoslav Do.22s), 13 (Helenio) (Ansons) and an air-sea rescue organisation.

Formation of No.205 Group.

R.A.F. M.E.;
O.R.B. Oct.
Admin. and Org.
Appendix K1.

To control the five Wellington squadrons then in the Middle East No.205(H.B.) Group was formed with effect from 23rd October at R.A.F. Station, Shallufa in place of No.257 (H.B.) Wing. Group Captain (later Air Commodore) L.L. Maclean remained in command. As the heavy bomber squadrons constituted the strategic striking force the Group was not placed under the jurisdiction of A.H.Q., Egypt, but remained "directly under the hand of the A.O.C.-in-C". Operational control could be granted to A.O.C., Western Desert, when the situation demanded it.

A.H.B. V.D/38
p.8.

Proposed Wing Organisation.

Idem p.25

Administration was put in hand to form the mobile self-contained Wings required by the A.O.C.-in-C. to aid the mobility of his forces. Squadrons were to be cut to flying crews and such maintenance personnel as were required for daily and between-flight inspections only, plus men for refuelling and re-arming. The Wings would normally contain three squadrons (in the case of the heavy bomber and transport aircraft two squadrons only), but as a temporary overload an additional squadron could be included. The Wing was to contain Headquarters for control, together with one Servicing and one Administrative echelon for attachment to each squadron, wherever the squadron might be located.

Idem p.9.

Although the scheme for increasing the mobility of squadrons and Wings (including the redesign of R.S.U.s and A.S.P.s.) was worked out the imminence of the Western Desert offensive precluded the implementing of it in time for "Crusader" operations. Nevertheless, it is important to note that the decision was made to adopt it as soon as possible. The Wing reorganisation was designed as a long term policy and not merely to meet one aspect of the campaign.

C.M.S.O's (1) Branch and No.206 Group.

After our reverses in Cyrenaica, Greece and Crete in the Spring of 1941, the number of serviceable aircraft available against the enemy in the Middle East had fallen to a dangerously

/ low.

- (1) C.M.S.O. by established practice should have stood for Chief Maintenance Staff Officer, but in the M.E., was taken to stand for Chief Maintenance and Supply Officer. (A.H.B. V D/38 p.49.)

low level. (1)

Information sent to Sir Edger Ludlow-Hewitt 15.7.41. At the instigation of Lord Beaverbrook (M. of S. for Aircraft Production) the War Cabinet on 9th May decided to send Air Vice Marshal G. Dawson (of M.A.P.) to the Middle East to investigate and solve the many supply and maintenance problems of the Command. In particular, he was to improve aircraft serviceability "by introducing methods which have been proved successful in U.K." At a meeting held at Air Ministry the following day, with the C.A.S. in the Chair, the "arrangements consequent upon the appointment of Air Vice Marshal Dawson as Chief Maintenance Officer, Middle East Command", were discussed. In particular, it was laid down that the C.M.O.'s functions were twofold: he was head of the Engineer and Equipment Services with executive powers and he was also principal adviser of the A.O.C.-in-C., on technical problems. On the other hand the normal procedure was to be adhered to whereby the A.O.A., should instruct "the C.M.O. as to the policy which the technical organisation should aim to serve."

A.V.M. Dawson left England on 16th May, taking with him a small staff of experts - Air Commodore Boswell, Group Captain Leigh and Wing Commanders Barber and Barnard. These officers were to help with the investigation and be available for possible replacement of maintenance staff officers then in the Middle East.

The position later arose that A.V.M. Dawson, filling an established A/Cdr. post as C.M.O., was equal in rank to the A.O.A. (A.V.M. Maund) and contrary to the established procedure, but with the A.O.C.-in-C's concurrence, was acting independently of him, in order to implement speedily his scheme for putting maintenance and repair on a workable footing. In order to establish this de facto position Air Marshal Tedder on 25th June proposed to Air Ministry that "A.V.M. Dawson should be established as Chief Maintenance and Supply Officer at H.Q., R.A.F., M.E. with a small staff to be responsible for supply and maintenance policy" and that a Maintenance Group should be formed "to control M.U.s., R.S.U.s., and A.S.P.s., and also deal with all routine matters of supply, repair and maintenance whole of S.E.S.O. staff except Movements, whole of S.R.S.O. staff with A.I.D. and Technical Publications Section will be transferred to Maintenance Group."

Air Ministry on 8th July informed the A.O.C.-in-C. that his proposals could not be accepted in toto. It was pointed out that the proposed organisation would, in effect, set up two maintenance officers in the Command - A.V.M. Dawson and O.C., Maintenance Group. Moreover, "the proposed organisation would also take away from the A.O.A. control and co-ordination of major services on which the successful outcome of operations so largely depend." It was agreed, however, that in view of the envisaged increase in Middle East strength and consequent expansion on the maintenance and supply side that a Maintenance Group Headquarters should be established "on normal well-tried lines." It was reiterated that the C.M.O. was to be under the A.O.A., but should have direct access to A.O.C.-in-C., as Chief Technical Adviser; the Equipment (including Movements), Maintenance Plans and Engineer branches were to be under C.M.O. and responsible to him.

/ The

(1) The C.M.S.O's graph (Appendix M) shows the number of serviceable aircraft in June as only 240, with another 200 serviceable in 14 days. The Establishment Committee, however, pointed out that at that time the "Mayfly" returns then submitted were unsatisfactory, in that the existence of numbers of aircraft within the Command was not disclosed. (A.H.B. V D/38 p.33.) According to figures quoted by the D.W.O. there were, as at 20th June, in Egypt, Sudan and Levant:- 465 modern type aircraft, serviceable or serviceable within 14 days (Cat.A) and 117 Cat.A obsolete aircraft; Malta:- 65 Cat.A modern type aircraft; Iraq:- 11 Cat.A modern type aircraft and 14 Cat.A obsolete aircraft; and Aden:- 19 Cat.A obsolete aircraft (Page 31).

A.H.B. V D/38
Pgs. 8 & 9.

H.Q. R.A.F. M.E.
O.R.B. July
Admin. and Org.
Appendix E.

The Establishment's Committee found in the autumn, however, that the A.O.C.-in-C's proposed organisation, despite Air Ministry's instructions, had largely been put into effect⁽¹⁾, an order having been issued for "an organisation separate from H.Q., R.A.F., M.E. to control and supply maintenance formations in the M.E." and "to embody the existing Equipment, Repair and Servicing Branches of H.Q., R.A.F., M.E.," to form with effect from 17th June. This Group, later named No.206 Group, was commanded by A/Cdr. C.B. Cooke, formerly C.M.O.

Revised Arrangements for C.M.S.O. and No.206 Group.

A.H.B. V D/38
p.28.

The Establishment Committee in October "were impressed by the apparent lack of direction and in some instances discovered contradictory orders from C.M.O. and 206 Group which they attribute^(d) to the fact that the Engineer and Equipment staffs had been divorced from the Headquarters".⁽²⁾

The Committee accordingly urged the A.O.C.-in-C., to revert to normal procedure, with the C.M.S.O., under the A.O.A., and the staffs of the Equipment and Engineer services at H.Q., R.A.F., M.E.⁽³⁾

A.O.C.-in-C's
correspondence
with C.A.S. etc.

A.H.B. V D/38
p.40.

The attempt by the Committee to put the maintenance organisation back on to the "correct rails" led to the A.O.C.-in-C. in early October, complaining to the V.C.A.S. that the Committee's activities were having an adverse effect on the working of the maintenance organisation, which in view of the urgency of the Command's needs was often on unconventional lines. Eventually, on 6th November, Air Commodore Storrar was instructed by the Air Ministry "to defer as far as possible to wishes of C.-in-C., as regards Maintenance Organisation of the Command as a whole".

Idem. p. 28
and 29.

Accordingly, the arrangement whereby the C.M.S.O. was detached from A.O.A. and formed a third main branch of the A.O.C.-in-C's staff was officially recognised.

With regard to No.206 Group the Establishments Committee won its point. The Engineering and Equipment staffs were re-established at H.Q., R.A.F., M.E., under the C.M.S.O., and the responsibilities of the Group were restricted to maintenance units in Egypt.

/ Command

(1) The maintenance reorganisation, in common with other reorganisation, had been discussed with the Inspector General, Sir Ludlow Hewitt, who in general saw eye-to-eye with Air Marshal Tedder, although he disagreed (according to the Establishments Committee) with divorcing practically the whole of the staffs of the Equipment and Engineer Services from the Command Headquarters.

(2) In this connection it should be noted that the Establishment Committee had been briefed at A.M. before it departed to examine the maintenance organisation "with the object of putting it on lines as close as possible to those which apply at home", with C.M.O. under A.O.A.

(3) The A.O.C.-in-C., insisted that C.M.S.O. must be detached from A.O.A. because of the size of the maintenance problem, the complications caused by the long lines of supply and the fact that M.E. maintenance was not backed by industry as in U.K. Also, the C.M.S.O. had to liaise with the Intendant General and American Representatives. The Committee believed that the detachment from A.O.A., may have been due to a large extent to the "personalities" involved. (A.H.B. V D/38 p.28). "The 1936 Staff Organisation had never been put into effect in H.Q., R.A.F., M.E., ... The Command was still in fact, if not in theory, run on the Chief Staff Officer arrangement (the Chief Staff Officer being the D/A.O.C.-in-C.) and the A.O.A. was not allowed to take his proper share in the organisation or in the responsibility." It was believed that many difficulties would disappear when the new A.O.A. (A.V.M. Pirie) took over.

Command Headquarters Reorganisation.

H.Q. R.A.F. M.E.
O.R.B. Jan. '42.
Admin. and Org.
Appendix A.

Headquarters R.A.F., Middle East, as established at the end of 1941, thus contained three main branches, controlled by the S.A.S.O. (A.V.M. Wigglesworth), the A.O.A. (A.V.M. Pirie) and the C.M.S.O. (A.V.M. Dawson), immediately under the D.A.O.C.-in-C. (Air Marshal R.M. Drummond), and the A.O.C.-in-C. (Air Marshal A.W. Tedder).

The A/S.A.S.O. and C.S.O. establishments were raised to A/Cdr. rank and an A/C.M.S.O. post with A/Cdr. rank was established. The proposal to establish an A/Cdr. as D/A.O.A., however, was not complied with, owing to the divorcement of C.M.S.O. from A.O.A., and the post of S.P.S.O. was kept a G/Capt. establishment as P3 matters were mainly dealt with by the B.P.S.O.

Idem and A.H.B.
V D/38 ps.11 &
12.

Features of the "irregular" organisation which were remedied included:- the transference of Administrative Plans from the S.A.S.O. to the A.O.A.; the placing of the Radio branch definitely under the C.S.O.; and the placing of the Air Reinforcement Control under the A.O.A., instead of the C.M.S.O., it being decided that the delivery of aircraft was a "movement" rather than a "supply". The last decision involved the creation of a Movements sub-branch under a Group Captain. Additional sub-branches established included training under the S.A.S.O., with a Group Captain as S.T.S.O.⁽¹⁾ and an Establishments sub-committee with a Wing Commander as Chairman, under the A.O.A., to facilitate changes of establishments in the Command.

Idem p.61.

H.Q. R.A.F. M.E.
O.R.B. Jan. '42.
Admin and Org.
Appendix A.

In certain cases, also, the establishments of sections were increased to allow for expanding commitments.

Maintenance and Supply Problems.

The success of the air operations in the Middle East depended to an increasing extent on the establishing of an organisation which would be capable of solving the problems of wastage and supply involved in operating over a vast area and, in particular, those associated with warfare in the Western Desert.

The main problems were:-

- (1) Supply and repair of aircraft.
- (2) Supply and repair of aero-engines.
- (3) Supply and repair of M.T.
- (4) Supply and repair of all equipment for fighting, including armament, radio etc.
- (5) Supply of bombs, ammunition and pyrotechnics.
- (6) Supply of food, petrol and oil.
- (7) Supply of clothing, tentage, medical stores etc.

These problems involved:-

- (1) Accurate estimation of wastage and repair capacity.
- (2) Getting the necessary products of U.K. and U.S.A. into the Command.

/ (3)

(1) M.E. had proposed that this should be an A/Cdr. post, but it was later agreed that with the setting up of a Training Group in Kenya a G/Capt. Training would be adequate at H.Q., R.A.F., M.E. (A.H.B. V D/38 p.12).

- (3) Holding safely all equipment arriving in M.E. base.
- (4) Distribution plans.
- (5) Salvage plans.
- (6) Consideration of adverse effect of climatic conditions on new types of engines and other equipment.
- (7) Making necessary modifications to American aircraft, engines and other equipment.
- (8) Widespread repair organisation to meet demands and ensure maintenance of all equipment.

Mention has already been made of the establishment of the C.M.S.O.'s branch and No.206 Group for planning and control: it is also necessary to indicate the main features of the supply and maintenance organisation evolved by the time of the "Crusader" offensive.

"M. & S. Organisation Crusader and After" p.5. "The problems of Maintenance and Supply for 'Crusader' could not be placed in a watertight compartment of the organisation. While it is true that only some of the Maintenance Units were strictly identified with maintaining and supplying the Western Desert, nevertheless the complete picture of the Middle East was always the back curtain for "Crusader". No problem was solved without influencing, directly or indirectly, future problems in other potential or actual theatres of war."

Supply of New Aircraft for 'Crusader'.

As already indicated new aircraft for the Middle East either arrived cased, or for certain types were flown direct from the United Kingdom to the Middle East. Two main erection centres had accordingly been formed - at Takoradi, on the West Coast of Africa, and Port Sudan on the East Coast; a subsidiary erection unit was located in the Canal Zone at Kasfareet for aircraft arriving via Suez.

Idem. Chart 6.

The delivery of aircraft to the Western Desert from the erection centres was, in general, by the beginning of 'Crusader' effected as follows:- Blenheims and Hurricanes flew from the Takoradi erection centre along the reinforcement route to Khartoum and thence to No.108 M.U., on the Fayoum Road, south-west of Cairo (with some of the Hurricanes to 'Kilo 8' on the Suez Road), where aircraft were stored and made operationally serviceable. American aircraft from the Port Sudan erection centre after being made operationally complete at Wadi Gazouza) were flown to the following storage units, where they were made operationally serviceable:-

Tomahawks to No.108 M.U., Bostons to No.107 M.U., Kasfareet and, later, Kittyhawks to No.113 M.U., Hurghada. The few Kittyhawks and Baltimores erected at this time at No.107 M.U., were also stored there and made fit for operations. Aircraft reinforcements which flew in via Malta were stored at No.108 M.U. Thence Wellingtons, in particular, were delivered to No.205 Group direct.

The focal point for the distribution of aircraft to R.S.U's serving squadrons in the Western Desert was at Wadi Natrum (roughly half way between Cairo and Alexandria). An Aircraft Replacement Pool was formed there, at L.G.100, with effect from 1st September and No.1 Delivery Unit with effect from 22nd October. Seven days' estimated wastage for 'Crusader' was stored at Wadi Natrum and the units supplying the W.D. squadrons normally held two days' wastage.

H.Q. R.A.F. M.E.
O.R.B. Sept. '41.
Admin. and Org.
Appendix G.
Idem.

/ The

"M. & S. Organisation 'Crusader' and After" p.6.

The plan arranged for the storage of serviceable aircraft and thus prevented a dangerous congestion of serviceable aircraft within the range of enemy bombing.

Repair Organisation in Depth.

Idem. ps.3 & 9.

The two principal depots in the M.E. at the outbreak of war were No.102 at Abu Sueir and No.103 M.U., at Aboukir. These units fulfilled an important function in building up M.E. air strength in the early phases, but their vulnerability to bombing served to emphasise the necessity for a repair organisation dispersed in depth.

During July and August No.102 M.U., was systematically attacked by enemy bombers (page 78). Some of the invaluable and irreplaceable plant and stocks were evacuated before the final successful raid, so the major loss incurred was of facilities rather than equipment. To replace the facilities, garages and the buildings in the Boulac quarter of Cairo were taken over and men and equipment from Abu Sueir were moved into them. Then the ancient caves⁽¹⁾ in the Mokhattam hills at Tura, south of Cairo, were prepared for the installation of workshops and stores with a production and holding capacity equal to that originally possessed by No.102 M.U. The sections in the caves were linked with the parties scattered around Cairo under a single technical control (a Group Captain Engineer) with two distinct administrative echelons. The combined organisation was named No.111 M.U. and functioned as a repair and stores depot with effect from 24th October.

H.Q. R.A.F. M.E.
O.R.B. Nov. '41.
Admin. & Org.
Appendix O.

"M. & S. Organisation 'Crusader' and After" p.11.

Meanwhile, in a different section of the Mokhattans, an M.U. had been formed (No.101) as a main storage depot for all explosives. Additional facilities for aircraft and engine repairs were set up at R.A.F. Stations, Heliopolis and Helwan; there, repair units were increasingly manned by native labour and were controlled by H.Q., R.A.F., M.E.

The maintenance organisation evolved in the Cairo area, from which the complete organisation radiated, is indicated at Appendix L, Chart No.1. The maintenance organisation in the Lower Egypt area is given on Chart 2. The main features of the whole repair, maintenance and supply organisation dispersed in depth, as obtaining for 'Crusader', is indicated on Chart 3.

Repair and Salvage Units and Air Stores Parks.

Idem p.7.

In the Western Desert for 'Crusader' there were three R.S.U.s. - Nos.51, 53 and 54 - each working in parallel with an A.S.P. - Nos.31, 33 and 32, respectively. The first two R.S.U.s mentioned, with their A.S.P.s, kept advanced sections working as far forward as possible. In all the R.S.U.s operated thirteen mobile repair sections and twelve mobile

/ salvage

(1) Caused by the excavation of stone for the building of the Pyramids.

salvage sections. (1)

Idem P.7. In the rear there was an additional R.S.U. (No. 54) and A.S.P. (No. 37) working with the heavy bomber Wing (later No. 205 Group); these operated three mobile salvage and six mobile repair sections.

At Appendix L, Chart 4 shown diagrammatically how the forward elements for maintenance, repair, salvage and supply were directly connected to the base maintenance and supply systems; the chart also indicates the types of aircraft served by the forward elements. The channels of supply to and from the depots for the A.S.Ps are shown in Chart 5.

SECTION THREE - TRAINING

Aircrew operational training received far less than its due during the 1941 lull. The crucial fact was that although the opposing armies were not engaged on major operations the Air Force was obliged to continue its intensive effort. Operational strength had to be maintained and resources as well as the time factor precluded the establishment of an adequate training organisation if the continuous quick supply of aircraft and aircrew to squadrons was to be achieved. This hand-to-mouth existence helped to keep the wolf from the Egyptian door but boded ill for future effort.

Within the limits imposed by operational needs and shortages of personnel and equipment, however, a considerable advance was made in putting the operational training organisation on a sounder basis, although the full fruits of this policy could not be expected until later.

Previous O.T.U. Position

In order to appreciate the efforts made to improve operational training in the Middle East, it is necessary to glance at the previous O.T.U. arrangements.

Prior to Italy entering the war Air Ministry had ruled that O.T.U.s should be retained in the United Kingdom in accordance with a general policy of carrying out operational training in the operational theatre served. (2)

/ In

(1) The work of the forward R.S.U.s. was difficult and hazardous. Searching for an aircraft "down in the Desert" in most instances meant many days of constant search over a wide area: pin-points, even given by the pilots who "walked in", were often entirely inaccurate. As soon as an aircraft was located, it was carefully inspected and a decision was made on the method and the extent of repair necessary. Sometimes the aircraft was repaired on the spot, often under almost indescribably hard conditions, and sometimes temporary repairs were effected to allow the aircraft to be flown back to base. More often, however, the aircraft was transported many hundreds of miles over the Desert to a base depot, although on occasion this course was modified to the extent that the aircraft was taken only as far as the main working party of the R.S.U. concerned. The repair capacity of an R.S.U. was, however, limited. Later in the campaign a separate organisation was formed to link part of the forward salvage work with the base - the Base Salvage Section, controlled by H.Q., R.A.F., M.E., which transported to the depots aircraft which had been dumped at pre-arranged focal points. ("M. & S. Organisation 'Crusader' and After" ps. 8 and 9).

(2) This policy, in the main, governed the subsequent development of the O.T.U.s.

A.H.B. Draft
Narrative
"Training" p. 314.

Idem.

In the summer of 1940, when the Middle East had become an operational theatre, proposals were put forward that O.T.U.s. should be set up in that area. In October of the same year, however, the E.R.P. Committee decided to expand and re-arm the M.E. first-line, and it was agreed to defer the question of O.T.U.s. as all available aircraft and equipment were needed for operational use. It seemed likely that Italian opposition would be sufficiently spasmodic to allow our squadrons to undertake the training, at least as a temporary measure.

Nevertheless, planning allowed for future O.T.U.s. and in November, 1940, the M.E. training Unit Reserve Pool at Ismailia (a miscellaneous collection of aircraft, instructors and pilots awaiting employment) was ear-marked as No.70(M.E.) O.T.U. and regarded as a nucleus for future development. In the autumn of 1940, also, a start was made with operational training in Kenya: certain South African squadrons had gone to Nakuru to take part in the East African campaign and a small improvised O.T.U. came into existence there.⁽¹⁾

Idem.

The position at the beginning of 1941 was that a number of fighter pilots and crews for Wellingtons and Blenheims were reaching the Middle East after experience in operations or training, but the majority of the M.E. replacements were coming direct from S.F.T.S.s in Iraq, Africa or Australia. These pilots, though they had been trained on the Old I.T.S.-A.T.S. syllabus, had in many cases flown only Hart variants, and needed considerably more than simple conversion before they were fit for operational employment.

H.Q. M.E.50882
Operational
Training Policy
Encl.1B.

Idem.Encls.3A.
Idem 2A.

There was, then, far more training in hand than Ismailia could possibly cope with, and a mixed O.T.U., moreover, was found to be neither economical nor efficient. In January, 1941, therefore the fighter training element was removed to Amriya⁽²⁾. In addition, a Wellington O.T. Flight was formed at Kabrit, in the Canal Zone.

A.H.B. Draft
Narrative on
Training p.314.

Meanwhile, Air Ministry was "reconsidering provision of O.T.U. facilities" in the Middle East⁽³⁾. In February and March the training units at Amriya and Nakuru were recognised as additional nuclei to No.70 O.T.U. at Ismailia for O.T.U. development, and were later allotted the numbers 71 and 72. No.71 O.T.U. was to train fighter pilots for North Africa and No.72 fighter pilots and medium bomber crews for East African operations. All three of these embryo O.T.U.s. however, were short of aircraft, instructors and staff, and could deal with nothing more than bare conversion to operational types.

/ Air

(1) Known unofficially as No.1 (S.A.) O.T.U., although it was not included in any authorized S.A.A.F. programme. (H.Q., M.E.50882 Operational Training Policy. Encls.34A).

(2) This airfield became vacant when No.112 Squadron was sent to Greece.

(3) A.M.S.O. informed the A.O.C.-in-C., M.E., in January: "You will appreciate that owing to shipping and other limitations operational type aircraft for O.T.U.s. can only be provided by use of aircraft thrown up as a result of your re-arming or by diversion of some of the operational types being despatched to you for re-arming, expansion or wastage." Air Marshal Tedder (then D. A.O.C.-in-C.,) wryly commented, "Egyptian methods of brick building not new to us." (H.Q., M.E. S.50992 Encls.2A and 5A).

H.Q., M.E., 50882
Encl. 3A.

Idem. Encls. 29A.

A.H.B. Draft
Narrative on
"Training" p. 315.

Air Ministry refused to recognise the Wellington Flight at Kabrit as an O.T.U. nucleus, as replacement crews for heavy bombers and G.R. aircraft were to be provided by the crews flying out the aircraft from the United Kingdom. Middle East had found, however, that refresher courses for Wellington crews were necessary as they often came straight from prolonged operations with Bomber Command. To eliminate this need it was decided in April that an O.T.U. in England (No. 15 O.T.U.) was to be employed exclusively on training fresh Wellington crews for the Middle East. (1)

In May, accordingly, it was decided that the Middle East should be self-sufficient in O.T.U.s. for all types of aircraft in operational use there, except heavy bombers, flying boats and G.R. aircraft.

Further Development.

Idem and H.Q. M.E.
50882 Minute 22.

By the beginning of June, 1941, there was a serious deficiency of pilots in the Middle East first-line owing to heavy losses: it was necessary to build up the O.T.U.s. quickly even at the expense of operational strength. Fresh airfields were needed for training. In particular, the fighter and A.C. O.T.U. nucleus (No. 71) had returned to Ismailia from Amriya (which was required for operational use) and Ismailia, then housing Nos. 70 and 71 O.T.U. nuclei, was a mark for enemy bombers.

Idem Encl. 31A

At this stage Major-General Van Ryneveldt (South African C.G.S.) put forward the proposal that a joint R.A.F.-S.A.A.F., O.T.U. should be formed at Nakuru, capable of handling the flow of crews from South Africa to the Middle East. Air Marshal Tedder agreed and it was arranged to transfer No. 70 O.T.U., from Ismailia to Kenya. (2)

When No. 70 O.T.U., removed to Nakuru in July the fighter nucleus (No. 71) remained in Ismailia. As Nakuru had previously been ear-marked for No. 72 O.T.U. the latter

/ had

(1) A.V.M. G. Garrod (A.M.T.) stated in a letter to A.M. Tedder in May that "since wastage in crews is only 55% of the wastage rate of aircraft and all heavy bombers will have to be flown out to you, you should have a reasonable supply of heavy bomber crews and there should be no necessity for a heavy bomber O.T.U. in the Middle East once these crews start to reach you." (H.Q.M.E. 50882 Encl. 29A) Later, No. 21 O.T.U. was also formed in U.K. to help with the training of heavy bomber crews and an O.T.U. for G.R. training was also established. Australian aircrew, required for heavy bombers, who arrived direct from Australia by sea, received their final training in the squadrons.

(2) Until No. 70 O.T.U. was established at Nakuru it was agreed that South African reserve fighter pilots and bomber crews should be sent direct to Egypt in accordance with the numbers requested from time to time by H.Q. R.A.F., M.E. Their employment and training in Egypt pending posting to S.A.A.F. squadrons was entirely in the A.O.C.-in-C's hands. When No. 70 O.T.U. was established it would in the early stages undertake fighter as well as bomber crew training. S.A.A.F. direct reinforcement would then end and be diverted to keeping No. 70 O.T.U. running to capacity, and Middle East would then draw on No. 70 for S.A.A.F. squadrons. Later, South Africa would send only reserve bomber crews to No. 70 and reserve fighter pilots to No. 71., and Middle East, as before, would draw on them under their own arrangements.

had now to be given a new nucleus at another location. Eventually, Gazouza (in the Sudan) was selected as a temporary site and No.211 Squadron, a reserve Blenheim squadron, set to work on training, so far as resources allowed.

A.H.B. Draft
Narrative on
"training" p.316.

The Middle East O.T.Us then gave promise of development. Some 75% of the ground staff for Nos.70 and 71 had left the United Kingdom at the end of April. A few advanced trainers were obtained from South Africa and a few Ansons (originally intended for Australia) were sent out from the United Kingdom. Operational types of aircraft continued to be allotted according to Middle East resources, the balance between first line and training being decided by the A.O.C.-in-C. Instructors and aircrew for staffing the O.T.Us had also to be drawn from M.E. resources.

Idem

At the end of July as a result of an Air Ministry conference the target figure for Middle East O.T.Us was raised to four. The plan was to have two to train on medium bombers (Nos.70 and 72) and two on fighters (Nos.71 and a proposed 73). No.71 was also to continue to give Army Co-operation training.

A.O.C./4 Part I
Conference
Minutes
Encl. 84A.

On 4th August at another conference, with the Secretary of State (Sir A. Sinclair) in the chair, and attended by A.M. Tedder who had been recalled to London (page 16), it was agreed that the training position in the Middle East was improving and it was anticipated that the deficiency in bomber and fighter crews "would be righted during the next two months". (1) "The S. of S. asked if nothing could be done to speed the formation of O.T.Us: it was obviously very undesirable that pilots should be trained by conversion in operational squadrons if it could be avoided. Was it worth while switching pilots to be trained here (in U.K.)? This was considered, but it was felt that while every effort should be made to put the proposed O.T.Us on a pilot producing basis as soon as possible the urgency of the need in the Middle East made it inevitable that the output of S.F.T.Ss should be trained in operational squadrons until additional O.T.Us were ready."

The Middle East O.T.Us, however, were obliged to work at considerably less than their planned size during the autumn of 1941, (2) and were handicapped by deficiencies in instructors, trainer aircraft, target towers, equipment and ground staff.

/Inspector

- (1) It was then thought that Nos.70 and 71 O.T.Us would be working at full capacity by the end of October and Nos.72 and 73 by mid-December and the end of December, respectively.
- (2) It may be noted that although in September the reinforcement policy included increasing the number of G.R. Squadrons, there was no need for additional M.E. O.T.Us as the Hudson crews required were supplied from No.6 O.T.U., Thornaby, and No.1 O.T.U. Silloth in U.K. Similarly, crews for the new Beaufighter reinforcements were supplied from home.

Inspector General's Report, September 1941

A.H.B.II J/27/1
D.Ops.(Overseas)
I.G.'s Report to
A.M.T.

Towards the end of September Air Chief Marshal Sir E. Ludlow Hewitt sent a report to A.M.T. on the subject of Middle East operational training, giving particulars of the state of the O.T.U.s as revealed in his inspections in the late summer and early autumn.

In Egypt, in the summer of 1941, were No.71 (Fighter and Army Co-operation) O.T.U. at Ismailia and No.223 Squadron (Marylands) at Shandur, also in the Canal Zone. This squadron had been temporarily withdrawn from the first-line to train crews on the American bombers with which the Middle East was re-arming.

The Inspector General did not find No.71 O.T.U., at the time of his visit (13th August) "a particularly satisfactory unit". (1) The C.O., although "an admirable fighter leader", had no previous experience of O.T.U. training, and the I.G. recommended the posting of a C.O., who had had "the best fighter O.T.U. training in England". (2) It was fully realised that Ismailia was unsuitable and dangerous for an O.T.U. and the I.G. suggested its removal to Asmara (Eritrea) or Kenya as soon as possible. (3) At the time of the visit pilots were doing only 25 hours flying, but this was to be raised to 40 hours (4) for both fighters and A.C. pilots. One of the greatest difficulties of the O.T.U. was the lack of suitable aircraft for dual control. Fortunately, most of the pupils had flown Harvards in Rhodesia, but it was evident that either Harvards or Masters were urgently required. The improvised method of training adopted was (a) cock-pit drill performed on a Hurricane erected on trestles, (b) dual flying on a Wellesley, Vega Gull or Magister, (c) solo on a Hurricane or Tomahawk. (5) The O.T.U. possessed no cone-guns and no target towing aircraft, nor had they particulars of the self-towing target equipment for the Hurricane. (6) At that time, also, the unit was without air-to-air and air-to-ground firing ranges. One Link Trainer only was available, which was manifestly insufficient, and nobody on the unit had had experience of synthetic training as practised in the United Kingdom. Additional difficulties included shortage of tools and spare parts, which, in combination with other factors, resulted in a low rate of serviceability.

/On

- (1) At this time No.71 O.T.U. was at least 50% down on personnel and instructors. (A.O.C./4 Part I. Conference Mins. Encl.83A.).
- (2) Gp Capt. Murliss-Green assumed command 13.10.41. The former C.O. (Wg.Cdr. Dunn) became Chief Instructor. (No.71 O.T.U., O.R.B.)
- (3) Actually No.71 O.T.U. was removed to Gordon's Tree (Khartoum) at the end of September 1941. (No.71 O.T.U. O.R.B.).
- (4) In the event not practicable until November, 1941. (No.71 O.T.U., O.R.B.).
- (5) The I.G. recommended that only those pilots who were going to Tomahawk squadrons should be taught to fly Tomahawks owing to the high wastage rate due to pupils crashing through swinging after landing.
- (6) The I.G. signalled A.M. to send these particulars.

On the other hand, the I.G. found No.223 Squadron "quite admirably run on an exceptionally well-organised station." The plan at that time was to turn out twelve crews every fortnight, each with 30 hours flying. For this purpose the unit had twenty-two aircraft - seventeen Marylands, two Oxfords, one Blenheim and two Harts. Six screened crews were employed as instructors. The unit was divided into two flights - one carrying out the conversion to Marylands and the other the O.T.U. training. It was intended that the squadron should return to operations when No.72 O.T.U. was properly established.

Further south, as already mentioned, No.211 Squadron was doing duty as the nucleus of No.72 O.T.U. at Gazouza, in the Sudan, and No.70 O.T.U. was taking shape at Nakuru, Kenya.

At the time of the I.G.'s visit to No.211 Squadron, the intended station of No.72 O.T.U. was being built at Carthago, "next door to Gazouza", but this would not be ready till early 1942. Sir Ludlow Hewitt reported that although No.211 Squadron had been in existence for O.T.U. training for several months and had had a number of crews under training, mostly Australians, it was not until early September that the unit received sufficient equipment to enable it to begin flying training. Progress had therefore been slow and the Australian crews had inevitably become bored and impatient. During September, however, "energetic steps" were taken to equip the unit, but the I.G. was of the opinion that the O.T.U. could not be fully formed and working at full strength before the end of the year. The C.O., was an experienced O.T.U. officer from Upwood and the I.G. considered that the O.T.U. would be satisfactory once it received adequate equipment.

The most satisfactory O.T.U., in September was No.70. It was more advanced than the others, had an excellent staff of officers and was considered to be "going ahead extremely well".⁽¹⁾ Although the unit had few facilities for synthetic training, satisfactory progress was being made in the improvising of equipment for that purpose. An air-to-ground range and bombing range had been provided and arrangements were in hand with the Kenya Government for an air-to-air range. The unit's most serious deficiencies were screened crews and Blenheim Mark I dual control aircraft. The situation would obviously be much improved, reported the I.G., when the O.T.U. received its equipment from Ismailia: 509 cases of spares were stated to be on the way, having been despatched in early August.

The Inspector General fully approved the A.O.C.-in-C's proposal to form an O.T.U. Group in Kenya (No.207), mentioned in the previous section, and recommended that so far as practicable all the O.T.U.s should be located in that general area.⁽²⁾ The I.G. also considered that there

/should

- (1) Nevertheless, at this time "No.70 O.T.U. was at least 50% down on personnel and instructors". (AOC/4 Part I Encl.83A).
- (2) He noted that No.70 was already there; No.72 was committed, however, to be located at Carthago (Sudan); No.71 was to be removed from Ismailia to Gordon's Tree (Sudan) and the I.G. suggested Asmara instead; and he recommended that the additional fighter O.T.U. should be sited in Kenya. In the event, No.71 went to the Sudan, as planned, and No.73 was later formed at Aden.

should be eight Middle East O.T.Us in all - including two for the training on American heavy bombers which were planned to be delivered direct from America to the Middle East.

A.H.B. Draft
Narrative on
"Training" p.317.

This proposal for training heavy bomber crews was not pursued, however, as the policy was later adopted of training crews in the area of the aircraft manufacture for types which the replacement crews could ferry to the operational area.

Limited Development, Autumn 1941

A.O.C./4 Part I
Encl. 83A.

On 15th September a conference on O.T.Us was held at Cairo, with the A.O.C.-in-C., in the chair. "Air Vice-Marshal Capel (then acting as Air Officer Training) opened the meeting with the review of the situation, pointing out the various snags, such as lack of permanent locations, provision of satellites, lack of training aircraft and lack of ground and flying personnel."

Locations agreed on were as follows:-

- No.70 O.T.U. to remain at Nakuru.
- No.71 O.T.U. to be transferred to Gordon's Tree (Khartoum) for the winter and then to go to Carthago when the latter was vacated by No.72.
- No.72 O.T.U. to be removed from Gazouza to Carthago and eventually to Kenya.
- No.73 O.T.U. to form temporarily at Aden.

Each O.T.U. was to have two satellite landing grounds, in view of the large number of aircraft on establishment. At this time it was stated that Nos.70 and 71 O.T.Us were "at least 50% down on personnel and instructors". A small proportion of No. 72 O.T.Us ground personnel was due to arrive in October, and in the meantime No.211 Squadron (acting as No.72 O.T.U. nucleus) was up to establishment in personnel.

D.D.Ops.(Overseas)
Formation of O.T.Us
in M.E.Encl. 10A.

On 4th October Air Ministry issued revised establishments for the O.T.Us. Details of the establishments, including planned output, are given at Appendix N.

A.O.C./4 Part I
Encl.87A.

The Middle East planned during October that No.70 O.T.U. should be at three quarters strength in aircraft; No.72 at one third strength, and No.71 (excluding A.C. element)(1) should be at half progressing to three-quarters strength. Even this programme could not be adhered to (2)

/however

- (1) Arrangements were then in hand for the A.C. element to be formed as a separate O.T.U.(No.74) at Agir.
- (2) Aircraft position as reported by A.C.M.S.O. on 13th October was as follows:-

No.70 O.T.U.	No.72 O.T.U.	No.71 O.T.U.(Fighter)
Blenheim IV 46	Blenheim IV 27	Hurricanes 20
Blenheim I 8	Blenheim I 6	Tomahawks 9
Oxford 8	Oxford 0	Harvards 5

Compare above figures with establishments at Appendix N(AOC/4 Pt.I Enc.87A)

On 29th October, A.V.M. Capel (A.O.T.) said that additional aircraft were not arriving at the O.T.Us as promised. e.g. No.71 O.T.U. had been promised 12 Hurricanes and 12 Tomahawks - two Hurricanes had arrived and the unit had three Tomahawks less than before. At No.72 one Blenheim out of 5 promised had arrived. At No.70 a large number of aircraft were Cat.I apparently due to lack of spares (Idem Encl. 88A). As regards trainer aircraft, Air Ministry had then arranged to ship many requirements, including some direct from U.S.A., but the full effect of this action could not be felt in M.E. till 1942. (D.D.Ops(Overseas)Formation of O.T.Us. in M.E. Encl.18A).

however, and the expected expansion in November (when 'Crusader' was in full swing) also failed to materialise. As regards instructors and personnel, by November the position at No.70 O.T.U. was considered satisfactory; the position at No.71 had (theoretically) improved due to the arrival of additional instructors from home,⁽¹⁾ and at No.72 O.T.U. instructor personnel had reached 51% of establishment and more staff was on the way from the United Kingdom.

A.H.B. Draft
Narrative on
"Training" ps.317
and 318.

In spite of gradual improvements the capacity of the O.T.U.s was still slight, so that a large pool of aircrew awaiting O.T.U. courses accumulated. Accordingly, considerable numbers of fighter pilots and medium bomber crews had to be sent from the United Kingdom to reinforce the first-line.⁽²⁾ The rest of the first-line's requirement had still to come from operational training in the Squadrons.

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Part II.
Encl.229A and
passim.

So far as 'Crusader' was concerned, the undeveloped condition of the Middle East Operational training organisation meant, in the words of the A.O.C.-in-C., that a "large proportion of pilots (were) green". The reinforcement of fighter pilots from Fighter Command, in particular, was an absolute necessity.

Further Development Hampered

A.H.B. Draft
Narrative on
"Training" p.318.

In addition to the O.T.U.s not being able to supply adequate trained aircrew for the beginning of the 'Crusader' offensive in November, the plan to have them in full operation by the Spring of 1942 was also thwarted.⁽³⁾ A major factor in this connection was the fact that aircraft destined for the Middle East had to be diverted to a great extent to India and the Far East owing to the entry of Japan into the war.

By a combination of circumstances, therefore, the early development of the M.E. O.T.U.s was slow and disappointing. It is of interest to note that it was not until the palmier days of 1943, when the tide of battle had receded from the Middle East, that training had the opportunity of full development.⁽⁴⁾

/Training

- (1) The C.O., of No.71 O.T.U., however, submitted that many of the instructors posted had never flown operationally and were of little or no use. (No.71 O.T.U. November. O.R.B. Un-numbered Appendix).
- (2) Some details have been given on page 33.
- (3) In actual fact the M.E. O.T.U. organisation in the Spring of 1942, (No.70 (L.B.) O.T.U. at Nakuru: No.72 (L.B.) O.T.U. at Carthago: No.71 (F) O.T.U. at Gordon's Tree: and No.74 (A.C.) O.T.U. at Agir) could turn out trained aircrew only at the monthly rate of 35 fighter pilots and 36 bomber crews - less than the output in October, although in some cases the courses were longer. The rest of the first-line's requirements had still to come from operational training elsewhere. (A.H.B. Narrative on "Training" p.318).
- (4) In the autumn of 1942, the monthly output of the M.E. O.T.U.s was only 24 light bomber crews, 45 fighter pilots and 15 A.C. pilots. In the Spring of 1944 the monthly output of ten M.E. O.T.U.s, feeding squadrons in the Mediterranean and Pacific theatres, was 176 bomber, L/R fighter and G.R. crews and 176 fighter or reconnaissance pilots. (R.A.F. Med. Review No.6 Page 145.).

Training in the Squadrons

Apart from the virtual O.T.U. work carried out in squadrons during the 1941 lull, it is necessary to emphasise that the extensive re-arming and formation of squadrons implied considerable conversion training.

Some indication of the work involved is given by comparing the Middle East orders of battle in respect of those types for which the Middle East had training commitments - single-engined fighters, medium (later re-classified as light) bomber types and Army Co-operation aircraft - at the beginning, the middle and the end of the 1941 lull. In many cases the squadrons mentioned below were not, of course, up to full strength and in some cases, for various reasons, were not immediately ready for operational employment.

A.H.B. VB/11/2
Overseas Squadrons
Aircraft Position
(E.1(C)(Z.A.))
and Orders of
Battle M.E.,
F.O.S. and M.E.,
W.O.S.

As at 15th June in the Middle East (including Iraq and Aden, but excluding Malta) there were seven Hurricane squadrons (including one still officially classed as a Blenheim squadron): two Tomahawk squadrons: six Blenheim IV squadrons (including one still officially classed as a Wellesley squadron, but excluding one already equipped with Hurricanes and one with Marylands, two with a few Blenheim Is and two with a nil strength): three Maryland squadrons (including one still officially classed as a Blenheim squadron): three Army Co-operation squadrons, including two still officially classed as Lysander squadrons but equipped with Hurricanes, and one with an assortment of Lysanders and Gladiators: one squadron of obsolete Wellesleys (excluding one re-equipped with Blenheims and one with a virtually nil strength): two squadrons of obsolete Vincents: and one squadron of obsolete Gladiators, beginning to re-arm with Tomahawks.

Idem

Three months later (15th September) the Hurricane squadrons had increased to eleven (including one still officially listed as a Blenheim squadron, but excluding one with a nil strength): the Tomahawk squadrons then numbered four: squadrons flying Marylands numbered six: there were still five Blenheim IV squadrons (including one still partly armed with Vincents, but excluding one re-armed with Hurricanes and five with a nil strength): two Army Co-operation squadrons equipped with Hurricanes and one with obsolete Audaxes (excluding two with a nil strength): one squadron of obsolete Vincents: and one of obsolete Wellesleys.

Idem

By 15th November, Hurricane squadrons numbered thirteen (including two armed with Hurricane IIs and one still partly armed with Gladiators, but excluding one with a nil strength): Tomahawk squadrons had increased to five (all Mark II): there were four squadrons flying Marylands: (1) one former Maryland squadron partly rearmed with Bostons: seven Blenheim IV squadron including one still partly armed with Vincents but excluding two with a nil or virtually nil strength): three Army Co-operation squadrons equipped with Hurricanes and one with obsolete Audaxes: and there were still the obsolete Vincent and Wellesley squadrons.

/In

- (1) One of the six mentioned in the preceding paragraph, was switching over to Bostons (No. 24 Squadron, S.A.A.F.) and another had re-armed with Beauforts (No. 39 Squadron).

In brief, during the five months' lull in the main ground battle training had been carried out to ensure the doubling of the fighter force; the introduction of a hard-hitting American-type day bomber force; the re-creation of an adequate Blenheim force, pending the substitution of more modern types; and the strengthening of the Army Co-operation squadrons.

Inadequate Training in Tactics

Within the squadrons themselves, however, there had been insufficient operational training and tactics were largely out-moded. Some advance was made in introducing new tactics in the Desert, particularly in respect of fighters and Army Co-operation aircraft, after the appointment of A.V.M. Coningham as A.O.C., No. 204 Group in July, but matters were still unsatisfactory in this connection.

A.H.B. II J/27/1
D.Ops. (Overseas)
Inspector General's
Reports

The Inspector General reported in September that "there had been practically no training in operational units, partly because they have for the most part been busy on operations, partly through lack of the realisation and understanding of the necessity for such training, and partly through the absence of proper facilities One of the causes of neglect of training in operational units has been the weakness of the Training Staff at Headquarters, Middle East". (1)

In particular, the inadequacy of the fighter tactics for offensive action, due to the long period spent on local and shipping patrols, and the weakness of the Blenheim squadrons were not fully realised until preparatory operations for 'Crusader' had begun. The steps taken to remedy these deficiencies before the offensive opened are mentioned in Part V.

General

Idem

The Inspector General also reported that "disciplinary and administrative training was urgently needed". The fact was that the rapid expansion of the Middle East Air Force involved the influx of many inexperienced and partially trained officers and N.C.Os. There was no organisation in being for their speedy training; moreover, the Command was very short of Administrative officers, (2) particularly, and this made it impossible at that time to release them for training courses.

Wg Cdr. Finlayson
'Crusader' Report

More alarming was the tendency of some of the commanders of squadrons to under-estimate the importance of administration and discipline. The S.O.O., A.H.Q., W.D., referring to the preparatory 'Crusader' period in his report wrote: "The Blenheim squadrons were commanded by young and comparatively inexperienced C.Os who, although adequate as squadron formation leaders in the air gave little attention to administration, training, and squadron battle orders, and paid no attention to the development of a tight ground drill. There is a tendency amongst young C.Os to cultivate mistaken notions about being 'one /of

- (1) The measures taken to improve the control of training at Headquarters have been mentioned in Section Two of this part of the Narrative.
- (2) The A.O.A., in September said that he had 230 Administrative Officers who needed training.

of the boys'..... and to have immature ideas about discipline. Bonhomie and geniality are fine and necessary qualities, but where they are out of proportion to the personality and sense of responsibility of the C.O., they inevitably undermine his authority and breed an easy-going spirit which quickly degenerates to inefficiency and finally to a general lowering of morale". Before any real rot could set in, however, tightening up measures were taken, including the replacement of C.Os not fully up to their tasks.

The training of Administrative officers was not put on an adequate basis until courses were inaugurated in 1942.

SECTION FOUR - ARMY CO-OPERATION

Mention has been made in Part One of the narrative of the ineffective arrangement for air support for the Army obtaining up to the middle of 1941. In preparation for the renewal of the Cyrenaican struggle a revised system was evolved based partly on experiments carried out in Britain but more especially on the experience gained by exercises and actual warfare in the Desert.

Formation of No.253 Wing

No.253 Wing
O.R.B. and A.O.C.in C.
Correspondence
with C.A.S.

As early as 1st May, 1941, instructions were issued for the formation of an Army Co-operation Wing - No.253 (first called Air Component Wing) - under No.204 Group in the Western Desert "to carry out close support and tactical reconnaissance for the Army". It was laid down that "the Wing will be purely operational and will comprise one A.C. squadron, one fighter squadron and one Medium bomber squadron" (i.e. Blenheim or Maryland squadron, later reclassified as light bombers). The Wing's establishment was not filled, however, until July 1941. (1)

The first joint exercise carried out by the Wing with the Army occurred on 11th and 12th July, - "Western Desert Force Exercise No.3. No.451 Squadron R.A.A.F. (Hurricanes) was used for tactical reconnaissance and No.113 (Blenheims) squadron and No.229 (Hurricanes) Squadron for close support bombing and fighter activity, respectively.

In general, however, up to October the only squadron constantly under the Wing was No.451 (A.C.) Squadron, R.A.A.F. although other squadrons were attached from time to time, including No.274 (Hurricane) Squadron, No.113 (Blenheim) Squadron No.12 (Maryland) Squadron, S.A.A.F. and No.33 (Hurricane) Squadron. The composition of the Wing during the 'Crusader' preparatory operations and the absorption of the Wing's staff into A.H.Q., W.D., during 'Crudader' proper are considered in Part Five of the narrative.

/Further

- (1) Wg.Cdr. Charles (who became O.C. No.253 Wing) and a number of other Army Co-operation trained pilots were sent out by Air Ministry at the end of June to the "trained numbers" requested by the A.O.C.-in-C. (A.O.C.1 Part I encls. 113B and 115A.).

Further Study of Air Support Problems

C.-in-C. M.E's
Despatch July -
October 1941.

War Office File
43/RAF/640

In July an Inter-Service Committee of representatives of the Army and R.A.F. was formed to study the whole question of air support. Further experiments were carried out in August and an Air Support Conference was held in Cairo on 4th September "to discuss the policy to be adopted in the Middle East for the provision of Air Support for the Army".

M.E. (Army and R.A.F.) Directive on Direct Air Support

(1) General Aspects

Idem

On 30th September the M.E. (Army and R.A.F.) Directive on Direct Air Support (M.E. Training Pamphlet (Army and R.A.F. No.3) was "issued as a result of recent experiment and trial". It was to be adhered to in principle in future operations, but could be modified in detail to suit local conditions and special circumstances.

Direct air support (1) was defined as "air action having an immediate effect on the action of our own ground forces in battle". Such support could be pre-arranged or impromptu; it was the latter which presented difficulties.

Effective direct support pre-supposed the enjoyment of air superiority in order to limit enemy air interference. As the weight of the air attacks at this stage would usually not be heavy it was realised that the main effect would most likely be moral rather than material. "Air support not only destroys the morale of the enemy, but also raises that of our own troops".

There were two aspects of direct support:

- (a) Defensive support to impede or halt the enemy's ground offensive in general and to counter his dive-bombers in particular.
- (b) Offensive support which aimed at the destruction of enemy ground forces with the intention of facilitating the offensive of the military forces on the battlefield.

For defensive support against an enemy ground offensive the most suitable targets were normally outside the range of ground observation and had therefore to be selected by air reconnaissance. A tentacle system was necessary, however, as a second means whereby commanders of leading brigades could rapidly communicate their requirements in air support. Air defence against dive-bombers "in its biggest aspects" could only be achieved by complete air superiority. There was no time for fighters to be called up once an attack had started. As defence by the wasteful means of standing patrols was quite "out of the question" the best solution appeared to

/be

- (1) The use of the term "close support" was described as "leading to confusion owing to the impossibility of defining its limitation".

be fighter sweeps at the time bomber raids were most likely. (1) The most constant protection would, accordingly, have to be provided by ground A.A. defences.

It was in offensive direct support, however, that the R.A.F. was most likely to assist ground operations although there were not available aircraft suitable for dive-bombing. Attacks by fighters were something akin to the German Stuka attacks, but although these were probably more effective than bomber attack they could not normally be expected until a considerable degree of air superiority had been obtained.

Normal direct support accordingly, would be given by medium bombers (later reclassified as light bombers). These attacks would consist of:-

- (a) level bombing (6-8,000 feet) in which sticks of bombs falling at pre-determined intervals were released automatically, the bomb-aimer of the leading aircraft sighting for the whole formation.
- (b) shallow-dive attack, in which the aircraft dived from medium altitudes to approximately 2,000 feet, levelled out and stick-bombed as in (a) above.
- (c) low-level attack (1,000-3,000 feet) in which the aircraft maintained constant height at low altitude during the approach, actual bombing and "get away". The pilot normally aimed and released bombs, the aircraft attacking individually. This form of attack could only be carried out when ground opposition was expected to be slight.
- (d) ground-level attack (below 50 feet) in which the aircraft never climbed above 50 feet during the entire raid, the object being to achieve complete surprise. Unless the exact position of the target was known, however, and was clearly discernible from low level this form of attack was useless. In general, it was considered unsuitable for desert targets.

It was believed that the 250 lb. bomb would produce more effect (including moral) than 40 or 20 lb. bombs. These smaller bombs were only useful against concentrations of troops and vehicles and the enemy had learned to avoid such concentrations. Thus the 250 lb. G.P. bombed fuzeed instantaneous was considered the most suitable one available for direct air support bombardment, except in the rare cases of ground level bombing where an eleven seconds delay fuze had to be used.

(2) Characteristics of Direct Air Support Bombing

The Directive on Direct Air Support pointed out that by means of direct air support bombing it was possible suddenly to produce a considerable volume of fire to

/assist

- (1) It was pointed out that the German was regular in his habits; in particular, experience showed that his most usual time for dive-bombing was just after first light.

assist formations which had outstripped their artillery. Bombing was not to be used, however, when other ground support, such as artillery and mortars, was sufficient. Unlike artillery it would be generally impossible for direct air support aircraft to sustain their attack for a prolonged period and air attack did not tend to become more accurate as it proceeded. The success of the attack would depend on the extent of the enemy ground and/or air opposition, good visibility and a target which could be clearly recognised from the air. To avoid the accidental bombing of our own troops it was laid down that targets should never be within 500 yards of them.

Suitable targets for direct support bombing were given as:-

- (a) Concentrations of troops or vehicles which could be surprised in close formation and would have difficulty in dispersing.
- (b) Headquarters and Signals Centres, where these could be accurately located.
- (c) Artillery positions in the open (the effect being more likely to kill or disperse gun crews rather than knock out guns).
- (d) Supply echelons.
- (e) Crossing points over obstacles.

The above-mentioned targets were normally outside the range of ground observation and would usually be selected by air reconnaissance.

(3) Application of Direct Air Support

In order to ensure that the maximum effort was obtained from the available direct air support aircraft an Air Support Control was to be used to meet, modify or reject reports from support received from various sources.

The Headquarters of the R.A.F. formations which might be called upon to give Direct Air Support was to be organised with one or more mobile advanced headquarters, which, combined with an Army element was to be known as Air Support Control (A.S.C.).

The two elements would comprise:-

ARMY

Two staff officers plus a small staff.
A wireless organisation consisting of:-

- (a) Seven forward links known as tentacles for communicating with the Control Headquarters. The tentacles could be allotted to those lower formations which the higher commander decided should be given the means of calling for air support.
- (b) Three wireless sets at the Control Headquarters for communicating with the tentacles.

/R.A.F.

R.A.F. The Formation Commander or his deputy plus a small operational staff.

- (a) Eight wireless sets known as Forward Air Support Links (F.A.S.Ls) for controlling air support aircraft in the air and for listening to reconnaissance aircraft.
- (b) Two wireless sets known as Rear Air Support Links (R.A.S.Ls.) for communicating directly to landing grounds.
- (c) Four wireless sets for use at four landing grounds.

The plan of Communications for an Air Support Centre is given at Appendix O.

(4) Allotment of A.S.Cs., Tentacles and F.A.S.Ls.

It was the intention to provide A.S.Cs on the basis of one to each Corps and one to the Armoured Division. For 'Crusader', however, it was not intended to provide the Army element of an A.S.C. allotted to the Armoured Division as all H.Qs in such formations already had operational wireless channels which would be used for passing requests for air support.

The H.Qs of the A.S.C. would be established as part of the H.Q. of the formation fighting the battle. This would normally be a Corps H.Q. or Armoured Division H.Q.

Tentacles and F.A.S.Ls were to be allotted to brigades of infantry divisions to enable forward commanders to call for direct air support. Tentacles and F.A.S.Ls for listening purposes were to be allotted to Infantry Division H.Q.

(5) Selection of Targets

The A.S.C. organisation thus allowed requests for air support to be received from:- tactical reconnaissance aircraft which happened to note suitable targets; a support reconnaissance aircraft specially sent up by A.S.C. H.Qs to look for suitable targets; and forward formation commanders by means of the tentacles allotted to them.

The selection of targets on the basis of air reconnaissance was to be made by the following method. The military commander indicated to the R.A.F. formation commander likely areas for direct support targets. On this information the R.A.F. commander arranged the air reconnaissance. Request for air support on selected targets was made by R/T by the support reconnaissance aircraft to A.S.C. H.Qs. The control staff decided whether the request should be accepted or refused and the aircraft and the appropriate ground formation were informed accordingly.

Requests from forward troops for air support was to be made by W/T from the tentacles. The messages were received at the A.S.C. H.Qs by the G.S.O.2. The Control staff accepted or refused the request according to the suitability of the target and availability of aircraft,

the formation originating the request being notified. If accepted, the request was passed by the R.A.F. Commander over the R.A.F. signal system to the appropriate landing ground. A.S.C. informed the tentacle of the time of attack and number of aircraft so that the ground commander could make any necessary adjustment in his plans.

In order to reduce to a minimum the time taken in transmitting calls for air support, standard types of messages were adopted. The target was to be described by means of the Reconnaissance Code and authorised abbreviations. The number of aircraft required was decided at Control H.Q. on the basis of the type of aircraft, availability of aircraft and other demands.

As the location of our own troops and the times of attack and rendezvous had to appear on the message simple map references and time codes were used throughout. Such codes were to be originated by the H.Q. of the formation to which the A.S.C. was allocated. Furthermore, as medium, low-level and shallow dive attacks could not achieve results as accurate as these from dive-bombing, it was necessary to lay down a bomb-line beyond which it was not safe to attack. Bomb-lines were to be expressed as ground features wherever possible and not as grid-lines.

(6) Availability of Aircraft

In respect of the state of readiness of aircraft the system found most satisfactory in trials involved 50% of aircraft at "instant readiness"; 25% ready within two hours; and 25% "released".

Wings (or airfields) had to report to the A.S.C., one hour after the return of a mission, the number of aircraft returned and available for further sorties. The interval of one hour was allowed for inspection refuelling and re-arming.

(7) Indicating the Target

The various ways of indicating the target to the support aircraft were:-

- (a) The formation was met at the R.V. by a reconnaissance aircraft and led to the target.
- (b) It was directed from the ground by means of ground strips or R/T from a F.A.S.L.
- (c) It was given the exact location before leaving the landing ground.

(8) Recognition Signals

An efficient recognition system between aircraft and ground troops was essential. The system evolved was based on a flying height of 6,000 feet and included the use of coloured cartridges, Verrey lights and ground signs.

/Modifications

Modifications of A.S.C. for 'Crusader'

Wg.Cdr. Geddes'
Report (CS. 14280
Appendix B).

The A.S.C. organisation laid down in the M.E. Directive was modified prior to the opening of the 'Crusader' offensive as a result of two later exercises. In particular, air support was controlled by the A.O.C., W.D., at Battle H.Q. The function of the Corps link was limited to relaying messages (without sifting) from reconnaissance aircraft and tentacles straight to Battle H.Qs and to provide warning to the Wings or Landing grounds pending final orders from the A.O.C.

Further details of the final arrangements for providing direct support during 'Crusader' are given on page 129.

PART IV

REVIEW OF AIR OPERATIONS ASSOCIATED WITH THE
LIBYAN CAMPAIGN, MID-JUNE TO MID-OCTOBER, 1941

While advantage was being taken of the post "Battle-axe" lull in the Desert conflict to reinforce and reorganise our Middle East forces, little relaxation was possible of the air effort. In this part of the narrative the scope of the air operations directly associated with the Libyan campaign⁽¹⁾ prior to the beginning of the preparatory "Crusader" air operations (beginning in mid-October) is briefly reviewed.

In general terms, as indicated in Part Two, this air effort was directed against hindering the enemy's build-up in Libya, while at the same time ensuring the safety of our Egyptian and Malta bases and the holding of Tobruk.

SCALE AND DIRECTION OF BOMBER EFFORT

From 16th June to 14th October inclusive, the following bomber effort was directed against the enemy's reinforcing of Libya:-⁽²⁾

A. From Egypt and Western Desert.

M.E.F.O.S.
June to
October, 1941

I. Enemy Ports, Bases, Lines of Communication and (to a slight extent) Enemy Positions:-

No. of raids:	265
Heavy Bomber effective sorties:	855
Medium (and miscellaneous) Bomber effective sorties:	421

II. Enemy Shipping in Transit.

No. of Attacks:	Approximately 7 (excluding attacks carried out primarily in connection with the Syrian campaign, but including some specifically against submarines).
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Heavy Bomber effective sorties:	1
Medium (and miscellaneous) Bomber effective sorties:	Approximately 12

III. Enemy Airfields and Landing Grounds

No. of raids	95
Heavy Bomber effective sorties:	178

/Medium

- (1) The air operations considered thus exclude those currently carried out in connection with the campaigns in Syria, Persia and Abyssinia.
- (2) Heavy (later re-classified medium) sorties bomber comprised Wellington sorties.
Medium (later re-classified light) and miscellaneous bomber sorties comprised Blenheim, Maryland, F.A.A. and Fighter-bomber sorties (Malta only).

Medium (and miscellaneous)
effective Bomber sorties: 226

B. From Malta

I. Enemy Ports, Bases and Lines of Communication

No. of Raids: 132

Heavy Bomber effective
sorties: 474

Medium (and miscellaneous)
Bomber effective sorties: 279

II. Enemy Shipping in Transit

No. of Attacks: 43

Heavy Bomber effective
sorties: 6

Medium (and miscellaneous)
Bomber effective sorties: 203 (Excludes all sorties which
did not result in attacks
being delivered)

III. Enemy Airfields and Landing Grounds

No. of Raids: 44

Heavy Bomber effective
sorties: 1

Medium (and miscellaneous)
Bomber effective sorties: 112

Classification of Supply Targets

The supply targets attacked can be divided into three main categories, corresponding to the initial (for all practical purposes), the middle and the end sections of the enemy's supply line to Cyrenaica:-

- (1) Production centres and ports of embarkation in Southern Italy, Sicily, Greece and Crete.
- (2) Shipping in transit.
- (3) Ports of off-loading, dumps and transport in North Africa.

Bombing of Production Centres and Ports of Embarkation

The greater part of the enemy supplies for North Africa was concentrated at and shipped from Naples: the main targets there during the period under immediate review were:- shipping, harbour installations, railway and marshalling yards, oil storage tanks, a power station, an airframe works and a torpedo factory.

Naples, however, could be attacked from Malta only. The impracticability of maintaining a large bombing force on the

island, and the fact that Malta's main offensive effort could be directed more advantageously against shipping at sea and the main off-landing port of Tripoli, precluded the mounting of a strong offensive against Naples. Successful attacks, made largely for moral or diversionary purposes, were delivered by a total of 26 Wellingtons of No. 48 Squadron during July, but anything approaching a sustained effort was not attempted against the port until the "Crusader" preparatory period, beginning in mid-October. A full-scale bomber offensive against Naples was not practicable, in fact, until 1943, when powerful Anglo-American air forces could attack the port from Tunisian bases.

As a sustained effort against Naples was out of the question during the 1941 lull, Malta's main harrying activity against northerly supply targets was confined to near-at-hand Sicily, with a few intermittent raids on Southern Italian targets. These nuisance attacks, which comprised some 170 effective sorties, were carried out at various times by Wellingtons of Nos. 38 and 148 Squadrons and Fleet Air Arm Swordfish⁽¹⁾ and Fulmars, operating by night, and Marylands of No. 69 Squadron and Blenheims of Nos. 82, 105, 107 and 110 Squadrons, operating mainly by day. The targets attacked, excluding landing grounds, which are considered later, included:- Palermo (shipping, harbour installations, power station and sea-plane base): Augusta (submarine base, sea-plane base, oil depots, military barracks): Messina (ferry terminus, marshalling yards, oil storage tanks and sea-plane base): Catania (Marshalling yards and ammunition dumps): Ragusa (bitumen factory and railway): Licata (munitions factories and warehouses) Trapani (Shipping): Porto Empedocle (power station): Crotone (munitions factory, railway and shipping): Marina di Cantanzara (railway and factory).

The harrying air attacks on the Sicilian bases hindered to some degree the enemy's build-up, constituted a constant threat to the fulfilling of his communications and production time-tables and helped to undermine Italian morale.

Meanwhile, from August to mid-October, the restricted⁽²⁾ air effort of Egyptian bombers against enemy production centres and departure ports was directed against targets in this category in Greece and Crete. In addition to the need for limiting the enemy's build-up in the Eastern Mediterranean, these attacks were prompted by the fact that the successful shipping strikes from Malta (considered later) induced the enemy to route his shipping whenever possible well clear of the island and involved the use of Greek ports for the supply of Cyrenaica. A small Wellington effort was expended against Heraklion (harbour, stores dumps and barracks) in August and a brief series of small-scale Wellington attacks were carried out against Piræus (shipping, harbour installations, oil storage tanks, chemical factories and warehouses) during the first half of October. Three heavier raids, comprising 89 effective sorties by No. 257 Wing's Wellingtons were also delivered against the banks and entrances to the Corinth Canal, which provides a short route between the Ionean and Aegean Seas and was in frequent use by the enemy particularly for transporting oil and petrol. The attacks were reported to have blocked or partially blocked the waterway for appreciable periods.

M.E.W.O.S.
No. 6
Appendix H.

/Strikes

- (1) F.A.A. Swordfish carried out mining as well as bombing.
- (2) Restricted because better dividends were obtainable by attacks on ports of off-loading and stores dumps in Cyrenaica.

Strikes on Shipping at Sea as Currently Reported

A.O.C.-in-C's
correspondence
with C.A.S.
etc. Part II
Encls. 161A.

The surest way of preventing vital supplies reaching the enemy's forces in North Africa, was to sink the supply ships while en route. As the C.A.S. put it in late August: "Although heavy bombers may give some results on embarkation and disembarkation ports, experience on our ports here shows a very heavy scale of attack is necessary Sinking of enemy ships is more effective and produces more lasting results."

Sending well-escorted shipping to the bottom of the ocean by air action was, however, a more difficult, hazardous and complex task than routine bombing and required, inter alia, thorough, specialised reconnaissance and trained ship-striking forces.

Malta was well situated athwart the enemy's sea line of communication to Tripoli to take toll of reinforcing shipping and endeavours were made to operate the largest practicable and available ship-striking air force from that base. The general plan involved the employment of reconnaissance A.S.V. Wellington, Maryland and Blenheim aircraft on regular and extensive sea searches, covering an area extending north-west across the Ionian Sea to Cephalonia, from there south-west to Benghazi and back through the Gulf of Sirte. Sightings were followed up by Blenheim and Wellington bombers or F.A.A. torpedo-carrying Swordfish or Naval forces.

M.E.W.O.S.
No. 6 Appendix
H. and
Appendix A.

II J.1/29

During the period under immediate review (16th June to 14th October) Malta-based aircraft carried out a total of 210 effective sorties in attacks on enemy vessels plying the Central Mediterranean. The great majority of the attacks was carried out by Blenheims (at various times Nos. 82, 105, 107 and 105 Squadrons), operating by day, and torpedo-Swordfish of No. 830 Squadron, F.A.A., operating by night. In June, also, Marylands of No. 69 Squadron helped with the day attacks and, from September onward, a Wellington detachment aided the effort against shipping at night. The most high day attacks of the Blenheims were particularly fraught with danger and heavy casualties were inevitable.

A.O.C/7Malta
Encls. 138B
and passim.

The results achieved by Malta-based aircraft against enemy merchant shipping at sea during the four months June to September, inclusive, were currently assessed at H.Q. R.A.F. M.E.,⁽¹⁾ as follows:-

II J.1/29

June:- Two vessels (7-900 tons each) sunk; five vessels (one of 3-4,000 tons, one of 5-6,000 tons and three (tonnage unknown) damaged; and results unknown in respect of another three vessels.

July:- Three vessels (5-9,000 tons each) and one schooner sunk; and three vessels (5-9,000 tons each) damaged.

August:- Three vessels (6-9,000 tons each), one vessel of unknown size, two small tankers and one schooner sunk; two vessels (4-5,000 tons and 8-9,000 tons each), one

/vessel

(1) The H.Q. R.A.F. M.E. classified results in "Monthly Tables of Attacks on Shipping and Submarines" (II J.1/29) did not correspond entirely to the analysis compiled by Air Ministry War Room from the Committee reports of the Directorate of Naval Intelligence (H.Q. Med/S.247/49/4/Air). The H.Q. R.A.F. M.E. tables, however, provide break-down of estimated results according to aircraft bases and sinkings at sea and in harbours.

Enemy Merchant Shipping Losses (contd.)

vessel of unknown size, one tanker and one schooner probably sunk; five vessels of unknown size and five vessels (varying from 5,000 to 10,000 tons each), damaged; and results unknown in respect of attacks on two other vessels.

September: - Three vessels (approximately 2,000, 7,000 and 13,000 tons respectively), one vessel of unknown size and two schooners sunk; five vessels (varying from 3,000 to 13,000 tons each), and two of unknown size probably sunk; six vessels (varying from 6-9,000 tons each), two vessels (approximately 10,000 and 13,000 tons each), one of approximately 20,000 tons, four of unknown size and one schooner damaged; and results unknown in respect of attacks on four other vessels.

Idem.

The success achieved by Malta-based aircraft against enemy naval vessels is outside the scope of the present narrative and is considered in the narrative of the Air/Sea War in the Mediterranean.

Egyptian-based squadrons were less favourably placed than Malta aircraft for shipping sorties and the number of effective sorties flown on this activity was low. The attacks in this category flown during June and July were made in connection with the Syrian campaign and did not directly affect the Libya campaign. In August and September the few sorties flown, mainly by Blenheims of No. 203 Squadron, were largely directed against enemy submarines. H.Q. R.A.F.M.E.'s assessment of results achieved against enemy shipping at sea during August and September was: - one merchant vessel of unknown size damaged and unknown results in respect of attacks on one merchant vessel and five submarines.

Idem.

Although the results of the air attacks from Egypt against shipping were meagre at this stage, reconnaissance was maintained to the fullest extent the inadequate force for the purpose allowed. The information obtained was, of course, equally available to the Navy and essential to our appraisal of enemy supply routes. During the earlier part of the period under review, No. 203 Squadron Blenheims and No. 230 Squadron Sunderlands carried out sea searches between Crete, Greece, Cyprus and North Africa at need. When, in September, the enemy increased the use of small vessels from Greece, No. 201 Group aircraft were provided with an advanced base at Fuka for the operation of reconnaissance Beauforts (No. 39 Squadron) and a striking force of Blenheims (No. 55 Squadron); long-range F.A.A. Swordfish then took over the commitment from Cyprus. In October two Beauforts were employed on a daily reconnaissance, flying together to Sapienza to fix position and then returning by different routes, the distance covered being approximately 1,050 sea miles. A further operation was subsequently instituted in which three aircraft flew singly on over-lapping rectangular searches to the eastern limit line of the reconnaissance aircraft operating from Malta.

A.O.C-in-C's
correspond-
ence with
C.A.S. Encls
170A and
passim.
M.E.W.O.S.
No. 6
Appendix
'H'.

It must be emphasised that the abovementioned results are simply the current assessments arrived at in the Middle East. The confirmed total losses inflicted by air and sea action arrived at by the collation of enemy records and the confirmed findings of the Admiralty Shipping Losses Assessment Committee are mentioned on page 70.

Bombing of North African Arrival Ports Etc.

Second to the sinking of enemy shipping in transit, the surest method of limiting enemy supplies was to bomb the enemy's off-loading ports in Tripolitania and Cyrenaica; harass, whenever practicable, his transport to the forward area and destroy his supply dumps.

In this connection, Tripoli, the enemy's principal arrival port for larger merchant vessels, was within the orbit of Malta's limited bomber force and the Cyrenaican ports and dumps could be continuously attacked by the Middle East's main bomber strength located in Egypt and the Western Desert.

M.E.F.O.S.

June to October,
1941

During the period 16th June to 14th October, Malta-based aircraft kept up a steady pressure against Tripoli, carrying out 72 raids involving 357 effective heavy bomber sorties and 101 effective medium and miscellaneous bomber sorties. The heaviest attacks were made during August and September as bad weather hindered the effort in the following month. The targets attacked included shipping, harbour installations, marshalling yards, petrol depot, military stores and power house. The night raids were carried out at various times by Wellingtons of Nos. 38 and 148 Squadrons and by F.A.A. Swordfish, which made harrying attacks and also mined the harbour, and the day effort by Marylands of No. 69 Squadron (in the earlier period) and Blenheims of Nos. 82, 105 and 107 Squadrons.

A.O.C./47 Malta.
Encls. 104A.

The A.O.C., Malta (A.V.M. Lloyd), was of the opinion that owing to the concentration of good bombing targets "heavy bombs on Tripoli would be decisive in closing the port." During the 1941 lull it was not possible to drop sufficient quantities of heavy calibre bombs (one thousand pounders or more) to put this theory to the test, but Malta's attacks caused considerable dislocation of off-loading performances and a very appreciable destruction of supplies. The supplies sent eastwards by coastal shipping or road transport also came within Malta's orbit; offensive shipping sweeps were carried out in the Gulf of Sirte and transport on the coastal road was attacked from time to time by Blenheims, Marylands and F.A.A. Fulmers. These attacks, although inevitably on a small-scale, paid good dividends both in material damage and moral effect.

The vital distribution centre in the enemy's supply system to his forward area was Benghazi,⁽¹⁾ the chief port and capital of Cyrenaica. Supplies arrived by sea - both direct and via Tripoli - and, as mentioned above, by road from Tripoli. Although supplies were distributed quickly there were necessarily many large supply dumps in the Benghazi area. The main harbour is contained by an inner and outer breakwater on the north side and another breakwater on the south. Within the harbour, to facilitate off-loading and disembarkation of personnel, use was made of five moles. Apart from shipping and the harbour facilities, a rich variety of targets included the railway (which ran to Barce, 68 miles, and southwards to Solluch, 35 miles, as well as local lines), stores targets (including munitions), M/T depots and parks, W/T stations and military barracks. The attacks on airfields in the area are considered later.

M.E.F.O.S.

June to
October, 1941

During the four months period under review a constant night offensive was directed against Benghazi by No. 257 Wing's Wellingtons, comprising 102 raids and the flying of 578 effective sorties.⁽²⁾ During August, also, this night effort was supplemented by a few sorties flown by Blenheims of No. 113 Squadron and Marylands of No. 12 Squadron, S.A.A.F.

/Although

(1) Total capacity of the harbour at this time was some 30,000 tons per month (Vice Admiral Weichold's Report Part 1 Para. 63).

(2) See pages 105 & 106 for fuller details.

Although this constant bombing effort succeeded in limiting the enemy's use of the port(1) it was fully realised that an even stronger effort was necessary to cut the enemy's Cyrenacian supply-line effectively. Longer range heavy bombers were clearly required, but were not then available. Pending the arrival of American heavy bombers in strength, the attacks on Benghazi during the next month (mid-October to the opening of the ground campaign in mid-November called for an intensification of the night effort, the employment of bombs of a heavier calibre (2) and a day effort (3) to ensure sustained interference. The general effects of our bombardment of Benghazi are considered in some detail later, on page 107.

In addition to the pre-occupation with Benghazi during the four months under review, regular attention was paid to Bardia (a small port used by small craft from Crete and Greece, with reserves of petrol and ammunition in the vicinity) and Derna (a small port used for schooner traffic, with a variety of supply dumps, M.T. and A.F.V. repair shops and military barracks in the general area). The effort against Bardia, excluding attacks on enemy transport tanks and encampments in the vicinity, comprised 35 heavy and 287 medium and miscellaneous bomber effective sorties against Derna, 70 heavy and 10 medium bomber effective sorties. Bardia, in particular, received attention from Marylands and Blenheims by day as well as the night Wellington, Albacore and medium bomber effort. Other supply targets periodically attacked included the railway and workshops at Barce and forward dumps in the Gambut area, the efforts against the latter being made mainly by escorted Marylands of No.12 Squadron, S.A.A.F., operating by day.

Total Enemy Merchant Shipping Losses(4)

(a) As currently assessed by the Admiralty Shipping Losses Assessment Committee

The restriction placed on the enemy's reinforcing of Libya by air action can best be indicated by the assessment of losses inflicted on enemy merchant shipping. As already mentioned,

/the

- (1) There were throughout the period queries from Air Ministry as to whether the M.E. Wellingtons were employed to full capacity. Air Marshal Tedder writing to the C.A.S. at the end of September stated: "I have had an analysis prepared which can be compared with one got out by A.M. War Room R.O.2. for D.B.Ops. The average sorties per squadron of Wellingtons of No.3 Group over a period 8th June to 2nd August was just over 25 sorties per squadron per week: the average for our Wellingtons is 22-28. I am surprised it compares so favourably, in view of the fact that our sorties are longer, the flying hours involved for each operational sortie are greater and in view of the difficulties of maintenance under our conditions and without the support of the makers". (A.O.C.-in-C's correspondence with C.A.S. etc. part II enclosures 184B).
- (2) Examination of bomb damage in Syria made it perfectly clear that except as an anti-personnel weapon the 250 lb. bomb (was) positively valueless" (A.O.C.-in-C's correspondence with C.A.S. Part II Enclos. 184B). Increased stocks of 1,000 lb. bombs and a limited number of 4,000 lb. bombs were available for "Crusader" operations.
- (3) S.A.A.F. Marylands began their day efforts on 14th October.
- (4) It should be noted that casualties inflicted on enemy naval vessels by sea and air action are not considered in this narrative as they are dealt with in the narrative of the Air/Sea war in the Mediterranean.

the main sinkings through air action were effected by Malta-based aircraft covering the Central Mediterranean. Comparatively few ships were sunk in harbour; of the combined air and sea sinkings during August, for example it was estimated that only 6% was sunk in harbours.

II J1/29.

H.Q.Med/S. 247/
49/4.Air.

The Admiralty Shipping Losses Assessment Committee currently estimated the casualties inflicted on enemy merchant shipping in the Mediterranean by sea and air during the period 1st June - 5th October, 1941, as follows:-

	<u>Sunk or Con- Structive Loss</u>	<u>Seriously Damaged</u>	<u>Damaged</u>
<u>June</u>	71,014 tons	11,400 tons	63,400 tons
<u>July</u>	74,113 tons	55,800 tons	64,230 tons
<u>1st August to 7th Sept.</u>	91,844 tons	58,190 tons	62,320 tons
<u>8th Sept. to 5th October.</u>	99,156 tons	69,600 tons	39,300 tons
TOTAL	336,127	194,990	229,250

Idam.

The results achieved by air action, June to September, 1941 were assessed thus :-

Month	Aircraft	Sunk or Constructive Loss No. Tonnage	Seriously Damaged No. Tonnage	Damaged No. Tonnage
June	F.A.A. Malta Blens Other a/c	- 1 1 8,000 1,500	- 3 - 11,400 -	3 2 4 27,000 13,400 23,000
	TOTAL	2 9,500	3 11,400	9 63,400
July	F.A.A. Malta Blens Other a/c	2 6 1 9,800 20,300 2,500	2 7 - 11,000 37,800 -	- 6 3 - 44,230 18,000
	TOTAL	9 32,600	9 48,800	9 62,230
Aug.	F.A.A. Malta Blens Other a/c	6 3 1 35,560 4,300 6,000	3 5 - 16,200 8,219 -	- 7 4 - 29,620 16,200
	TOTAL	10 45,860	8 24,419	11 45,820
Sept.	F.A.A. Malta Blens Other a/c	2 5½ 1½ 14,000 11,972 4,000	7 4 - 43,000 30,200 -	1 2½ 4½ 8,000 20,000 21,000
	TOTAL	9 29,972	11 73,200	8 49,000
	AGGREGATE	30 117,932	31 157,819	37 220,450

Thus in the official estimates of shipping casualties in the Mediterranean June to September, 1941, the Middle East Air Force was credited with well over 35% of the total tonnage of enemy merchant shipping estimated as sunk and for the greater part of the shipping claimed as damaged.

A.H.B.
II J.1/29

H.Q. R.A.F., Middle East, issued some tentative conclusions about the interference with the enemy's main stream of reinforcing shipping between Italy and the North African ports. These conclusions are interesting but unconfirmed. It was estimated that in August the Royal Navy and R.A.F. together sank 24% of the total sailings (88% of the shipping sunk being south-bound and thus cargo-carrying) and in September 50% of the total sinkings (91% of the shipping sunk being south-bound).

To the toll taken of enemy cargoes must be added the R.A.F.'s appreciable but unassessable destruction of supplies in Libya and constant interruption of off-loading.

(b) Confirmed Enemy Shipping Losses (Identified Vessels)

Appendix P

The figures quoted in the preceding sub-section are the official estimates issued during the war. The confirmed losses of identified enemy merchant ships (based on enemy records and later confirmatory reports of the Admiralty Shipping Losses Assessment Committee) were as follows:-

<u>June</u>	Total tonnage sunk in the entire Mediterranean from all causes: 49,732 tons (including 31,809 tons sunk by the Royal and Allied Navies and 13,006 by the R.A.F. and F.A.A.). Losses adjudged on the African Convoy Route only: 44,068 (including 26,145 tons sunk by the Royal and Allied Navies and 13,006 by the R.A.F. and F.A.A.).
<u>July</u>	Total tonnage sunk in the entire Mediterranean from all causes: 35,508 tons (including 20,136 tons sunk by the Royal and Allied Navies and 15,235 by the R.A.F. and F.A.A.). Losses adjudged on the African Convoy Route only: 26,191 tons (including 10,956 by the Royal and Allied Navies and 15,235 by the R.A.F. and F.A.A.).
<u>August</u>	Total tonnage sunk in the entire Mediterranean from all causes: 39,413 tons (including 17,255 tons by the Royal and Allied Navies and 22,158 by the R.A.F. and F.A.A.). Losses adjudged on the African Convoy Route only: 38,495 tons including 16,337 tons by the Royal and Allied Navies and 22,158 by the R.A.F. and F.A.A.).
<u>September</u>	Total tonnage sunk in the entire Mediterranean from all sources 96,048 tons (including 57,521 tons by the Royal and Allied Navies and 36,685 by the R.A.F. and F.A.A.). Losses adjudged on the African Convoy Route only: 70,700 tons (including 39,956 tons by the Royal and Allied Navies and 30,355 tons by the R.A.F. and F.A.A.).

It must be emphasised that the above figures refer entirely to merchant ships which have been identified by name. It is reasonable to assume that some ships sunk have not been definitely identified, particularly in the case of vessels of small tonnage.

An analysis of the causes of the sinking of identified merchant ships is given at Appendix P. It must be pointed out that the figures for the tonnage sunk on the African convoy route in this Appendix are subject to revision, as in certain cases although ships sunk were on routes known to be used by the enemy for the supply of North Africa they could possibly in some instances have been plying between Italy and Greece and Italy and Sicily only.

It may be noted that the confirmed figures of losses caused by air action exceed the official estimates for June and September, 1941, by 3,506 and 6,713 tons respectively; the confirmed figures for July and August are 17,365 tons and 10,742 tons(1) lower than the official estimates of losses caused by air action.

Shipping Losses as Reported by Vice-Admiral Weichold.

A.H.B.I
S.10.

An interesting report was written for Naval Intelligence in November 1945, by a German prisoner-of-war - Vice Admiral Eberhard Weichold (Chief German Liaison Officer with the Italian Naval Headquarters and C.-in-C., of German Naval Forces in the Mediterranean, June 1940 - March 1943) (2). The report is valuable in pointing out "the fundamental 'Continental' attitude of the High Commands of the German nation and of the forces" and the failure to appreciate the importance of the war at sea and that in the Mediterranean in particular.

Idem Part I
para.68.

In case this report should be accepted as wholly authoritative, it is necessary to point out that Vice-Admiral Weichold's figures of losses suffered by Axis shipping plying the North African convoy route must be accepted with reserve(3). In June, Weichold states that of the 118,000 tons of shipping space used on the African supply lines only 8,500 tons were damaged. As already mentioned, 44,068 tons of shipping adjudged on these lines and associated ports have been confirmed as sunk. For the following month (July) the Admiral quotes the figures of nearly 20,000 tons sunk and over 7,000 tons damaged out of 153,000 used as against the confirmed losses of 26,191 tons adjudged on the African convoy routes. "In August", Weichold states, "out of 150,000 tons, 36,000 were sunk and nearly 13,000 tons were damaged." In this instance the losses figure almost corresponds to the confirmed figures for identified vessels. In September Weichold puts the shipping in use at 163,000 tons, of which he states 49,000 tons were sunk and nearly 14,000 tons damaged. The confirmed losses of identified vessels adjudged on the African convoy routes was 70,700 tons.

A point worth noting is that even on the basis of Vice-Admiral Weichold's figures - which are apparently under-estimated so far as losses are concerned - the success of our sea and air action against the enemy's supply line to Libya is indisputable. It is admitted that in July well over 18% of the enemy's total tonnage used in the African convoy routes was put out of action; in August the figure was nearly 33%; and in September nearly 30%.

/Attacks

- (1) In order to make a true comparison allowance has been made for the confirmed sinking of a hospital ship of 13,060 tons, although this tonnage is not included in the table at Appendix P.
- (2) Vice-Admiral Weichold was relieved of his appointment by Admiral Raeder in March 1943, for his criticism of German Naval policy in the Mediterranean. The Vice-Admiral after his capture hoped to improve the German situation "by acquiescing to British demands" and categorically denounced "the false basic attitude of National Socialist Germany, especially in the sphere of world wide ethics". (A.H.B.I. S.10 Attached Correspondence).
- (3) Weichold compiled his report from copious notes taken from official documents which passed through his hands, but he was not able (according to G.S.O.3., 56 Infantry Brigade, 9th July, 1946) to enumerate these original documents.

Attacks on Enemy Air Bases

M.E.F.O.S. (Supplemented by O.R.Bs.) Owing to the over-riding commitment to cut enemy supplies, our counter air force operations were inevitably on a small scale. Attacks by Egyptian-based bombers, 16th June to 14th October, against enemy air bases in Cyrenaica and the Eastern Mediterranean absorbed 24% of their total effective bomber sorties against targets associated with the Libyan campaign: attacks of Malta-based aircraft against Tripolitanian and Sicilian landing grounds absorbed only 10% of their total effective bomber sorties.

The effort against the enemy's Cyrenaican air bases although small, was constant. The rear airfields at Benina, Tmimi, Martuba, Barce, Berka and Derna were periodically attacked at night by small forces of Wellingtons, Blenheims, Marylands and F.A.A. Albacores. The German fighters' main base at Gazala received somewhat more regular and concentrated attention and the forward landing grounds at Gambut, from September onwards, were subjected to occasional day raids by Marylands of No.12 Squadron, S.A.A.F.

Role of Western Desert Fighters

After operation "Battle-axe" had ended (18th June) offensive air operations over the forward area became spasmodic. During the lull in the ground fighting each side aimed at conserving its fighter strength, and the fact that bomber attacks, in the absence of close-support targets, were mainly directed against opposing build-up implied that fighter commitments were predominantly protective.

Squadron ORB's M.E.F.O.S. and S.D.225 Appendices to H.Q.R.A.F. M.E. ORB Admin. and Org. The No. 204 Group (later A.H.Q., W.D.) squadrons which carried the burden of fighter operations during the four months under immediate review (mid-June to mid-October) were:- Nos. 73, 274, 1 S.A.A.F., R.N. (F) Squadrons and, towards the end of the period, Nos. 229 and 238 Squadrons (Hurricanes) and Nos. 250, 2 S.A.A.F., and, later, 3 R.A.A.F. and 112 Squadrons (Tomahawks). From the beginning of July No. 451 Squadron, R.A.A.F. (Hurricanes) relieved No. 6 Squadron as the Army Co-operation Squadron in the Desert for tactical air reconnaissance duties.

The main commitments of the fighter force were:-

- (a) Providing cover by day for the Tobruk convoys.
- (b) Defence of the Desert bases (e.g. Fuka, Sidi-Barrani, Mersa Matruh and Maaten Bugush).
- (c) Providing air cover for our tactical reconnaissance aircraft and infrequent day bomber attacks.
- (d) Periodic offensive sweeps.

The last-mentioned task was necessary to ensure that local air superiority was not lost and to keep alive the offensive spirit of the force; it was limited owing to the over-riding protective commitments and the fact that, owing to the G.A.F's exploitation of the superior performance of the M.E.109 by employing "tip and run" tactics, such sweeps had to be carried out at squadron strength at least.

The heaviest and most constant fighter commitment was the provision of cover for shipping supplying tobruk. At various

times it was necessary to employ virtually the entire fighter force on this activity in order to maintain formations at squadron strength for prolonged periods during the day. Thus of the fortnightly totals of Western-Desert fighter sorties, which varied from 500 to 700 sorties, in many cases well over half of the effort was devoted to shipping protection. This fighter cover dissuaded the enemy to a great extent from interfering with the convoys by day, although from time to time determined attacks were delivered by escorted formations of dive bombers. On such occasions our fighters were often outnumbered, but, in general, provided successful protection. The following selection of outstanding combats, indicates the success achieved against enemy raiders during critical periods. On 30th June, Tomahawks and Hurricanes of Nos. 73, 250, 274 Squadrons and No. 1 Squadron, S.A.A.F., engaged and drove off enemy aircraft which made six attacks on a convoy; four Ju.87's, two M.E.110's and two G.50's were claimed destroyed for the loss of one Tomahawk and one Hurricane. (1) On 15th July, Hurricanes of No. 73 Squadron intercepted fifteen J.U.87's and five M.E.110's attacking our shipping and claimed the destruction of six Stukas and one M.E.110 for the loss of two Hurricanes. (2) Four days later the same squadron drove off twelve M.E.109's, but lost one of their own aircraft. On 29th July, a total of twenty Stukas, escorted by ten M.E.109's, attacked a convoy in two waves; No. 250 Squadron Tomahawks claimed the shooting down of four J.U.87's for the loss of two aircraft. (3) On 2nd August, the enemy launched a mass attack on certain of our naval units by twenty J.U.87's, escorted by nine M.E.200's and six M.E.109's; Hurricanes of No.1 Squadron, S.A.A.F., drove off the raiders and claimed four Stukas and a German fighter destroyed for the loss of three S.A.A.F. fighters. (4) On the 21st of the same month, patrolling Hurricanes of Nos.73, 1 S.A.A.F., and R.N. (F) Squadrons and Tomahawks of No.2 Squadron, S.A.A.F., in all eighteen aircraft, sighted a total of eighteen M.E.110's, twenty-five M.E.109's, ten J.U.87's and a formation of H.E.111's, operating in formations of seven to ten aircraft, approaching our shipping off Sidi Barrani. Our claims in combats against the numerically superior enemy amounted to one M.E.110 shot down and five more "probables" for the loss of two Hurricanes and one Tomahawk. (5) Two days later Tomahawks of No.250 and No.2 Squadrons, S.A.A.F., on patrol over destroyers in the same area, encountered five Stukas and shot down two of them without loss. (6)

The supply of Tobruk was inevitably costly for our Navy and merchant shipping, but by taking advantage of moonless periods and due to effective day fighter cover over the greater part of the journey the formidable risks attached to the Tobruk run were diminished and the beleaguered garrison was successfully maintained and necessary reliefs carried out. From the air aspect this heavy protection commitment was a strain on our air resources, limited the scope of offensive fighter operations and tended to reduce the aggressiveness of the fighter force as a whole. (7)

/On

- (1) German records show 2 M.E.110's destroyed and one J.U.87 damaged on 30th June.
- (2) German records show 3 J.U.87's and 1 "day fighter" destroyed on 15th July.
- (3) German records show 1 J.U.87 destroyed on 29th July. (Verluste Afrika ADIK 103/64). It is possible, however, that some Italian fighter a/c are concerned.
- (4) German records show one fighter, two dive-bombers and one bomber destroyed on 2nd August.
- (5) German records show one M.E.110 destroyed on 21st August.
- (6) German records show only one bomber destroyed on 23rd August (Verluste Afrika ADIK 103/64).
- (7) See page 101 for measures taken during the "Crusader" preparatory period to eliminate this last fault.

M.E.F.O.S.

Idem.

Appendix
M(i)

S.A.A.F. Narrative P.172 On the comparatively few occasions when Italian fighter formations were encountered over the forward area our aircraft proved superior. In particular, on 3rd September eleven Tomahawks of No.2 Squadron, S.A.A.F. interrupted about 20 G.50's, which were engaged in straffing two of our Sidi Barrani landing grounds. As the result of "dog fights" lasting 25 minutes, No.2 Squadron claimed the shooting down of five enemy aircraft and one "probable"; the only damage suffered by the Squadron was one aircraft which received a shell from our own A.A. through the hydraulic system and another which sustained a punctured tyre.⁽¹⁾ The enemy were reported to have shown great determination and fight, but were completely outclassed by our pilots and aircraft.

M.E.W.I.S. No. 64 Part 4. Combats with M.E.109's, however, which occurred towards the end of the lull period, proved that the German fighters were a more formidable proposition. During the fortnight 22nd September to 5th October, three Tomahawks and six Hurricanes, mainly employed on reconnaissance or reconnaissance escort, fell victims to M.E.109 "tip and run" tactics and our claims only amounted to three "probables".⁽²⁾ In an offensive sweep over the Sidi Omar area on 6th October, twelve S.A.A.F. Tomahawks encountering fourteen M.E.109's fared better, claiming the destruction of one German fighter and another probably destroyed for the loss of two aircraft.⁽³⁾ Six days later, in support on Army operation in the Sheferzen area, honours were virtually even; as a result of combats between 33 Tomahawks of Nos. 112, 2 S.A.A.F. and 3 R.A.A.F. Squadrons and formations of M.E.109 E's and F's and G.50's, three M.E.109's and one Italian fighter were claimed shot down and two more M.E.109's as "probables" for the loss of four Tomahawks.⁽⁴⁾

It was evident that in order to achieve local air superiority prior to the launching of our November offensive our fighter sweeps would have to be carried out in strength to off-set the superior performance of the later types of Messerschmitts.

Enemy's Attack in September

The lull in the ground fighting between the "Battle-axe" and "Crusader" operations was only once seriously interrupted. The incident is recorded in General Auchinleck's Despatch thus:-
C. in C.M.E's Despatch July to October, 1941 p.13. "On 14th September the enemy advanced to test our strength and dispositions above the escarpment. The force consisted of two columns. The northern column was composed of about 100 tanks, and the southern contained chiefly lorried infantry and maintenance vehicles escorted by armoured cars. Our reconnaissance elements /and

- (1) The Italians invented an entirely fabulous account of this encounter. "Lt.Col.Bonzano, O.C. No.20 Fighter Wing has been awarded the Silver Medal for valour. According to Italian reports, on September 3rd last, he led a formation of 27 of his fighters on an offensive sweep in the skies over Sidi Barrani. Trusting to their numerical superiority, some 50 Hurricanes and Tomahawks, who appeared on the scene, dived to attack. The Italian pilots," the report continues "with superb impetus and marvellous skill, accepted battle shooting down 13 Hurricanes and Tomahawks, while another five were seen to abandon the fight in search of a forced-landing. By this engagement the vaunted prowess of the Hurricanes and Tomahawks has emerged entirely discredited, according to the author." (M.E.W.I.S. No.64 Part 6).
- (2) German records show 3 M.E.109's damaged.
- (3) Not confirmed by German records.
- (4) German fighter casualties reported in German records show one M.E.109 damaged. It is possible more Italian aircraft were involved (Verluste Afrika ADIK 103/64).

and light columns withdrew, inflicting casualties on the enemy. By nightfall the enemy tanks had reached the Rabia area, but during the night they withdrew. By first light on the 17th September our troops had returned to their original positions."

M.E.W.I.S.
No. 66.

The enemy's advance was supported by dive-bombing attacks by J.U.87's and sweeps by M.E.110's, M.E.109's and M.E.200's, which, however, inflicted little damage. A bizarre feature of the enemy's air effort was the misadventure of a formation of eleven Stukas of No.209 Squadron, I.A.F. By some major error in co-ordination this Italian formation lost touch with the German force, and, after exhausting its petrol in bewildered wanderings, forced-landed for the most part in our territory. The crews of eight of these Italian J.U.87's were quickly made prisoners.

M.E.F.O.S.
No. 23.

The enemy's reconnaissance in force was opposed on the 14th by three attacks delivered by twenty-three Marylands of Nos. 12 and 24 Squadrons, S.A.A.F., escorted by Hurricanes. The S.A.A.F. bombers dropped one hundred and seventy 250 pounders and incendiaries on enemy A.F.V's and M.T. in the area near Sofafi, causing fires and scoring hits on vehicles. Meanwhile, Tomahawks, with a covering patrol of Hurricanes, made a low-flying attack on the Gambut landing grounds, which Stukas were using as an advanced airfield, and the attacks were continued during the night by small forces of Wellingtons and F.A.A. Albacores.

Daily Opsum
14th Sept.

C.in C. M.E's.
Despatch ps.
13 & 14.

Comparative losses as a result of the enemy's thrust were currently assessed as:- on our side, fifteen casualties, an armoured car, one Maryland and six fighters (including two reconnaissance aircraft) destroyed, and by the enemy nearly a hundred casualties and losses of fourteen tanks, fifteen vehicles and twenty-one aircraft.

General Failure of Enemy's Bomber Offensive

It had been appreciated (page 11) that intensive enemy air action directed against our build-up, particularly in Egypt, during the summer of 1941 might well be our main hazard. The cards appeared to be heavily stacked in favour of the enemy. From his air bases in Sicily, Cyrenaica, Southern Greece and Crete, he could cover the entire operational area and had, moreover, the advantages of interior lines. In the event, the enemy not only failed to carry out a determined and sustained bombing programme to cripple our build-up, but, as already indicated, also failed to protect adequately his own supply routes to Libya.

M.E.W.I.S.
Nos. 53-69.

The protection of convoys and rear posts and bases was an Italian Air Force commitment and regularly absorbed the major part of its effort. Allied to these protective duties was the need to neutralise Malta as an offensive base, particularly for ship-striking squadrons. The I.A.F. proved, characteristically, unequal to these tasks. Moreover, our aggressive action against the enemy's sea-lines forced the I.A.F. to divert a considerable portion of its bomber force to convoy escort duties; this had the effect of reducing the scale of the Italian bomber effort without appreciably hindering our attacks.

R.A.F. M.E.
Review No.3.
(Report by
Intelligence
Branch).

The German bomber force assumed the main offensive role. In the absence of major ground operations, well planned strategic bombing was clearly called for. In practice the employment of the bomber force was open to severe criticism. Its effort was dissipated against a variety of targets instead of being concentrated on the few most vulnerable points of our supply organisation - notably Suez and its sea approaches. An important factor, however, which contributed to a restricted German effort

M.E.W.I.S.
No.6

was a decline in aircraft serviceability at a time when our own maintenance had vastly improved. Prior to the Russian campaign German squadrons normally held a 25% reserve of aircraft immediately available as replacements and further replacements could be obtained at short notice from the large stocks of aircraft in stored reserve in Germany. As losses mounted on the Eastern Front inroads were made in G.A.F. reserves. Gradually most of the Luftwaffe units lost their immediate reserves and replacements had to be drawn from air parks and central stores. There was, accordingly, a general fall in serviceability: the estimated average serviceability of the Luftwaffe in the Mediterranean, in the autumn of 1941, seldom exceeded 60 - 70 per cent and frequently fell below that figure. In addition, the operations of Libyan based aircraft were probably limited at various times by petrol shortages.

Enemy's main Bomber Aims

The enemy's main aims, as reflected by his bomber effort, were directed against:-

M.E.W.I.S.
No.60 and
passim.

- (1) Strengthening the Tobruk blockade and hindering our build-up in the Desert.
- (2) Neutralising our sources of supply and impairing our air effort by attacks in the general Suez area.
- (3) Neutralising Malta as an offensive base.
- (4) Continuing the offensive against the Fleet at Alexandria.
- (5) Weakening our position in the Eastern Mediterranean.
- (6) Harassing isolated positions and associated lines of communication.

Enemy Bomber Action and Our Defensive Measures.

(a) Blockade of Tobruk.

M.E.W.I.S.
Nos. 53-69.

The bomber commitment (1) above absorbed the most sustained and determined effort, both the G.A.F. and I.A.F. taking part. Mention has already been made (pages 73 & 74) of the enemy's day attacks on shipping supplying the Tobruk garrison and the convoy protection afforded by No. 204 Group fighter squadrons; at times, also, enemy bombers, including Stukas, were employed against shipping during the hours of darkness, when our fighter patrols were not operating, and achieved some success. Against Tobruk itself, which was out of range for effective fighter protection, the G.A.F. carried out intermittent, moderate-scale, high-level and dive-bombing attacks by day on the harbour and defences; bombers based in Southern Greece occasionally attacked the garrison by night; the harbour was mined from time to time, and J.U.88's and M.E.110's, returning from night offensive reconnaissances over the forward area, tended to drop their bombs on Tobruk as a matter of routine. The I.A.F.'s participation in the offensive against Tobruk, as in its operations elsewhere, was more convincing on paper than in fact. H.Q. R.A.F. M.E. Intelligence expressed the view: "They (the Italian bombers) do not appear to carry out their operations with the direct intention of crippling our war effort, instead they use a policy whereby they seem to their German allies to be operating on a large scale and at the same time undergo little danger of loss to themselves by employing a minimum of enterprise over enemy territory."

M.E.W.I.S.
No.60.

Part Five of
the
Narrative

The air attacks against Tobruk failed in their attempt to render the fortress untenable. Indeed, we succeeded in maintaining the garrison to the extent that it would be counted on to play an offensive role in our November offensive. The strain imposed on our shipping and air resources, however, was a factor which caused constant anxiety and hindered our preparations for "Crusader".

M.L.V.I.S.
Nos. 53-69.

The enemy air effort against our build-up in the Desert was small, as targets associated with the Tobruk blockade offered richer dividends with slighter risks. Small-risk harassing night raids were carried out spasmodically, however, by both the G.A.F. and I.A.F. on military targets and landing grounds in the forward area, particularly our base at Mersa Matruh; the effort never achieved more than a nuisance effect.

(b) Attacks in the Canal Zone.

No. 250 Wing's
O.R.B. July-
October, 1941

C-in-C's
Despatch July-
October, 1941
P. 18.

Meanwhile, the G.A.F.'s endeavour to neutralise our sources of supply by attacks in the Suez Canal zone was not backed by sufficient power to limit our reinforcing to defensive needs. From early July to mid-October attacks were delivered on 34 nights by an estimated total of 442 aircraft, mainly Greek-based J.U. 88's; particular advantage was taken of moon periods. The attacks at times included the mining of the Canal. The raids "seriously threatened shipping in the Suez Canal and in the Gulf of Suez", but the menace never materialised into really crippling shipping losses and prolonged stoppages in unloading. An incidental result of the bombing was "a reduction in the amount of Egyptian casual labour, but this was speedily remedied by improving the arrangements for air raid precautions and importing labour from Upper Egypt." Defended anchorages were established in the Gulf of Suez, at Abu Zenima and Ras Ghemsa, for use in the event of Port Tewfik becoming unuseable, but this never occurred.

Idem.

A.O.C./201/1
Fighter Defence
of Egypt
Enclos. 39.

The enemy's threat from the air called for immediate protective measures, particularly as the "air raids coincided with the arrival of important convoys carrying large reserves of men and vehicles" and American ships, moreover, had just begun to arrive. Ground defences were strengthened by moving several batteries from other areas to Suez during moonlight periods and anti-aircraft crews were placed aboard American ships. The air defence of the general area is mentioned later; but it is necessary to emphasise that Air Marshal Tedder insisted that defence was "a matter of team work between fighters, lights and guns".

No. 250 Wing
O.R.B. July-
October, 1941.

A.O.C-in-C's
Correspondence
with C.A.S.
Part I Enclos.
113A.

The German attacks were not confined to the bombing of shipping and unloading facilities in the Suez and Port Said area, but were also directed at times against supply and Air Force targets in the Ismailia, Abu Sueir, Shallufa Moascar, Kabrit, Kasfareet and Kantara areas. The most devastating raid from the point of view of R.A.F. build-up occurred on the night 9/10th July, when No. 102 Maintenance Unit at Abu Sueir was attacked. As a result of the bombing 26 aircraft were burnt out, 20 required major repairs, and 27 required minor repairs; all five test benches and 40 Bristol engines were seriously damaged, and there were serious losses in fabric spares. The "worst item" was the loss of nine Tomahawks in cases which had just been collected to be loaded for dispersal by rail to Geneifa the following morning. The attack emphasised the need for the dispersal of maintenance and storage facilities which was already in hand (page 45). Improved protective

measures and dispersal prevented the enemy achieving a similar success subsequently.

No.250 Wing
O.R.B. July-
October,1941.

Responsibility for the entire air defence of Egypt was vested in No.202 Group (afterwards A.H.Q. Egypt). The operational control of the R.A.F. defence of the Suez Canal zone was exercised by No.250 Wing, reformed at Ismailia on 1st July, 1941. During the period under immediate review the Wing operated No.94 Squadron (Hurricanes) and a token force of Royal Egyptian Air Force Gladiators. No.94 Squadron was located at Ismailia (with a satellite landing ground at Fayid) and had a detachment at Port Said; apart from this detachment, which protected shipping during the day, the squadron operated entirely as a night fighter squadron. Control was exercised by the wing operations room at Ismailia and sector operations rooms at Port Said and Fayid. The R.D.F. screen (provided by No.204 A.M.E.S., Damietta; No.219, Port Said; No.254, El Arish; No.259, Bir el Abd; and, later, No.261, Tel el Kebir and No.262, Wadi Gindali) covered the Suez Canal area up to the limits of No.252 Wing's sphere of responsibility,⁽¹⁾ eastwards to the Sinai-Palestine border and seawards. The radar system was supplemented by a screen of British and Egyptian observer posts. The British posts reported the movements of aircraft by W/T to the Ismailia operations room. The Egyptian observer system was linked by telephone to No.252 Wing operations room at Alexandria.

Balloon squadrons operationally controlled by No.250 Wing were Nos. 972, 973 and 974 at El Kantara, Port Said and Kasfareet, respectively.

Idem.

In the absence of technical equipment and specialist personnel for the control of night-fighters, No.94 Squadron operated on line and layer patrols (particularly over Ismailia and Abu Sueir) and was dependent on moonlight and searchlight illumination for interception. Interceptions were inevitably few and usually fleeting: conclusive contacts resulted in one J.U.88 confirmed destroyed in August and four in September (including two which crashed after being damaged).⁽²⁾

(c) Reduced Pressure on Alexandria

No.252 Wing
O.R.B. June-
October,1941.

As the enemy's air effort against the Suez Canal zone developed, his pressure on our naval base at Alexandria was relaxed. From mid-June to the end of July, attacks on the port and adjoining areas were made by an estimated total of 140-150 raiders: during the next two-and-a-half months the estimated total amounted to only 70. These attacks were carried out during hours of darkness, almost entirely by German bombers. Our defences - both ground and air - prevented the enemy delivering accurate attacks and, in general, the bombing was spread over a wide area and rarely hit important targets. There was, also a very slight, spasmodic day reconnaissance effort, which was largely ineffectual.

A.O.C-in-C's
correspondence
with C.A.S.
Part 2 Enclos.
170A.

The C-in-C., Mediterranean, insisted that the defence of the naval base at Alexandria - as in the case of the port and shipping at Suez - was his responsibility, and held the view that it was the guns and searchlights which prevented the enemy from carrying out accurate bombing "and consequently fighter operations must be subordinated." The A.O.C., M.E., on the

/other

(1) W.O.U.s under No.250 Wing during the period were No.13, Ismailia and Shallufa, No.15 (1.Sect.) Kasfareet, and No.17 (2 Sect.) El Arish.

(2) These casualties appear to be confirmed by German records (ADIK 103/64).

other hand, maintained that "to credit guns and searchlights with the fact that bombs have in most cases straddled and not hit directly is to my mind fantastic." In Mid-September Air Marshal Tedder wrote, "meantime fighters, when allowed to co-operate, are beginning to do rather well.....As, however, we are only just beginning to get useful results in this way, I propose to hold my fire until I have a larger volume of practical evidence."

No.252 Wing
O.R.B. June-
October, 1941

Operational control of the air defence of the Alexandria area, and lower Egypt generally, was exercised by No.252 Wing, under the general control of No.202 Group. The Wing was responsible, also for providing fighter assistance to H.M. ships and convoys within its operational area. (1)

S.D.225(location of Units)
Appendices to
H.Q. R.A.F.
O.R.B. Admin.
and Org. June
to October 1941

During the early part of the period under immediate review, a flight of No.94 Squadron, detached to Amirya, undertook the night fighter defence; later No.30 Squadron (Hurricanes), located at Edku, undertook this commitment. Beaufighters of Nos. 252 and 272 Squadrons, loaned by No.201 Group, and F.A.A. Fulmars, at times, helped with special defensive commitments particularly against night raiders. The day fighter-defence was carried out, at various stages, by Nos. 33, 112 and 274 Squadrons and a flight of No.30 Squadron. Other units associated with the defence of Alexandria and the Delta included No.971 Balloon Squadron (Alexandria); a radar screen provided by a series of A.M.E.S's at Amirya, Aboukir, Tel el Kebir, Mex, Wadi Natrun, Baltim and Damietta; various observer units, and a P.A.C. detachment at Alexandria. The warning system was linked up with those in the Suez Canal zone and the Delta.

Idem.

Control of the fighters was exercised by the Wing or sector operations rooms of fighter directing ship (H.M.S. "Formidable" or H.M.S. "Naiad"). Night patrols were carried out by Hurricanes and Beaufighters, not only to effect interceptions over the Alexandria area, but also over Rosetta, Baltim and Damietta, when attacks were in progress in the Canal zone, in an attempt to catch the raiders on their return journey. Due to the lack of night-fighter aids, and the restrictions imposed by gun areas few interceptions were made: one J.U.88 was shot down near Wadi Natrun by No.33 Hurricanes in July and another was claimed as probably destroyed in August.

(d) Slight effort against Lower Egypt

A.O.C-in-C.
correspondence
with C.A.S.
Part 2 Enclos.
164B and 166A
and M.E. War
Council.
minute 6
17/9/41.

On a few occasions enemy bombers penetrated into lower Egypt and attacked targets in the Cairo area, particularly military stores at Abbassia and Air Force targets at Helwan and Tura. H.M. Government had declared its intention of bombing Rome in retaliation if Cairo were deliberately attacked. It was decided, however, that "any substantial retaliation on Rome must direct aircraft from vitally important operations against enemy supply lines..... a token retaliation would tend to encourage further attacks on Cairo by revealing our supposed big stick as a mere switch". The Chiefs of Staff, with the War

/Cabinet's

(1) (a) Within an area of a radius of 35 miles from Ras el Tin.

(b) Within 35 miles of the coast between Baltim and Dekheilla.
(No.252 O.R.B. June Appendix A and August Appendix G).

Cabinet's approval, therefore, recommended that there should be no attacks on Rome⁽¹⁾ unless the bombing of Cairo became systematic, in which case retaliation was to be as heavy as possible. In the event, an air offensive against Cairo was never mounted.⁽²⁾

A.O.C/201/1
Enclos.40A

Shortly before the opening of the "Crusader" offensive, the Chiefs of Staff suggested the despatch of a specialist mission to enquire into the whole question of the air defence of Egypt. The recommendations of the mission are referred to on page 284 and the pages following.

(e) Ineffective Effort Against Malta.

Details of the Italian Air Force's attempt to neutralise Malta as an offensive base and the successful defence maintained by Hurricane squadrons under the control of A.H.Q., Mediterranean, are outside the scope of this narrative. It is sufficient to say that the I.A.F.'s sporadic effort was never pressed with sufficient determination to cause appreciable damage. It became abundantly clear that nothing short of a sustained Luftwaffe offensive would neutralise Malta as an offensive base.

(f) Sporadic Attacks in the Eastern Mediterranean

The enemy appreciated that we were strengthening and reinforcing Cyprus during the period (Part 2 of the narrative), but the call to hinder our preparations there was less urgent than to destroy our sources of supply in the Suez area. Air attacks on our landing grounds and harbours in Cyprus, accordingly, although fairly constant were on a small-scale and mainly carried out by Italian aircraft based in the Dodecanese. This effort, and a still slighter one against Haifa, rarely produced more than a nuisance effect. Italian reconnaissance aircraft also harried, at times, small vessels plying between Egypt and Cyprus.

M.E.W.I.S.
Nos.53-69.

S.C.225
(Appendices
to H.Q.R.A.F.
M.E. O.R.B.,
Admin. & Org.)

The defence of Palestine, Syria and Cyprus was vested in A.H.Q. Palestine and Transjordan, based at Jerusalem; an advanced headquarters was located at Beirut and No.259 Wing at Nicosia, Cyprus. Effective R.A.F. fighter squadrons (excluding Army Co-operation squadrons) controlled by A.H.Q. P. & T.J. in September were No.80 in Palestine, No.260 and No.3 R.A.A.F. in Syria and No.213 in Cyprus. The necessity for building up our fighter strength for "Crusader" in the following month, and the fact that the threat on our Eastern Front was not then pressing, led to the withdrawal of all these squadrons with the exception of a flight of No.213 Squadron.

(g) Slight I.A.F. Effort against Isolated Positions

Linked with the Italian Air Force's reconnaissance of our isolated positions in order to watch for any undue

/reinforcing,

- (1) Targets in the vicinity of Rome were, in fact, not attacked until 19th July, 1943, when the war had receded from the Middle East.
- (2) In spite of the fact that Cairo was never declared an "open city", as the Egyptian Government constantly requested. (Middle East War Council Min.8 9/7/41 and passim).

M.E.W.I.S. Nos. 57 and 61. reinforcing, was a slight harassing air activity. In particular, a few small-scale attacks were made on Siwa and Giarabub. This slight effort was in keeping with the I.A.F.'s policy of attacking targets where fighter opposition was unlikely to be encountered.

Comparative Aircraft Losses

M.E.W.I.S. Appendices "A" June-October, 1941. During the period 16th June to 14th October, 1941, the aircraft casualties inflicted on the enemy in the entire Middle East Command were assessed by Intelligence Branch, H.Q., R.A.F. M.E. as:-

German aircraft:	142 destroyed and 24 probably destroyed.
Italian aircraft:	253 destroyed and 68 probably destroyed.
<u>TOTAL:</u>	395 enemy aircraft destroyed and 92 probably destroyed.

ADIK 103/64. In respect of German aircraft, German records show 81 aircraft destroyed and 22 damaged. These figures represent 57% of the aircraft claimed as destroyed in Intelligence Branch assessments. Satisfactory Italian records are not available, but if we accept a similar percentage in respect of Italian losses the total number of enemy aircraft destroyed during the period may be taken as approximately 225.

M.E.F.O.S. & M.E.W.I.S. Appendices June to October 1941. The Middle East Command aircraft losses due to enemy action during the same period were reported as:- 226 aircraft destroyed in battle and 59 destroyed on the ground. Total: 285 aircraft destroyed. In addition, 101 aircraft were reported lost due to causes other than enemy action. In many cases the aircrew concerned were saved.

C.-in-C's. Tribute

C-in-C's Despatch July-October, 1941. P. 30. In his despatch covering the period of the lull in the battle during the summer and autumn of 1941, General Sir Claude Auchinleck paid the following tribute to the Royal Navy and Royal Air Force for their success in winning the battle for supplies:-

"I have referred to our great indebtedness to the Royal Navy and the Royal Air Force for enabling us to maintain and relieve Tobruk. This was but a small part of their contribution to the preparations of the Army. Both Services were ceaselessly engaged in preventing the enemy reinforcing and supplying his forces. It was largely due to the conspicuous success which attended their efforts, that the enemy was compelled to allow us the respite we so sorely needed. Moreover, it is due to their tireless devotion in organising and protecting convoys, that we received the reinforcements and vast quantities of stores which enabled us to reorganise and re-equip the armies of the Middle East."

/CHRONOLOGY

CHRONOLOGY OF PRE-"CRUSADER" PERIOD

II MID-JUNE - MID-OCTOBER, 1941.

1941	Events in Middle East Command	Events in Other Theatres
22 June		Germany invaded Russia.
5 July		German forces reached the Dnieper.
11 July	Hostilities ceased in Syria.	
12 July		Anglo-Russian agreement signed in Moscow.
14 July	Armistice signed in Syria.	
26 July	Attack by E-boats and midget submarines on Valetta Harbour failed.	
28 July		Japanese landed troops in Indo-China.
14 August		Publication of the Atlantic Charter.
14 August		Russians announced evacuation of Smolensk.
24-28 Aug.	Rising in Persia quelled.	
14-16 Sept.	Enemy made limited advance to test our forward positions in W. Desert and then withdrew to original positions.	
17 Sept.	Teheran occupied by British and Russian forces.	
18-28 Sept.	Relief of 9th Australian Division in Tobruk by the 70th Division begun.	
20 Sept.		Turkey closed Dardanelles to all warships.
12 Oct.	Relief of Australians in Tobruk continued. (Ended 26th October).	

FOR PART III MID-OCTOBER, 1941 TO LATE JANUARY, 1942,
SEE PAGE 288.

PART V

PHASES ONE AND TWO

OF "CRUSADER" PROJECT.

SECTION ONE. "CRUSADER" OUTLINE PLAN

C-in-C
Despatch

Appendices
2, 4 & 5

The primary aim of the "Crusader" offensive was to drive the enemy out of Cyrenaica. Subsequently, it was hoped to establish forces at the Tunisian border in time to turn our main Army and resist the expected threat to the Middle East's northern flank in the spring of 1942.

Some of the benefits which would result from the army advance - as set forth in previous strategic appreciations - were:- the removal of the threat to our base in Egypt from the west; the facilitation of the passage of our shipping through the Mediterranean by the capture of ports and air bases along the Libyan coast; the relief of Tobruk, which hitherto had absorbed much of our naval and air effort; the establishment of forward sea and air bases allowing our interference with Axis plans in Italy, Sicily, Greece and Crete; the deterrence of pro-Axis activity in Tunisia; and the general raising of British prestige, which had suffered from our defeat in Greece and Crete.

Essence of Army Plan

C-in-C's
Despatch
Appendix 5

In order to wrest Cyrenaica from the enemy the prime necessity was to destroy the enemy's armoured forces - particularly the German armour which constituted the backbone of the hostile armies.

To effect this destruction it was necessary to bring the enemy to battle on ground of our choosing and not of his. The most obvious move to induce the enemy to advance to meet us was the direction of strong forces towards Tobruk in order to raise the siege. Accordingly, this main attack was to be made by the 30th Corps with all our best armour - the Cruiser and American tanks - with a view to destroying the enemy's armoured forces east of Tobruk. To aid this main attack the Tobruk garrison was to sally out and threaten the enemy's flank and distract his attention.

Meanwhile, our other main Army formation, the 13th Corps, was to contain and cut off the enemy forces holding the frontier defences, and then to advance westwards to help the 30th Corps in their clearing-up process.

Other projected operations included action by light mobile forces based on Maddalena and Giarabub moving westwards and north-westwards against enemy lines of communication and landing grounds in the Mechili - Gialo area.

Details of the Army plan and disposition and make-up of the opposing ground forces are given in Section 3 of this Part of the narrative.

General Air Plan

In essence our air aims in the "Crusader" operation were -

W.D.
"Crusader"
Air Plan
A.H.B.IIJ/
6/71
M.E.W.O.S.
No.6
Appendix "G"

- (a) to gain air superiority and
- (b) to use this superiority in providing the maximum support to the Eighth Army.

As indicated in the previous section, R.A.F. activity during the lull in the Desert fighting had been continuous, particularly in connection with preventing the enemy's build-up. In October plans were formulated to intensify the air effort as a preparation for the achievement of the aims mentioned above.

/ "Crusader"

"Crusader" operations, so far as the Air Force participation was concerned, were visualised as falling into four phases as follows:-

- (1) A period of approximately 30 days which constituted a preparatory "softening-up" period (D-35 to D-6 inclusive). This phase was originally planned to begin on 5th October but owing to the postponement of the launching of the offensive to 18th November the pattern of the attacks was more evident after 14th October, which is taken as the opening day of the phase.
- (2) A period of about six days (D-5 to D-day, inclusive), during which time the Army was to concentrate and move forward.
- (3) A period of approximately five days (D+1 day to approximately D+5) which, it was thought would include the period of battle between the opposing armoured forces and relief of Tobruk.
- (4) The subsequent unpredetermined period covering the enemy's retreat.

During each of these envisaged phases the role of the Air Force was clearly defined in advance and specific tasks were allotted to the various formations concerned.

For the purpose of clarity it is intended to give details of the Air and Army plans phase by phase, followed in each case by the operations carried out, so that the implementation of the theory into practice is readily seen.

Factors Affecting Attainment of Air Aims

Comparative Air Strengths (Current Estimates)

The main factor affecting the attainment of our air aims was the air strength which could be brought to bear by either side. The assessment of this, as already indicated, proved a difficult and highly controversial matter.

A.H.B.II
J6/7/1

During the third week in October the Planning Staff at A.H.Q. Western Desert was of the opinion that "at present we have superiority in air forces in the theatre of operations" (Cyrenaica). In particular, the enemy's Cyrenaican strength was estimated at 190 aircraft for the G.A.F. (but an additional 30 aircraft was thought likely to arrive by the end of October) and 273 for the I.A.F. R.A.F. (and associated air forces) strength was put at 615. Accordingly, even with the estimated 117 German bombers and 21 long range fighters in Greece and Crete, which "might be expected to endeavour to interfere with our concentration and subsequently intervene in the battle", it was believed at A.H.Q. Western Desert that we possessed numerical superiority. It was pointed out, however, that the enemy had elsewhere in the Mediterranean theatre (excluding Metropolitan Italy and the long-range aircraft in Greece and Crete) an estimated Italian strength of 638 aircraft and German strength of 55 aircraft. Some of these aircraft could also, at need, play a part in subsequent "Crusader" operations, but the extent of their participation could not be predetermined. For our part, we had also to take into account the strength of the Malta Force and that of No.201 (N.C.) Group.

/On

A.C.A.S.(I) on 15.10.41 estimated the enemy's establishments east of Benghazi on 1.11.41 as 192 aircraft for the G.A.F. (excluding a possible reinforcement of 30 aircraft) and 360 for the I.A.F. (Appendix H).

AOC-in-C
Correspon-
dence with
OAS
Enclo.
213A.

On 20th October, after a further review of the situation, the V.C.A.S., who had, as mentioned on page 22, been sent to Egypt to arrive at firm figures for comparative strengths, stated that in agreement with the A.O.C.-in-C. British (and associated) forces in Cyrenaica were assessed at 660 operational aircraft and Axis forces at 641 (207 German and 435 Italian). The figure for the Axis included reserves. Probable serviceability of these forces on D-day was put at 528 for British forces and 385 for those of the Axis. The maximum first line British strength was obtained by the stripping of less vital areas. We also had 50% reserves which did not include service aircraft in O.T.U.s or squadrons in process of forming. (1)

In addition to the Cyrenaican strength it was estimated that the Germans had 156 aircraft of all types, excluding short-range fighters, in the Aegeans and Crete, and we expected to have 64 bombers on Malta. Probable serviceability of these forces was assessed as 72 for the Germans and 48 for the British. These forces had to be considered as it was presumed they would "Participate in battle to the extent of operating against lines of communication".

Accordingly, by studiously ignoring the enemy's Mediterranean air forces not based in Cyrenaica and the Eastern Mediterranean, the required guarantee was given to the Prime Minister that we should enjoy numerical superiority in that theatre of operations.

The A.O.C.-in-C., however, although obliged by political considerations to turn a blind eye to the enemy's potential reserve strength was in no wise convinced that numerical superiority, as distinct from air superiority which was dependant on factors in addition to numbers, could be counted on after the battle had been joined. Although numerical superiority in aircraft could not be counted on throughout the whole of the projected operation, this did not imply that the Royal Air Force doubted that it could attain air superiority.

Comparative Air Strengths (Actual at Outset of Ground Offensive)

It is convenient here to indicate the actual air strengths of the opposing forces on the eve of the ground offensive which began on 18th November.

Appendix 'Q' The estimate of 660 operational aircraft (528 serviceable) for the strength of British (and associated) air forces for Cyrenaican operations on D-day proved to be an under-estimate. On the eve of the offensive the fourteen Hurricane and Tomahawk squadrons available had a strength of 367 aircraft (315 serviceable or serviceable in 3 days); the three Army Co-operation squadrons 46 aircraft (41 serviceable or serviceable in 3 days); the four complete Blenheim and three Maryland/Boston squadrons under A.H.Q. Western Desert, 145 aircraft (120 serviceable or serviceable in 3 days); and No.205 Group Wellington squadrons, which could be placed under A.H.Q., Western Desert's operational control, 99 aircraft (78 serviceable or serviceable in 3 days). Total: 657 aircraft (554 serviceable or serviceable in 3 days). To this total, moreover, have to be added the following units for which complete figures are not available:- the Strategical Reconnaissance Flight (Marylands), No.8 Squadron detachment (Blenheims), No.55 Squadron Blenheims (at the disposal of A.H.Q., W.D. for a time), a detachment of No.272 squadron (Beaufighters), detachment of Nos. 39 and 203 Squadrons (Blenheims/Beauforts) for sea

/reconnaissance

(1) The data on which the revised strengths were based have been destroyed.

reconnaissance, a detachment of No.60 Squadron (Survey Flight), No. 826 Squadron, Fleet Air Arm (Albacores) and the Lorraine Squadron (Blenheims).

Idem

The estimate of 64 bombers based on Malta was virtually correct. The actual figures on the eve of the offensive were:- 36 Blenheims (32 serviceable or serviceable in 3 days) and 38 Wellingtons (34 serviceable or serviceable in 3 days), but some of the Wellingtons were engaged in sea reconnaissance only. In addition, Nos. 828 and 830 Squadrons, Fleet Arm (Swordfish/Albacores) were available.

Appendix 'R'

An order of battle of the German Air Force in the Mediterranean compiled from enemy records is given at Appendix 'R'. The total strength amounted to 400 operational aircraft (206 serviceable). The location of the units cannot be determined from the enemy records available, but it is possible to make an approximate division between those based in Cyrenaica and those elsewhere in the Mediterranean by accepting the disposition in a A.I.3(b) report (which gave a total strength of 365 aircraft) as a working basis. On this basis the G.A.F. operational aircraft strength in Cyrenaica on the eve of the ground offensive is put at:-

IIJ1/63

Type	Strength	Immediately Available
S.E. Fighters	90	(1) 18
T.E. Fighters	14	9
L/R Bombers and Bomber/Recce	43	19
D.Bombers	80	66
Reconnaissance	17	9
TOTAL	244	121

Appendix 'S'

An order of battle of the Italian Air Force supplied by the Italian Air Ministry, shows that the operational aircraft strength in Cyrenaica at the outset of the ground offensive was

Fighters	154
Bombers and T/B's	60
D/Bombers	15
Reconnaissance (Various)	67
TOTAL	296

Serviceability figures in respect of the I.A.F. are not available but A.I.3(b) estimated the serviceability of the I.A.F. in Cyrenaica at 65% at the outset (falling to 45-50% after a fortnight). On this basis the total serviceable operational aircraft would be 192.

Thus total Axis strength of operational aircraft in Cyrenaica on the eve of the ground offensive, so far as can be determined, was 540 aircraft with 313 serviceable/immediately available. These figures were 102 and 72 less, respectively, than the A.O.C.-in-C's and V.C.A.S.'s estimate which included reserves. Thus, as the final air forces available to us for Cyrenaican operations had been under-estimated, it is clear that we enjoyed a considerable numerical superiority so far as the initial operations were concerned.

/But

(1) This was abnormally low and was evidently increased shortly after the offensive opened.

Idem &
Appendix 'R'

Appendix 'S'
&
IIJL/63

But, as Air Marshal Tedder had insisted, this was by no means the whole picture. The G.A.F. had some 96 bomber and bomber reconnaissance aircraft (about 42 serviceable) in Greece, as well as appreciable numbers of T/E fighters and coastal aircraft in Greece/Crete and Sicily. The I.A.F. had 178 aircraft (including 138 fighters) in Tripolitania (115 estimated as serviceable), and an estimated 410 aircraft in Sicily, Sardinia and the Aegeans (225 estimated as serviceable). A proportion of these considerable air forces could be expected to operate against our lines of communication (particularly the German bombers), and some were available to reinforce Cyrenaica. Moreover, the enemy had at his disposal vastly superior forces of transport aircraft, which in view of his critical supply situation was a factor of the utmost importance. A.I.3(b) estimated that at the opening of the campaign about 75-100 JU.52 were regularly engaged in ferrying supplies etc. to Libya; this total was increased to 250-300 shortly afterwards - although serviceability was estimated at only 33, falling to 20 per cent. In addition, the Italians had a considerable air transport force, including the huge S.82 types.

IIJL/12
Amended
para.29.

In the event, therefore, we enjoyed a clear numerical superiority of aircraft in Cyrenaica at the outset of the offensive. But in view of the vastly superior numbers of Axis aircraft elsewhere in the Mediterranean theatre and the great advantage held by the enemy in having far shorter reinforcing routes than those available to the R.A.F. and the A.O.C.-in-C was justified in insisting that the potential strength of the enemy's air forces was considerably greater.⁽¹⁾

Appendices
'R', 'S' &
'T'

The considerable reinforcing of the Luftwaffe in the Mediterranean area and an appreciable strengthening of the I.A.F. in Libya during the second month of the campaign is referred to on page 192.

Other Factors Affecting the Attainment of Air Aims.

A.H.B.
IIJ/ 6/7/1

So far as the opposing air forces in the Desert were concerned our aircraft were considered to be superior in design and performance - with the notable exception of the German ME.109F, which in most respects was far better than the Tomahawk and the Hurricane. In addition, our serviceability, as already indicated, was expected to be higher. In reserves of aircraft (assessed at 50% of our strength) our situation was deemed satisfactory, except for a shortage of reserves of Tomahawks.

Moreover, petrol and stocks of spares and equipment at our disposal were considered adequate and no undue difficulty was anticipated in maintaining our squadrons in the field. The relief of Tobruk, moreover, was expected to provide us with advanced landing grounds already stocked with fuel, it being estimated that in late October there were 72,000 gallons of DTD and 30,000 gallons of 100 octane available. The enemy's supply situation in Cyrenaica, on the other hand, was known to be causing him worry and he was using all means of transport to increase his stocks.⁽²⁾ Nevertheless, although we had taken toll of his sea transport and attacked Benghazi at night, it was estimated that our previous inability to interfere with day activity at the port had allowed the enemy to send in 1,000 tons of supplies to the port daily. In addition, as already mentioned the Germans had at their disposal great numbers of JU.52 transport aircraft and many gliders (for supplying Derna from Greece). On balance, however, our supply situation in Cyrenaica was considered to be far more satisfactory than that of the enemy.

/In

(1) A major factor in limiting the employment of greatly increased enemy air forces in Cyrenaica, as it turned out, was the shortage of fuel.

(2) See page 167.

Idem

A.O.C.-in-C's
Corres-
pondence
Enclos.
225A.

A.H.B.
II/J/6/7/1

In respect of morale it was expected that we should hold the upper hand. The majority of the enemy air crews was composed of Italians. Previous experience had proved them to be good fighter pilots in favourable circumstances, but unreliable as bomber pilots. Success elevated them temporarily, but defeat was apt to depress them almost to the point of demoralisation. The Italians could by no means be discounted, however, particularly as by late October it was thought that the picked team of German fighters had "succeeded in stimulating Italian fighters into a high state of morale and efficiency". There was no tendency to under-rate the Germans who had taken over the main responsibility not only for military but also for air force activity in Cyrenaica. The German pilot was judged to be "more akin in temperament to ourselves and with equal training....equal to ourselves as a fighter and bomber pilot or member of a crew".

The A.O.C.-in-C's "only real anxiety" had been on the score of reserves of flying personnel being inadequate to provide replacements for battle casualties. As mentioned on page 33 this anxiety was allayed by Air Ministry action in sending substantial reinforcements of fighter pilots (including Army Co-operation pilots and flight commanders and potential flight commanders) in time to play a part in early "Crusader" operations.

Other factors which had a direct bearing on the attainment of our air aims, including operational, administrative and signals arrangements, are considered later.

SECTION TWO - THE PREPARATORY PHASE

A.H.B.
II J6/7/2

The "Administrative Plan and Maintenance Project - 'Crusader'" (dated 6th October, 1941) presupposed the following forces allocated to the A.O.C., Air Headquarters, Western Desert for the conduct of 'Crusader' operations:-

Short Range Fighters	12 Sqdns. at 16 I.E. aircraft.
Long Range Fighters	1 Sqdn. " " " "
Medium bombers and G/R	10 Sqdns. " " " "
Army Co-operation	3 Sqdns. " " " "
Torpedo Bombers	1 Sqdn. " " " "
F.A.A. bombers (2 flights of 8 a/c)	1 Sqdn. " " " "
Transport Squadrons	1 Sqdn. " " " "
"Boston" Squadron (doubtful)	1 Sqdn. " " " "

By the end of the preparatory period the forces concentrated were in certain respects stronger than those envisaged, due to the stripping of all other areas in order to build up the maximum strength in the Desert. This final concentration, however, was not achieved until towards the end of the phase, as squadrons which had been training or rearming in the rear and others in non-operational areas had to be moved up to the forward area.

Order of Battle M.E. Squadrons under the control of A.H.Q., Western Desert at the beginning of the period (14th October) were as follows:-

W.G.S.No.1 Eight squadrons of short-range fighters: Nos.229,238 and No.1 S.A.A.F.(Hurricanes), Nos.2 S.A.A.F., 3 R.A.A.F., 112 and 250 (Tomahawks) and R.N.(F) Squadron (Hurricanes and Martlets). The last six squadrons composed No.258 Wing. In addition, there was one long-range Hurricane squadron (No.33 Squadron). The Medium Bomber Group comprised four squadrons of Blenheims (Nos.11,45,55 and 113 Squadrons), two of Marylands (Nos.12 and 21 S.A.A.F.) and a detachment of No.39 Squadron (Marylands and Beauforts) for general reconnaissance. Army Co-operation requirements were met by No.451 Squadron R.A.A.F.(Hurricanes), controlled by No.253 Wing.

/Other

Other forces which could be placed from time to time under A.H.Q. W.D's operational control were the heavy bombers of No.257 Wing, later No.205 Group, (Nos.37, 38, 70, 108 and 148 Wellington squadrons) and No.826 Squadron, F.A.A.(Albacores and Swordfish).

Increased Fighter Force

During the preparatory period three Hurricane squadrons (Nos.30, 94 and 274) were removed from the control of No.202 Group (later A.H.Q., Egypt) to strengthen the Desert force and No.260 Squadron (Hurricanes) was transferred from Haifa. This left only No.73 Squadron and a flight of No.213 for the defence of the Delta and the other flight of No.213 "for oil Haifa". In addition No.4 Squadron S.A.A.F., which had trained on Mohawks in Kenya, arrived in Egypt in September, were re-equipped with Tomakawks early in the following month, and joined the Fighter Force in time to commence operations on the last day of the preparatory period.

Squadron 94 and 274)
O.R.Bs. and A.H.Q., Egypt)
Orders of (Hurricanes)
Battle M.E. Squadron and a flight of No.213 for the defence of the Delta and the
W.O.S. other flight of No.213 "for oil Haifa".
NCS.1-5. S.A.A.F., which had trained on Mohawks in Kenya, arrived in Egypt
A.O.C-in-C's in September, were re-equipped with Tomakawks early in the following
correspon- month, and joined the Fighter Force in time to commence operations
dence C.A.S. on the last day of the preparatory period.
Part 2
Encls.207A.
S.A.A.F.
War Diary.

To facilitate control of the increased Fighter Force two additional fighter wings were formed - No.262 Wing (Headquarters formed on 11th October at Sidi Heneish) to ensure (with No.258 Wing) that two mobile fighter wings were ready for the battle, and No.269 (first named 264) Wing (Headquarters formed on 24th October at Sidi Heneish) to control defensive fighters.

No.262 Wing
O.R.B.
No.269 Wing
O.R.B.

Towards the end of the preparatory period the fighter wings were composed as follows:-(1)

A.O.C-in-C's
correspon-
dence with
C.A.S. etc.
Part III
Encl.233B.
and
App. "U"

No.258 Wing (Group Captain Cross) - Bir Khamsa.

Nos.1 and 2 Squadrons, S.A.A.F., 3 Squadron, R.A.A.F., and 94,238 and 274 Squadrons. (Operating mainly from Sidi Heneish area)(2).

No.262 Wing (Wing Commander Rosier) - Sidi Heneish.

No.4 Squadron, S.A.A.F. and 80, 112, 229, 250 and 260 Squadron. (Operating mainly from Sidi Heneish area)(2).

No.269 Wing (Wing Commander Fenton) Sidi Heneish.

Nos. 30, 33 and R.N.(F) Squadrons. (Operating from Sidi Heneish and Gherawla).

Fighters for Special Duties

In addition to the Fighter Force constituted as above a detachment of No.272 Squadron (Beaufighters) was allocated to A.H.Q., Western Desert from No.201 (Naval Co-operation) Group and moved up on 9th November from their base at Edku (east of Alexandria) to Gherawla in time to carry out long-range operations during Phase Two.

No.272 Sqn.
O.R.B.

Meanwhile, No.80 Squadron (Hurricanes) had been transferred in October from Syria to Egypt, where their aircraft were fitted with bombracks to carry eight 40 lb. bombs, the role of the squadron being changed from a fighter to a fighter-bomber squadron. A period of

/training

(1) The re-allocation of squadrons made prior to the offensive is indicated at Appendix "U".

(2) Landing grounds at Bir Khamasa were used for refuelling.

training was carried out at Fuka and the first test with bombs made on 1st November. The intention, however, was to keep the squadron in reserve until the opening of the offensive.

Strengthening of Medium Bomber Force

Squadron O.R.Bs. and No.270 Wing O.R.B.Oct.& Nov.1941. M.E.W.O.S. No.2 App.F. The Western Desert Blenheim bomber strength was increased by the transference from Iraq of No.14 Squadron and No.84 Squadron (the latter operating as two flights attached to Nos.14 and 45 Squadrons), and from Aden of a flight of No.8 Squadron. A Free French Blenheim squadron (Lorraine Squadron) was also formed at Fuka during the latter part of October, but was not operationally employed until the actual battle was joined.

S.A.A.F. Narrative p.204. Idem p.211. No.270 Wing O.R.B.Oct. The medium bomber force thus became sufficiently large to necessitate control by two wings. The creation of a S.A.A.F. Medium Bomber Wing at Maaten Bagush at the beginning of October was officially recognised as No.261 Wing by a M.E., Air Order dated 17th October; on 3rd November, Air Ministry agreed to this wing being renamed No.3 (S.A.) Wing. The second wing, No.270 Wing (for the first few days of its existence named No.265 Wing), was formed with Headquarters at Fuka on 24th October.

Towards the end of the preparatory phase the bomber squadrons were controlled as follows:-

No.3(S.A.) Wing (Col. Willmot, S.A.A.F.) - Maaten Bagush.

Nos.12 and 21 Squadrons, S.A.A.F. and Nos. 11 and 113 Squadrons.

No.270 Wing (Group Captain G. Beamish) - Fuka.

Nos. 14, 45, 55⁽¹⁾ and 84 Squadrons and one flight of No.8 Squadron.

Additional W.D. Reconnaissance Units

No.208 Sqn. O.R.B. Oct. '41. No.237(R) Sqn.O.R.B. Oct.& Nov. Army Co-operation squadrons, under No.253 Wing, were brought up to three. No.208 Squadron(Hurricanes), transferred from Palestine, reached the Western Desert on 19th October, in order to share the main Army Co-operation commitments with No.451 Squadron, R.A.A.F. The squadron began operations on 30th October. No.237 (Rhodesian) Squadron (ex Kufra) completed its re-arming with Hurricanes in the Delta in October and moved up to the Desert at the end of the month. During the preparatory period this squadron was kept in reserve.

S.A.A.F. Narrative p.210. For additional reconnaissance commitments, detailed later, a Strategic Reconnaissance Unit was formed on 12th October from a flight of No.12 Squadron S.A.A.F.(Marylands) with flying personnel from Nos.12 and 24 Squadrons S.A.A.F. and No.39 Squadron. The unit was attached to No.24 Squadron S.A.A.F., Fuka, under No.3 (S.A.) Wing.⁽²⁾

Idem p.259. No.24 Squadron, S.A.A.F., which was re-arming with Bostons, in place of Marylands, had a complete flight of Bostons ready for operations by 14th November, with the balance of the aircraft due in the following fortnight. Owing to the need for further reconnaissance particularly of enemy landing grounds, it was decided that the squadron should first be used for reconnaissance instead of in a bomber role. No operations were carried out in the preparatory phase, the reconnaissance duties commencing on the eve of the offensive. The squadron did not operate as a bomber squadron again until December.

/A

- (1) No.55 Squadron returned to No.201 (H.C.) Group
- (2) In mid-November work was begun to make the unit self-supporting. By the end of the month it was practically self-sufficient.

S.A.A.F.
Narrative
p.198.

A detachment of No.60 Squadron, S.A.A.F., (ex East Africa) arrived at Fuka at the beginning of October with three Marylands. The squadron was considerably under establishment and there was much sickness among the personnel who had served in East Africa. The detachment was allocated for survey work required by the Army.

No.203 Sqn.
O.R.B.
Nov.1941

To supplement the sea reconnaissance carried out by the detachment of No.39 Squadron a detachment of No.203 Squadron (Beauforts) - also of No.201 (N.C.) Group - commenced operations from Fuka on 7th November. (1)

Air Transport

A.O.C.in-C's
Correspondence with
C.A.S.
Part IV.
Encl.234A.

Arrangements for concentrating all available transport aircraft were put in hand during the first week in November. These forces comprised:-

No.216 Squadron (16 I.E. Bombays)
No.117/31 Squadron (12 I.E. D.C.2s.)

Appendix V.

(This composite squadron was made up of Squadron H.Q. and one flight of No.117 Squadron plus a flight of D.C.2s from No.31 Squadron, India).

No.1 Australian Air Ambulance Unit (Three D.H.86s)
South African Air Ambulance Unit (One Lodestar)
Five D.H.86s, taken over from British Airways and fitted with stretchers. These aircraft were operated by No.216 Squadron.

Air Headquarters, W.D., Communication Flight (About 12 two-seat aircraft of various types).

Further assistance could be obtained from British Airways.

Idem.

The air transport forces were to be controlled by an Air Transport Wing Headquarters. Owing to shortage of staff this was formed as a nucleus and therefore had to function as part of Air Headquarters, Western Desert at Maaten Bagush. The fact that the unit was not formed until immediately prior to the opening of the offensive "militated against smooth working in the early stages".

Non Flying Units

A list of units responsible for maintenance, repair, salvage, signals, medical and defence arrangements, with their location during the preparatory period, is given at Appendix X. Locations of some of these units at later dates are included at Appendix V.

General Maintenance Project

A.H.B.
II J6/7/2
p.4.

The general policy for maintenance was that the Air Stores Parks should supply all units of the Force with requirements of technical and non-technical equipment, while the Repair and Salvage Units should assist the squadrons in the maintenance of aircraft and M.T. vehicles. The maintenance organisation in the field, would, in turn, be supported by the maintenance organisation in the base area (Delta and other African depots). (See Appendix L).

It was the policy to maintain squadrons to full I.E. and I.R. establishment. Such wastage as occurred during Phase One and Two would be replaced under normal arrangements. It was anticipated that the operational intensity during these phases would allow the full scale of reserves to be virtually intact.

/The

(1) The work carried out by G.R. squadrons is not treated in this narrative as it is covered in a separate narrative dealing with the air-sea war.

The distribution of responsibility of the A.S.P.s and the R.S.U.s. is shown at Appendix Y.

Aircraft Issued to Squadrons During Phase One

An indication of how the Western Desert squadrons were built up during the preparatory period is given by the following list of aircraft issued, according to type:-

R.A.F. Operations in W.D.etc. Nov. '41-May '42.	Hurricanes	90
	Tomahawks	53
	Blenheims	59
	Bostons	19
	Marylands	4
	Beaufighters	2

Increased Mobility

A.H.B.
II J6/7/2

Theoretically all units of the Western Desert Air Force, with the exception of Air Headquarters, heavy bomber squadrons (operationally controlled by A.H.Q., W.D.) and F.A.A. squadrons, were mobile.

Wg.Cdr.
Finlayson's
Report
(Draft)
A.H.B.
II J6/7/4

The main consideration was the necessity for maintaining uninterrupted air operations while the ground organisation moved backwards or forwards. "To achieve this, every unit, which in static conditions works as an undivisible entirety, must be made to walk. For this purpose two limbs are required, each of which can carry the weight of the body while the other is reaching forward. Therefore it is a fundamental principle in mobile warfare that every unit must be capable of division into separate entities."

D/AOC/5
Part I
Encls. 38A.

Although improvements had been made to increase mobility it was still evident, as the A.O.C., W.D., reported on 7th November, that "the establishment of vehicles of any R.A.F. unit has always been cut to the bone and it is difficult to recover the years the locusts have eaten." Though squadrons may be able to manage in England - moving over good roads without need to carry reserves of petrol and water - the R.A.F. have never legislated adequately for moving over desert or some of the appalling going encountered out here."

A.V.M. Coningham was not concerned so much with the squadrons, (2) which were then up to full establishment in load carriers (22 for fighter and 26 for bomber squadrons) as with non-operational units - particularly the main bodies of the R.S.U.s and A.S.P.s, A.H.Q., W.D., and the S. & T. Columns (the latter having a preponderance of unsuitable Ford six-wheelers). The A.O.C.'s last-minute requirements were met to a considerable extent by the C.M.S.O.'s action in supplying 84 additional three-tonners and extra utility vehicles shortly before the opening of the offensive.

/The

- (1) Wg.Cdr. Finlayson in his draft report remarks rather cynically: "Establishments for our mobile units appear in general to be made up by taking the establishment of a static unit, cutting every item down to the lowest limits, and then adding to it sufficient M.T. to carry what personnel and equipment remains. Thus maintenance difficulties are increased, the comforts of personnel are decreased, and the unit is put into the raw conditions of the field or desert".
- (2) It is not implied, however, that the squadron C.O.s were satisfied with their allotment. In point of fact most C.O.s declared that they required three more load carriers: this demand was refused. A suggestion was made by the Assistant C.M.S.O. that as the squadrons were to move up with no bulky equipment (i.e. no E.P.I.P. tents, bulky mess equipment or personal equipment - officers, e.g., being limited to 35 lbs) certain vehicles would be withdrawn and added to the Reserve Pool. The A.O.C. found this impracticable. (D/A.O.C. 5 Part I encl. 38A)

M. & S. The effort made to render the Western Desert Air Force as
Organisation mobile as possible is incited by the fact that of the R.A.F.
'Crusader' vehicles involved at the beginning of the advance 802 were new.
and After.

Air Operational Plan for Phase One

A.O.C.-in-C's
Correspon-
dence with
C.A.S. etc.
Part III
Encl.233A.

During the preparatory period (D-35 to D-6) the Air Force aimed at the intensification of its counter air force activity in order to achieve air superiority, and also the weakening of the enemy forces by the interruption of their supplies. The latter task was the dominant one, although the success achieved was dependant to a great extent on the outcome of the first.

A.H.B.
II J6/7/4
Part I.

In respect of the first commitment the enemy forces primarily to be considered were those located in Cyrenaica. In particular, German bombers and transport aircraft were based in the Benghazi and Derna areas, dive-bombers at Tmimi, Italian bombers and fighters at Martuba and German fighters in the Gazala area, with advanced landing grounds around Gambut. The core of the Axis Air Force was the German fighter force based at Gazala.

A.H.B.
II J6/7/1.
"Crusader"
Air Plans.

Air superiority had first to be established, accordingly, over the triangle Tobruk - Bardia - Maddalena (comprising the enemy's forward area) and this also implied the prevention of enemy tactical air reconnaissance and interference with our ground forces.

Subsidiary counter air force commitments, which had to be carried out if the situation warranted it, were attacks on airfields in Greece and Crete in order to neutralise the long-range aircraft based there, and attacks (from Malta) to help to contain the air forces in Tripolitania and Sicily.

Features of Enemy's Supply System

The dislocation of the enemy's supply organisation involved an intensification of the attacks on the lines already indicated in Part Four.

M.E.W.I.S.
No.74.
Appendix B.

The main features of the enemy supply system in Libya obtaining in early November (as appreciated by Intelligence, Eighth Army) were as follows:- Benghazi was considered as "railhead" for Cyrenaica. In general, supplies of all kinds were shipped by fast convoy from Italy to Tripoli. Most of the supplies of food, ammunition and petrol were transferred by coastal shipping to Benghazi, although in some instances road convoys made the journey to the forward areas without unloading. Tanks and M.T. were driven from Tripoli to Benghazi by road and then despatched forward. In sending supplies forward from Benghazi, Derna was used as a staging post. The forward delivery points for stores were situated along the road between Gazala and Tobruk. Dumps further forward (Bu Amud to the frontier) were assumed to be laid down under formation arrangements and moved according to need. An extract from H.Q., Eighth Army's D.I.S.No.46, giving fuller details, is attached at Appendix Z.

For attacks on sea-borne supplies to Tripoli and land facilities and communications associated with the unloading and transporting of supplies eastwards, Malta remained the strategic centre. The effort against Benghazi and Cyrenaican communications to the battle area, which came within the orbit of the bombers controlled by A.O.C., Western Desert, now needed to be stepped-up.

Task of Fighters

A.H.B.
II J6/7/1

In the following account of the allocation of tasks during Phase One, the three Fighter Wings are numbered as at the end of the phase.

In pursuance of the policy laid down, No.258 (Fighter) Wing was set as its primary task offensive action over the Tobruk - Bardia - Maddalena triangle by periodic offensive sweeps in such strength as to ensure superiority against any enemy formation likely to be encountered. The Wing's secondary commitments included providing cover for the aircraft of No.253 (Army Co-operation) Wing, engaged on tactical and photographic reconnaissance of enemy dispositions, cover for day bombers attacking targets in the forward area and local defence commitments. In general, the bombing attacks were to be co-ordinated with the protective sweeps provided for No.253 Wing. When necessary No.258 Wing could be called on to assist No.269 Wing with the protection of the Tobruk convoys.

M.E.W.O.S.
No.6 and
No.262 Wing
O.R.B.
OCT. 1941.

No.262 (Fighter) Wing helped with the control of squadrons arriving in the Western Desert during the period and was allotted tasks similar to those of No.258 Wing.

No.269 (Fighter) Wing was allotted the task of intercepting enemy reconnaissance and day bomber aircraft in the Matruh - Daba base area and providing the routine escorts for the Tobruk convoys. Help with these tasks when necessary could be afforded by the other fighter wings.

Reconnaissance Commitments

A.H.B.
II J/6/7/1
No.208 Sqn.
O.R.B.
Oct.1941.

The requirements of the Army were to be met by No.253 (Army Co-operation) Wing. In particular, No.208 Squadron was allocated to the Armoured Corps (30th Corps) and No.451 Squadron to the 13th Corps. Until the 30th Corps were ready for operations, however, a detached flight of No.208 Squadron was put at the disposal of the 13th Corps. No.257 (Rhodesian) Squadron was to be held in reserve during the preparatory period and held ready to help either Corps, if necessary. The Wing Commanders controlling the Corps squadrons were to live with the Corps Commanders to maintain close contact, while Squadron Leaders operated the squadrons. In addition, selected Wing Commanders were to be placed with the Divisional Commanders for liaison duties.⁽¹⁾ During the preparatory period the Army Co-operation squadrons were responsible for pinpoint and overlap photography to a depth of 40 miles beyond the enemy's lines.

A.O.C-in-C's
Correspon-
dence A.O.C.
to C.A.S.

Encl.234A.
A.H.B.
II J6/7/4
Section VI.

In addition to the Army Co-operation squadrons the Survey Flight (No.60 Squadron) was made available for carrying out photographic reconnaissance for mapping purposes in order to meet the requirements of the Army Survey Company at Eighth Army Headquarters.

Idem.

Owing to the inability to meet the accumulating demands of the Army a Strategic Reconnaissance Unit was formed from a flight of 12th Squadron S.A.A.F. (page 93) to undertake photographic and strategic reconnaissances beyond the limits of the Army Co-operation Squadrons' responsibilities.

For assistance in covering the more extensive stretches of the Desert the Photographic Reconnaissance Unit could be called upon. The Unit was required to undertake photographic tasks requiring a particularly high standard and associated with mapping and the identification of long established fortifications rather than for day to day reconnaissance information.

/In

- (1) Wg.Cdr. Geddes was sent to 13 Infantry Corps (Lt.Gen.Godwin-Austin); Wg.Cdr. Charles to 30 Armoured Corps (Lt.Gen. Willoughby Norrie); Wg.Cdr. Ferrers to 4 Indian Division (Lt.Gen.Masserry); and Wg.Cdr. Gill to N.Z. Division (Lt.Gen. Freyberg).

In general, demands for photographs for the Army were made through General Staff Intelligence. It was necessary, so far as resources permitted, to locate the enemy's formations, particularly his armoured divisions; to discover his dispositions, defensive works; gunpits; petrol and ammunition dumps and minefields; to survey certain road and tracks and keep check of the traffic using them; and keep a rough check of tonnage passing through enemy ports.

The reconnaissance demands of the R.A.F. were passed through the Senior Intelligence Officer, A.H.Q., Western Desert. In particular, a photographic check was required as often as possible of all enemy airfields in order to build up a picture of enemy air force dispositions. In addition, further intelligence was to be obtained by photographs of attacks by the light bomber squadrons. It was intended that reconnaissance should provide one of the main sources of information for the selection of bomber targets during the preparatory period and when the offensive was in full swing.

It should be noted, also, that No.201 (Naval Co-operation) Group was responsible for reconnoitring the ports, harbours and airfields in Crete and Greece and arrangements were made for any photographs likely to be of use to A.H.Q., Western Desert, to be passed to that Headquarters. Similarly, A.H.Q., Mediterranean, was responsible for similar commitments within the scope of reconnaissance aircraft based on Malta.

Photographic Check on Enemy Air Bases

Idem.

In order to obtain a complete picture of enemy air force dispositions it was obviously desirable to procure photographs of all air bases at the one time. This was particularly important in the desert where squadrons constantly changed their landing grounds for purposes of security or in order to extend their range. Our main task was to detect the movements of the elusive German fighter force.

As cloud was more prevalent over the Jebel area than over the desert it was realised that the ideal of simultaneous photography of all airfields was most unlikely to be realised. A north and south line through Gazala, however, coincided with the division between the enemy's fighter and bomber landing grounds. It was decided, therefore, to attempt to obtain complete and simultaneous photographs of one or other of the two areas east and west of the dividing line. These airfield areas were designated "Alpha" and "Beta" areas and comprised the following landing grounds. Photographs of the main bomber targets were included as convenient.

"ALPHA" RECCE.

Priority A.

Barce
Benina
Berka
Berka satellite
Derna
Gazala No.1
Gazala No.2
Martuba West
Martuba Main
Timimi

"BETA" RECCE

Priority A

Benghazi Harbour

Priority B

Gambut
Gasr el Arid
Bir el Baheira
Monastir
Capuzzo North
Sidi Rezegh
Sidi Aziez
Bir el Gobi
Gabr Saleh
Gobi
Bu Amud

Priority B

Benghazi harbour

Priority C

(Alternatively under "Beta" recce.)

Priority C

(See under "Alpha" recce)

Agedabya
Bersis
Mechili
Acroma
El Adem
Cirene
Appolonia
Ghemines
Soluch

A list of photographs taken over Libya from early October, 1941 to the end of the 'Crusader' campaign is given at Appendix A(i).

Bomber Tasks

A.H.B.
II J6/7/1

No.3 (S.A.) Wing was assigned the tasks of carrying out day attacks on supplies and dumps in the back areas, shipping at Benghazi and landing grounds in the Gazala and Timimi areas. No.270 Blenheim Bomber Wing was required to attack enemy landing grounds and army targets in the Tobruk - Bardia - Maddalena triangle, the day attacks to be co-ordinated with the sweeps made by Nos. 258 and 262 Fighter Wings. For night operations Fleet Air Arm Albacores were to be made available for identifying and illuminating the targets.

The heavy bombers of No.257 Wing (later No.205 Group) were to continue their pressure on shipping and port facilities at Benghazi by night and attack such other strategic targets as might be decided on from time to time.

A.O.C.-in-C's
Correspondence with
C.A.S. etc.
Part III.
Encl.233A.

During the first half of the preparatory phase our bombing policy was to conserve our strength, to continue the training of squadrons and to furnish crews with experience of the battle area. Casualties to flying personnel and aircraft would, accordingly, not be high and losses could be replaced from available reserves. It was originally intended that the bomber forces should be conserved for a maximum effort on the night D-1, D-day and D+1. The A.O.C.-in-C., however, considered this arrangement wrong, as the night in question was moonless and there was the chance that the weather would deteriorate and thus limit the proposed effort. Accordingly, it was decided that the Wellingtons should operate at maximum effort as from the night 5/6th November onward and concentrated day attacks should be delivered against the enemy air forces as soon as our fighters were at concert pitch, which was expected to be reached a few days after the Wellingtons began their maximum effort. Loss of surprise likely to be caused by the intensified effort was not thought to be a real factor as the Army concentration prior to D-day was not expected to be fully concealed in any case.

Bomber Effort from Malta.

D/AOC.3
Malta
Encl. 47A.

Apart from the constant need to attack sea-borne supplies as the occasion arose, the most profitable targets associated with the 'Crusader' project for Malta-based bombers up to D-10 were considered to be:- the repair depot and workshops on the Castel Benito airfield, the docks, shipping, petrol pipe-line terminus and pumping station at Tripoli, the docks at Naples and aircraft and the aero engine repair shops on the airfield at Mellaha.

/Possible

Possible Modifications of Air Plans

A.H.B.
II 36/7/1

It was appreciated that the enemy would realise that our build-up in the Western Desert portended an attack and was likely to make counter moves to meet it.

There were three main moves open to the enemy:-

- (a) He could attempt to reinforce his Cyrenaican front - particularly his air forces - to such an extent as to withstand our attack;
- (b) He could anticipate our offensive by launching one himself; or
- (c) He could withdraw his armour and his air forces as far as possible behind strongly fortified localities such as Bardia, Gazala and Derna.

The first two of the probabilities mentioned above depended on an improvement of the enemy's supply situation, which was unlikely in view of our air action and a parallel activity by the Royal Navy. It was on the cards, however, that the enemy could strongly reinforce his air strength in Cyrenaica from his resources in Tripolitania, Sicily, Sardinia and the Eastern Mediterranean. The Air Plan allowed for attacks to neutralize or contain these forces, but it was possible that this effort might have to be stepped-up. In particular, if a considerable Wellington effort was required against the enemy's air bases in Greece and Crete, this would involve a diversion of the effort against Benghazi and an inevitable improvement in the enemy's supply situation. If the enemy attempted to forestall us by initiating a ground offensive our Phase One operations would necessarily have to be cut short. As the battle area would then be the Sidi Barrani - Khamsa - Maddalena triangle an alternative series of locations for our air forces for Phase Two and Three operations had to be drawn up in case of need.

If the enemy decided to withdraw behind defended positions our counter air force operations would be easier to carry out as our squadrons could operate from the landing grounds evacuated by the enemy against air forces which would be concentrated on a few airfields. In view of the reduced commitments, much of the bomber effort, also, would be sooner available for attacks on armoured concentrations and supply dumps within the defended areas.

In the event the enemy carried out none of the three counter moves open to him and our offensive - through factors which will emerge in the narrative - achieved tactical surprise.

Operations and Training During Preparatory Period

Weaknesses of Fighter Force

The operations of No.258 Wing over the forward Tobruk - Bardia - Maddalena area during the first half of the preparatory phase revealed the need for further reorganisation and training before the Fighter Force was ready for the battle.

The duties on which our fighter squadrons had been engaged since the siege of Tobruk were predominantly defensive. Their almost invariable tasks were:- protective cover over shipping supplying

/Tobruk

AOC-in-C's
Correspondence with
C.A.S.
Part III
Encls. 234A

A.H.B.
II J6/7/4

AOC-in-C's
Correspondence with
C.A.S. etc.,
Part III
Encl. 234A

Tobruk⁽¹⁾ patrols over our troops in the forward area, the escorting of reconnaissance aircraft and (during the opening days of Phase One) the escorting of Blenheim bombers. Our pilots had long thought in terms of defence and their tactics were inevitably non-offensive. Many of our most experienced pilots had, moreover, been lost in the Greece and Crete campaigns and there was an "extreme shortage of... both wing leaders and section leaders". "We have," the A.O.C.-in-C. reported, "a large proportion of pretty raw material which we have had to push forward after only very abbreviated O.T.U.".

Our pre - "Crusader" fighter tactics - which were also largely used at the outset of the preparatory period were, accordingly, inadequate. Our formations were often made up of mixed types of aircraft and these composite formation flew at heights where the performance of our Hurricane Is and IIs and Tomahawks was not at its best, giving tactical advantage to the Germans who used their small force of ME.109Fs (with their superior speed and climb) to advantage. "Our formations were frequently straggling affairs without proper cohesion between higher and lower elements. Individual aircraft, except for two weavers per squadron, were still flying straight, a practice which had been abandoned in England for some time. Defensive circles, ducking and other defeatist tactics were common. The consequence was the Germans evolved a technique for dealing with our cumbersome defensive patrols..... The Germans had comparatively few aircraft but of higher performance than ours..... The Germans avoided giving us any tactical advantage and relied upon their superior ceiling and speed". "His (the Hun's) present tactics", Air Marshal Tedder wrote in early November, "are the old ones of hanging off..... until he sees a chance of picking off a straggler".

The nature of the previous defensive tasks, imposed by circumstances, and the potential threat of German jumping tactics combined with the lack of experience and training of many of our pilots, the inferiority of our aircraft compared with the Germans' latest type and grave deficiencies in flying Kit were all likely to weaken the offensive spirit and lower the morale of our fighter pilots. The measures taken during the latter part of Phase One to ensure that the Fighter Force was prepared for battle operations are discussed later.

It is not meant to imply by the above that our fighters over the forward area were outmatched. The position so far as the air war with the G.A.F. was concerned was a stalemate, while the Italian fighters during the preparatory period kept away from the forward area. Our fighter formations rarely had the opportunity of forcing the Messerschmitts to give battle and yet had to operate in strength for fear of the German tip and run technique. On the credit side the Germans were unable to prevent our formations from effectively covering

/our

- (1) Air Marshal Tedder in his letter to the C.A.S. said:
"It was moreover only when offensive sweeps began again that we realised what a bad effect these continuous ship cover patrols had been having. The first day I was up there (referring to visit to W.D. ~~later~~ October and early November) during a three squadron sweep one squadron went into a defensive circle when eight Huns appeared. The squadron commander is a good fighting leader but until I talked to him it hadn't occurred to him that there was anything wrong about it." (A.O.C.-in-C's Correspondence with C.A.S. Enclos. 234A).

our tactical reconnaissance aircraft wherever they wished to operate.⁽¹⁾

There were only three combats of note with ME.109s and honours were slightly in our favour.

S.A.A.F.
Narrative

On 22nd October the Tomahawks of No.2 Squadron S.A.A.F., returning to base after escorting No.45 Squadron Blenheims operating against Gasr el Arid, were "jumped" by the ME.109Fs; the outcome of the combat was reported as one aircraft shot down on either side.⁽²⁾

The following day six Hurricanes of No.1 Squadron S.A.A.F., took part in a Wing sweep over the forward area with Tomahawks of Nos. 3 Squadron R.A.A.F. and 238 Squadrons: the S.A.A.F. squadron flew at 19,000 feet as middle cover in the formation with No.238 Squadron above at 21,000 feet and No.3 Squadron below at 18,000 feet. Over Halfaya Pass, however, the top cover Tomahawks had parted company with the formation and six ME.109s took advantage of this to "jump" the Hurricanes from about 20,000 feet. Two Hurricanes, which had become separated from the formation, as the result of A.A. fire over Halfaya, were shot down by the ME.109s (the pilots escaping by parachute), but three of the remaining four Hurricanes claimed three Messerschmitts destroyed⁽³⁾ and another damaged without further loss. A passage in the unit's diary reads:- "The engagement had an immediate beneficial effect on the morale of all pilots. We had been frequently 'jumped' by ME.109s during the last month and there seemed no way of countering their hit and run tactics. Lt. L....., leading our formation, showed that ME.109s are not invincible - an opinion which several pilots held - and that their hit and run tactics are not infallible.....the morale of the pilots has gone back to its former high level".

M.E.W.O.S.
No.3

On 30th October eleven Tomahawks of No.250 Squadron on an offensive sweep covering tactical reconnaissance aircraft of No.208 Squadron encountered about eight ME.109S near Bardia: honours were believed to be even as the result of the combat, one aircraft being reported as shot down on either side.

The operations of our fighter squadrons in strength over the forward area during the preparatory phase, although not spectacular, ensured that an adequate degree of air superiority was maintained.

Protective Commitments

M.E.W.O.S.
Nos.1 to 4

Shipping protection and local defence still absorbed the fighters' main operational effort during Phase One. Full figures are not available for the first week of the period, but from 21st October to 11th November 418 sorties were flown on these protective tasks, amounting to 65 per cent of the total fighter effort. In particular, nearly 100 sorties were flown over the Tobruk convoys during the week ending 28th October, when the final relief of the 9th Australian Division was successfully effected.

/These

- (1) The only losses through enemy action suffered by the Army Co-operation squadrons occurred on 12th November, when two Hurricanes of No.451 Squadron R.A.A.F. failed to return from a photographic reconnaissance of the Sidi Omar area.
- (2) German records, however, show only one ME.109 damaged (Verluste Afrika ADIK 103/64)
- (3) German records, however, show no ME.109, either destroyed or damaged on 23rd and 30th October (Verluste Afrika, 103/64)

These defensive patrols were carried out almost without incident - a negative proof of their efficacy in dissuading the enemy from attempting any appreciable offensive action.

Fighter Training and Reorganisation

As already mentioned the fighter operations revealed the need for a general overhaul of tactics and organisation. The measures carried out included the withdrawal of squadrons from operations, in turn, for training; the appointment of a Senior Fighter Wing Commander (Group Captain K.B.B. Cross, appointed Officer Commanding No.258 Wing); the replacement of several squadron C.Os. who were not considered first class; the introduction of fresh fighter pilots from England (page 33); and the temporary building up of squadrons to an increased establishment of 18 I.E. aircraft plus 7 I.R., to provide against the anticipated heavy wastage during the early stage of the battle.

Tactics recently evolved at Home and now introduced in the Desert under the general supervision of the newly-appointed S.A.S.O. at A.H.Q., Western Desert (Air Commodore B.E. Embry) involved more offensive formations. In particular, each aircraft weaved within its squadron formation. "The squadrons are enthusiastic over the new methods", wrote Air Marshal Tedder, "and they should be a very effective answer to the Hun's tip and run tactics. I should hate to have to tackle one of these formations which looks like a swarm of angry bees".

It had been hoped that the information transmitted by the A.M.E.S. at Tobruk could be exploited to effect interceptions over the forward area in sufficient force to ensure success, but this was found to be impracticable for the following reasons:-

- (a) The vital part of the battle area owing to our Army's initial advance would almost certainly be further from our forward fighter grounds than from the enemy's fighter base at Gazala.
- (b) Even if it had been possible to operate still further forward than from the Maddalena landing grounds (Prepared for the start of the battle) there would still have been the difficulty, due to dust and limited take-off area, of getting squadrons airborne quickly enough for interception.
- (c) Lack of R/T range.

It was therefore decided to operate in a series of Wing sweeps of two squadron strength over the areas considered most vital by Eighth Army Headquarters. The flying wings were constituted as follows:-

Nos. 3 R.A.A.F. and 112 Squadrons	(Tomahawks)
Nos. 2 and 4 Squadrons, S.A.A.F.	"
Nos. 1 S.A.A.F. and 274 Squadrons	(Hurricane IIs)
Nos. 229 and 238 Squadrons	(Hurricane)
Nos. 94 and 260 Squadrons	(Hurricane Is)
Nos. 250 and R.N.(F) Squadrons	(Tomahawks and Hurricane Is)

Against the uneconomical use of aircraft involved in the sweeps had to be balanced the advantage of probably outnumbering the enemy encountered, thus off-setting to some degree our inferior aircraft performance.

/The

HQ AHQ W.D.
ORB Oct.41
and
A.H.B.
II J6/7/4

AOC-in-C's
Correspon-
dence with
C.A.S.
Part III
Enclos.234A
and
A.H.B.
II J6/7/4

Gp.Capt.
Cross's
Report
appended
to Wg.Cdr.
Finlayson's
Report
(IIJ6/7/4)

The flying wings during the period of intensive operations were expected to carry out two missions daily: during the actual campaign, however, some squadrons flew three sorties per aircraft. The duration of the sweeps was approximately two hours.

Idem

"Wings adopted with slight variations the formation of one squadron 1,000 feet above the other, with squadron in six pairs line abreast and well spaced. Though unmanoeuvrable this was found to be the best formation for searching. In two of the most successful Wings the interval between squadrons was increased up to 4,000 feet and to overcome the difficulty of visual contact the top squadron led". (1)

The wisdom of building up the Fighter Force beyond the normal establishment was proved in the early stages of the campaign, when the arrival of replacement aircraft was tardy, due mainly to the fact that casualty signals were delayed through the preponderance of priority operational W/T traffic.

Reconnaissance Activity

Daily reconnaissance sorties were carried out both by tactical and strategic reconnaissance aircraft in order to fulfil Phase One commitments.

During this preparatory phase, our target information was not in such a state of flux as it inevitably became when the battle was joined and day to day needs were slight compared with later requirements.

Squadron
O.R.B's

From the time of its installation on L.G. 75 (11th October) to 12th November No. 451 Squadron, R.A.A.F. carried out 23 tactical reconnaissance sorties and fifteen photographic sorties on behalf of the 13th Corps and the detached flight of No. 208 Squadron during the last fortnight of the phase, operating from the same landing ground, flew ten sorties on tactical and eight on photographic reconnaissance. During this static period all reconnaissance sorties were accompanied by a "weaver" except when cloud was 6/10ths or more, or the fighter cover was available. The flights operated under the direct operational control of the 13th Corps and reconnaissance requirements were not, in general referred back to No. 253 Wing unless the demands necessitated operating further than ten miles west of the wire.

In preparation for working with the 30th Corps, also, No. 208 Squadron engaged in R/T practice with the 7th Armoured Division (this practice being combined with a search for M.T.) and Arty/R practice with the 2nd Armoured Division W/T vans.

S.A.A.F.
Narrative

The newly-formed Strategical Reconnaissance Unit carried out its first operation - over the Benghazi area - on 14th October. Areas subsequently covered during the month included the Siwa Oasis, Gazala, Timimi, Martuba, Bir el Gobi, Gabr Saleh and enemy forward landing grounds. Army and R.A.F. demands were co-ordinated by the Senior Intelligence Officer at A.H.Q. Western Desert and at this stage the tasks for the day were sent direct to the unit by signal.

/During

- (1) "This scheme worked well against a fighter force employed mostly in support of bombers, but as soon as the land battle stabilised it had to be abandoned, it being found that the top cover often saw a target below which it was unable to attack and the lower formation was often attacked from above without the top cover knowing anything about it". (A.H.B. IIJ6/7/4)

A.H.B.
II J6/7/4

During the preparatory phase, however, the S.R.U. crews, which in some cases were due for a rest from operations, were still only partially trained in the work and handicapped by various deficiencies, including a flying kit for high flying. As weather conditions were also frequently unfavourable for high flying, few positive results of value were achieved.

S.A.A.F.
Narrative

The Survey Flight (No.60 Squadron) operating on behalf of the Army Survey Company at Eighth Army Headquarters, commenced its specialised work on 16th October.

R.A.F.Med.
Review
No.6.

The unit had come into the field almost at the eleventh hour so far as "Crusader" was concerned and essential areas had to be photographed as quickly as possible so that necessary map revisions could be prepared for our ground forces. There was no time for "block photography" to cover the whole specified area and work was confined generally to flying strips of twin-obliques along strategic roads, tracks and wadis or providing photographic tie-strips between central ground points. One Maryland operated every day and areas photographed included: Gialo, Mechili (from the first sortie over this area the Squadron's C.O. failed to return) Bir Hakim to Sidi Omar, Bir Tengeder and Bir el Chleta.

S.A.A.F.
Narrative

A.H.B.
II J6/7/4

The survey photographs taken by the unit were available for R.A.F. examination through the Army Air Photographic Interpretation Unit. The Survey Flight, considering the shortness of time and limited aircraft resources, performed most valuable work.

The Photographic Reconnaissance Unit was not only short of aircraft but had commitments elsewhere in the Middle East. On the average, one long-range Hurricane fitted with three 20" lens cameras was provided for "Crusader" work. Films were processed at night by the Unit at Heliopolis, where a preliminary interpretation was made, and flown forward the following morning in the aircraft detailed for the next day's photographic task.

Difficulties of Photographic Reconnaissance.

Idem

The difficulties associated with photographic reconnaissance during Phase I were summarised by the S.O.O., Air Headquarters Western Desert as follows:-

"During the preparatory period the Army requested far more photography than it was within our capacity to provide.

The weather was most unfriendly. Owing to the urgency of the tasks and the daily supplications of the Army our aircraft rarely failed to make efforts to obtain the photographs every day. The consequence was that many photographs were inferior and piecemeal. Owing to the great distances these abortive attempts seriously affected the serviceability of our aircraft, and it was frequently impossible to make the best use of the few good days. The Germans were able to intercept our aircraft in the frontal area, and near their fighter bases. This area extended from Maddalena and Sollum westwards to Gazala. Since most Army requirements were in this area, our aircraft were not operating in amenable conditions and were, indeed, frequently chased off whilst engaged in their mosaics. There are considerable tactical complications in undertaking photographic tasks in these conditions. The desert does not provide a surfeit of features which our pilots can use as starting point for their runs..... The S.I.O. did his best to co-ordinate all photographic requirements. Demands came in from the Army at night, however, and short of overloading the signals communications already hectic at that time of night, it was only possible to eliminate any tendency towards habitual redundancy. Day to day redundancy was reduced, but not always eliminated."

/So

So far as the check of the enemy's main airfields and landing grounds was concerned "eventually we were able to cover the majority of enemy air bases although not entirely to our satisfaction."

M.E.W.O.S. Bomber Effort
Nos.1 to 5

During the preparatory period the Middle East bomber squadrons flew a total of 630 sorties, of which 292 were flown in the last eight days and nights, when the bomber scale of effort was stepped up. The sorties were divided as follows:- 393 against ports (including shipping in harbour) and bases: 139 against airfields and landing grounds: 88 against enemy positions, transport vehicles and dumps in the forward area: and 10 against shipping at sea:

Malta-based bombers and fighter-bombers contributed 500 sorties with the effort directed as follows:- 321 sorties against ports (including shipping in harbour) and bases: 84 against airfields and landing grounds: 70 against shipping at sea: and 25 against enemy positions and road transport.

Increased Pressure on Benghazi

In attacks on Cyrenaican supply targets the bombing of the enemy's main base of Benghazi remained the dominant feature.

No.257
Wing
(later
No.205
Group)
O.R.B.
AOC-in-C's
Correspon-
dence with
C.A.S.
Part 3
Enclos.234A
and No.205
Group ORB
Nov.1941
M.E.W.O.S.
Summary
No.3.

In their constant effort by night the Wellingtons of No.257 Wing (later No.205 Group) flew a total of 144 effective sorties, dropping nearly 184 short tons of H.E. bombs - including during the last week of the phase a proportion of 4,000 pounders - and approximately ten and a half tons of incendiaries. The targets attacked included the moles, shipping (when seen), petrol storage, stores (including the main supply depot) and marshalling yards. There were no Wellington losses due to enemy action. On the night of 1st/2nd November, however, heavy losses were caused through a fog developing "suddenly four hours before the Met. expected". Of the Wellingtons operating on that occasion seven of No.148 Squadron attacked petrol dumps at Coefia, north-east of Benghazi. These aircraft were routed to alternative landing grounds as soon as the fog started to form, but all the Western Desert landing grounds were quickly obscured. Five of No.148 Squadron's aircraft crash-landed, four being destroyed and the other badly damaged. Five member of the crew were seriously injured and seven slightly.

AOC-in-C's
Correspon-
dence with
C.A.S.
Part 3
Enclos.234A

Although the intensified Wellington effort resulted in further damage to port facilities and virtually stopped off-loading at night the attempt to hit shipping at night proved the most difficult task. On 4th November Air Marshal Tedder reported:-

"The relatively small ships which go into Benghazi are poor targets - though we know the heavies got one petrol and one ammunition ship (the gap in the outer mole which the latter blew up must be a nuisance now when winds are fresh). Ships come in at dawn and lie outside at night, and as far as possible material is.....cleared from the wharves during daylight."

S.A.A.F.
Narrative
and
M.E.W.O.S.

In accordance with the air plan to dislocate the enemy's off-loading technique at Benghazi, the two S.A.A.F. Maryland squadrons began their series of highly successful day attacks, No.21 Squadron, S.A.A.F. delivering the first blow on 14th October. From that date to 8th November the Marylands carried out seven raids on the port, involving 53 effective sorties and the dropping of nearly 52 tons of

/bombs

AOC-in-C's bombs⁽¹⁾ (mostly 250 pounders). Their high level bombing was proved
Correspondence with by photographs to have been first-class.
C.A.S.

Part III The Marylands were able to reach Benghazi from the refuelling
Enclos.234A landing grounds at Sidi Barrani or Bir Khamsa with a reasonable margin
and of safety. Including the necessary detour to make an approach from
A.H.B. the open desert, the distance covered was 400 to 420 miles. It was
II J6/7/4 not infrequent for a proportion of the Squadron, in spite of flying
in formation, to have sufficient fuel to return to base at Fuka.

S.A.A.F. On only one occasion were the Marylands obliged to abandon a
Narrative mission against Benghazi through enemy fighter interference in order
to avoid casualties. On the other missions the fire-power and speed
of the bomber formations prevented any losses being inflicted on them
by enemy air action.

Disappointing Performance by Fortresses

AOC-in-C's The A.O.C.-in-C. believed, in regard to Benghazi, "that repeated
Correspondence with interference of work throughout the twenty-four hours was in itself
C.A.S. a useful factor in stopping supplies". To supplement the day
Part 3 effort by the S.A.A.F. Marylands, accordingly, steps were taken to
Enclos.234A press into service the small force of Flying Fortresses as soon as
possible.

Idem The following is the summary of events leading to the first
Enclos.237A Fortress sorties in the Middle East, as signalled by Air Marshal Tedder
to the Chief of Air Staff:-

"First three aircraft arrived 29/10, fourth arrived p.m. 1/11.
Ground personnel arrived 3/11. Tanks removed 3/11. Equipment
arrived 7th. Bombing up night 7/8th took 12 hours for three
aircraft. One of these aircraft developed engine trouble
apparently due to internal leak in petrol tank. Two aircraft
operated on 8th against Benghazi. Aircraft which returned
reported good run up at 28,000 feet but bursts obscured by low
cloud. No. A.A. Fighter 10,000 feet below".

The flying performance was much inferior to that expected.

"Careful and detailed flight plan had been prepared, main object
to ensure most economical cruising. Allowance made for 20
minutes at 30,000 feet. Climb to 28,000 estimated at 83
minutes, actual 2 hours 42 mins. Absolute ceiling proved
to be 28,000. Engine temperatures proved to be 230° compared
with permissible 218°. Appears that in warm conditions
performance considerably below that in cold climate. on 8th
recent unseasonable hot spell had not broken and I do not
consider this first attempt adequate basis for forming final
conclusions. Normal cool weather now begun. I will report
as soon as further experience gives definite line".⁽²⁾

One of the Fortresses operating on 8th November failed to return;
its vapour trails were last seen by its companion at 25,000 feet;
approximately fifteen miles from Benghazi. A search that day by

/Hurricanes

- (1) On several occasions "screamers" were fixed to bombs and beer
bottles were hurled out in order to accompany the material damage
with the blood-curdling noises formerly associated with warfare.
The diarist of No.21 Squadron S.A.A.F. on 21st October,
however, reported rather ruefully that "this visit to the Axis
port was more productive of sound than damage".
(S.A.A.F. narrative).
- (2) The only other sortie carried out by a Fortress during
"Crusader" is referred to on page 137.

HQ RAF ME
Report on
RAF Oper-
ations in
W.D. etc.
Nov.41 to
May 42
IIJ.1/12
and
M.E.W.O.S.
No.4.

Hurricanes and on the morrow by Marylands, as well as a sweep by 24 fighters sent out to destroy the aircraft if located, were unsuccessful. The following day, however, the crew was sighted about 75 miles west-south-west of Maddalena by Marylands of No.12 Squadron S.A.A.F., which were sent out on a parallel track search westwards to a distance of 150 miles. Supplies and water were dropped and the Maryland which reported the crew later led a Lysander of No.208 Squadron to the scene to pick up the Fortress's captain. A ground column brought back the remainder of the crew and destroyed any instruments which had escaped damage when the crew fired the aircraft and smashed the special bomb-sight.

It was learned that an unanticipated shortage of petrol had caused the forced landing. Previously, the other Fortress, when it refuelled as arranged between Sidi Barrani and Matruh, was also found to be short of fuel.

General Results of Air Offensive against Benghazi

In order to assess the exact value of the sustained air offensive against Benghazi, it would be necessary to have precise information on a number of points which cannot now be fully ascertained. These include, for example, the precise material damage caused during any given time and its effect on the supply situation; the increased over-all time required to unload any given tonnage; the extent to which the enemy was embarrassed by having to supply his Army by other means; and the moral effect.

V. Admiral
Weichold's
Report
(AHB.S.10)
Part I
para.62.

Idem
para.63

The general results of the air offensive are, however, abundantly clear. Although the bomber forces available were not sufficient to neutralise the port entirely, its operation was greatly restricted. This was due not only to the material damage inflicted or threatened, but also to the fact that "dock workers and stevedores were for the most part composed of Arabs who fled at each air attack". Thus the enemy was dissuaded from sending merchant shipping direct to Benghazi except when particular supplies were urgently required. It would have been of inestimable help to the Axis if the far distant base at Tripoli could have been transferred to Benghazi but this was impracticable as (in Vice Admiral Weichold's words) "an increase in (Benghazi's) unloading ~~campaign~~ was very difficult in the face of the enemy's continual air attacks and the damage resulting therefrom". Thus the enemy was obliged to fall back on the uneconomical use of coastal shipping and motor transport from Tripoli. Apart from the time-lag involved this was made difficult by shortage of M.T. and (at various times) petrol.

Attacks on Other Cyrenaican Supply Targets

M.E.W.O.S.
Nos.1-5

During the first three weeks of the preparatory period, as the pressure on Benghazi was increased, a lighter effort was directed by night against points in the enemy's supply line nearer the battle area. These attacks, which may be described as constant nuisance raids, were carried out by Blenheims of Nos.45 and 55 Squadrons and Albacores of No.826 Squadron, Fleet Air Arm. During the moonless period flare-dropping Albacores also helped by identifying the targets. The latter included petrol, stores and ammunition dumps in the Bardia, Gambut and Soblum areas, and road transport on the Bardia - Tobruk road was also attacked by the Albacores. In general, the experienced Fleet Air Arm pilots showed far greater skill in finding and attacking these difficult targets than the Blenheim air crews. (1)

/In

(1) The defects of the Blenheim squadrons at this stage are mentioned on page 112.

In the last part of Phase One (from the night of 4/5th to dawn on 13th November), as the bomber effort was stepped up, increased attention was paid to supply targets east of Benghazi, which were associated with the enemy's build-up in the battle area. In particular, stores dumps and M/T workshops at Derna were attacked by a total of 50 Wellingtons and 26 Blenheims (principally of No.11 Squadron) by night and eleven S.A.A.F. Marylands by day. A lesser day and night effort was made against the Berka stores dumps; Albacores and Blenheims continued their night harassing raids on supply targets and M.T. concentrations in the forward area; and Wellingtons from time to time bombed close-at-hand supply targets when bad weather prevented long-range flights.

S.A.A.F.
Narrative

The three Maryland attacks on Derna and Berka were all opposed by enemy fighters, including ME.109s. As in the case of their operations over Benghazi the S.A.A.F. bombers were not prevented from pressing home their attacks; two aircraft were reported shot down on either side, but, not surprisingly, more Marylands than enemy fighters were damaged.

Attacks on Western End of Enemy's Supply Line

Meanwhile, Malta-based bombers attacked vital points at the western and southern ends of the enemy's supply line. Their key targets were Naples, the main base and port of departure of Libyan supplies, and was formerly, Tripoli, the principal off-loading port.

M.E.W.O.S.
Nos.1-5

Targets in the Naples area - which included shipping, harbour installations, railway yards, aircraft and torpedo factories, oil storage depots and power stations - were attacked with considerable success on twelve nights during Phase One by a total of 96 Wellingtons.

The first attack of the period, on the night 16/17th October, was a noteworthy one in the records of Middle East bombing as 4,000 lb. bombs were employed for the first time in that theatre.

Idem No.2

Although the bombing of Naples at this early period was slight compared with the intensive attacks carried out later in the war, the following report of a raid made in October is sufficient to show that it cannot be dismissed cursorily. "Naples. Oil Storage Depot. Night 21st/22nd - 24 Wellingtons (Malta) 2300-0043 hours. Attacks from 8,000' 34 tons H.E. bombs including 4 x 4,000 lb. 6 x 1,000 lb, 91 x 500 lb and 36 x 250 lb. 216 lb. inc. bombs also dropped, 12,000 leaflets. Inc. started fires in target area, which was then attacked with H.E., increasing the original fires to one enormous conflagration spreading over an area 400 yards square, with flames rising to 1,000' and smoke to 12,000' visible 80 miles away. Some of the crews newly arrived from operations over Germany stated that the blaze was the biggest they had ever seen. The railway station was set well on fire and other smaller fires were started round target area, many buildings being demolished. Inc. dropped on Sicily on return journey started fires at Catania and other towns. One Wellington overshot on landing, one personnel killed and one injured".

A.H.B.
II J1/12.

M.E.W.O.S.
No.4.

In November, also, the Wellingtons turned their attention to Brindisi, the most important port in the Southern Adriatic, from which the enemy was routing urgent convoys direct to Benghazi. The first attack delivered on the night of the 7/8th by 21 Wellingtons was described as "highly successful". Hits were registered on the marshalling yards, railway stations, tracks, sea-plane factory and barracks, and photographs confirmed, inter alia, that the torpedo-boat base was struck.

Idem
Nos.1-5

The Blenheims' main Italian targets during the period were the chemical works at Cotrone and factories and railways at various points on the east coast: the Cotrone factory appeared to escape damage although a goods train was hit in the area.

/Meanwhile

Meanwhile, a variety of near-at-hand communications and supply targets in Sicily came under attack - including bombing by small forces of Wellingtons when adverse weather prevented attacks on Naples. The night raids included a constant effort against the submarine base at Augusta by Fleet Air Arm aircraft; small-scale attacks on the munition factory at Licata by Blenheims and F.A.A. aircraft; and a few sorties against communications at Messina and the power station at Palermo by Wellingtons. By day a slight Blenheim effort was directed against railways and factories at Catania and escorted Hurricane-bombers on one occasion hit the railway and a factory at Ragusa.

Idem.

Owing to the increased effort against station targets and the deterioration in the weather, the attacks on Tripoli were slighter than during the previous two months. Nevertheless, the port was bombed on eight nights during the preparatory period by a total of 58 Wellingtons, and from the end of October the bomb-loads dropped included a proportion of 4,000 pounders. The principal targets were the harbour installations, shipping, marshalling yards and petrol stores. Reconnaissance aircraft also, from time to time carried out day nuisance raids by dropping small calibre bombs.

Idem.

To impede the M.T. traffic along the coastal route, meanwhile, No.107 Squadron Blenheims made a few attacks by day, when conditions were favourable, on road convoys between Zuara and Sirte. The following report on one of these raids indicates their general scope. "Zuara - Sirte. M.T. on roads, 17th October. 4 Blenheims 107 Squadron. 5,750 lb. bombs. Two lorries and a trailer were blown off the road and a number of others, including one armoured car were damaged".

The above-mentioned attacks on communications and supplies by Malta-based aircraft were carried out almost without loss through enemy action.

Shipping Strikes in October

Meanwhile, the endeavour was continued to prevent supplies reaching the North African mainland by striking shipping en route, the air attacks, as previously, being planned mainly on the basis of air reconnaissance.

The success achieved in this activity up to the end of September has been indicated in Part Four of the narrative. The period taken for review here is from 1st October to 2nd November, inclusive, which is covered by an analysis issued by the Anti-Shipping Sub-Committee of the Bombing Committee of estimated losses inflicted.

A.H.B.
II J1/29.

From Malta a total of 26 Swordfish of No.830 Squadron F.A.A. made five night and one day attack on convoys along the route to Tripoli, and, as will be seen from the tables given below, was credited with great success. Malta-based Blenheims flew 19 sorties in four day bombing attacks, principally against shipping off Sicily and Pantelleria, and Malta-based Wellingtons carried out two night bombing attacks, including one on a convoy 110 miles west of Derna. In other instances sorties flown did not result in attacks being made.

The effort of the Egyptian based ship-striking squadrons was mainly directed against U-boats in the Eastern Mediterranean. As already indicated the effort against enemy naval vessels is considered in the Narrative covering the Air/Sea war in the Mediterranean.

/Enemy

Enemy Merchant Shipping losses in October as currently Reported.

H.Q. MED/
S247/49/4
/Air.

The Anti-Shipping Sub-Committee of the Bombing Committee assessed the effect of the air attacks (including damage to shipping in harbours) as follows:-

1st October - 2nd November 1941.

(A) Sunk or Constructive Loss:-

Aircraft	Number of Ships	Tonnage
No.2 Group (Blenheims) Malta	1	600
F.A.A.	6	37,000
Other R.A.F. Aircraft	2	12,000
TOTALS	9	49,600

(B) Seriously Damaged

No.2 Group (Blenheims) Malta	4	8,00
F.A.A.	-	-
Other R.A.F. Aircraft	2	11,000
TOTALS	6	19,000

(C) Damaged

No.2 Group (Blenheims) Malta	3	9,078
F.A.A.	-	-
Other R.A.F. Aircraft	3	8,880
TOTALS	6	17,878

A.H.B.
IIJ/1/29

Sixteen merchant ships totalling 48,350 tons, were reported sunk in all areas of the Mediterranean by H.M. Submarines during the period and five vessels totalling 14,840 tons damaged. These totals include several French vessels and some in the Eastern Mediterranean not directly connected with the supply of Libya.

Thus, just under 98,000 tons of enemy shipping (excluding naval craft) are believed to have been sunk in the entire Mediterranean by sea and air action during October and the opening days of November.

The findings of H.Q. R.A.F. M.E. in respect of shipping plying between Italy and West Africa are as follows:- for the month of October total sinkings (through sea and air action) are estimated at 41% of the estimated total sailings from Italy (137,000 tons) and south-bound sinkings (i.e. of cargo-carrying vessels) are put at 31% of the total sailings.

Confirmed Enemy Shipping Losses (Identified Vessels) during October.

Appendix P

The confirmed losses of identified enemy merchant shipping in October (see Appendix P for fuller details) were as follows:-
Total tonnage sunk in the entire Mediterranean from all causes:- 45,050 tons (including 10,326 tons sunk by the Royal and Allied Navies and 34,604 by the R.A.F. and F.A.A.). Losses of shipping adjudged on the African Convoy Route only: 35,125 tons (including 401 tons by the Royal and Allied Navies and 34,604 tons by the R.A.F. and F.A.A.)

Vice-Admiral Weichold's Comments.

A.H.B.I. S10 Part I Para.76. As in the case of the previous months Vice-Admiral Weichold in his report quotes a much lower figure for the African convoy tonnage sunk. Weichold states that during October 18,800 tons of

/merchant

merchant shipping were sunk and 12,800 tons damaged. He also put the total African Convoy tonnage during the month at only 50,000 tons (compared with H.Q., R.A.F. M.E.'s estimate of 137,000 tons of shipping sailing from Italy only) - "a third of the monthly average of the past seven months, which had not been satisfactory". Thus he estimated the tonnage sunk and damaged as 63% of the total tonnage used. "In spite of this situation", the Admiral comments, "which led to a catastrophe, the German High Command did not take any supporting action, as on 2nd October the new autumn offensive began in Russia, for which all forces, and above all air forces, were required. Again maritime needs had to give way before continental interests."

Attacks on Airfields and Landing Grounds

M.E.W.O.S.
Nos. 1 - 2

During the first part of Phase One (14th to 28th October) a moderate pressure was exerted against the enemy's Cyrenaican landing grounds by Egyptian based Blenheims and Marylands as planned, except that in the rear area the German bomber and air transport base at Derna received attention instead of the dive-bomber base at Timimi.

In their attacks on forward landing grounds, Nos. 11, 45, 55 and 113 Squadrons flew a total of 38 effective sorties against those at Gambut, Gabr Saleh, Bir el Gubi and Gasr el Aryid. The S.A.A.F. Marylands made two raids on Derna and two on the German fighter base at Gazala, flying 30 effective sorties. The attacks were carried out with more precision and success than those of the Blenheims and photographs showed that an appreciable number of aircraft were hit on the ground.

Clear proof was provided of the Blenheims' need of fighter protection when operating over the forward area. On 20th October, Blenheims of Nos. 55 and 113 Squadron, briefed to attack Gambut, arrived in advance of the time for their rendezvous with Tomahawk and Hurricane squadrons, and proceeded to carry out their mission without the normal cover. The Blenheims, approaching their target from the sea were attacked by M.E. 109s, which took off from the landing ground. The bombers withdrew out to sea after their attack and there the leader was shot down 40 miles off shore; another Blenheim failed to return and four were damaged.

The hope that the attacks on the enemy's forward landing grounds would lead to strenuous opposition from his fighter force and combats with our numerically superior covering fighters was not fulfilled. Practically the only success achieved (mentioned in page 100) occurred during a raid on Gasr Aryid landing ground on 22nd October, when No. 2 Squadron, S.A.A.F. Tomahawks (taking part in a three squadron covering sweep with Nos. 3 R.A.A.F. and 238 Squadrons) provoked an attack by ten ME. 109s and claimed one shot down.

For the remainder of the preparatory period the limited offensive against the Cyrenaican air bases was continued mainly at night - 46 effective bomber sorties being flown under cover of darkness as compared with 26 by day. In particular, the previously poor results of the Blenheim squadrons' day attacks, combined with the decreased fighter cover available over the forward area owing to the need for training and re-grouping, led to a curtailment of the Blenheim day attacks in favour of night raids.

A.H.B.
6/7/4

Workshops, hangars and petrol dumps at Berka airfield were the main targets, being attacked twice by Wellingtons and once (by day) by Marylands. Four small-scale night attacks were delivered on the Gazala landing grounds (three by Blenheims and one by Albacores), and Timimi, Benina and Martuba also received slight attention.

/Once

Idem.

Once again the weakness of the Blenheim squadrons was spot-lighted. In spite of the help given by flare-dropping Albacores during the moonless period, the squadrons were not sufficiently trained in night flying to achieve results which justified the casualties sustained through various causes.

In general, however, the Phase One attacks on the enemy's Cyrenaican airfields achieved their purpose of helping to secure adequate air superiority without obviously trailing the cloak of an imminent offensive.

M.E.W.O.S.
Nos. 1-5

Meanwhile, in spite of bad weather spells, 84 Malta-based bombers and fighter-bombers exerted pressure on the enemy's rear air bases. The main effort, directly connected with 'Crusader' operations, was made against Castel Benito airfield, which was attacked on two nights by a total of 39 Wellingtons. The raid on the night 2/3rd November was particularly successful. "Fires (were reported) among hangars and administrative buildings, workshops and ammunition dumps (were) hit and two destroyed..... At one time during the attack at least twelve aircraft were burning on the aerodrome." Photographs showed that six aircraft were destroyed and ten damaged. Of the night fighters encountered one CR.42 was shot down: on our side one Wellington failed to return.

M.E.W.I.S.
No. 73.

Smaller scale airfield attacks included those delivered against:- Mellaha (east of Tripoli) by Blenheims; Comiso (Sicily) by Hurricane-bombers and night-flying F.A.A. Swordfish; Gela (Sicily) by Hurricane-bombers; Catania (Sicily) by night-flying F.A.A. Fulmers; Trapani (Sicily) by Wellingtons; and Elmas (Sardinia), in conjunction with a naval attack, also by Wellingtons. The Sicilian attacks were aimed primarily at restricting the enemy's air effort against Malta, but the pinning down or embarrassment of any of the enemy's Mediterranean squadrons was likely to affect 'Crusader' operations.

Further Training of Egypt-based Blenheim Squadrons

A.H.B.
6/7/4

It became increasingly clear during the preparatory period that the Western Desert Blenheim squadrons needed further training before they could pull their full weight in the coming battle. As already mentioned the low performance of the Blenheim implied that its employment in the forward area had to be under cover of night, cloud or fighter escort. The inexperience and poor training of the pilots prevented satisfactory results being obtained by the first two covers, particularly as bad weather increased the difficulties of night flying, and before the effect of direct fighter escort could be seen both Blenheim and fighter operations were cut down to a minimum to ensure intensive training during the last fortnight of the phase. Aggravation of the situation was caused by the fact that some of the aircrews were operationally tired; maintenance was often poor, partly due to in-experienced ground crews; there was a deficiency in equipment; the unsettled careers of the squadrons during the summer had adversely affected the serviceability of their transport; and in some cases the squadron commanding officers, although adequate as leaders in the air, paid insufficient attention to administration, training, squadron battle orders and a tight ground drill.

The S.O.O., A.H.Q., W.D.; indeed, declared that, "The state of morale was reflected in the number of aircraft falling out of squadron formation on account of small deficiencies, and in the somewhat fatigued attitude of mind towards operations. There is hardly a single Blenheim operation on record during the preparatory phase which was not impaired in one way or another by inefficient maintenance, lack of experience, or even in some cases, lack of determination."

/The

Gp.Capt.
Cross'
Report
appended
to Wg.Cdr.
Finlayson's
Report.

The training carried out included a specialised form of attack against enemy fighter landing grounds. "In deciding to attack enemy landing grounds it was fully realised that the majority were protected by considerable and very efficient 'flak' and were difficult to locate from low level. To overcome these difficulties a specialised form of aerodrome attack was developed.⁽¹⁾ The forces taking part in these attacks were:-

- 1 'Box' of six or twelve Blenheims
- 1 Squadron Fighters (Close Support)
- 1 Squadron Fighters (Top Cover).
- 1 Squadron Fighters (Aerodrome Attack).

Three such circuses were formed and trained in the back area until shortly before the land offensive was due to start. The plan as practised was for the Blenheims to proceed at between 8-10,000 feet to the target aerodrome by the route likely to be least observed with close and top escorts and with the straffing squadron in position slightly below and behind the bombers. When within twenty miles of the target, the bomber leader gave a signal by lateral rocking of his aircraft and the straffing squadron then did a 360 rate 2 turn down to ground level. It was found from practice that this put them about 6-8 miles behind the bombers. If enemy aircraft were sighted on the aerodrome by the Blenheim leader he bombed them and the fighters locating the landing ground by the bomb burst attacked as the dust was clearing. The bombing thus had three purposes:-

- (a) Damage to aircraft,
- (b) Location of landing ground for fighters.
- (c) Disconcerting A.A. crews.

As a safety precaution if no enemy aircraft were seen on the ground the Blenheim leader fired a red Verrey light and fighters swung away from the landing ground."

With the object of "laying on" this type of attack extensive pre-offensive reconnaissance enemy landing grounds was carried out by No.24 Squadron, S.A.A.F. Bostons (page 131).

In the event, however, only one opportunity occurred to use the attack as planned - on 17th November (page 130). On one other occasion, 19th November, the bombers were dispensed with.⁽²⁾

No.265(70) Other specialised training, meanwhile, included close support Wing O.R.B. exercises, which helped to eliminate signals difficulties. By means of intensive training, the replacement of C.O.s where necessary, App.XXVI. arrangements for improved maintenance and the bringing up to Wg.Cdr. establishment the squadrons' crews and equipment, the Blenheim force Finlayson's was wielded into one capable of playing a full part in the battle. Report and No.265(70) Wing's ORB Apps.XXII and LXXXIV.

/Ineffectual

- (1) In particular, dummies of the Gazala landing grounds were laid down for practising low flying attacks (A.O.C's correspondence with C.A.S. etc. Part III, Encl.234A).
- (2) No further opportunities occurred to exploit this form of attack owing to German fighter bases being out of range of our fighters, though the possibility of refuelling fighters in Tobruk with the object of attacking Gazala was examined and refuelling arrangements made. Unfortunately, the landing ground at El Gubi was under shell fire and when landing grounds in the Tobruk - El Adem area had been secured, Gazala had been evacuated by the Germans - (Group Captain Cross' Report - Appended to Wg.Cdr. Finlayson's Report).

Ineffectual Enemy Air Effort

In contrast to our aggressive action for limiting enemy build-up the enemy's air policy - despite his advantage in holding bases from which the entire operational area could be covered - for the most part lacked drive and co-ordination. His air forces were thrown largely on the defensive and such offensive action as was undertaken was, as previously, dissipated against various targets instead of concentrated against the few vulnerable points of our supply organisation.

M.E. W.I.S.
Nos. 70-75

In general the G.A.F. continued the more offensive rôle, leaving the mounting protective commitments to the Italians. In particular, convoy protection absorbed the I.A.F.'s main effort, bombers, dive bombers, reconnaissance and fighter aircraft all at various times being used for patrol over shipping at sea and in harbour.

Mention has already been made of the German fighter sweeps over the forward area. These were ever a potential menace owing to the ME.109's superior performance, but were not in sufficient strength to exploit it thoroughly.

The Luftwaffe's main bomber effort - against Tobruk - represented the "softening-up" for Rommel's forestalled assault. Cyrenaican-based JU.88s and JU.87s and HE.111s from the Athens area together ensured a daily effort against the fortress, which on occasion reached the 40 sorties mark. Considering the constant effort the attacks caused slight damage only. Similarly, the attempt to disrupt our coastal shipping was ineffective. The following Intelligence Report relates to the fourth week in October, but is typical of the whole preparatory phase.

"Several attacks have been made against merchant and naval vessels off the Egyptian coast.....German aircraft, operating mainly from the Derna area, have taken part in these attacks and have apparently been largely responsible for reconnoitring the area, spotting and reporting the shipping observed. Italian torpedo-carrying aircraft (S.79 and S.84) as well as CZ.1007s operating from Derna and Rhodes have also attacked shipping. The results of these attacks so far reported have in all cases been unsuccessful."

Our build-up in Egypt continued virtually unimpeded, singularly little advantage being taken of the November moon period. Five attacks made in the Suez area were token efforts by two to four Greek-based HE.111s; no success was achieved against shipping and negligible damage done to Suez and Port Tewfik.

Wg.Cdr.
Finlayson's
Report

A somewhat heavier effort was directed against our Fuka air base, a few Cyrenaican - based JU.88s participating as well as HE.111s. Moonlight layer patrols were carried out by No.30 Squadron Hurricanes in an endeavour to catch the enemy aircraft coming from Greece and Crete, but without success. Nevertheless little damage was inflicted in the few raids.⁽¹⁾ The following entry from the A.H.Q. Operations Log Book laconically records the results of the heaviest attack - carried out on 3rd November by approximately four JU.88s and six HE.111s. "Report from No.270 Wing regarding heavy raid at Fuka Main last night. Landing ground useable but several craters. One aircraft will require double engine change, six aircraft damaged by splinters but repairable at unit within 24 or 48 hours. One Army personnel suffering from shock."

/Spasmodic

(1) Arrangements had been made for maximum dispersal. Blenheims of Nos.45 and 55 Squadrons, for example, during the moon period removed to No.53 dispersal landing ground, further south, each afternoon, carried out their night operations from there and returned to their Fuka base the following morning. (Appendix X No.265(later 270) Wing's O.R.B. October 1941).

Spasmodic bombing elsewhere varied from nuisance attacks on Army positions and targets at Sidi Barrani, Maaten Babush and Burg el Arab to the almost pointless bombing of Fayoum and the entirely pointless bombing of the empty fort at Maddalena.

The main Italian offensive effort against Malta, meanwhile, was characterised by the high percentage of aircraft which drew off before reaching the coast and the inconsiderable damage caused by those which fulfilled their missions.

Phase One Balance Sheet

By the end of the preparatory period our main aims had been achieved:-

- (a) The Axis supply situation had deteriorated.
- (b) Adequate air superiority was achieved.
- (c) Reconnaissance had given us a good picture of the enemy's air bases, disposition of his ground forces and the situation of his main dumps, workshops and supply routes.
- (d) Our air striking force was in better fettle than at the beginning of the period.

M.E.W.I.S.
Nos. 70 to
74

Enemy aircraft casualties (caused in combat and airfield attacks) for the period 14th October-12th November, inclusive, were assessed as follows:-

<u>Egypt and Libya:</u>	37 destroyed and 3 probably destroyed.
<u>Malta:</u>	17 destroyed and 5 probably destroyed.
<u>Dodecanese and Eastern Med:</u>	4 destroyed and 2 probably destroyed.

The following was the classification according to types of aircraft:-

<u>German</u> ^{*(1)}	<u>Destroyed</u>	<u>Probably Destroyed</u>
Bomber	9	2
Bomber Transport	1	1
Fighter	7	1
Unidentified	-	1
Totals	17	5
<u>Italian</u>		
Bomber	15	1
Bomber Transport	2	-
Fighter	17	4
Reconnaissance	3	-
Unidentified	4	-
Totals	41	5

On the debit side were the M.E. aircraft casualties. Losses (including Malta's) from all causes were 42 bombers and eighteen fighters. These losses, considering the scale of effort, were remarkably small, and in a number of instances did not involve the loss of the crews.

M.E.W.O.S.
No. 5 App.C.

/Section

- (1) German records show the following casualties for the period 14th October-12th November, inclusive:-
 Short Recce:- 1 destroyed. Long Recce:- 2 destroyed and 2 damaged.
 Day Fighters:- 3 destroyed and 4 damaged. "Zerstörers" (ME.110s):- 2 destroyed. Bombers:- 5 destroyed and 1 damaged. Dive-bombers 3 destroyed and 3 damaged. Other Types 1 destroyed and 1 damaged.
 A total of 17 aircraft destroyed and 11 damaged.
 Verluste Afrika. ADIK. 103/64).

SECTION THREE. PHASE TWO.

Ground Situation

C-in-C's
Despatch
Nov. 1941-
Aug. 1942
p. 44.

During the second week of November the greater part of the enemy's ground forces in Libya were concentrated in eastern Cyrenaica, leaving in Tripolitania only necessary garrison troops and the weak Sabrata division, which served as a drafting formation. The enemy's main Cyrenaican forces consisted of three armoured, two motorised and five infantry divisions and comprised the Panzer Gruppe, Afrika, under the command of General Rommel. The main components were as follows:-

- Afrika Corps:- 15th and 21st Panzer Divisions and 90th Light Division (Afrika Division).
- Mobile Corps:- Ariete Division (armoured), Trieste Division (motorised) and Trento Division.
- 21st Corps:- Bologna, Pavia and Brescia divisions.
- Frontier Group:- Savona Division and elements of other divisions, both German and Italian.

The 21st Corps, stiffened by three German infantry battalions, which had been investing Tobruk had recently been joined by the Trento Division. The frontier defences at Halfaya, Sollum and Capuzzo, established during the summer, were manned by a German infantry division. Those around Sidi Omar were held by the Savona Division. Bardia had a mixed garrison of Italians and Germans. Located between the 21st Corps and the Frontier Group were the armoured and mobile forces. The 21st Panzer Division lay astride the Trigh Capuzzo, about twelve miles to the south of Gambut, where Rommel had his Headquarters. The 15th Panzer Division and the Afrika Division (specially formed for Desert operations) were grouped around El Adem, El Duda and Sidi Rezegh. The Ariete and Trieste divisions had taken up their positions at Bir el Gubi and Bir Hakim, respectively.

The principal Eighth Army formations available for the projected offensive were as follows:-

- 13th Corps:- New Zealand and 4th Indian Divisions and 1st Army Tank Brigade.
(No. "T" Air Support Control).
- 30th Corps:- 7th Armoured Division, 4th Armoured Brigade Group, 1st South Africa Division (two brigades) and 22nd Guards (Motor) Brigade.
(No. 1 (Australian) Air Support Control)
- Tobruk Garrison:- 70th Division, 32nd Army Tank Brigade, Polish Carpathian Infantry Brigade Group.
- Oasis Force:- 6th South African Armoured Car Regiment and a battalion group from 29th Indian Infantry Brigade.
- In reserve:- 2nd South African Division (two brigades).

As mentioned on page 11 the C.-in-C's original estimate of armoured forces needed for the conquest of Cyrenaica was three divisions: the actual armoured formations available comprised one and half divisions and one brigade of infantry tanks.

"The Eighth
Army" H.M.
Stationary
Office
Pubn.p. 12.

In tank strength the Eighth Army had numerical superiority over that of the Axis - 665 against an estimated 505 of the Axis. But this simple count did not imply a superiority in performance. The three armoured brigades of the 7th Armoured Division contained a total of 455 tanks, but of these 165 were of the light Stuart type (later re-classified as reconnaissance vehicles): the remainder was composed mainly of Crusaders. The First Army Tank Brigade comprised 120 Matildas and Valentines and the tank brigade in Tobruk mustered 90 tanks of similar types. Over half of the Axis tanks, on the other hand, were German Mark IIIs and IVs, and these in the event proved superior in armament, armour and reliability of any of ours. None of the British tanks had a gun heavier than the two-pounder, whereas it transpired the German tanks fired nothing lighter than a $4\frac{1}{2}$ lb shell, while the heaviest gun fired one of 14 lbs. The German armour, therefore, had a great advantage in striking power.

M.E.W.O.S. held a strong defence running south-west and south of Sidi Barrani No.6 (from to Giarabub and the Siwa Oasis: the defences (like those of the Military enemy) included anti-tank defences, gun emplacements and minefields, M.E.sources) all in considerable depth.

Work on defences was continued by either side until mid-November. British armoured forces during this preparatory period were kept in the back areas.

The Army Plan

C-in-C
Despatch
Appendix 5

As already indicated, the prerequisite for dislodging the enemy from Cyrenaica was the destruction of his armoured forces - and, above all, the German armour. In order to effect this the enemy had to be brought to battle on ground of our choosing: and this could best be done by directing our armoured forces towards Tobruk and raising the siege.

Idem
p.45

Accordingly, plans were drawn up for the 30th Corps to make the main attack, while at the same time ensuring that the left flank of the 13th Corps was protected against an assault by the enemy's armoured formations. As the first step towards bringing the enemy to battle, our main armour was to move to a central position near Gabr Saleh, from which it could strike north-west or north-east according to how the situation developed. At this stage ground and air reconnaissance units had the important task of discovering the enemy's exact whereabouts, in order that it could be determined to what extent his movement southwards could be prevented by obtaining control of the few crossings of the coastal escarpment. The Army Commander (General Cunningham) alone held responsibility for deciding which direction our armour should move if the enemy was not engaged in favourable circumstances on the opening day of the offensive.

Idem
p.46

The subsidiary task of the 30th Corps was to relieve Tobruk. Operations to achieve this were not to be undertaken until the enemy's main armour had been defeated or at any rate rendered incapable of interfering with the relief. The 30th Corps Commander was instructed to signal the Commander of the Tobruk garrison when he was in a position to support their planned sortie, and the garrison troops were then to come under command of the Corps.

Idem

The basis of the plan for raising the Tobruk siege was the capture of two ridges to the south-east of it - the El Duda and Sidi Rezegh ridges, which were some 5,000 yards apart and commanded the enemy's two principal lines of communication. "The Tobruk by-pass road climbs up from the coast, crosses a saddle, and then turns west along the southern slope of El Duda ridge: in the valley between the two ridges runs the Trigh Capuzzo. Provided that the

enemy armoured forces were defeated or heavily embroiled, our forces would have only infantry to compete with and mostly Italian infantry at that".

At the conclusion of the armoured battle the 1st South African Division was to secure a position near Sidi Rezegh, and by threatening the rear of the Axis troops investing Tobruk, to assist the sortie of the garrison. Meanwhile three brigades of 30th Corps were to drive southwards to El Duda and two feint attacks were to be made by two infantry brigades of the Tobruk garrison in the western and southern sections. The garrison's main attack was to be launched at dawn on the day following the receipt of the 30th Corps' signal.

After the relief of Tobruk the area was to be cleared of the enemy as quickly as possible. The size of our pursuing forces was to be determined by the extent of the success achieved in the armoured battle.

The 13th Corps's task was to contain and cut off the enemy forces holding the frontier defences, and then to advance westwards to help the 30th Corps in their cleaning-up process.

The primary task of the Oasis Force was to protect the associated air forces which were to attack the enemy in the coastal area to the south Benghazi and to harass advancing or withdrawing enemy columns. A deceptive scheme was planned, so as to induce the enemy to believe that the Force was much larger than it actually was and induce him to divert armoured formations to meet it. The Force was, accordingly, relatively weak in infantry but included a high proportion of guns and armoured cars.

Other subsidiary operations planned included the rôle allotted to the Long Range Desert Group of observing enemy movements along the Desert tracks south of the Jebel Akdar to the main battle area and along the approaches to Gialo from the north, and raids to be carried out in the enemy's rear by the 11th Scottish Command and a section of the 1st Special Air Service Brigade.

Date of the Offensive

M.E.W.O.S.
No.6
para.15 &
C-in-C's
Despatch
p.14.

It was known during October - principally through air reconnaissance of enemy positions - that the enemy had in hand a scheme for attacking Tobruk in force. The C.-in-C. gave serious thought to the advisability of postponing the opening of our offensive until Rommel struck, with the idea of catching the enemy on the wrong foot, but abandoned this project owing to the fact that Rommel's intended attack might not take place for several weeks and there was need on our part for offensive action at the earliest moment. Captured operational plans later revealed that the enemy's intended assault was scheduled for 23rd November.

Our attack was timed to be launched when the enemy had been sufficiently weakened by our preliminary air offensive.

Idem
p.15.

The reason for deferring the opening of our offensive from 11th to 18th November was due mainly to the delay in providing the full quota of transport for the 1st South African Division and the completion of its training.

Eighth Army Concentration

M.E.W.O.S.
No.6.
Appendix G
(From M.E.
Military
Sources)

During the period of concentration (approximately 12th to 17th November, inclusive) the Eighth Army formations assembled as follows:-

/(a)

- (a) In the most northerly frontier area the 11th Indian Infantry Brigade Group took up positions running from the coast approximately ten miles south-east of Sollum, across the escarpment, to about seven miles east of Sheferzen. Slightly in advance of this formation was the Central Indian Horse.
- (b) To the south of the left flank of the 11th Indian Infantry Brigade Group was the 7th Indian Infantry Brigade, the Army Tank Brigade and the 4th Indian Division, with the New Zealand Division about ten miles from the frontier between Scheferzen and Maddalena. The 13th Corps Headquarters was located near Quarat.
- (c) The armoured forces of the 30th Corps were in the Maddalena area. In particular, the 4th Armoured Brigade was to the north of a line running east and west through Maddalena. South of this line was concentrated the 7th Armoured Brigade; further south was the 7th Support Brigade and further south still (about twenty-six miles south-east of Maddalena) was the 22nd Armoured Brigade. The Headquarters of the 30th Corps was situated in the Khamsa area.
- (d) The 1st South African Division was located approximately fifteen miles to the south-south-west of the 22nd Armoured Brigade.
- (e) In the Giarabub-Siwa area, meanwhile, the 29th Indian Infantry Brigade, the 38th R.T.R., "F" R.T.R. and the 6th South African Armoured Car Regiment had taken up their stations.

Advanced formations of all the above mentioned units had moved up to the frontier, and in some cases beyond, by 17th November.

CS. 14280
Part 1.

HQ. Eighth Army (with A.H.Q. Western Desert attached) moved forward to the Khamsa area on 16th November.

Phase Two Air Aims

During the second phase (D-5 to D-day) our primary aim was to increase the degree of air superiority already achieved in readiness for the imminent battle: this involved an intensification of counter air force operations, particularly against the enemy's fighter force. Our second aim was to cover the concentration of the Army by protecting the assembly areas and preventing enemy air reconnaissance. The third aim was to limit enemy supplies reaching the battlefield.

Construction of Landing Grounds

In order to afford support to and cover the advance of our ground forces it was necessary to prepare and safeguard a series of landing grounds which would allow our Air Force to keep the battle area within range. The general plan was for the fighters, with their limited range, to progress by short strides to speedily prepared landing grounds on selected sites, and the bombers to follow with longer strides to take over suitable landing grounds vacated by the fighters.

A.H.B.
6/7/4

Although the actual construction of the airfields was the responsibility of the C.R.E. Aerodrome, a Group Captain was appointed to maintain liaison with the Army, co-ordinate work and relieve fighter commanders of this responsibility and to supervise minor tasks such as marking, which are R.A.F. commitments. This officer worked from the forward fighter wing through which he maintained contact with Air Headquarters. He was instructed to follow closely behind our forward troops to select and inspect airfields and ensure that the Army cleared mines and booby traps.

The areas in which the Fighter Force were to be located immediately prior to and in the first stage of the campaign were first at Bir Khamsa and then at Maddalena. It was anticipated that Gambut and Gazala would be the first landing grounds to be wrested from the enemy and were accordingly earmarked for the next steps forward. In the event, it may be noted, enemy resistance in these areas upset the proposed sequence and landing grounds in the Tobruk area were taken over before these became available.

The projected steps for the day bomber wings in the early stage of the campaign were from Fuka and Bagush - Bir Khamsa - Gambut.

It was aimed to procure airfields 2,000 x 2,000 yards.⁽¹⁾ This area allowed enough space for the accommodation of several squadrons and ensured that there was no undue congestion when aircraft were taking off and landing. It was not always possible, however, to find sites of such liberal dimensions. As the campaign developed runway landing grounds were used as rains rendered the desert a morass.⁽²⁾

The texture and surface of the desert, in the main, appears featureless from the air and it is often difficult to distinguish good from bad landing surfaces. It was important, therefore, that the landing area should be clearly marked, especially where large numbers of aircraft were using the same landing ground. The corner markings were also raised in order to give a line to aircraft on the ground about to take off.

The number of landing grounds required by the Mobile Air Support Forces totalled eight. The fighter squadrons required three as, apart from grounds of security and control considered later, it was necessary that they should take off and land with the minimum of delay. This would have been impossible on a congested airfield, particularly in the dust of desert landing grounds. The two bomber wings required two landing grounds with adequate dispersal area. A further airfield sited near Air Headquarters was needed for the Communication Flight, Air Transport Wing and the Strategical Reconnaissance Unit. Two separate airfields, also, were allotted to Bomber and Fighter A.S.P.'s and R.S.U's.

No. 208 Sqn. The Army Co-operation squadrons were to use the most appropriate landing grounds near the Corps to which they were attached. All reconnoissances were to be made from the advanced landing ground where two aircraft and three pilots were to be in readiness. The pilots were to fly up to the advanced landing ground from the operational landing ground the day before the proposed dates for their sorties.

U.K.
Nov.

The particular moves of the Air Force are indicated in their chronological sequence in the narrative.

Other Considerations

Among the considerations governing the selection and siting of the forward airfields were those associated with their security against attacks by:-

- (a) fighters;
- (b) escorted dive-bombers;

/(c)

- (1) A list of the landing grounds in use during the initial stages of the campaign, showing location and dimensions is given at Appendix B(i).
- (2) It was found later that the S.A.A.F. Bostons needed a particularly good landing ground surface for their tricycle undercarriage and owing to the fact that their propellers were liable to get dented by stones.

A.H.B.
6/7/4

- (c) high level and night bombing;
- (d) long-range patrols by ground forces;
- (e) paratroops.

Idem.

Basically there are two methods of achieving security. The one is to disperse airfields and aircraft over a vast area, thus limiting the effect of a local attack and eliminating the risk of having all air forces neutralised simultaneously. The other way is to concentrate all aircraft to such an extent that fighter, anti-aircraft and ground defences have a small area to protect and can bring to bear their maximum power.

The form of attack most to be feared was the low fighter attack, against which the main defences were light anti-aircraft and P.A.C. (Parachute and Cable) batteries. It was felt that sufficient confidence could be placed in our warning system (which was the W.O.U. screen so far as low flying attacks were concerned) and in our combined fighter and A.A. defences to compromise between the two methods of ensuring security by locating our advanced air forces in such an area as to gain the advantages of a single cohesive defence organisation and yet be able to practice as much dispersal as possible within a defended zone.

By the end of Phase One, as mentioned in page 102 our advanced fighter squadrons had been organised into flying wings, each comprising two squadrons of twelve aircraft each. The squadrons paired in flying wings were so far as possible placed on different landing grounds. The arrangement made it simpler to get the 24 aircraft into the air and joined up in formation and also ensured that the fighter defences of any particular airfield were not depleted by the absence of a whole wing at a time or that two squadrons were not immobilised while refuelling at the same airfield at the same time.

Thus for the purposes of security and ease of control the fighter airfield area was to consist of three landing grounds within a few miles of each other. These were linked up by a telephone system to ensure immediate control from Wing Headquarters, which was situated in a central position. The three airfields were under the one air and ground defences and covered by the same W.O.U. screen.

Idem.

The greatest emphasis was placed on the necessity for the widest possible dispersion of aircraft within the protected area.

Radar arrangements during the preparatory period have already been discussed. It should be noted, however, that from D-2 onward complete information from the Tobruk A.M.E.S. was passed in code direct to the No. 258 fighter wing in the forward area. This was an important factor in ensuring the security of our forward fighter landing grounds.

A W.O.U. screen was also laid around the advanced airfields area which gave at least three minutes warning of low flying hostile aircraft.

The A.A. lay-out of the Eighth Army during the "Crusader" operations is given at Appendix C (i).

So far as the defence of landing grounds was concerned the theoretical control for the A.A. units came direct from Eighth Army Headquarters. Inevitably, once the campaign began the actual control was exercised by Air Headquarters, and the Brigadier in charge of the A.A. units engaged in the defence of airfields became virtually the executive officer of the Senior Fighter Wing Commander and Bomber Wing Commander. In short, the A.A. defences can be said to have become an integral part of Air Force organisation even before the organisation of the R.A.F. regiment in 1942.

/To

To help against low flying attacks nine P.A.C. batteries (under R.A.F. direct control) were normally dispersed on each fighter and bomber landing ground.

In order to provide protection against enemy ground attacks R.A.F. armoured cars were attached to the Fighter Wings in the forward area and moved forward with them. In addition, Army units were allotted for airfield defence duties against possible activity by long-range desert patrols and paratroops.

Communications

To ensure unbroken control from Advanced Air Headquarters, Western Desert, the most important operational channels - those to the fighter and bomber wings in the forward area - were duplicated. The channel to Rear Air Headquarters was also duplicated. Thus any operational signals to No.205 Group or other operational units not controlled by the Western Desert fighter or bomber wings would be passed through Rear Air Headquarters.

A report on communications during the "Crusader" campaign is attached at Appendix D(i).

Movement and Locations of Air Forces

For Phase Two operations the forward move of part of our air forces began in order to exert maximum pressure and fulfil protective commitments.

When the Army's concentration began in earnest (D-5) it was arranged for the fighter squadrons of No.258 Wing to move up to landing grounds in the Bir Khamsa area, which they had used for refuelling purposes in the preparatory period. A day or two later No.262 Wing's squadrons also moved up to the same area.

Two days before the offensive opened Advanced Air Headquarters Western Desert, was set up alongside Army Battle Headquarters in the Khamsa area. The rear Air Headquarters, under the A.O.A. W.D., remained at Maaten Bagush.

On D-1 No.258 Wing Headquarters moved (with the Seventh Armoured Division) to a landing ground in the Maddalena area in preparation for the control of the fighter squadrons to be located in that area. Landing ground sites in the Maddalena area had been selected previously but were not developed in case our plans should be discovered by the enemy. These sites needed little more than marking before they were ready to receive the fighter squadrons. During this move No.262 was responsible for operating the squadrons of both wings from the Bir Khamsa area. The fighter Force was strengthened, meanwhile, by a battle flight of No.73 Squadron which moved up to a landing ground near Sidi Rezegh at the outset of the campaign and subsequently operated from Maddalena.

No.262
Wing's
O.R.B.
Nov.1941.

No.73 Sqn.
ORB.Nov.41.

A.H.B.
6/7/4
Appendix V.

No.258 Wings Headquarter's move set the pattern for subsequent advances. From D-day onward the two fighter wing Headquarters virtually formed a single fighter group. "Each wing was one of the two limbs necessary to maintain uninterrupted control of operations. While 258 Wing was stationary, it controlled the whole Fighter Force. When the Fighter Force had to move.....either 258 Wing went forward to take over control at the proposed landing grounds, leaving 262 Wing in control during its move, or 262 Wing went forward and took over control while 258 Wing came up".

To extend the range of our fighter offensive reconnaissance, also, No.272 Beaufighter Squadron previously detached from No.202 Group operated from Gherawla.

/The

The Army Co-operation squadrons were located on landing grounds in the Sidi Barrani area in readiness to move up with their respective Corps. To help with tactical reconnaissance, for the 30th Corps, also, No. 24 Squadron, S.A.A.F. (re-armed with Bostons) was based at Fuka with an advanced landing ground in the Bir Khamsa area. Other reconnaissance units remained at their previous locations. H.Q. 253 Wing was now absorbed into Advanced Air Headquarters becoming the direct Support Section.

Meanwhile, in readiness to operate at first light on the opening day of the offensive four of the Blenheim squadrons and the two Maryland squadrons with the wings controlling them, Nos. 3 (S.A.) and 270, moved up to advanced landing grounds in the Sidi Barrani area.

In order to implement the Air Plan associated with the operations of the Oasis Force (Pages 85 and 86) No. 33 Long Range Hurricane and No. 113 Blenheim fighter squadrons were located on a landing ground in the Giarabub area. It was planned that a landing ground (No. 125), some 90 miles west of Giarabub, where stocks of petrol and supplies had been laid down under protection of two sections of the No. 2 R.A.F. Armoured Cars, would be available for operations by about midday on the opening day of the offensive. (1)

The five Wellington squadrons of No. 205 Group remained based in the Canal zone, but used landing grounds 60, 104, 106 as advanced landing grounds.

The location units directly concerned with "Crusader" operations (i.e. those operationally controlled by AHQ W.D.) is appended at Appendix V. Those less directly concerned (squadrons controlled by A.H.Q. Malta, No. 201 (N.C.) Group and No. 202 Group remained the same as given in the Order of Battle at Appendix U.

Allocation of Tasks - Phase Two (Part One)

A.H.B.
6/7/1

In respect of the allocation of tasks, Phase Two "Crusader" operations may be divided into two parts - the first consisting of the five days up to the eve of the "Crusader" D-day and the second covering the night before the advance and the first day of the offensive.

During the first part of the phase, in spite of the increased scale of operations, an intensive effort was to be made by ground organisations to maintain a high degree of aircraft serviceability in preparation for a maximum effort during the second part of the phase.

The following tasks were allocated to formations under the control of AHQ Western Desert:-

A.H.B.
II J6/7/1
"Suggested
Programme"
sheets.

In order to control the air over the battle area Nos. 258 and 262 Fighter Wings were to carry out offensive sweeps over the Maddalena - Sidi Omar - Bir el Gobi - Gambut area.

Protective sweeps to cover the concentration of our ground forces and prevent enemy air reconnaissance and bomber action were also necessary over the Fuka, Barrani, Bir Mischeifa, Sollum and Khamsa areas. Certain squadrons, also, were to be held at readiness for interception in some of these areas as required.

/In

(1) A Bombing transport service was flown bi-weekly from Maaten Bagush to Giarabub, via Mersa Matruh (Appendix W).

In addition, it was planned that selected squadrons should make low-flying attacks on enemy forward landing grounds, and Beaufighters and fighter Blenheims were directed to shoot up M.T. particularly petrol tankers, along the roads from Benghazi to Derna and from Derna to Gazala in order to help the dislocation of enemy lines of communication.

For night interception one flight of No.272 Beaufighters was to be made available.

In the initial stage of the Oasis Force's operations No.33 Squadron was required to prevent enemy reconnaissance of the Giarabub Oasis, deal with attempted enemy air attacks on IG.125 and protect the ground column during its advance from Giarabub to that landing ground. No.113 Squadron, meanwhile, was allocated the tasks of offensive reconnaissance over the area IG.125 - Adegabia - Agheila - Gialo and attacking targets in the general Sirte area.

A.H.B.
II J6/7/1
"Suggested
Programme"
sheets
and
A.H.B.
II J6/7/4

The main commitments for the bombers were the further weakening of the enemy's air forces and the prevention of supplies reaching the battle area. In respect of the latter the main weight of the attacks necessarily devolved on the Wellington squadrons. As at this stage attacks against the port and installations at Benghazi would not immediately influence battlefield operations it was decided that the night bombers during the first part of the period should concentrate primarily on the dumps there, at Derna, and other rear areas. It was also planned, at first, that the Marylands and Blenheims should operate intensively against dumps nearer the battle area, but "as a dump in the middle of the desert is as bad a target as it is possible to choose", it was later decided that these bombers should devote their main effort against the more profitable targets of enemy landing grounds. The Wellingtons, also, were to add weight to the attacks on the main counter air force target - the German fighter landing grounds at Gazala. Wellingtons from Malta were to hit Italian supply centres. Meanwhile continuous strategic and photographic reconnaissances were to be made of all the airfields and landing grounds in the enemy's back areas (particularly around Benghazi, Derna and Timimi), in order to provide immediate information of any changes in the disposition of his air forces. In the early morning and afternoon of D-1 visual reconnaissance was to be carried out of all key landing grounds to secure target information for the intensified bomber attacks.

A.H.B.
II J6/7/1
and
M.E.W.O.S.
No.6.
Appendix G

Tactical reconnaissance was now to include the covering of the Tobruk area daily, in order to give the Garrison a picture of enemy dispositions around the perimeter before making its sortie. Two Army Co-operation aircraft of No.451 R.A.A.F. Squadron were to operate from the Tobruk landing ground to help with this activity.

Plan for Sabotaging Enemy Airfields

HQ RAF ME
"Operations
in W.D.
Nov.1941
to 19th
May 1942"

In order to augment the destruction wrought on enemy landing grounds by our air attacks a special project was prepared for paratroops to sabotage airfields in the Gazala and Timimi areas. Three Bombays of No.216 Squadron were assigned the tasks of dropping three officers and thirty-three men twelve miles due south of Gazala landing ground and for two more to drop two officers and twenty-two men the same distance south of Timimi airfield. The bombing of these airfields by Wellingtons, with illumination provided by flare-dropping Albacores, during the night was to provide a diversion and also identify the target for the Bombays.

/Operations

Operations Phase Two (Part One). (Dawn 13th November to evening of 17th November).

Fighter Action

During the five days preceding the opening of our offensive the effort of the Fighter Force was intensified in order to carry out the tasks already specified.

M.E.W.I.S.
No.74.

The increased sweeps over the forward area, however, provoked no particular air reaction from the enemy and the opportunity was sometimes taken of delivering low-flying attacks on road transport. The whole effort of the German Air Force, in particular, during these days showed a noticeable decline, which was apparently due mainly to the poor weather conditions.

S.A.A.F.
Narrative

South African squadrons claimed two successes against enemy fighters. On 15th November, Hurricanes of No.1 Squadron, engaged on a defensive patrol over their landing ground in the Bir Khamsa area were diverted against approaching Italian aircraft comprising one S.79, escorted by eight G.50s. The Italian fighters abandoned the Savoia on being attacked, but the South African pilots claimed two of them shot down. The next day a Tomahawk of No.2 Squadron, also on defensive duties, claimed one Me.110 shot down over the Sidi Barrani area. (1)

No.272 Sq.
O.R.B.

On the 15th, No.272 Squadron detachment of Beaufighters began their operations from Gherawla (L.G.10). Patrols flown between Derna and Crete, in an endeavour to intercept the Ju.52 air transport traffic, bore no fruit, but successful ground strafing operations were carried out against road transport and grounded aircraft in the Barce, Timimi and Gad el Amar areas.

C-in-C's
Despatch
Nov. '41 -
August '42
P.48.

The main achievement of the fighter squadrons, however, was their success in helping to conceal from the enemy the concentration of the Eighth Army which was then being completed. General Auchinleck reported: "Captured enemy Intelligence papers revealed no knowledge of what was happening. This praiseworthy achievement was due both to the work of the Royal Air Force in preventing enemy aerial reconnaissance, and to the high degree of camouflage, deception and dispersion reached during the concentration".

M.E.W.O.S.
No.5 p.7.

M.E.W.I.S.
No.74

The enemy was by no means unaware, however, of our activity in the Giarabub area. On 13th November an S.79, which reconnoitred the landing ground there was claimed as damaged by No.33 Squadron Hurricanes. This reconnaissance was the prelude to a determined operation against Giarabub air base two days later. The attack was carried out by two waves of aircraft - nine Ju.88s, escorted by six Me.110s, which bombed from 10,000 feet and seven Me.110s, accompanied by four Me.109s (fitted with long-range jettisonable tanks), which made low-level bombing and strafing attacks. The raid resulted in one Blenheim of No.113 Squadron being destroyed on the ground, five Blenheims and two Hurricanes damaged, casualties to 20 R.A.F. personnel, the destruction of transport and the firing of a petrol dump. No.33 Squadron claimed three Ju.88s, damaged in combat at the cost of two Hurricanes destroyed and two damaged, and one Me.110 was shot down by anti-aircraft fire. (2)

/It

- (1) Not confirmed by German records (Verluste Afrika ADIK 103/64).
- (2) Total German losses on 15th November as given in German records were:- 3 Ju.88s, one Me.110 and one Me.109 destroyed and two Ju.88s damaged. (Verluste Afrika ADIK 103/64).

It was clear that the enemy was watching the employment of the Oasis Force very carefully; further attacks on the landing ground of the associated squadrons are mentioned on page 82.

Air Reconnaissance

No.451 Sqn. The Army Co-operation squadrons (Nos.208 and 451 R.A.A.F. Squadrons) during the five days before the battle were for the most part concerned with last minute arrangements and moving to their new stations in readiness for their operations with their respective Corps. No.451 Squadron carried out two Artillery reconnaissances over Halfaya (which however, were abortive owing to first a R/T breakdown and then bad visibility) and also covered the Marsa Belafrit coastal area, where large numbers of M.T. were reported dispersed. Aircraft at Gambut were also located. No.208 Squadron's role in the first phase of the battle was to locate for the 30th Corps Italian and German divisions and to observe any possible ways of approach to the plain from the area bounded by the Bardia-El Adem escarpment. A reconnaissance carried out on 17th November located the Headquarters of the of the Armoured Division at Bir El Gubi and pinpointed the location of tanks.

S.A.A.F. Narrative On the 17th, also, two Bostons of No.24 Squadron, S.A.A.F., commenced their reconnaissance activity, covering enemy forward landing grounds.

Idem. Marylands of No.60 Squadron (the Survey Flight) carried out photographic reconnaissances of the road from El Adem through Bir El Gubi and photographed strips north and south of El Mechili, but their operations were to a great extent impeded by low cloud. No.2. No.2 P.R.U. Photographic Reconnaissance Unit, meanwhile, covered the Gazala O.R.B. landing grounds and Timimi, as well as continuing their Beaufighter reconnaissances over Crete.

Attacks on Airfields and Landing Grounds

O.R.B., M.E.W.O.S. Unfavourable weather reduced the projected scale of the bomber effort against these targets. Nevertheless, day raids were carried out by the appreciable total of 71 Marylands, supplemented by four Blenheims and one Fortress sorties, and 22 Wellingtons and No.5 and Daily Opsums nine Fleet Air Arm Albacores delivered night attacks. On two occasions, also, a total of twelve Albacores illuminated the targets for the night bombers. Nearly 70 short tons of H.E. bombs were dropped in the day attacks and 25 short tons in the night raids (including nearly three tons of incendiary bombs).

Although cloud in most cases hindered the observation of the results of the bombing, there was sufficient evidence to say that the attacks achieved a fair measure of success.

The S.A.A.F. Marylands first paid attention to the enemy's rear landing grounds at Benina, Derna, Barce and Berka (in order to limit the enemy's bomber and transport aircraft effort) and Timimi (the base of the German Stukas). High level attacks from 11,500 to 20,000 feet were delivered on the three airfields on the 13th, 14th and 15th November. Observed results included the scoring of direct hits on grounded aircraft at Derna; bursts among dispersed aircraft at Timimi, where in one raid five aircraft were hit; and the causing of a fire on the Barce landing ground. Martuba airfield was hit by a Fortress on the 14th, when this aircraft was unable to attack its briefed objective at Benghazi. The Wellingtons helped in the attacks on the rear landing grounds with a successful attack on grounded aircraft at Derna by nine aircraft on the night of the 15th/16th and a less successful one by four aircraft on Timimi landing ground on the following night.

On the 16th, nine Marylands acted as precursors of the intensified attacks on the German fighter base at Gazala. Bad

weather during the night, however, limited the planned Wellington effort and only nine of those despatched succeeded in pressing home their attacks. Adverse weather conditions also hindered the follow-up attacks on the next day. Nine Marylands bombed Gazala south landing ground through 9/10ths cloud and four escorted Blenheims of No.45 Squadron attacked dispersed aircraft on a landing ground at Bir el Baheira.

On the Germans' main advanced fighter landing ground nearer the battle area - that at Gambut - nine Albacores on the night of 14th/15th November started a "large fire" and destroyed the aircraft on the ground. Action by offensive long-range fighter aircraft against the enemy's landing grounds is mentioned on page 131.

Thus, although bad weather prevented the full implementation of the air plan against the enemy's air bases, a considerable stepping-up of the day bombers' effort was achieved, which put us one stage further along the arduous way to air superiority.

Failure of Plan to Sabotage Enemy Landing Grounds

Although our counter air force operations had, in the main, proved successful, the scheme for sabotaging the enemy's landing grounds at Gazala and Timimi failed entirely. This was due to adverse weather conditions and faulty navigation.

A.H.B.
II J1/15
Narrative
Reports
of
Interest

In accordance with the plan mentioned on page 124 five Bombays were despatched on the night of the 16th/17th November to drop sabotage parties twelve miles south of the Gazala and Timimi landing grounds, respectively. Wireless silence was ordered to be observed throughout the operation. The weather deteriorated during the flight and by the time the target was reached it was raining hard, with a surface wind blowing at 25 to 30 miles per hour and 8/10th-9/10ths cloud at 1,500 feet.

This obscurity hindered the navigators in fixing their position and prevented them from seeing the flares dropped by the Albacores co-operating with the Wellingtons attacking Gazala. As orders had been issued that every effort was to be made to carry out the operation despite adverse conditions, the three Bombays transporting the Gazala party dropped their contingent at what was believed to be the agreed spot and one of the two Bombays which managed to locate Timimi did the same with its party. Actually the Gazala party was dropped twenty-four miles from the landing ground instead of twelve, but the Timimi party descended at the correct place. From information subsequently obtained from a prisoner, it appears that the Gazala troops were discovered and captured. The Timimi party hid in a wadi, but three hours before their attack was due to take place a deluge of rain damped all their detonators and explosives and the project had to be abandoned. The troops proceeded to a pre-arranged rendezvous and returned to our lines.

The Bombay which failed to locate Timimi was obliged, on its return journey, to force-land near the frontier through shortage of petrol. A W/T message in plain language was sent to base requesting help, but this, apparently, was intercepted by the enemy. On the following morning enemy fighters attacked and destroyed the grounded Bombay. Two of the crew were killed and later the rest of the party was captured.

Bombing of Supply Targets

During the three nights 13th/14th to 15th/16th November the Wellington effort was continued, as planned, against the enemy's supply organisation, in order to limit build-up in the forward area.

/Sorties

No.205
Group
O.R.B.

Sorties against targets in this category were made by 51 Wellingtons of No.205 Group, which dropped approximately 56 tons of high explosives (including some 4,000 lb "block busters") and over seven tons of incendiaries. The targets attacked were stores dumps at Berka and Bardia, stores and M.T. workshops at Derna and harbour installations at Benghazi. The attacks succeeded in causing fires at the Bardia dumps and explosions were observed at Berka and Derna. The high-light of the attacks on Benghazi was the dropping of two 4,000 pounders plumb on the base of the central mole. In all cases the opposing anti-aircraft fire was slight and ineffective and no casualties were incurred.

Nearer the battle area, Marylands of No.21 Squadron S.A.A.F. carried out two raids of six sorties each against stores dumps in the Gazala area, which were without anti-aircraft protection, and started a number of small fires. The afternoon attack was opposed by two enemy fighters believed to be ME.109s: the bombers shot down one of them into the sea for the loss of one Maryland.

Meanwhile, Wellingtons of No.38 Squadron, operating from Malta, were briefed to attack railway and supply targets at Naples (the enemy's main embarkation port and supply base) and Brindisi (the most important port in the southern Adriatic, from which the enemy was increasingly routing convoys direct to Benghazi). Bad weather, however, prevented these attacks from being carried out and marshalling yards and ammunition dumps at Catania, Sicily, were attacked as an alternative target. Railway targets in Southern Sicily were also attacked by Hurricane-bombers.

The bombing of supply targets during the few days prior to the opening of our offensive represented the finishing touches to the pre-battle air offensive which had been maintained for five months.

Proposed Tasks for End of Phase Two

A.H.B.
II J6/7/1

From the evening before until the evening after the move forward of our troops it was planned that our air action should be on the maximum scale. The establishment of definite air superiority was the over-riding consideration.

The main allocation of tasks was as follows:- On the night 17th/18th November the five Wellington Squadrons were to operate against aircraft and landing ground installations at Derna, Gazala and Martuba West. No.826 F.A.A. Squadron Albacores were to illuminate the targets and drop spikes. Other planned night activity included Blenheim bomber diversionary attacks in the Gazala-Timimi area and low-level attacks on the Gazala landing grounds and Albacore attacks on Gambut. On D-day the night blitz was to be followed up by both fighter and bomber attacks - with the Gazala landing grounds as the main target. Meanwhile, No.258 and No.262 Fighter Wings were to carry out offensive sweeps in the Maddalena - El Adem - Bardia triangle to cover the advance of our ground forces, our tactical air reconnaissances and the low-flying attacks. No.269 Wing's commitments were to protect our lines of communication and base airfields and cover bombers refuelling on the Bir Khamsa landing grounds.

The two squadrons in southern Cyrenaica were to provide cover for the Oasis Force Group and attack airfields and M.T. in the Benghazi - Agedabia area.

Reconnaissance commitments included the covering of landing grounds attacked in order to assess damage, a watch on enemy army movements directed eastwards towards the Gazala - Tobruk area and continued tactical reconnaissance of the Tobruk area to facilitate the imminent sortie of the Garrison.

No.253 Wing Headquarters now ceased to function and was absorbed into Air Headquarters Western Desert. The Commander of the Wing was attached to Battle Headquarters as Army Co-operation Adviser to the A.O.C. The Wing staff remained in being and was attached to A.H.Q. Battle Headquarters as a Direct Support Section. The Wing's squadrons were to be engaged on continuous reconnaissance for the Corps to which they were affiliated. As already mentioned Wing Commanders had been attached to main Army formation as Liaison Officers.

Revised Direct Support Arrangements

Wg.Cdr.
Geddes's
Report
(CS. 14280
Appendix B)

Although the principles embodied in the M.E. Directive on Direct Support were adhered to for "Crusader", certain modifications were made in the organisation as a result of further exercises.

On the lines of the organisation previously considered No.3 S.A. Wing established W/T contact with No. 30th Corps and No.270 Wing with the 13th Corps.

In front of Corps Headquarters tentacles were allotted under Corps arrangements. From Corps Headquarters backwards, the tentacles were allotted as indicated in Appendix E(i). Allotment of tentacles in front of Corps in this appendix were not rigid, as they needed to be adjusted as required by the tactical situation and the wishes of the Corps Commander. The sets in the rear of Corps were permanently allotted as shown. The allotment of frequencies to A.S.C. units were made by C.S.O. Eighth Army in co-operation with C.S.O. A.H.Q. W.D.

Idem
p.2.

The organisation for direct air support outlined in the M.E. Directive was modified by mutual consent of the G.O.C. Eighth Army (General Cunningham) and the A.O.C.; W.D. (A.V.M. Coningham). It was decided that the local air superiority over our advance must be maintained and that the provision of direct support should never jeopardise this essential superiority. Moreover, before decentralisation was needed it might be necessary for the entire bomber force to be directed against a single point. It was decided, therefore, that the Air Support should be controlled centrally by the A.O.C., W.D., aided by the Direct Support Section at Battle Headquarters. (1) The function of the Corps Headquarters Unit was, therefore, to relay messages from aircraft and tentacles straight to Battle Headquarters and also warn the Wings or landing grounds, so that pilots could be briefed pending the final decision by the A.O.C. The general layout for A.S.C. is given at Appendix E(i).

A.H.B.
6/7/4

Although each Bomber Wing and Corps formed separate W/T circuits, the Wing Operation Rooms were connected by telephone and exchanged all support demands. The Wing Commanders in the first stage of the offensive could thus arrange between themselves which Wing should answer any particular call in accordance with the forces available and mutual convenience.

S.A.A.F.
Narrative

The briefing of crews for targets to be attacked was done directly by the Wing A.L.O. assisted by Operations Officers.

/CALL

- (1) The procedure for passing targets by the Direct Support Section was as follows:- On receipt of a target from aircraft or tentacles from the Air Support Controls or from Bomber Aerodromes on one of the four sets available, the Direct Support Section Officer on duty was called in the office tender on the omnibus telephone by the wireless van concerned and he took down the message. He immediately passed it to R.A.F. Operations and "G" Operations by telephone to obtain the A.O.C's and G.O.C's confirmed decision about its acceptance. He signalled the Wing at once whether the target was accepted or refused. He repeated the target as soon as opportunity offered, to R.A.F. Intelligence for record purposes. G(Ops) passed the information to their own "G" Intelligence.

CALL TO BATTLE

On 17th November the following message was received by the C. in C. Middle East:-

AOC-in-C's
Correspon-
dence with
P.M.etc.
Part III
Enclos.242C

"Prime Minister to General Auckinleck. Personal and most Secret. Begins:

I have it in command from the King to express to all ranks of the Army and R.A.F. in Western Desert, and to the Mediterranean Fleet, His Majesty's confidence that they will do their duty with exemplary devotion in the supremely important battle which lies before them.

For the first time British and Empire troops will meet the Germans with an ample equipment in modern weapons of all kinds. The battle itself will affect the whole course of the war. Now is the time to strike the hardest blow yet for final victory, Home and Freedom. The Desert Army may add a page to history which will rank with Blenheim and Waterloo.

The eyes of all Nations are upon you. All our hearts are with you. May God uphold the right. You should use this message (? if), when and as you think fit."

This call to battle, which expressed the rising hopes of Britain after the disasters of Dunkirk, Greece and Crete was made known to all formations concerned on the opening day of the offensive.

AOC-in-C's
Correspon-
dence with
C.A.S.
Part III
Enclos.242A

So far as the Air Force was concerned, the A.O.C.-in-C on the eve of the battle signalled the Chief of Air Staff, "Squadrons are at full strength, aircraft and crews, with reserve aircraft, and whole force is on its toes".

Deterioration in the Weather

On the eve of the battle (17th November) there broke out over the Desert the worst storm of the year. The ambitious bombing programme arranged for that night had, accordingly, to be called off. The decision of the A.O.C.-in-C. that the Wellington forces should not be husbanded to deal a pre-offensive potential knock-out blow (page 98) was thus proved to be a far-sighted one.

Naval
Historical
Section
Prelimi-
nary Narra-
tive, Medit-
erranean
Operations.

A planned bombardment of the Halfaya area during the night by H.M. 7th Cruise Squadron had also to be abandoned as the Fleet Air Arm Albacore spotting aircraft was grounded by the bad weather. (1)

"Crusader" D-Day

On D-day (18th November) the torrential rain continued. The adverse weather conditions, however, which also included low cloud and dust storms, were by no means disadvantageous to our cause as, although our planned scale of air effort was inevitable whittled down, our ground forces were able to make their initial advance under the cover of lowering skies and the enemy's air operations were restricted by weather far worse than that experienced in our area.

/Soon

- (1) The intention was to create an impression of an attack pending in the coastal area. (Naval Historical Sections Preliminary Narrative, Med.Ops.).

C-in-C's
Despatch
Nov.41 to
Aug.42
p.48.

Soon after dawn our armoured brigades, screened by armoured cars operating far in front, crossed the frontier wire near Maddalena and by evening had reached their battle positions astride the Trigh el Abd, with the exception of 22nd Armoured Brigade which had been delayed and halted ten miles south of its planned position. The 6th South African Division, to the south, advanced to cover the western flank, while the Guards Brigade followed to protect landing grounds and field maintenance centres.

Apart from increased shelling in the frontier area and the capture of two German armoured cars, the approach march, covered by our fighter aircraft, was without incident.

Tactical surprise was achieved and everything pointed to the conclusions that Rommel believed that our move was nothing more than a reconnaissance in strength.

Squadron
O.R.B.s.
and
S.A.A.F.
Narrative.
P.305.

Six reconnaissances were carried out over Cyrenaica by the two Army Co-operation squadrons allotted to Corps and No.24 Squadron, S.A.A.F. during the day. In particular, No.208 Squadron reported that no enemy movement was in progress in the forward area at Bir el Gibni, thus showing that the enemy had not anticipated an attack. Bostons of No.24 Squadron, S.A.A.F., confirmed that most of the enemy's landing grounds were water-logged. Concentrations of enemy vehicles and armour reported included those near Bir el Gubi, Sidi Azeiz and along the escarpment.

M.E.W.O.S.
No.6
(Amended
from
O.R.B.
records)

During the day, in spite of the bad conditions, the sixteen fighter squadrons operating under the control of A.H.Q. Western Desert carried out a total of 116 sorties on the lines of the plan previously mentioned. Sixty-four sorties were flown on offensive sweeps to cover the line of our advance and deny to the enemy the air over the battlefield: 24 on bomber escort duties: 20 on ground attack: and four each on shipping protection and local defence.

Daily
Opsum

AOC-in-C's
Correspon-
dence with
P.M. etc.
Part III
Enclos.243A

The Hurricanes and Tomahawks of Nos.1, 2 and 4 S.A.A.F., 94, 112, 229, 238, 250, 270 and the R.N.(F) Squadrons carried out five offensive sweeps during the day without encountering a single hostile aircraft. The Chief of General Staff in the Middle East in a signal to the Prime Minister said that "the absence of enemy air activity in the forward area was remarkable". Our air superiority at the outset - due to the combined effect of our counter air force operations and water-logged condition of many of the enemy's landing grounds was, in fact, complete.

No.272
Squadron.
O.R.B.

The outstanding feature of the fighter operations was the success achieved by our long-range fighters on offensive reconnaissance. Six Beaufighters of No.272 Squadron intercepted a mixed force of enemy aircraft over the Timimi area and without loss to themselves claimed the shooting down of five JU.52s and one Henschel 126 (a high-wing monoplane used for reconnaissance). They then proceeded to destroy four S.79s and a Fiescher Storch on the ground. Later in the day four more Beaufighters claimed two more German transport aircraft destroyed south of Barce and four petrol tankers on the main road running east from Barce - again without incurring any casualties.⁽¹⁾

M.E.W.G.S.

In the south, in offensive patrols connected with the Oasis Force's project, Hurricanes of No.33 Squadron claimed three CR.42s shot down over the landing ground north-west of Gialo and two more Italian fighters destroyed on the ground. No.113 fighter Blenheims ranging further afield, expended thirty rounds of cannon and 7,000 rounds of small arms fire against a concentration of 35 vehicles on the Jedabya - Agheila road, seriously damaging at least half of the concentration, including a petrol tanker.

/The

(1) German records show four "other types" of aircraft (presumably transport aircraft) destroyed on the 18th. (Verluste Afrika 103/64)

S.A.A.F.
Narrative
P.303

The adverse weather conditions all but cancelled our day bomber programme. During the early morning a mission by No.12 S.A.A.F. squadron against the Stuka base at Timimi was rendered abortive by 10/10ths cloud, but five of the Marylands on the homeward journey took advantage of a break in the clouds to drop their bombs on Gazala No.2 landing ground. No.21 Squadron, later, in the morning, while circling around the same landing ground, in preparation for an attack, were attacked by twelve enemy fighters (G.50s and ME.109s) from starboard. All but one of the nine Marylands escaped into clouds, after jettisoning their bombs, but the straggler was shot down. On emerging from cloud cover, however, the rear gunner of one of the bombers reported the shooting down of one of the fighters. In the afternoon four Blenheims of No.14 Squadron operated singly against Bir el Baheria landing ground (on which No.24 Squadron S.A.A.F. reconnaissance Bostons had reported the presence of aircraft); but poor visibility prevented the observation of results, later, the 13th Corps found damaged Henschels, and (Army Co-operation) ME.110s at this landing ground.

CS.14280
P.3

S.A.A.F.
Narrative
P.305
and Opsum
No.532

During the afternoon the two Maryland Squadrons and No.11 Blenheim Squadron, escorted by two squadrons of Tomahawks, were ordered to attack their first "Crusader" air support target - a large concentration of A.F.Vs and M.T. vehicles water-logged near Bir el Gobi which had been previously located by air reconnaissance. The Blenheims, in particular, took off within half an hour of the Wing's order. The three Marylands of No.12 Squadron S.A.A.F. lost touch with the No.21 Squadron S.A.A.F. Marylands and returned without fulfilling their mission; the other aircraft - eleven Blenheims and three Marylands - succeeded in scoring direct hits on the vehicles.

Reduced Enemy Air Operations.

M.E.W.I.S.
No.74.

There was a noticeable decline in both G.A.F. and I.A.F. activity during Phase Two (13th to 18th November). This appeared to be due mainly to the adverse weather conditions and, later, waterlogged landing grounds.

The Luftwaffe fighter activity was particularly restricted; only a few small patrols were reported and none on D-day. Moreover, apart from the low-flying attacks which accompanied the bombing of Giarabub, mentioned on page 125, no reports were received of ground strafing in the forward area.

Tobruk was ineffectively dive-bombed on 14th November by 12 aircraft but no high-level attacks were reported. A few bombs were also dropped on our Desert airfields at Fuka and Maaten Bagush. There was no bombing of our supplies or installations in the Canal Zone or the Delta.

The I.A.F. fighters continued to provide their usual protection for harbours and airfields. It appeared that the enemy was more concerned with our daylight raids on his Cyrenaican air bases than the possible effects of the day bombing of Benghazi, as the fighter protection given to that harbour was small compared with that given to the airfields and landing grounds. It was believed by Intelligence that the fighters reported as Me.109s which at times intercepted our bombers over such targets as Derna, Berka and Gazala were probably MG.200s or G.50s, which were known to be on standing patrols over these areas.

PART VI

PHASE THREE (THE BATTLE)

Anticipated Situation, Phase Three

A.H.B.
IIJ6/7/1

Phase Three embraced the period of battle between the armoured forces and was anticipated to last from D+1 to approximately D+5. During the phase air action was to be taken to weaken still further the enemy's air forces in order to deny them the power to interfere in the battle area, and to afford support for our advancing ground forces.

It was assumed from the Army plan that by D+1 contact between the opposing armoured forces would be made somewhere in the area south-east and south of El Adem. The 13th Corps, meanwhile, would be advancing north-westwards to link up with the right flank of the Armoured Corps. A decision in the battle of armour was expected by the fourth day and it was assumed that thereafter the enemy would fall back, with our pressure being increased by the sortie from Tobruk. By D+5 it was anticipated that the 30th Corps would be prepared to advance to Benghazi, other forces would be moving on Derna and Mechili and enemy troops holding Bardia and Sollum would be invested. In Southern Cyrenaica the Oasis Force Group was expected to reach Maaten Es Scheigheigh.

Actual events, however, proved to be far different from the envisaged ones. The main battle and the raising of the Tobruk siege were not concluded until the second week in December and resistance at Gazala lasted still longer.

Fighter Force Moves to Maddalena

H.Q. 262 Wing
O.R.B.
November

W.D. Order of
Battle 22/11/41
Appendix V)

Mention has already been made in Part Five of the plans for moving up our air forces to keep in touch with the shifting battle area. The first movement of our air forces was implemented as planned. On 20th November the fighter squadrons of No. 258 and 262 Wings moved up to the prepared landing grounds in the Maddalena area. Two days later in Southern Cyrenaica, Nos. 32 and 113 Squadrons, supporting the Oasis Force Group, were installed on L.G. 125 (about fifteen miles north of Es Scheigheigh).

Owing to the unexpected prolongation of the battle no further moves forward were possible until the second week in December, when our fighter force was established in the El Adem - Tobruk area.

Envisaged Air Commitments for Phase Three

A.H.B.
IIJ6/7/1

The fighter squadrons on the Maddalena landing grounds were now to maintain local air superiority over the area Derna - Mechili - Bir Hakim - Tobruk. They were also to continue the attacks on enemy aircraft reported on forward landing grounds. Airfields in the back area were again to be attacked by our long-range fighters. The allocation of fighters on these tasks would depend on the degree of air superiority achieved and the consequent diminution of the scale of enemy air effort against our lines of communication, air bases and supply organisation.

In Southern Cyrenaica it was planned that the fighters which had covered the advance of the Oasis Force to Maaten Es Scheigheigh would attack enemy columns in the Agedabia area.

/Counter

Counter air force operations by the Western Desert bombers were to include the bombing by Blenheims of the enemy landing grounds in the Barce - Cirene area while Marylands were to attack those at Berka and Barce. These attacks had as a secondary aim the diversion of the enemy's fighter force from the battle area to defence duties over his base areas. Dependent on the extent to which enemy air forces had been scattered and the extent of the battle, close support was to be given to our attacking ground troops on the lines mentioned on page 129. Bomber squadrons were also to be available if required to attack enemy shipping.

It was first thought that Wellington squadrons would also be required to make concentrated attacks on enemy airfields in the Eastern Mediterranean in order to minimise the expected attacks by aircraft operating from these bases against our backward areas and also hinder the despatch of German reinforcements to Cyrenaica. It was later decided, however, that the continuance of attacks on the enemy's Cyrenaican landing grounds and supply bases (particularly Benghazi) would have a more direct influence on the battle.

Reconnaissance was to continue as in the first phase, with special attention being paid to strategic reconnaissance of airfields in Greece and Crete and the Tripolitania - Sirte area.

From D+2, when the enemy was expected to despatch reinforcements to Tripoli, the offensive action of the Malta Force was to be directed against preventing this activity, particularly by attacks on shipping.

Employment of Radio-jamming Wellingtons

C.A.S. Folder
1720

In order to hinder the enemy's control of his tank forces plans were formulated for the employment of Wellington I.Cs, specially equipped for jamming inter-tank radio communication. Six of these aircraft had been flown out from England during the second and third weeks in October and experiments were subsequently carried out in Palestine with German tank radio sets. As a result of the tests the C.A.S. was able to inform the Prime Minister "that we should be able to jam out completely, from about 20 to 30 miles range, all German inter-tank signals between units two miles apart and perhaps less. The Wellingtons will have to fly by day near the battle area and may therefore require some fighter escort, but they will not be flying all the time, as the intention is to put them up only when the situation is considered opportune".

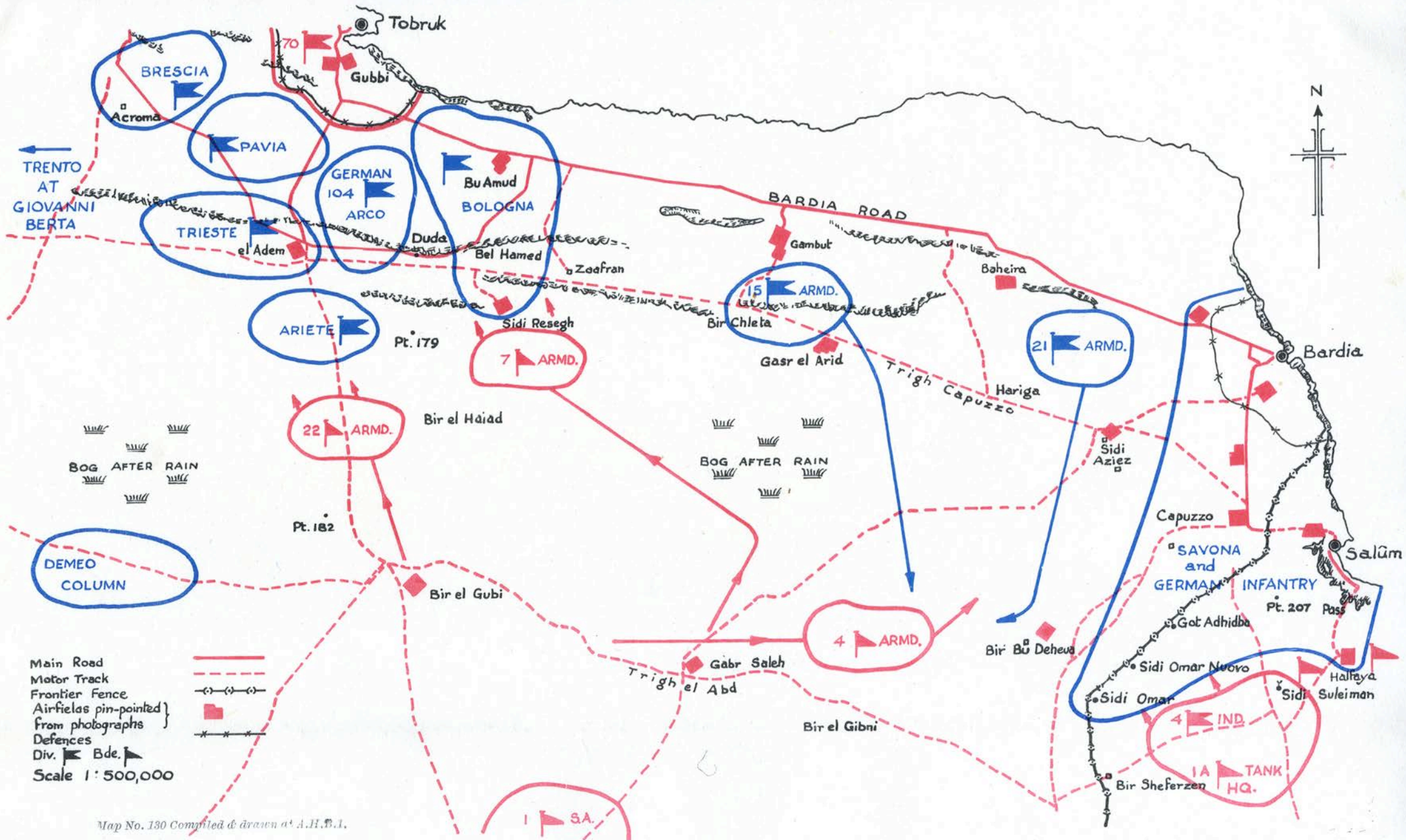
The actual employment of these special Wellingtons is mentioned on page 139.

Our Initial Success

Until the morning of 21st November the battle proceeded, if not entirely as expected, at any rate decidedly in our favour.

/On

SITUATION EVENING OF 19TH NOV. 1941



C.-in-C's
Despatch
November '41
to August '42
P.48 and
CS 14280 P.4
(Geddes Report)

On 19th November the armoured battle was joined in earnest. On the left the 22nd Armoured Division contacted the Ariete division in the Bir el Gubi area (where No.208 Squadron reconnaissance aircraft observed and pin-pointed 1800 vehicles and 80 tanks), and gained the upper hand, reporting the destruction of 45 M.13 tanks and taking 200 prisoners. On the right the 4th Armoured Division became engaged with the more formidable German armoured forces near Gabr Bu Meliha. The Commander of the 30th Corps (Lt.General C.W.M. Norrie), judging that the greatest part of the enemy's armour was in that locality, then moved the 22nd Armoured Division across to help in the operation, leaving the 1st South African Division to hold the Italian division. In the centre the 6th Royal Tank Regiment broke off from the 7th Armoured Brigade, engaged in skirmishing, and advanced north-westwards on Sidi Rezegh, which was found to be virtually unguarded. The 7th Armoured Division moved up to Sidi Rezegh the following morning.

No.451 Squadron
O.R.B.

The position on the 20th appeared so favourable that it was decided that the Tobruk garrison should make its sortie at dawn on the next day. Information regarding enemy dispositions in the area had been provided on 19th and 20th by four tactical reconnaissances flown by aircraft of No.451 Squadron R.A.A.F. operating from Tobruk. The decision was influenced by the fact that there were indications of enemy movement westwards from the battle area (which made it seem possible that the enemy was attempting to elude conflict) while the greater part of the enemy's armoured forces was believed to be engaged further south in the Gabr Saleh area.

No.208 Squadron
O.R.B.

In the original plan the 1st South African Division had been allotted the task of supporting the sorties from Tobruk. The revised scheme, owing to the turn of events, involved the Support Group of the 7th Armoured Division, backed by two armoured regiments, taking Sidi Rezegh (the bottle-neck of the enemy's communications), and the 5th South African infantry brigade helping with the consolidation there and contacting the 70th Division after its sally from Tobruk.

Air Superiority 19th and 20th November

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Enclos.246A

As a result of our air action during the first two days of the battle proper (19th and 20th November) the A.O.C.-in-C. was able to report:- "Clear that for the present complete air superiority has been attained". An Army Staff Officer back from the forward area described the situation as being "like France only the other way round", while Air Vice-Marshal Coningham, more restrainedly, wrote to Air Marshal Tedder:- "30 Corps are very pleased with us and so is Army in general".

M.E.W.O.S.
No.6 amended
from
Squadron
O.R.Bs

During these two days the Western Desert fighters were able to devote their main effort to offensive sweeps over the battle area, carrying out sweeps at two squadron strength, as planned, and generally involving two sorties per day by the fighter aircraft concerned. The ~~direction~~ of the two days' effort, totalling 419 sorties, was as follows:-

266 sorties on offensive sweeps, 42 on ground attack

/(excluding

- (1) The comment of the R.A.F. Liaison Officer with No.13 Corps on 20th November was nearer the truth: "The chief strategic move today was the constant flow of enemy M.T. westwards from Bardia along the Tobruk by-pass and also from Acrroma (3843) back to Gazala. The enemy was obviously moving his thin-skinned echelons out of range of our fighters". (CS.14280 page 5).

(excluding a number of straffing attacks carried out by the fighters in the course of their sweeps), 47 on bomber escort, 53 on local defence, six on shipping protection and five on escort for reconnaissance aircraft.

On the 19th our offensive fighters over the battlefield again experienced a blank day so far as encountering hostile aircraft was concerned, due in part to the fact that several of the enemy's landing grounds were still water-logged.⁽¹⁾ The following day, however, the enemy, now realising that our attack portended something for different from a reconnaissance in force, endeavoured to use his air force in support of his ground forces. This involved, in particular, missions by escorted Stukas, which met with scant success. This confirmed the Air Force view that the dive-bomber - the bugbear of the Army - was by no means the terror of the skies when opposed by determined fighters.

Revised
figures quoted
in Opsun 536
22/11/41

Air victories scored by our offensive fighters on the 20th were currently assessed as seven JU.87s, four ME.110s, and one ME.109 shot down; several more aircraft were damaged or claimed as probables.⁽²⁾ Our losses were seven fighters with four pilots saved.

M.E.W.O.S.
No.6 and
A.H.B. 6/714

Two combats deserve special mention. In an early morning sweep over the Acroma - Gazala area Nos.3 R.A.A.F. and 112 Squadrons sighted six ME.110s engaged in reconnaissance at 3,000 feet; our fighters dived on them from 10,000 feet and claimed four destroyed without loss.⁽²⁾ Later in the morning No.250 and R.N.(F) Squadrons, covering the Gambut - El Adem area, encountered nine JU.87s, escorted by fifteen ME.109s, apparently en route to attack our forces near Sidi Rezegh. The Stukas were forced to jettison their bombs and No.250 Squadron claimed two JU.87s destroyed and one JU.87 and two ME.109s as "probables".⁽²⁾ In an attempt to "hose pipe" the entire formation, however, two fighters from each of our squadrons were shot down by the escorting ME.109s as they were closing in.

The enemy's Stuka force was also struck on the ground at its Tmimi base. No.272 Squadron Beaufighters on 19th November reported the destruction of five JU.87s and two ME.109s⁽³⁾ by straffing and on the following day claimed the destruction of fourteen more Stukas, another Messerschmitt and a petrol dump.⁽⁴⁾ These and subsequent

/operations

- (1) There was, however, one low-flying attack made by ME.109s on one of our Maddalena landing grounds in the course of which a Tomahawk was shot down (but the pilot baled-out safely) and two Army co-operation Hurricanes of No.451 Squadron, R.A.A.F. were destroyed on the ground.
- (2) See Footnote 4 below for losses on 20th November as shown in German records.
- (3) No aircraft casualties are shown in German records for 19th November.
- (4) German records do not confirm all our claims for 20th November, particularly in regard to JU.87s, although JU.88 losses were heavy. German casualties recorded on 20th November were:- 3 ME.110s destroyed are one damaged, one ME.109 damaged, seven JU.88s destroyed and one damaged, one JU.87 destroyed and one damaged and one "other type" damaged. (Verluste Afrika ADIK 103/64).

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Enclos. 249A

operations caused the A.O.C.-in-C to report:
"Beaufighters have been and can be absolutely invaluable".
Other ground attacks on landing grounds by our fighters on the 20th included the effective machine gunning on the 19th of fifteen Italian fighters on a landing ground in the vital Sidi Rezegh area by Tomahawks of Nos. 2 and 4 Squadrons S.A.A.F. (1) and on the following day the destruction of two JU.87s and one CR.42, dispersed with other aircraft in a wadi north-west of Capuzzo, by Tomahawks of No. 250 Squadron.

No. 205 Group.
O.R.B.

Meanwhile, the main No. 205 Group effort was being directed against the German air bases. On the three nights 18/19th to 20th/21st November the Wellingtons flew a total of 44 effective sorties against Derna (including three against stores in the town), 40 against the three Gazala landing grounds, fifteen against Martuba West and two against Tmimi. In all, nearly 138 tons of high explosive bombs, fifteen tons of incendiaries, 18,000 spikes and 74,000 leaflets were dropped. The attacks were aimed primarily at dispersed aircraft. Low cloud prevented the observation of results at Derna and Tmimi, but grounded aircraft were known to have been hit on the Gazala landing grounds and at Martuba West.

Although the day bomber effort was now switched against battlefield targets in support of our advancing ground forces, the Blenheims still devoted some attention to forward landing grounds: No. 11 Squadron, in particular, successfully attacked dispersed German transport aircraft on the forward landing ground at Gasr el Arid (south-east of Gambut).

Close Support for the Army

Opsums, No. 270
O.R.B., S.A.A.F.
Narrative,
M.E.W.O.S.
Summary No. 6

On the 19th almost the entire effort of the two medium bomber wings was directed against concentrations of enemy M.T. and A.F.V.'s located by air reconnaissance in the forward area Gambut - Bardia - Capuzzo, successful attacks being delivered by fifteen Blenheims and sixteen Marylands. Pressure on the columns was maintained as far as possible during the night by F.A.A. Albacores.

The following day the effort of the medium bomber force, held at the call of the Army, was switched against enemy columns reported by air reconnaissance to be moving westwards along the Tobruk by-pass. In an attempt to turn the supposed withdrawal into a retreat the columns were attacked in the El Adem area by eighteen Marylands and 27 Blenheims. The A.O.C., Western Desert, reported that the Blenheim squadrons, which were not very strong, have done "extremely well, punctual, good formation and excellent bombing".

A.O.C.-in-C.,
Correspondence
with C.A.S.
Part III.
Enclos. 246A

/The

- (1) These aircraft had been located by T/R Bostons of No. 24 Squadron S.A.A.F. An airfield attack on the lines indicated on page 113 was arranged, but as the Auto-aircraft protection was known to be light the bombers were dispensed with. No. 2 Squadron made the attack and No. 4 Squadron provided Top Cover (see Appendix G(i)). Our ground forces at Sidi Rezegh on 20th November reported the capture of some 40 aircraft on the landing ground, a number of which had been damaged by our fighter attacks. Nineteen aircraft were serviceable, however, and their pilots were taken prisoner as soon as they attempted to take off. (H.Q., R.A.F. M.E. Report on Operations in the Western Desert, November '41 to May '42, p. 16).

S.A.A.F.
Narrative

The operations on the 20th proved extremely costly for No.21 Squadron S.A.A.F. In the only attack challenged by enemy fighters, four out of nine Marylands were shot down by Me.109s (at the expense of two destroyed) and a fighter bomber limped home with a hundred holes in it.

A request to A.H.Q., Western Desert, that Marylands should be escorted when engaged on battlefield attacks could not then be granted, however, as available fighters were needed for escorting Blenheims whose performance was inferior.

An attempt during the day to give assistance to our ground forces engaged with German armoured units at Gabr Saleh was frustrated by the failure of our troops to display identification signals, and the assigned formation of No.12 Squadron S.A.A.F. Marylands returned to base with their bombs.

Finale and Début

Special features of the air attacks during the first two days of the battle proper were the last appearance, of our heaviest type of bomber and the début of our lightest.

On 19th November, Flying Fortresses made their third and last appearance in the Middle East theatre, a single aircraft dropping 3,000 lbs. of H.E. bombs at 29,000 feet on Derna through 10/10th cloud. Technical and other difficulties thereafter proved too formidable to justify persevering with this type of aircraft. The main technical hitch, in particular, was oil trouble in the inside port engine.

A.O.C.-in-C's
Correspondence
with C.A.S. 263A

No.80 Squadron
O.R.B. November

The 20th November witnessed the first effective sorties by No.80 Squadron's Hurricane-bombers. Ten aircraft with two others as cover, attacked vehicles along the road south of Bir el Baheira. The bombing was not successful, but subsequent ground strafing put fifteen vehicles out of action.

The squadron's bombing performance improved as the campaign progressed, although the 40 lb. bombs employed proved ineffective against tanks even when direct hits were registered.

Special Operations

On the 20th, also, two special air operations were carried out which deserve special mention, the first employment of the R/T jamming aircraft (popularly known as "Winston's Wellingtons") and the help given by transport aircraft in flying up to the forward area urgently needed ammunition.

C.A.S.Folder,
1720

The airborne jammers achieved technical success and the signalled situation report from Advanced Headquarters on 21st November, stated: "Preliminary reports from prisoners indicate tank jamming most successful causing breakdown in their communications." These preliminary reports, however, proved over-optimistic and R/T jamming could not be considered at this stage a factor of importance.

/These

D/AOC/5 Encl. 67B

These special Wellingtons were used on several other occasions during the first month of the campaign, flying some 20 sorties on their "very thankless and hazardous task" for the loss of two out of six aircraft. The A.O.C., Western Desert, then decided to dispense with their services as the crews, who were night bomber crews loaned only for the period of the battle, were "showing signs of cracking." (1)

O.R.B. 216 Squadron
and A.O.C. -in-C's
Correspondence
with C.A.S. Part
III 246A

CS 14280

The quick despatch of 37 m.m ammunition to the 4th Armoured Brigade on 20th November was a neat piece of work carried out by Bombays of No. 216 Squadron from Matruh. The distress call was sent out at 12.30 hours: by 16.45 hours twelve tons of the required ammunition were being unloaded at one of the Maddalena landing grounds. This operation greatly helped the 4th Armoured Brigade's activity on the morrow.

Malta Hits Enemy Supply Organisation

M.E.W.O.S.
No. 6
Appendix A

While the Middle East Air Force's effort was being directed against battlefield targets and airfields, Malta-based bombers during the three nights 18/19th to 20/21st November, despite bad weather, maintained pressure on the enemy's main supply centres both in Italy and Libya. Docks and railways at Naples and Brindisi were the principal targets, these being effectively bombed by 35 Wellingtons of No. 40 Squadron. In a raid on Brindisi on the second night, in particular, hits on the oil storage tanks in the harbour caused a series of explosions every few minutes and columns of dense black smoke were visible for 200 miles on the bombers' return journey. Further south, communications and oil storage facilities at Messina were attacked as an alternative target. To hinder the unloading of stores which had safely reached Libya small forces of Wellingtons attacked both Tripoli and Benghazi: their efforts at the former port was supplemented by F.A.A. Swordfish which mined the harbour and carried out diversionary bombing.

The attacks delivered by Blenheims on convoys in the Gulf of Sirte and the Ionian Sea on the 19th and 20th are included in the general appraisal of the shipping strikes in November on page

/Negligible

- (1) The R/T jamming Wellingtons were finally released by the G.O.C. Eighth Army on 23rd December and were then made available for wireless investigation operating from KABRIT, in the Canal Zone, pending the formation of a Special Signals Squadron at Ismailia. The C.S.O., H.Q. R.A.F. M.E. (Air Commodore Mann) informed the Director of Signals that there was no definite information that the jammers adversely affected the handling of enemy tanks, although it was reasonable to assume that considerable inconvenience was caused. The Wellington was not very suitable for the task as a quick "turn round" between sorties was necessary. However without fighter escort and cloud cover the Wellington was practically defenceless. In view of the light weight of the jammer equipment, the necessary installation in Beaufighters or Mosquitos was urged, if a suitable aerial could be designed. (A.O.C. 11 Part 2 Enclos. 59C).

Negligible Enemy Air Attacks

There was at this stage no enemy challenge to our build-up in the Desert. Mention has already been made of the small-scale attack on one of our advanced landing grounds on the 19th. To this has to be added a token effort by a total of eight enemy bombers on the 20th against Tobruk, which caused no damage or casualties.

The Disasters at Sidi Rezegh

Mention has been made on page 134 of the satisfactory progress of our military operations during the first three days of the offensive. (1) On the morning of 21st November however, the entire situation was transformed. General Rommel had fully realised the implications of the shrewd blow at the bottleneck in his communications at Sidi Rezegh and summoned the bulk of his armoured forces to deny us the commanding position which we were evidently about to gain. He thus turned the potentially dangerous situation to his own advantage by directing his main armour against our detached armoured forces.

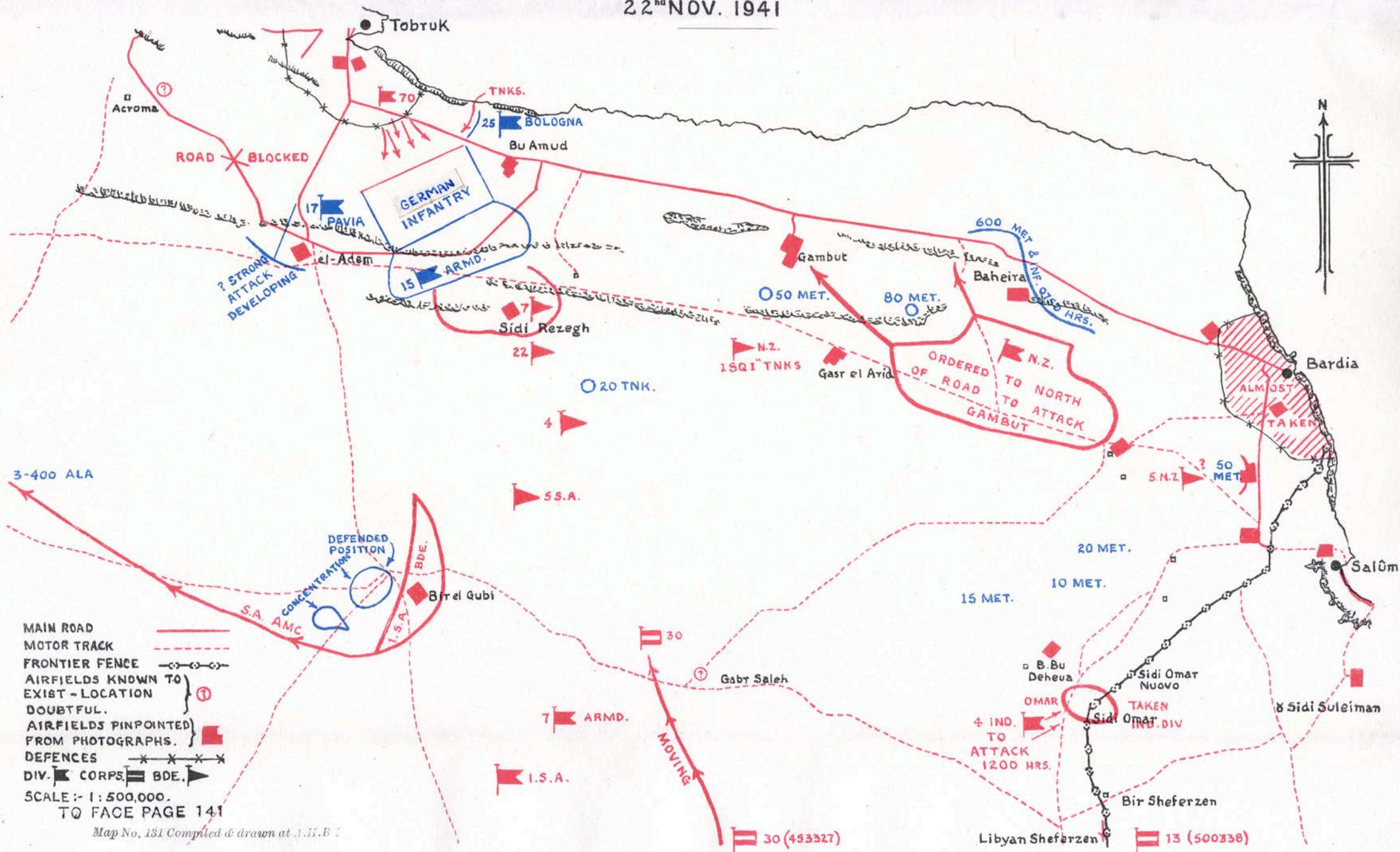
At 8 o'clock in the morning of the 21st the Support Group, preparing to attack Sidi Rezegh, became aware of the approach of the enemy's 15th Panzer Division from the south-east. The Brigadier directing operations therefore decided to leave one of his armoured regiments to support the attack and directed the other two against the enemy columns. The Support Group captured Sidi Rezegh after a hard fight and the two armoured regiments of the 7th Armoured Brigade succeeded in checking the 15th Panzer Division at the cost of heavy casualties. Our forces were allowed no respite, however, as hardly were these engagements concluded, when they were obliged to face the 21st Panzer Division, which had eluded the efforts of the 4th and 22nd Armoured Brigades to check them near Gabr Saheh in the south. (2)

/By

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- (1) In particular, it was believed (erroneously) that the greater part of the German armour had been put out of action. No.208(A.C.) Squadron's O.R.B. entry on 21st November reflected the current belief thus:-
"At the time of writing the exact figures of German casualties are unknown, but it is considered that they amount to one half of their total force."
- (2) No.208 Squadron made five reconnaissance sorties over the 30th Corps area during the day. In particular, 200 tanks in line were reported moving to the north-west from the Gabr Saheh area. (No.208 Squadron O.R.B.) No.24 Squadron Bostons also carried out reconnaissances of the Sidi Rezegh area (S.A.A.F.Narrative).

INITIAL SUCCESS AND FIRST CAPTURE OF SIDI REZEGH.

22nd NOV. 1941



By mid-day the situation at Sidi Rezegh was critical: the two German armoured divisions had apparently joined and our depleted forces were isolated. The 5th S.A. Infantry Brigade had not arrived as planned⁽¹⁾ and the 4th and 22nd Armoured Brigades which had been summoned from the south, could not be expected to arrive for several hours. Nevertheless, the Support Group and the 7th Armoured Brigade, aided by the 22nd Armoured Division's intervention about an hour before dusk, stubbornly resisted until the enemy broke off the attack. The 4th Armoured Brigade, meanwhile, had been checked by a screen of 88 m.m. guns a few miles to the south-east.

Idem

The following afternoon (22nd November) a pitched battle developed on the Sidi Rezegh landing ground and its environs in which at least a hundred enemy tanks and large numbers of anti-tank guns and infantry engaged the exhausted Supply Group and 7th Armoured Brigade, the three regiments of the 22nd Armoured Brigade and two of the 4th Armoured Brigade. In the words of General Auchinleck's despatch: "The fog of war literally descended on the battlefield, for the clouds of dust and smoke raised by tanks and bursting shells made accurate shooting impossible, and at times it was difficult to tell friend from foe". At the conclusion of the battle, which raged until after dark, our armoured brigades were driven off the landing ground. At the same time the Support Group, yielding to overpowering strength, was obliged to abandon Sidi Rezegh. The Group retired to the southern escarpment where it leaguered to the north of the Armoured Brigade.

Meanwhile, the 5th S.A. Infantry Brigade had arrived in the morning and had been set the task of capturing an objective (Point 178) on the southern escarpment which commanded the western end of the valley, where the enemy were regrouping preparatory to their assault on the landing ground. The South Africans failed to capture their objective and at length retired to leaguer to the west of the Support Group.

Rommel characteristically pressed home his advantage. A surprise night raid was made on the Headquarters of the 4th Armoured Brigade, and most of its wireless links were captured. Thus for the ensuing 24 hours this brigade, which, with its 100 tanks, constituted our remaining substantial armoured force, ceased to be a fighting entity. Thus, when the enemy attacked the 5th S.A. Brigade on the afternoon of 23rd November with over 100 tanks and a large force of lorried infantry, the brigade was practically annihilated.

After these disasters the G.O.C., 30th Corps, decided to rally the armoured brigades in a central position north of the Trigh el Abd and ordered the remaining brigade of the 1st S.A. Division to retire to Taieb el Essem to watch the western flank.

/T/R

- (1) The Brigadier in command had obtained permission for the brigade to halt over-night on the grounds that it was insufficiently trained to traverse unknown terrain on a moonless night. In the morning the brigade found itself confronted by the tanks of the Ariete Division.

Tac

R/R for 30 Corps 21st-23rd November

No.208
Squadron O.R.B.

S.A.A.F.
Narrative

During the days of the disasters at Sidi Rezegh No.208 (A.C.) Squadron operated at intensity in reconnoitring the 30th Corps' area of operations. From 21st to 23rd November the squadron flew 15 reconnaissance sorties for the loss of one pilot. Not only were enemy movements and bombing targets reported but on the 23rd information was obtained as to the extent of the advance of the New Zealand forces along the Trigh Capuzzo (page 143). Help with tactical reconnaissance was also given by Bostons of No.24 Squadron, S.A.A.F. which flew seven sorties (two aircraft failed to return) over considerable areas. In addition, valuable information was brought back from time to time by our attacking, fighter and bomber aircraft.

Although the air reconnaissance at this stage was inevitably not complete as could be desired, there appears to be no suggestion that a fuller coverage would have prevented the 30th Corps' misfortunes. These were due to the Germans' skilful tank tactics, ability to move rapidly by night and the superior performance of the German tanks during the actual engagements.

The Tobruk Sortie

C.-in-C's
Despatch
November '41 -
August '42
Page 49

Meanwhile, the sorties from Tobruk had started at dawn on the 21st and made progress against stiff opposition. (1) This opposition was in fact, severer than expected and the 70th Division's operations proved costly in men and tanks. The junction between the Bologna and Pavia Divisions had been selected as the best point to attack, but in the interval between the formulation of the plan and its execution the German 90th Light Division had been moved into that particular sector in readiness for the enemy's projected assault on Tobruk. In view of the increased opposition and as the South African Brigade had not arrived, as planned, and the Support Group was in difficulties at Sidi Rezegh, the G.O.C., 70th Division, wisely delayed the planned advance on El Duda.

No.451 Squadron
R.A.A.F. O.R.B.
November '41

A watch on enemy movements around Tobruk remained one of the commitments of No.451 (A.C.) Squadron, R.A.A.F.

Advance of 13 Corps

C.-in-C's
Despatch
November '41
August '42
pages

Deceived by the apparently favourable situation, the 13th Corps had also begun operations on 21st November.

A detachment of the 7th Indian Infantry Brigade had previously occupied the high ground dominating the Omars from the west and the New Zealand Division had taken up positions for its advance. On the 21st the New Zealanders moved forward and over-ran the ground to the west of the enemy's line of strong points up to the fringe of Bardia: Capuzzo, Musaid and Sollum barracks were occupied with little difficulty. Simultaneously, the Indian Brigade captured Sidi Omar in the rear and occupied two of its defended localities. It took several days, however, to

/capture

(1) During the night of the 20/21st the 7th Cruiser Squadron R.N. bombarded the enemy battery which had been shelling Tobruk from the Eastward, apparently without effect. (Naval Historical Section's Preliminary Narrative on Operations of Mediterranean Fleet).

capture Libya Omar and thus clear the whole area.

The 6th N.Z. Infantry Brigade, meanwhile, advanced westwards along the Trigh Capuzzo in order to join up with the 7th Support Group at Sidi Rezegh and captured the Headquarters of the Afrika Korps en route. On the 23rd the brigade (which had been transferred to the 30th Corps) stormed a strong point on the ridge some five miles to the east of Sidi Rezegh; this occurred, in fact, only a few hours before the disaster to the 5th S.A. Infantry Brigade already mentioned.

The same day the G.O.C., New Zealand Division, leaving the 5th Brigade to invest Bardia and Halfaya, advanced westwards with the remainder of the division, and after seizing Gambut airfield joined the 6th Brigade on the ridge to the east of Sidi Rezegh on the afternoon of the 24th.

No.451 Squadron
R.A.A.F. and
No.237 (R)
Squadron O.R.B.

CS.14280
P.8. and
No.237 Squadron
O.R.B.

At the outset of the 13th Corps' operations the attached Army Co-operation Squadron (No.451, R.A.A.F.) and No.237 (Rhodesian) Squadron paid most attention to the Halfaya and Capuzzo areas. Later, when the New Zealanders advanced along the Trigh Capuzzo both squadrons kept a close watch on the Gambut area. On the 23rd No.451 Squadron gave the New Zealand brigade a clear picture of what was confronting them by reporting at 11.00 hours 100 tanks and M.T. south-west of Sidi Rezegh, 100 tanks and M.T. north of Sidi Rezegh and 200 tanks and M.T. near Bu Amud, 10 miles north of Sidi Rezegh. No.237 Squadron also helped by reconnoitring the Gambut-Sidi Rezegh area.

CS.14280
Pages 6 and 7

On 23rd November, Advanced H.Q. 13 Corps moved to Bir el Hariga in order to control the operations at the frontier position and westwards along the Trigh Capuzzo. At the same time the A.I.L.O. attached to No.451 Squadron left L.G. 132 with his section for the proposed A.L.G. at Gasr el Arid, followed by the A.L.G. party. Unfortunately, the area between Chleta and Gambut had not been entirely freed of the enemy and the A.I.L.O., the G.S.O.III Air and the R.E. Officer I/C Construction Party were cut off by an enemy column. The main A.L.G. party was re-directed to Sidi Azeiz by Advanced H.Q. 13 Corps and the good permanent German airfield there, adequately protected by H.Q. 5 New Zealand Brigade, was adopted as the new A.L.G. With the A.I.L.O. was lost his secret box containing all the code names, locations and code maps. This made communication by wireless, which was the only link between Advanced Corps and the A.L.G. once the move along the Trigh Capuzzo had started, very difficult. The R.A.F. L.O. at Advanced H.Q. 13 Corps, accordingly, compiled a new R/T code and issued copies to the A.L.O. at Sidi Azeiz, the Squadron Commander at L.G. 132 and G.III Air at Corps H.Q. This code enable the Corps H.Q. to detail tasks to sorties, to order reserve aircraft to stand-by at A.L.G. and report casualties to the Squadron. The code was later enlarged to cover every eventuality.

General Military Situation, Evening 23rd November

By the evening of the 23rd the general military position was that the 13th Corps had liquidated or were in process of liquidating the enemy's frontier positions, while the 30th Corps, which was to have been supported by the New Zealanders' advance westwards, was being forced to retire from the vital Sidi Rezegh area. The 70th

Division from Tobruk had wisely not attempted to continue its advance to El Duda and its expected link-up with the 30th Corps had failed to materialise.

Satisfactory Air Situation (21st-23rd November)

A.O.C.-in-C's
Correspondence
A.O.C.III
Enclos.28A

As a reassuring contrast to our checkered military operations the A.O.C.-in-C. was able to report to the C.A.S.: "Air situation is satisfactory. There has been some heavy air fighting the last day or two which has given our fellow full confidence.... We have at present air superiority..... Whole effort both fighter and bomber now directed to support land battle..... Coningham and his team are working well, full of fight and not fussing".

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Enclos.251A

The R.A.F. effort at this stage was also fully appreciated by the directors of the Air war effort at home - "Say bravo to Tedder and R.A.F. on air mastery", signalled the Prime Minister to General Auchinleck.

The air effort devoted to retaining air superiority and affording close support during the period 21st to the night 23rd/24th November, inclusive, was as follows:-

Fighter Effort

M.E. W.O.S.No.6
(Amended from
Wing, Group and
Squadron O.R.Bs)

<u>21st November:</u>	145 sorties on offensive sweeps and ground attacks: 19 on bomber escort: 20 on shipping protection: TOTAL : 184 sorties.
<u>22nd November:</u>	183 sorties on offensive sweeps and ground attacks: 71 on bomber and T/R escorts: 17 on Local defence; TOTAL : 271 sorties.
<u>23rd November:</u>	185 sorties on offensive sweeps and ground attacks: 61 on bomber and T/R escorts: 12 on Local defence: 2 on shipping protection: TOTAL : 260 sorties.

Bomber Effort
(Direct Support)

<u>21st November:</u>	9 Maryland, 21 Blenheim and 10 Hurricane-bomber effective sorties.
<u>21st/22nd November:</u>	Approx. 6 Albacore effective sorties.
<u>22nd November:</u>	18 Maryland, 22 Blenheim and 10 Hurricane-bomber effective sorties.
<u>22nd/23rd November:</u>	8 Albacore effective sorties.
<u>23rd November:</u>	18 Maryland and 35 Blenheim effective sorties.

Against Airfields and Landing Grounds

<u>21st November:</u>	9 Maryland effective sorties.
<u>22nd/23rd November:</u>	20 Wellington effective sorties (including effort from Malta.)

23rd November: 5 Blenheim effective sorties (from Malta)

23rd/24th November: 23 Wellington effective sorties (including effort from Malta)
7 Albacore effective sorties.

Shipping Strikes⁽¹⁾

21st/22nd November: 13 Wellington effective sorties from Malta.
4 Swordfish effective sorties from Malta.

22nd November: 1 Blenheim effective sortie.

Other Attacks from Malta:- 5 Swordfish mined Tripoli harbour.
3 Wellingtons bombed Messina.

Naval
Historical
Preliminary
Narrative of
Med.Ops.

Naval Bombardments: At this time, also, night naval bombardments were carried out by destroyers of the 7th Cruiser Squadron on the enemy's strongholds at Bardia and Sollum.

Features of Fighter Activity (21st/23rd November)

With the drying out of the Cyrenacian landing grounds on 20th November, the enemy's air activity had revived. To counter this challenge the effort of the R.A.F. fighter flying wings on offensive sweeps was stepped-up still further; thus the total daily sorties flown on this activity rose from 109 on the 20th to 185 on the 23rd.

Appendix

The increase was necessitated by the continued absence of adequate arrangements for controlled interception. With the focal point of the battle at Sidi Rezegh, the enemy's forward landing grounds at Gargala were nearer the battle area than ours at Maddalena. Consequently, by the time a flying wing, briefed to intercept an attack on the basis of information received from the R.D.F. in Tobruk, could reach the Sidi Rezegh area, the enemy formation had delivered its attack and turned for home. Attempts made to employ two mobile R.D.F. sets mounted on lorries proved unsuccessful owing to their mechanical unreliability and lack of range. Even when the sets were fully serviceable their range was limited to 16 to 20 miles, which was insufficient to provide adequate warning. The inadequacy of the radar assistance together with the critical nature of the land battle caused the R.A.F. to maintain offensive sweeps over the battlefield during the greater part of the day.

It so happened at this time that the Axis fighters also adopted the practice of offensive sweeps in order to make a bid for a degree of air superiority which would allow the Stukas to operate without interference. Clashes in the air were thus inevitable. In particular, formations of Me.109s in similar strength to that of our flying wings

/were

(1) Shipping strikes carried out in November are considered on page 177 and following pages.

were over the battle area during 22nd November and the aerial encounters of that day were as significant as the current tank engagements.

No.3 Squadron
R.A.A.F. O.R.B.

During the morning of the 22nd, 12 Tomahawks of No.3 Squadron, R.A.A.F. were escorting 5 Blenheims of No.11 Squadron over the Bir el Gobi area, when 15 Me 109 Fs attacked just as the bombers were making their run. The ensuing combat resolved itself into a contest between the superior speed of the 109s and the greater manoeuvrability of the Tomahawks. At the conclusion of the engagement two Messerschmitts were reported destroyed and three damaged at the cost of one Tomahawk shot down and two missing. The Blenheims completed their mission without loss.

A.H.B. 6/7/4

During our afternoon sweep No.2 Fighter Operational Wing encountered 20 Me. 109 Fs. to the south-east of El Adem and a contest ensued which had a far reaching effect on subsequent fighter action. The S.O.O., A.H.Q., W.D., reported the encounter as follows:- "At this time the German fighter force made a bid to defeat one of our wing formations in the air in a straightforward air battle. Unfortunately for the Germans they met our best wing comprised of No.3 R.A.A.F. Squadron and No.112 Squadron. The enemy formation consisted of 16 or 18 Me.109s(1) and our formation consisted of 20 Tomahawks. The enemy had a speed, climb and ceiling superiority. After some preliminary and wary manoeuvring on both sides both formations fell into defensive circles - the Hun above and the British below. The circles flew round and round, while occasionally pilots would pull out and try to pick off one of the enemy when a suitable opportunity arose. Those who left the circle were invariably caught by the enemy circle - and so the circuses continued. It was a deadlock - neither side could break into the other. The evening gradually closed in and as dark fell, when it was hardly possible for either side to see the other, the Germans, who had farther to return to their base, flew off westwards. Only one of our aircraft returned to base that night, and this had run out of ammunition and had broken away early in the contest. The rest landed on other L.Gs or in the desert. Next day all but five aircraft returned.(2) The German losses were also five aircraft destroyed or damaged. In spite of inferior machines our formation had held its own. The Germans never challenged our fighter force in straight forward air combat again during the campaign. We had gained air superiority. The enemy resorted to raider tactics..... Me.109 Fs. looked around the skies watching our formations from above, diving upon stragglers or unescorted bombers and practising the pirate tactics which they had developed against our formations before the battle..... The possibility of the German fighters turning up in force, however, compelled us to maintain large fighter

/formations

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- (1) Reported as 20 aircraft by No.3 Squadron, R.A.A.F.
(2) This should really read "all but five pilots returned. See aircraft casualty figures later.

No.3 Squadron
R.A.A.F. and
No.112 Squadron
O.R.Fs.

No.250 Squadron
O.R.B.

A.O.C.-in-C's
Correspondence
with C.A.S.
etc. Part 3
Enclos. 248A

A.H.B. 6/7/4
and
M.E.W.Os No.6

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Part 3.
Enclos. 248A

M.E. W.I.S.
No.75

No.272 Squadron
O.R.B.

formations wherever we expected to meet the enemy - either on protective sweeps, over the battlefield or while escorting the bombers against direct support targets". Although the effect of this engagement was gratifying, our losses were heavy. The flying wing reported the destruction of three enemy fighters (1) and damage to several more, but six of No.3 Squadron's aircraft were shot down (although two pilots later made their way back to the squadron) and No.112 Squadron lost one aircraft. As a result of their losses, No.3 Squadron was unable to operate on the following day. During the afternoon of the 23rd 5 Tomahawks of No.250 Squadron, sharing the escort of Blenheims to El Aden with aircraft of Nos.229 and 238 Squadrons, claimed three Me.109's probably destroyed and six damaged.(2)

Air Marshal Tedder was able to assure the Chief of Air Staff that "any tendency to make bogey of the Me.109 F. (had) gone despite its superior performance."

During the three days under immediate review our fighter sweeps achieved considerable success in countering the attacks of escorted Stuka formations on our ground forces. In particular, Nos.229 and 238 Squadrons on a protective sweep on the morning of the 23rd scattered a force of 30 Ju. 87s, escorted by 20 Me. 109s and one G.50, which were caught when on the point of bombing our troops between El Gubi and Sidi Rezegh. The squadrons reported the destruction of 4 Stukas and the G.50, the probable destruction of 2 Stukas and one Messerschmitt and damage to two Stukas and one Messerschmitt.(3) The flying wing's losses, however, were also severe - eight Hurricanes failed to return, although the pilots in all cases were not lost.

On 24th November, the A.O.C.-in-C. reported to the C.A.S.: "Since we have at present air superiority and in view of the situation in land battle, fighter sweeps are carrying out low flying attacks as part of their sorties". On the morning of the 22nd, for example, Tomahawks and Hurricanes were credited with the destruction of approximately 100 lorries, including about 10 petrol tankers, on the El Aden-Acroma road, causing road blocks in several places. No.272 Squadron Beaufighters, also, in addition to their continued attacks on the enemy's rear airfields strafed M.T. on the road leading east from Barce on the afternoon of the 22nd, destroying several vehicles and three petrol tankers.

Attacks on Enemy Airfields (21st-25th November)

The counter air force operations included renewed bombing attacks on the enemy's bomber bases at Benina and Berka.

/On

- (1) German records show five Me.109s destroyed on 22nd November which seem to confirm our claims for the engagements in the morning and the afternoon (Verluste Afrika ADIK 103/64).
- (2) See Footnote (3) below for total German losses on 23rd November.
- (3) German records show 2 ME.'s, 6 JU. 87s, and one JU.88 destroyed and one ME.109 and 2 JU.87s damaged on 23rd November. (Verluste Afrika 103/64).

No. 205 Group
O.R.B. and
M.E. W.O.S.
No. 6

On the night of the 22nd-23rd 14 Wellingtons of No. 205 Group attacked dispersed aircraft at Benina and Berka, and six more Wellingtons, operating from Malta, also bombed Benina airfield. The following night 17 No. 205 Group Wellingtons continued their attacks on Benina and Berka, and small forces of Malta-based Wellingtons supplemented the bombing of the latter airfield and kept up the attack on Benina on the night of the 23rd-24th. In particular, large fires were started at the hangars and among buildings on Benina airfield.

Further west, in Tripolitania, 5 Malta-based Blenheims on the 23rd bombed and machine-gunned the landing ground west of Sirte.

A slight pressure was continued on the German fighter base at Gazala by nine Fleet Air Arm Albacores which dive-bombed the north and south landing grounds on the night of the 23rd-24th. An attack on Gazala No. 2 landing ground by nine Marylands of No. 12 Squadron on the 21st, however, had as its main aim the bombing of General Rommel who was reported to be landing there; low cloud over the area prevented the location of the target and bombs were jettisoned on the estimated position.

S.A.A.F.
Narrative

No. 272 Squadron
O.R.B.

Low flying fighter attacks on enemy landing ground included, in particular, the continued operations of No. 272 Squadron Beaufighters from Gherawla. On the 21st several Stukas and a JU.88 were reported shot up at Martuba and on the 23rd five SS.m. 79s were strafed at Barce. A projected strafing raid on Benina airfield on the 22nd was foiled by an effective fighter screen over the airfield and road transport in the vicinity was attacked instead.

Direct Support Bombing (21st-23rd November)

The total of 123 day bomber sorties flown on direct support missions during the three days 21st to 23rd November (page 145) appears at first sight to be small, considering the fact that two wings of Marylands and Blenheims were at the disposal of the A.O.C., Western Desert. There were, however, the following limiting factors, which must be taken into account:-

Squadron
O.R.Bs.

(a) On the 21st and 23rd there was intermittent low cloud and on the 22nd cloud, rain and dust storms, which tended to limit operations.

A.O.C./II
Enclos. 35A

(b) When the bomber force was put at the call of the Army the number of sorties was inevitably decreased, as it was necessary to wait for the situation reports before deciding on targets.

No. 270
Wing O.R.B.
November 22nd.

(c) On at least one occasion a projected Blenheim effort was wasted, as it was discovered after the formation was airborne that a Maryland force had already been allotted the task. Steps were taken, however, to prevent such duplication.

Idem
Appendix 143

(d) So far as No. 270 Wing was concerned at this time, calls for air support from the 13th Corps were infrequent and calls from the 30th Corps

/were

were passed direct to No.3 S.A.A.F. Wing and were only passed to No.270 Wing if they could not be met. In the latter case there was a delay while No.270 briefed the crews.

M.E. W.O.S.No.6
No.270 Wing
O.R.B.
S.A.A.F.
Narrative and
No.80 Squadron
O.R.B.

Nevertheless, the day bomber force's participation in the battle was appreciable. In support of the 30th Corps' operations 16 Blenheims of Nos.14 and 45 Squadrons on the 21st, effectively bombed a concentration of tanks and vehicles at Bir Hakin and 9 Marylands of No.21 Squadron, S.A.A.F. renewed the attack on the next day. On the 22nd, also, 5 Blenheims of No.11 Squadron attacked M.T. and A.F.Vs near Bir El Gubi, 12 Blenheims on Nos.14 and 45 Squadrons bombed traffic moving south-east towards the Sidi Rezegh area on the Acroma-El Adem road; and No.80 Squadron Hurricane-bombers bombed and straffed (with greater effect) groups of M.T. between El Adem and El Duda. On the 23rd, 18 S.A.A.F. Marylands bombed vehicles packed on either side of the El Adem-Bir el Gubi road and those moving in the direction of Tobruk, while 26 Blenheims of Nos.11 and 14 Squadrons and the Lorraine Squadrons hit A.F.Vs and vehicles on the escarpment to the west of El Adem. Nearer the frontier, 5 Blenheims of the Lorraine Squadron on the 21st attacked vehicles at Menastir and the Hurricane-bombers of No.80 Squadron bombed and straffed vehicles further west at Bir el Bahara; on the 22nd a successful attack by 9 Marylands of No.12 Squadron on an enemy position at Sidi Omar Nuova was followed shortly afterwards by its capture. Meanwhile, as already mentioned, the fighter force carried out widespread low-flying attacks and a slight night pressure was applied by F.A.A. Albacores attacking vehicles and petrol dumps in the Gazala area.

The air attacks at this stage were obviously not on a sufficient scale to be a dominant factor in the land battle, but they helped to restrict enemy movement - of paramount importance in the mobile warfare then in process - and inflicted considerable casualties on the enemy's "thin-skinned" vehicles.

Need to Escort Bombers over Battle Area

With the increased air activity it became evident that fighter escort for bombers operating over the battlefield was a necessity. The need was particularly emphasised on 22nd November. On that day, as mentioned in the preceding sub-section, 12 Blenheims of Nos.14 and 45 Squadrons were briefed to attack A.F.Vs and vehicles on the Acroma-El Adem road; the squadrons were informed: "Our fighters will be ground straffing and patrolling in the same area". No.14 Squadron completed their mission satisfactorily, but No.45 Squadron was obliged to jettison their bombs when attacked by 20 Me.109 Fs, "on emerging from 7/10th cloud at approximately 5,000 feet." Only two of the six Blenheims returned from the encounter and both of these were hit by cannon and machine gun fire; of the remainder, two were seen going down in flames, "with four parachutes in the air," and two failed to return.

No.270 Wing
Appendix 140

A.O.C./II
Enclos.28A

Before this encounter close fighter escort for bomber sorties over the battlefield had been sporadic; after the 22nd, escort on such missions became the general rule.

/Previously,

A.H.B.IIJI/16
Enclos. 9.

Previously, when fighter escort was provided, varying formations were used, including pairs in "Vic", and two flights of six aircraft each in pairs in line astern, one on either side of the bombers and just above them. An entirely new formation was then introduced. This entailed the division of the fighter squadron into two flights of three aircraft each and one flight of six aircraft. The bomber squadron adopted the "Vics in line astern, stepped down" formation. The fighter escort took up position as follows:-

- (a) Three aircraft in line astern, stepped down on either side of the bombers, so that the leaders were just ahead of, and some 200 feet above the bomber leader. The Nos.2 were just behind and some 100 feet below their No.1. The Nos.3 were in line with the rear of the bomber formation and flying at the same height.
- (b) The remaining six aircraft flew in pairs in line abreast some 200 to 300 feet above the rear flight of bombers. (In the first few operations this flight flew above and behind the bomber formations but experience showed that this position was subject to the worst anti-aircraft fire which almost invariably was most concentrated a little in the rear of the bombers).
- (c) Top cover, flying in the usual fighter formation of six pairs in line abreast, normally flew within 1,000 feet of the close escort. In the case of an attack from astern the top flight engaged the enemy aircraft, but it also acted as immediate top cover if either of the flank escorts had to beat off an attack from either flank or from below.
- (d) Throughout the operation all the fighter aircraft weaved continuously.

The success of the bomber escorts proved one of the features of the campaign. The ineffectiveness of the enemy's escort compared with ours was striking (see Appendix D(i)).

The Enemy's Counter-Stroke

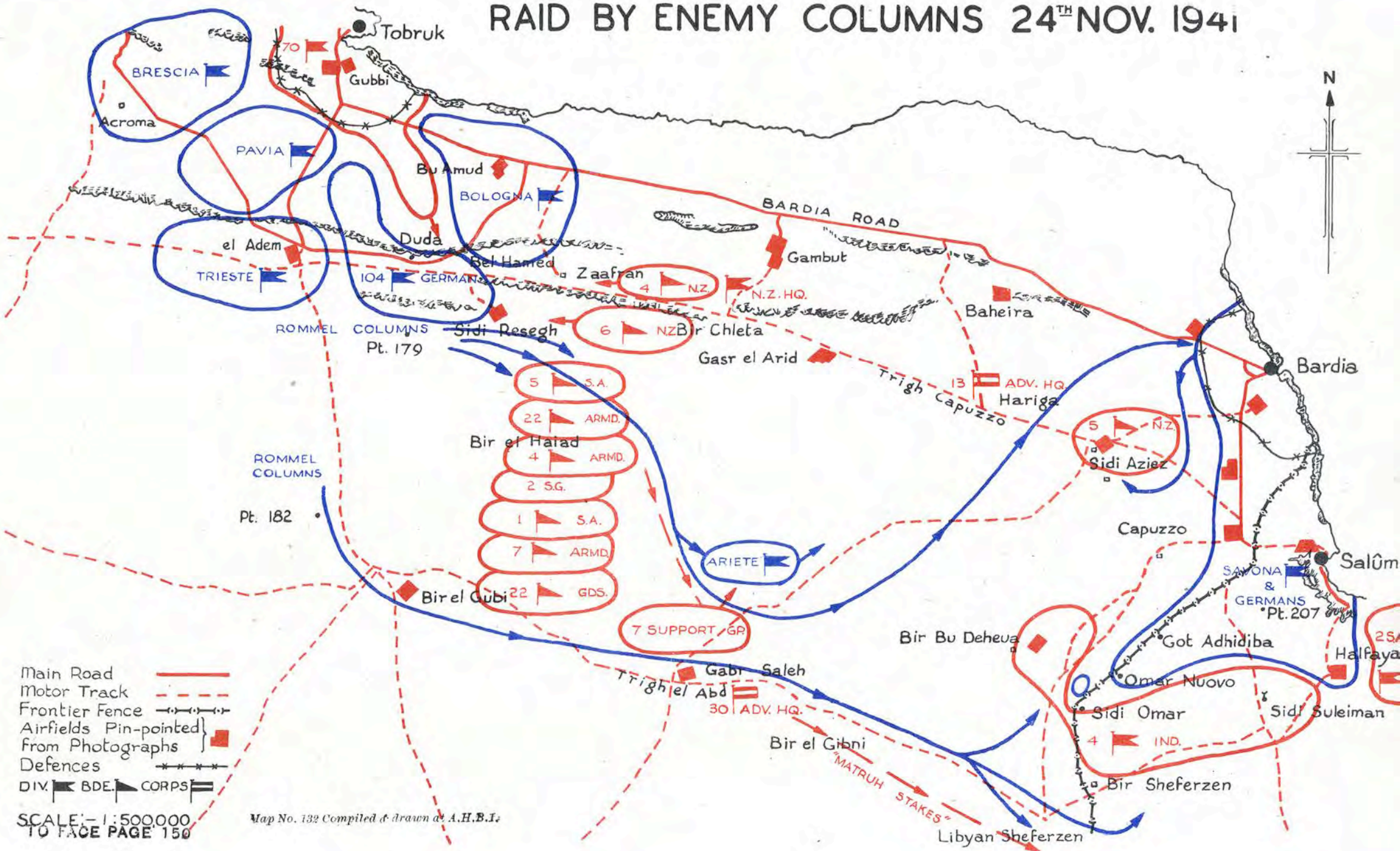
On 24th November, Rommel attempted to exploit the ascendancy gained over our armour by a characteristically opportunist move. Quickly gathering the bulk of his armoured forces, he poured it down the Trigh el Abd from El Adem and El Gubi, through Gabr Saleh towards Sheferzen. H.Q. Afrika Korps removed to Bir el Reghem (15 miles northwest of Gabr Saleh) to direct the operation. The object of the drive, apparently, was to destroy our dumps in the Gabr Saleh and Sheferzen areas, cut our line of communication running northwards to the Trigh Capuzzo, disable our fighter force on the ground, and create such confusion and despondency in our ranks generally as to lead to the Eighth Army's withdrawal.

/The

CS.14280

A.O.C./II
Enclos.38C

RAID BY ENEMY COLUMNS 24TH NOV. 1941



CS.14280
P.9.

The enemy's move achieved complete tactical surprise.⁽¹⁾ At Gabr Saleh, where Advanced H.Q. 30 Corps was established, the Army Commander (Lt.G. Sir Alan Cunningham) was conferring with the Corps Commander (Lt.Gen. Godwin-Austin) at about 13.00 hours, when an enemy tank column attacked the landing ground. The ground party of No.208 Squadron at this A.L.G. "left hurriedly and the Army Commander's Blenheim took off through a stampede of vehicles across the aerodrome". Both Advanced and Rear H.Q. 30 Corps were over-run and it was later reported that "a definite panic of rear elements of its ground staff at the aerodrome, Headquarters, B Echelon and other second line components was apparent".

The central German thrust crossed the wire south of Sheferzen at about 1600 hours and moved to the north-east. A detachment remained at the line south of Sheferzen, guarding the gaps, and picked up Eight Army supply and reinforcements columns coming from rail head and pipehead.

C.-in-C's
Despatch
November 1941 -
August 1942.
P.52.

Sporadic opposition on the ground was given to the enemy's marauding columns during the day - the Support Group engaged one column near Gabr Saleh, the 1st S.A. Infantry Brigade shelled others passing within range of its leaguer at Taieb el Essem and the gravely depleted 7th Armoured Brigade kept up a 30 miles running fight with another column - but in general the 30th Corps was thrown into confusion and control was temporarily lost.⁽²⁾

Idem
P.53.

The situation was relieved of utter gloom, however, by the fact that the New Zealand Division and the Tobruk Garrison, aloof from the prevailing disorder, were making fresh gains in the vital Sidi Rezegh area, 50 miles to the west.

Temporary Withdrawal of Fighter Squadrons

A.O.C./II
Enclos.38C.

The danger to our Maddalena landing grounds on the 24th led to a temporary withdrawal of part of the fighter force. "In view of the value of our fighter force as a potential target for these raids, and their defencelessness in the dark,"

/the

- (1) No.208 (A.C.) Squadron carried out five reconnaissances in the morning and early afternoon, "but reconnaissances failed to report any imminent danger on the left flank".(O.R.B.) Morning reconnaissances of No. 24 Bostons showed that "all the vehicles in the battle area were observed to be stationary". (S.A.A.F.Narrative P.315).No.451 (A.C.) Squadron reported little movement in the 13th Corp's area, but two sorties from Tobruk over Sidi Rezegh and El Adem reported a thinning of enemy M.T. concentration from which Corps Intelligence deduced that a raid on our communications was in progress (O.R.B. and CS.14280 P.10).
- (2) Wg.Cdr. Geddes, R.A.F. Liaison Officer to H.Q.30 Corps reported: "At nightfall the situation in the rear of 30 Corps appeared confused with no news of 30 Corps except the report brought by Gen. Cunningham on his visit at mid-day before his return to Battle H.Q. at Maddalena". (CS.14280 P.9). Wg.Cdr. Gordon Finlayson, S.O.O., A.H.Q., W.D., less restrainedly, declared: "30th Corps lost control of the situation and there ensued a most interesting period, which as a study of panics, chaotics and gyrotics is probably unsurpassed in military history." (A.H.B.6/7/4.)

(in the Fort Maddalena area)

(9 miles E.N.E. of Fort Maddalena)

(22 miles E. of Maddalena).

(Bir Khamsa)

No. 208 Squadron
O.R.B.

(P. 59326)

No. 451 Squadron
R.A.A.F.
O.R.B. and
CS. 14280
Ps. 11 and 12.

No. 237 Squadron
O.R.B.

the A.O.C., Western Desert, informed the A.O.C.-in-C., "I moved the Hurricanes back from L.Gs 123 and 124, four squadrons coming here (L.G. 122) for the night and four going to L.G. 128. It was a rather harassing business getting them down here owing to the dust and failing light, but it was done most successfully." (1) Air Vice-Marshal Coningham continued, "The following day, squadrons came back to continue work but the position still remained insecure. During the morning of the 25th the Army Commander asked me to evacuate L.Gs 123 and 124 and advised me to get the aircraft back from here. I therefore sent all the Hurricanes back to Bagush for a night's rest and arranged for the ground personnel from L.Gs 123 and 124 to 'picnic' ten miles south of their landing grounds..... The Tomahawks were sent back to L.G. 110..... I had arranged for squadrons to come back..... next morning and we returned to normal during the course of the day."

Two of the Army Co-operation squadrons were also obliged to retire temporarily. No. 208 Squadron abandoned their A.L.G. at Gabr Saleh in the afternoon of the 24th and evacuated L.G. 134; moves were then made to L.G. 123, 122 and finally to 128. Operations at L.G. 134 were not recommenced until 28th November. No. 451 Squadron, R.A.A.F. continued to use O.L.G. 132 (Maddalena area) and the A.L.G. at Sidi Azeiz until the 25th. The B.L.G. was withdrawn to L.G. 75 (near Piccadilly) and L.G. 128 was used as an alternative O.L.G. to L.G. 132; the advanced party remained at Sidi Azeiz until it was over-run on the 27th (page 161). No. 237 (Rhodesian) Squadron continued to operate from L.G. 128.

/ Referring

- (1) No. 1 Squadron war diarist wrote: "The news (of the threatened German tank attack) was received an hour before sunset and all aircraft were ordered to fly to L.G. 128. Other Squadrons received similar instructions and the sky was packed with Hurricanes, Tomahawks and two or three Lizzies (Lysanders) all making for L.G. 128. As most of the pilots did not know the whereabouts of L.G. 128, the majority landed at L.G. 122. So many aircraft were at L.G. 122 that they were standing wing-tip to wing-tip. The pilots, because of the danger of parachute troops, were ordered to sleep under the wings of the aircraft. All personnel other than pilots, were instructed to pack and be ready to move at half-an-hour's notice (S.A.A.F. Narrative p. 315). The compiler of the O.R.B. of No. 112 Squadron, located at L.G. 122, relates: "It is estimated that we had 175 aircraft on the drome and as the Hun column passed only 10 miles north of us... they missed a glorious opportunity of wrecking most of our fighters." The S.O.O. A.H.Q. W.D. reported: "Army H.Q. was open to the whims of the Hun. The Army thought first that he was making for railhead. That was within the bounds of possibility, but only if he could plunder our petrol dumps on his way. Later it was thought he was aiming at Army H.Q.... The Air Force thought of its fighter bases... The situation was grave..... It was thought that Rommel might throw in his parachute troops to deal a death blow at the fighter force by night. Every aircraft was guarded by its crew. Guards were doubled. A.A. gunners sited their guns as anti-tank guns. The night was tense". (AHB6/7/4.)

A.O.C./II
Enclos.38C.

Referring to these temporary withdrawals Air Vice-Marshal Coningham declared, "I was loath to do any moves at all, but the force is so valuable that it could not be risked I have explained the circumstances to the Army and have left them in no doubt as to their obligation to give us security for our bases and how our work relies on that security. They realise the position but of course could do little about it in the prevailing confusion and lack of information".

Air Effort on 24th November

M.E.W.O.S.No.6
(Amended from
Squadron
O.R.Bs.)

The R.A.F. effort on the opening day of Rommel's counter attack was unavoidably disrupted by the prevailing confusion and withdrawal of part of the fighter force. The operations of the latter were inevitably on a restricted scale in comparison with the previous intensive period. Thus the total fighter sorties on the 24th amounted to only 140 as compared with 271 and 260 for the preceding two days. The only part of the fighter activity which showed an increased effort, in accordance with the policy mentioned on pages 149 and 150 was in the provision of bomber escort - 80 sorties being flown as against 65 and 66 on 22nd and 23rd November.

S.A.A.F.
Narrative P.314
and No.80
Squadron O.R.B.
CS.14280

The most striking fighter activity was the straffing of the enemy's marauding columns. In particular, Tomahawks of No.2 Squadron S.A.A.F. and Hurricanes of No.80 Squadrons inflicted considerable casualties on the enemy's M.T. It was reported, however, that owing to the lack of identification flags⁽¹⁾ (only about 40 per Corps were issued owing to shortages of supply and other reasons) a certain amount of indiscriminate straffing from the air took place. "Since Rommel was using a large proportion of captured British vehicles mistakes in identification were excusable. Nearly all columns in the so-called Matruh Stakes were moving as **fast** as the ground and their horse power allowed in an easterly direction and it was singularly difficult for anyone either on the ground or in the air to pick out whether any particular cloud of dust was friend or foe."

In the enemy's rear, meanwhile, a disruption of his road transport columns was attempted, so far as the limited supply of suitable aircraft for the purpose allowed. No.272 Squadron Beaufighters, in a low flying attack, hit enemy lorries and petrol tankers on the roads in the Barce area, and further west, around Sirte (Tripolitania), a small force of Blenheims, operating from Malta, blew up three petrol tankers and hit other transport vehicles.

/A

-
- (1) By the Ground/Air Recognition Directive issued by H.Q. Eighth Army on 29th October, it was laid down. "When the time comes to lay on ground straffing tasks a code word "Undisout" will be issued by Eighth Army. From then onwards it will be the duty of forward troops to be prepared to display their flags or to accept the risk of accidental ground straffing by our fighters".

No.80 Squadron
O.R.B. and
S.A.A.F.
Narrative
P.314

A revealing combat occurred in the afternoon in the course of a ground strafing mission carried out by No.80 Squadron and No.4 Squadron, S.A.A.F., against a large raiding column which was threatening Maddalena. Our fighters sighted a force of Me. 110s "literally streaking underneath them at an incredible speed." As a result of the ensuing engagement the squadron claimed a total of five Me. 110s destroyed(1) for the loss of one Hurricane and one Tomahawk (several other missing aircraft returned later.)

No.270 Wing
O.R.B.
Appendix 144

On the 24th the day bombers' operations were entirely directed towards support of the Army and totalled 48 effective sorties. Factors which limited the scale of effort are considered later. In the morning, 16 Blenheims of Nos. 14, 45, and the Lorraine Squadron bombed M.T. concentrations which had previously been reported on the roads between Bir el Gubi, El Adem and Acroma.

Idem
Appendix 148
and S.A.A.F.
Narrative
P.314

When Rommel's thrust was becoming more evident in the afternoon the bombers were directed against M.T. concentrations on the El Adem - El Duda road, along the Trigh Capuzzo and between the trigh and the main road, sorties being flown by 10 Blenheims of No.14 Squadron and 18 Marylands of No. 12 and No.21 Squadrons. Four Blenheims of No.45 Squadron, uncertain whether the M.T. sighted were hostile or not, devoted their attention to vehicles to the west of El Adem.

No.205 Group
O.R.B.

During the night 19 Wellingtons of No.205 Group continued their offensive against the enemy's landing grounds at Benina and Berka, to check the rising trend in hostile air activity, and nine more renewed the attack on Benghazi, which was also attacked by 14 Wellingtons, operating from Malta(2).

M.E. W.O.S.
No.6

Enquiry into the Scale of Day Bomber Effort

A.O.C.-in-C's
Correspondence with C.A.S. etc.
Part 3
Enc. 252A

The total day bomber sorties on the 24th had been reported in the daily Opsum to Air Ministry as 45. This small total induced the C.A.S. to ask the A.O.C.-in-C., for information on the point. He pointed out that the weekly state dated 7th November reported about 250 day bombers serviceable "which would be thought to enable units to have at least 50% I.E. serviceable now". The enemy were apparently flying two sorties daily; the expectation from the R.A.F. was 100 to 150 sorties daily.

/The

- (1) Reference to reliable German documents, however, show only three Me.110s reported destroyed on 24th November. (Verluste Afrika 103/64).
- (2) The C.A.S. suggested that No.205 Group Wellingtons should be used on roving commissions behind the battle area instead of against Benghazi, but Air Marshal Tedder pointed out that petrol and ammunition had just arrived at Benghazi, while the absence of the moon rendered the roving commissions at that point impracticable, although it was intended to try them when "cloud height over high ground permitted". (A.O.C.-in-C., Correspondence with C.A.S. etc. Part 3, Enc.249A).

Idem Enc. 253A

The A.O.C.-in-C's reply to the C.A.S. merits reporting in some length and is summarised for the purpose of clarity.

- (i) It was explained that individual units had been stopped sending operational reports by signal in order to reduce the signal congestion and speed up transmission of orders and calls for replacement. Consequently, although the full details of sorties were not known for some days⁽¹⁾ replacements were effected quickly.
- (ii) Bombers as well as fighters in general flew two sorties per day and some did more. There were, however, many factors which made the number of sorties flown less than those which would appear possible by study of serviceability returns etc.
- (iii) Once the bomber force was put at the disposal of the Army Commander there was an inevitable reduction in the total sorties due to the need to wait for the situation report before deciding on targets. "On some occasions not possible to indicate bomber targets until 11 a.m." In a mobile battle such a reduction had to be accepted if the effort was to be used where it would contribute most. The question as to the correct balance between maximum bomber sorties per day and getting the maximum effect on a particular phase of the land battle was one the A.O.C.-in-C., had to leave to the commanders on the spot. He was satisfied that the balance was being well kept.
- (iv) There was considerable minor unserviceability due to enemy action both from A.A. and fighters. Moreover, severe dust, which the recent high winds had caused, resulted in engine unserviceability. In particular, at that time a very heavy engine replacement in Blenheims was necessary.
- (v) It frequently happened that aircraft had to land away from their own base.
- (vi) There had been no interruption of operations due to shortage of bombs, petrol or aircraft.

The A.O.C.-in-C., ended: "I am satisfied that every possible effort and more is being made to produce and maintain maximum scale bomber attack You have given me a good team and I am satisfied that from the fighting units and Commanders back to the supply units and organisation R.A.F. Middle East is pulling its fullest possible weight. The horses are willing and are neither being spared nor sparing themselves".

/The

(1) As already mentioned final records show that the day bombers' effort on the 24th totalled 48 effective sorties. It was an unlucky day to be chosen for assessing the bomber effort as it was a day of maximum confusion due to Rommel's counter-attack.

Idem 254A

The above information fully satisfied the C.A.S. and primed him with the facts necessary to counter the scepticism in regard to the R.A.F.'s effort expressed by the Prime Minister later in the month.(1)

Capture of Gialo

On 24th November the Oasis Force in Southern Cyrenaica duly performed its function in capturing Gialo. This success was due in no small measure to the strong supporting action of the associated squadrons, Nos. 33 and 113.

Both German and Italian aircraft attempted to impede the progress of the Force and, in particular, realising the danger to rear communications from our aircraft operating from L.G.125 (15 miles north of Maaten Es Schleighheigh) a determined attempt was made by the enemy to neutralise these air squadrons.

M.E.W.O.S.
No.6

Landing Ground No.125 was attacked five times on 22nd November. In the first attack one Ju.88 was reported to have dropped a few bombs without effect. This attack was followed by some 20 Me.110s, which destroyed four tenders and one armoured car by bombing and cannon and machine-gun fire. Shortly afterwards two S.79s were reported to have made a low-level bombing attack, which proved a failure. The fourth assault was a dive-bombing attack by about twelve Ju.88s which destroyed and damaged a number of Blenheims and Hurricanes on the ground. No.33 Squadron reported the shooting down of two of the raiders(2). In the last attack of the day five enemy aircraft approached from the west. Hurricanes of No.33 Squadron were ordered up on patrol and claimed the destruction of one S.79; the remaining four aircraft made a wide circuit of the landing ground and then withdrew. On the same day eleven Me.110s and three S.79s were reported to have made a bombing and strafing attack on the Armoured Car companies in the locality; in the course of the machine-gunning one armoured car and two wireless tenders were destroyed, six armoured cars damaged and a number of personnel wounded. It was thought that one Me. 110 was forced to land by return fire from the ground(3).

The

C.A.S.
"Crusader"
Folder

- (1) In a personal minute to the C.A.S. on the 27th (or 28th) Mr. Churchill wrote: "I see statements in the Press that R.A.F., M.E., are making 200 sorties per day. As they have well over 500 aircraft in action the figure should be nearly 1,000 if, as is stated, they are making two sorties per day per squadron. I am bound to say that my impression is that the G.A.F. are doing marvels outnumbered as they are".

The C.A.S., replying on the 29th, pointed out the fallacy of accepting figures given in the Press and stated (on the lines of Air Marshal Tedder's report) why the exact totals of sorties could not be immediately known and why it was impossible to estimate their number in advance. He also thought at that time that 250 fighters and day bombers in action would be nearer the mark than 500. He expressed the view that the German Army was doing marvels in spite of the virtual absence of air support.

- (2) German records show one Ju.88 destroyed on 22nd November. (Verluste Afrika ADIK 103/64).
(3) German records show two Me.110s lost on 22nd November. (Verluste Afrika ADIK 103/64).

Idem

The landing ground was also attacked by two Ju.88s on the following day (23rd November). The bombing did no damage. One of the raiders was reported to be hit by anti-aircraft fire and the second was claimed as badly damaged by No.33 Squadron Hurricanes⁽¹⁾. On the 24th a Me. 110 which had bombed L.G. 125 was intercepted by two Hurricanes of No.33 Squadron and black smoke was seen to be issuing from the starboard engine⁽²⁾.

In combats over the general Gialo area, also, on 23rd and 24th November, No.33 Squadron Hurricanes claimed the destruction of two G.50s and one Ju.88⁽³⁾ on the former day and one S.79 destroyed and two CR.42s damaged on the latter.

Decision to Continue the Offensive and Change in Command of Eighth Army

C.-in-C's
Despatch
November '41
to August '42
P.51
A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Part 3 Enc. 248A

On 23rd November, General Auchinleck had received an urgent request from General Cunningham to visit Eighth Army Battle Headquarters (near Maddelena); as the A.O.C., Western Desert had also asked the A.O.C.-in-C., to go forward, Air Marshal Tedder accompanied General Auchinleck.

C.-in-C's
Despatch P.51

The Commanders found the G.O.C., Eighth Army, greatly perturbed by the adverse military situation, which he considered critical owing to the greatly reduced number of serviceable tanks he had left. The enemy tank losses had been greatly over-estimated. In particular, his facilities for tank recovery were much superior to ours, and, being left in possession of the main battlefield, he was able to repair many tanks previously estimated as destroyed. Thus our initial numerical superiority had gone. The German armour, moreover, had proved considerably better in fighting qualities than our own. General Cunningham reported, accordingly, that if he continued operations on the previous intensive scale we might find ourselves with no serviceable tanks at all. The courses were open to us - to continue the offensive and risk the destruction of our remaining armour and the safety of Egypt or abandon the offensive altogether.

Idem (Letter to
Lt.Gen.Cunningham
24.11.41. App.6)

General Auchinleck and Air Marshal Tedder were in no doubt as to the proper course to adopt and the former instructed General Cunningham to continue the offensive with the object of recapturing Sidi Rezegh and making contact with the Tobruk garrison. H.M. Government immediately confirmed this decision⁽⁴⁾. To stem the despondency

/caused

- (1) German records show one Ju.88 destroyed on 23rd November. (Verluste Afrika ADIK 103/64).
- (2) German records show 3 ME.110 lost on operational flights on 24th November. (Verluste Afrika ADIK 103/64).
- (3) See Footnote (1) above.
- (4) The Prime Minister telegraphed to the C.-in-C., M.E. in the early hours of 25th November: "I cordially endorse your views and intentions and H.M. Government wish to share your responsibility for fighting it out to the last inch whatever may be the result. It is all or nothing but I'm sure you are the stronger and will win". (A.O.C.-in-C's correspondence with C.A.S. etc. Part 3, Enclosure 251A.)

caused by Rommel's opportunist counter-stroke the Commander-in-Chief on 25th November, requested General Cunningham to publish the following message as widely as possible:-

CS.14280
Appendix F

"During three days at your Adv.H.Q. I have seen and heard enough to convince me, though I did not need convincing, that the determination to beat the enemy of your Commanders and troops could NOT be greater and I have NO doubt whatever that he will be beaten. His position is desperate and he is trying by lashing out in all directions to distract us from our object which is to destroy him utterly. We will NOT be distracted and he will be destroyed. You have got your teeth into him. Hang on and bite deeper and deeper and hang on till he is finished. Give him NO rest. The general situation in NORTH AFRICA is EXCELLENT. There is only one order ATTACK AND PURSUE. ALL OUT EVERYONE".

C.-in-C's
Despatch
November '41 -
August '42.P.52,
and A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Part 3 Enclos.263A

General Auchinleck and Air Marshal Tedder had grave doubts, however, about the direction of the Eighth Army in the critical situation which had then developed and eventually the Commander-in-Chief decided to replace General Cunningham by his Deputy Chief of the General Staff, Major-General N.M. Ritchie, who was granted the acting rank of Lieutenant General. The Minister of State in Cairo provisionally approved the appointment and it was subsequently confirmed by the Chief of the Imperial General Staff and H.M. Government. General Ritchie assumed command on 26th November.

A.O.C./11
Part 2. Enc.41B

Air Marshal Tedder later reported to the Chief of Air Staff that "Co-operation with Coningham was very much closer than under the previous regime".

Improvement in Military Situation (25th - 27th November)

General Auchinleck's decision to carry on steadfastly with the offensive was almost immediately justified by events. In the next few days the tactical initiative was wrested from the enemy, although much more hard fighting was to ensue before Tobruk was fully relieved and the Axis armies driven westwards.

In relating the events of the critical days 25th to 27th November, the military action in the two main areas, with the accompanying aerial reconnaissance, is given separately for the sake of clarity. The offensive air activity over the whole operational area is given in some detail afterwards. The apportioning of this effort to each battle and on an account of it side by side with the military operations area has not been attempted, as the use of the air power was flexible and switched as the occasion demanded from one area to the other: the fighter action, moreover, continued to cover the entire battlefield.

The Enemy's Counter-stroke Peters Out

C.-in-C's
Despatch
November '41
August '42
P.52-53 and
CS.14280
P.10-11

On 25th November the enemy's marauding columns proceeded to exploit the confusion created on the previous afternoon. A part of the armoured force crossed the frontier wire at various points and scattered in groups over the territory to the east of it. Twice enemy tanks attacked the 4th Indian Division at Sidi Omar, but were driven off by well-directed artillery fire. Nevertheless this particular column took many prisoners and reached a

point nineteen miles east of Sidi Omar (within 50 miles of our railhead). Even Eighth Army Battle Headquarters near Maddalena, appeared at one stage in some danger from a force moving southwards along the frontier towards it. Part of the enemy's armour did not cross the frontier, but endeavoured to create as much havoc and panic as possible to the west. Mobile columns were formed from the Support Groups Brigade which hunted the enemy with considerable success.

CS.14280
P.11

No.451 Squadron and
No.237 Squadron
O.R.Bs.

Throughout the 25th No.451 Squadron, R.A.A.F. flew nine and No.237 Squadron three reconnaissance sorties in order to ascertain the enemy threats to the 13th Corps area, which at that time comprised a boomerang-shaped area between Sidi Rezegh, Sidi Azeiz and Sheferzen. In general, the enemy was found to be working his way northwards on both sides of the wire from the Fort Rabta area (4932) towards Sidi Azeiz and Halfaya. The tank strength of the main enemy force remained constant at 80, but the accompanying M.T. increased from 800 vehicles at 07.00 hours to between 1,000 and 1,500 by nightfall. Most of these vehicles were British three-ton lorries. During the day, also, selected bomber and fighter aircraft reconnoitred the frontier area in order to locate suitable targets for attack from the various marauding columns. In particular, two Blenheims of No.45 Squadron made early morning reconnaissances in the area 60 miles to the west and 20 miles to the south of L.G. 75 (30 miles S.S.E. of Sidi Barrani) and No.3 Squadron R.A.A.F. Tomahawks made two morning reconnaissances of the area south of Sidi Omar.

No.270 Wing O.R.B.
November
Appendices 151
and 152

CS.14280
P.10

Owing to the considerable losses suffered by his Me.110 tactical reconnaissance aircraft, the enemy at this stage began to employ pairs of Me.109s for "dart-in" sorties. The Me.109s dived from a great height for a brief circuit of the target area; owing to their superior speed in these tactics recourse to "weaving" was not necessary, but use was made of cloud cover whenever possible.

C.-in-C's
Despatch and
CS.14280 P.12

On 26th November there was a general movement of the enemy's main armoured forces towards their strong-hold of Bardia.

Attacks were made en route on Capuzzo and Musaid, but these met with negligible success. During the day both Advanced Headquarters 13th Corps (Bir el Hariga)(1) and Headquarters 5th New Zealand Brigade (Sidi Azeiz) were threatened by enemy columns. That evening the 5th New Zealand Brigade reported a large enemy force leaguered between Sidi Azeiz and Capuzzo; Headquarters 5th New Zealand Brigade therefore withdrew its vehicles not essential for fighting ten miles to the north and prepared Sidi Azeiz for a state of siege, bringing No.451 Squadron A.L.G. party into its leaguer, except for R.A.F. patrols maintained

/around

(1) In the morning a force of 35 tanks, 1,000 heavy trucks, armoured cars and trailer guns halted some 1,500 yards south-east of Advanced H.Q. 13th Corps and "a mutual inspection ensued from about 09.30 hours to 12.00 hours". The major commanding the anti tank guns "closed the interview by going forward with a couple of 2 pounders and setting fire to one of the armoured cars. The enemy then drove away towards Bardia " (CS.14280 P.12)

No.451 Squadron
and No.237
Squadron O.R.Bs.

around the aircraft. The pilots also remained by their aircraft in case a rapid evacuation was needed. The squadron had not been called on to operate with the same degree of intensity as on the 25th, but the threatened Sidi Azeiz area and the Bardia road were well-covered, while No.237 Squadron reconnoitred the area within Omar and Sheferzen.

Idem and
CS.14280
P.12

Shortly before dawn on the 27th, the expected assault on H.Q. 5 New Zealand Brigade took place and the Headquarters and the attached No.451 Squadron A.L.G. party were over-run⁽¹⁾. Further attacks on Capuzzo, however, were eventually beaten off. The four Hurricanes of No.451 Squadron on the A.L.G. at Sidi Azeiz took off in the darkness without a flare path of any kind in an attempt to cover the enemy movements and report back. As it was impossible to land at Sidi Azeiz again, the aircraft remained over the area as long as their fuel permitted, landed in the desert further south and later rejoined their unit. The last aircraft over the area was airborne at 05.30 hours L.T., carried out its reconnaissance until first light and dropped the results of its observations on 5th New Zealand Brigade before departing. During the day No.237 Squadron covered the area Sidi Omar - Bardia and El Adem - Gambut - Sidi Omar.

No.237 Squadron
O.R.B.

CS.14280
P.12

In view of the thrust from the enemy column at Sidi Azeiz Advanced Headquarters 13th Corps and other details had moved during the night eastwards along the Trigh Capuzzo, passed within two miles of the Ariete Division's leaguer and established itself twelve miles east of Sidi Rezegh.

Idem and C-in-C's
Despatch P.52 and
53

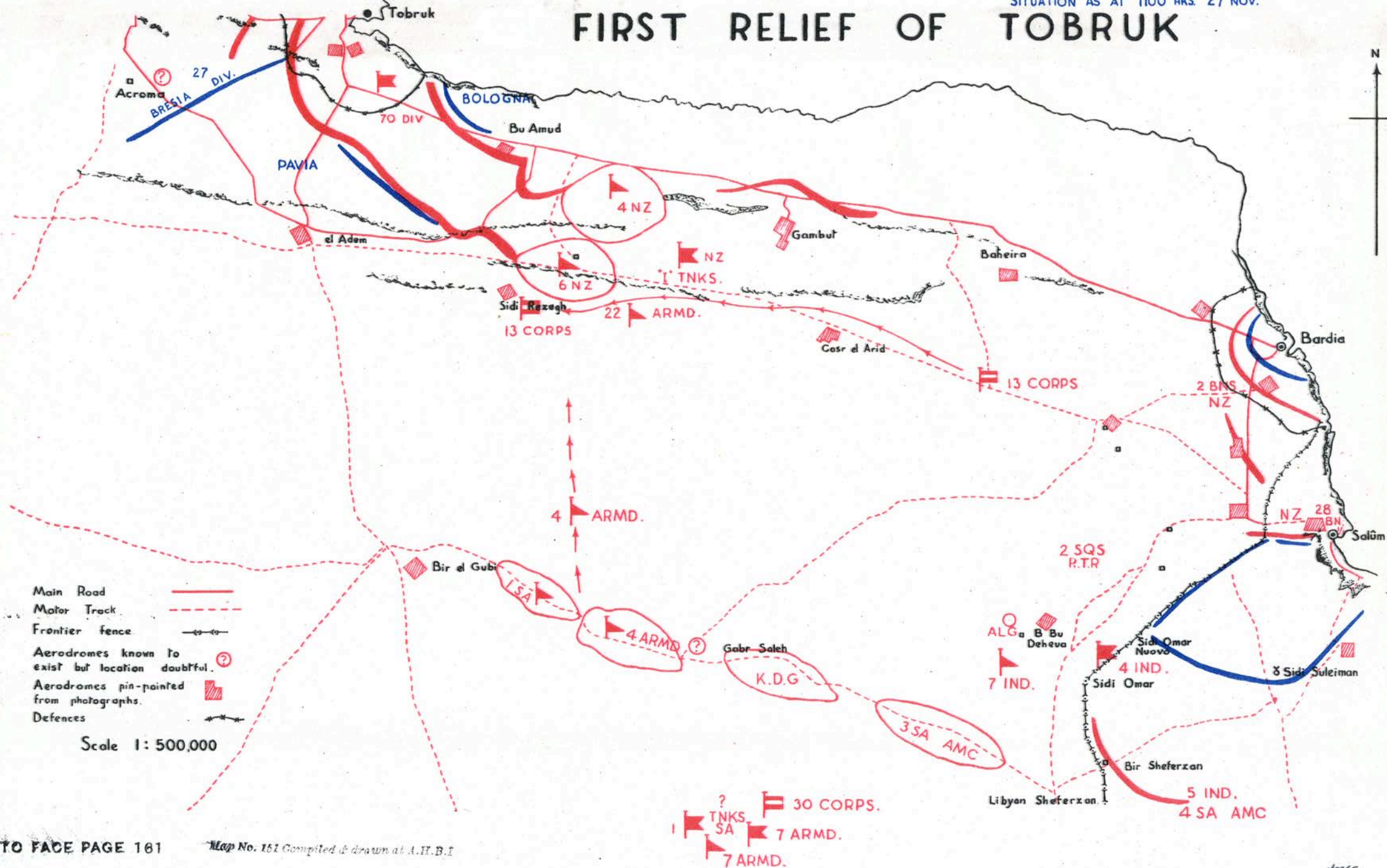
Intercepts then showed that the enemy's armour was being summoned westwards to meet the serious situations which had developed for him at Sidi Rezegh, El Duda and Belhamed.

The reformed 7th Armoured Division (consisting of the Support Group and 4th and 22nd Armoured Brigades and comprising 120 tanks in all attacked the Panzer Divisions several times on their journey to the west, but their inferior tanks and guns could not prevail against those of the enemy. Meanwhile, as mentioned later, the air attacks on the enemy's columns were renewed.

/Failure

- (1) The O.C. of this detachment (Flt.Lt. Carmichael) had sent the majority of the A.L.G. party with the Brigade "B" Echelon vehicles to the wadis north of Sidi Azeiz during the night. After commendable behaviour under shell-fire this party eventually made its way back to L.G.128 on 30th November (No.451 Squadron O.R.B.). The remainder of the A.L.G. party at Sidi Azeiz were captured and sent to Bardia where they were later released (except for Flt.Lt. Carmichael who had been taken away by submarine previously) when this stronghold was captured.
(CS.14280 P.12).

FIRST RELIEF OF TOBRUK



Failure of Enemy's Counter-stroke

Idem

In the main the enemy's thrust inflicted only superficial material damage and the moral effect was short-lived as the units which were scattered by the raiding columns soon re-assembled and re-organised themselves. The move even reacted to our advantage as it is probable that the New Zealand Division would not have progressed so well in the west (see following sub-section) if the enemy's armour had been pitted against it. Moreover the enemy expended much of his strength and used up most of his reserves in his desperate counter-stroke. "But", reported General Auchinleck, "it might have succeeded had the 4th Indian Division shown less determination and the mobile columns less offensive spirit, or had the Royal Air Force not bombed the enemy's principal columns so relentlessly".

C.-in-C's
Despatch
P.53

New Zealanders Make Contact with Tobruk Garrison

CS.14280 P.11-12
and C.-in-C's
Despatch P.52-53

Rommel's counter-stroke failed in its object of wresting the initiative from us, as, while it was in progress, the New Zealand Division and the 70th Division from Tobruk were meeting with success in the vital Sidi Rezegh area some 50 miles to the west.

From their vantage point on the ridge east of Sidi Rezegh (Point 175) the 4th New Zealand Brigade struck north and occupied Zafraan early on 25th November and Belhamed the same night. The 6th Brigade, meanwhile, advanced along the ridge towards Sidi Rezegh in order to assault it at the same time as Belhamed was attacked. The brigade's first attempt to reduce Sidi Rezegh failed to clear the enemy from the high ground above the mosque. The following night (26th November), in spite of the severe casualties previously suffered, the brigade succeeded in reducing the stronghold.

In the meantime the 70th Division from Tobruk had begun the final stage of its sortie - the capture of El Duda. This was successfully accomplished in the face of determined opposition by dusk on the 26th. The Eighth Army and the Tobruk Garrison made their first contact during the night when the G.O.C., New Zealand Division (Major General B. Freyberg) moved his reserve battalion from the south of Belhamed to join the troops consolidating at El Duda.

No.451 Squadron
and No.237
Squadron O.R.Bs

In addition to the reconnaissances previously mentioned, No.451 Squadron, R.A.A.F., and No.237 (Rhodesian) Squadron kept watch on the El Adem - Sidi Rezegh - Gambut area, particularly when the enemy's Panzer Divisions withdrew westwards. Although over 4,500 M.T. were reported on the move on 27th November few tanks were seen. The Germans were anxious about their declining tank strength and taking pains to conceal their armour from the air. No.451 Squadron detachment at Tobruk, meanwhile, continued to cover the enemy's dispositions in the vicinity of the fortress. No.24 Squadron S.A.A.F. Bostons also flew reconnaissances over Gambut on the 27th and reported the movement of two armoured columns.

S.A.A.F.
Narrative P.319

/The

No.208 Squadron
O.R.B.

The disorganisation of the 30th Corps, meanwhile, had involved a temporary lull in the operations of No.208 (A.C.) Squadron. On 26th November the Corps Commander formed his Battle Headquarters with the 7th Armoured Division (P.P.46034) and on the 28th No.208 Squadron recommenced operations from L.G.134.

Scale and Direction of the Air Effort 25th - 27th November

From 25th to 27th November the scale and general direction of the air effort connected with "Crusader" (excluding the tactical air reconnaissance activity already indicated and the photographic reconnaissance which continued on the previous lines) were as follows:-

Fighter Effort

M.E. W.O.S.

No.7

(Amended from
Group, Wing and
Squadron O.R.Bs)

25th November 52 sorties on offensive sweeps and ground attacks; 8 on bomber and T/R escort: 2 on shipping protection: and 12 on local defence.

Total: 74 sorties.

26th November 141 sorties on offensive sweeps and ground attacks: 90 on bomber and T/R escort: 35 on shipping protection: and 19 on local defence.

Total: 285 sorties.

27th November 155 sorties on offensive sweeps and ground attacks. 61 on bomber and T/R escort: 38 on shipping protection: and 24 on local defence.

Total: 278 sorties.

Bomber Effort

Direct Support

25th November 17 Maryland, 74 Blenheim (including 5 operating from Malta) and 12 Hurricane -- bomber effective sorties.

25th/26th November 7 Albacore effective sorties.

26th November 35 Maryland, 50 Blenheim (including 5 operating from Malta) 4 Albacore and 11 Hurricane - bomber effective sorties.

27th November 9 Maryland, 34 Blenheim (including 4 operating from Malta) and 23 Hurricane-bomber effective sorties.

27th/28th November 4 Wellington effective sorties.

Against Ports and Bases

26th/27th November 20 Wellington effective sorties.

27th/28th November 21 Wellington effective sorties (operating from Malta).

/Against

Against Airfields and Landing Grounds

27th November 9 Maryland effective sorties.

27th/28th November 16 Wellington effective sorties.
One Swordfish effective sorties (operating from Malta).

Shipping Strikes ⁽¹⁾

26th November 6 Blenheim effective sorties (operating from Malta).

27th November 5 Blenheim effective sorties (operating from Malta).

Total: 358 effective bomber (including fighter-bomber) sorties.

Air Battle of 25th November

No.3 Squadron
R.A.A.F. and
No.112 Squadron
O.R.Bs

Although our fighter sweeps on 25th November were few owing to the temporary withdrawal of part of the fighter force (page 151) there occurred one outstandingly successful fighter combat. In the afternoon the Commanding Officer of No.3 Squadron, R.A.A.F., led a flying wing composed of 10 Tomahawks of his own squadron and 13 of No.112 Squadron over the area in which the New Zealand Brigades were approaching Belhamed and Sidi Rezegh. The Tomahawks arrived over the battle area in time to see bombs bursting to the north-east of the Sidi Rezegh landing ground. A closer inspection revealed Ju.87s with close fighter escort, bombing from 6,000 feet, Me.110s, also escorted, bombing from 1,300 feet and another formation making a high level attack from 10,000 feet. Above these aircraft was a top cover of G.50s and Me.109s. In all, there were reported to be between 60 and 80 aircraft engaged in the operation. By the time the wing made contact the Stukas had completed their bombing and were making for base at top speed. Amid scenes of wild enthusiasm among the troops below⁽²⁾ the Tomahawks proceeded to inflict heavy losses on the hostile aircraft. The final claims of No.3 Squadron R.A.A.F. amounted to:-

3 Me.110s., 2 G.50s., 1 Me.109s and 2 Fiesler Storches destroyed, 1 Me.110 probably destroyed and 3 Me.110s, 3 G.50s and 2 Me.109 Fs. damaged. No.112 Squadron claimed 1 Me.110, and 1 CR.42 destroyed and 1 Me.109F and 1 G.50 probably destroyed⁽³⁾. One aircraft from each of our squadrons failed to return and three aircraft were damaged.

/ This

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- (1) The shipping strikes in November are considered on page
(2) One unfortunate officer who ventured to suggest that two of the crashing aircraft might be British "was nearly lynched as 'a b-y fifth columnist'." (No.3 Squadron R.A.A.F., O.R.B.).
(3) German records do not confirm all the claims so far as German aircraft were concerned. Losses suffered on 25th November are recorded as:- 3 Ju.87s, 2 Me.110s, 2 "other types" and one short-ranged reconnaissance aircraft destroyed and 1 Me.109 damaged.

No.3 Squadron
R.A.A.F.
November
Appendices

This air battle greatly strengthened the morale of the New Zealanders and No.70 Division who went on to make the gains already mentioned and both sent congratulations to the Squadrons. The A.O.C., Western Desert also signalled to No.3 Squadron: "Congratulations on the Squadron's splendid fight which has contributed so much to our present overwhelming air superiority The Squadron has been selected for re-equipment with the first Kittyhawks".

A.H.B. 6/7/4
M.E. W.O.S.
No.7

During the following two days (26th and 27th November) the fighter scale of effort returned to its former high level of nearly 200 sorties per day. In particular, fighter sweeps were carried out from dawn to dusk over the battle in the general Sidi Rezegh area, but combats were few.

Low-flying Fighter Attacks (25th - 27th November)

During the three critical days 25th to 27th November the main offensive effort of the R.A.F., both fighters and bombers, was directed towards (a) checking the enemy's marauding columns and (b) helping our forces further west to advance in the Sidi Rezegh and El Duda areas.

No.3 Squadron
R.A.A.F.
O.R.B.

The concentrated attacks of the bomber squadrons were again supplemented by the wide-spread strafing operations of the fighters. On occasion, these fighter attacks were delivered on the basis of observations made in reconnaissances carried out by aircraft of the squadrons concerned. Thus on the morning of the 25th, 12 Tomahawks of No.3 Squadron, R.A.A.F. followed up reconnaissance sorties which located one of Rommel's marauding columns south of Sidi Omar with a strafing attack. This mission clearly indicated the dangerous nature of these low flying attacks against armoured vehicles and protected transport vehicles. Of the Tomahawks engaged, one aircraft returned early with five holes in the main planes, one crash-landed after the oiling system had been shattered (although the pilot was saved), one aircraft was shot down and the pilot taken prisoner⁽¹⁾ and one aircraft was shot down and the pilot killed.

A.H.B. 6/7/4

On the 27th, when the trend of enemy movement was towards the battle at Sidi Rezegh, the fighter squadrons, in addition to carrying out constant sweeps over the area, were credited with the destruction of well over 20 vehicles on the Acroma - El Adem road. Along the roads west of El Adem, also, several of the fighter squadrons carried out "Rhubarb"⁽²⁾ attacks in pairs of aircraft with considerable success.

No.80 Squadron
O.R.B.

The record of No.80 Squadron was particularly impressive during the three days under consideration. Sixty-nine effective sorties were flown, including 46 on fighter-bomber

/attacks,

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- (1) The pilot in question was a prisoner for only two hours, however, as New Zealanders with Bren Guns stopped the enemy car in which he was being conveyed and the pilot seized the opportunity of 'jumping out' (No.3 Squadron ORB November 25th).
- (2) Code-name for roving ground attack missions.

attacks, and no serious casualties were incurred. On 25th November the column of enemy tanks in the Sidi Omar area was bombed, but the 40 lb. bombs employed appeared to have little effect on the enemy's armour, and it proceeded swiftly on its way. (1) On the following afternoon the squadron bombed with outstanding success a concentration of stationary vehicles of all types in the El Dahra area, south of the coastal road, which had been observed in the course of the morning sweep. At the head of the column were observed many staff cars and tents, and a table was laid out presumably for a staff conference. It was learnt later that the target was an Italian Divisional Headquarters. On the 27th No.80 Squadron carried out two fighter-bomber missions against the enemy's columns withdrawing eastwards along the Trigh Capuzzo to the Sidi Rezegh area. No great damage was claimed in the morning attack, but in the afternoon dispersed vehicles were set on fire over a wide area.

While the single-engined fighters were operating over the battle areas the detachment of No.272 Squadron Beaufighters continued to range further afield. In addition to their attacks on grounded aircraft, mentioned later, road transport convoys, including petrol tankers were successfully shot-up in the Agedabya area.

Direct Support Bombing (25th to 27th November)

(a) Against Rommel's Marauding Columns

On the 25th the full power of the day bomber force was directed against the enemy columns proceeding through the wire in the Sidi Omar - Sheferzen area. The Hurricane bomber attack already mentioned was followed by sorties flown by 9 Blenheims of No.11 Squadron and 17 Marylands of Nos.12 and 21 Squadrons, S.A.A.F., which registered many direct hits on the enemy tanks and vehicles. These attacks were followed up by a total of 60 Blenheims of Nos.14, 45, 84 and Lorraine Squadrons which dropped 227 250 lb. bombs, causing large fires and confusion generally. In view of the disorganisation caused by the temporary withdrawal of part of the fighter force on this day, fighter escorts could not be provided for the Blenheim Squadrons although fighter sweeps were maintained in the area of the bomber operations. A little before dawn and in the early morning of 26th November a total of 11 Fleet Air Arm Albacores renewed the air attack on enemy concentrations in the Sidi Omar area, and later in the day 9 Blenheims of Nos.45 and Lorraine Squadrons continued the bombing there and 10 more Blenheims of the same squadron attacked some 2,000 vehicles moving east of the Trigh Capuzzo. Fighter escort for the day bombers was once more available.

Reference has already been made (page 161) to the generous tribute paid by General Auchinleck for the part played by the R.A.F. in checking the enemy's marauding columns. All evidence points to the fact that the R.A.F.'s spirit at this critical stage was magnificent and the

/personnel

No.270 Wing,
O.R.B. No.11
Squadron O.R.B.
and S.A.A.F.
Narrative

No.270 Wing
O.R.B. November
and Appendices

(1) It was reported later by a prisoner of war from this column that some of the tank personnel opened up their lids "to see what the noise was about" and had their heads blown off. No.80 Squadron O.R.B. 25th November.).

A.H.B. 6/7/4

personnel involved whole-heartedly believed that the Air Force had saved the situation. This view was expressed by the Senior Operations Officer at A.H.Q., Western Desert, in the following words:- "To those who know the facts, and know the sense of fear and helplessness which prevailed at this dangerous moment when the whole campaign was in jeopardy, there can be no sincere doubts that the chief factor which eventually closed the opening which Rommel had found was the offensive power of the Royal Air Force. The destruction caused by our bombers was spread wide by the guns of our fighters. The morale of the enemy was choked by the omnipotence of the air. In their turn the enemy fell into confusion. Had there been an organised ground force in the area, hundreds of ^{prisoners} ~~provisions~~ and vehicles could have been collected. As it was, the chaos had reached such miraculous proportions that by the 26th November 30th Corps had to disengage and regroup before continuing the battle".

Even when due allowance is made for the fact that the writer of the above was an enthusiastic participant on the air side and throughout his report shows himself a somewhat impatient and harsh critic of the Army, and for the fact that, in the light of subsequent experience, there was a tendency in the early campaign to over-emphasize the material damage inflicted by air attack, it is indisputable that the air effort had a very considerable moral and material effect at this critical period and was a stabilising factor of the greatest importance.

(b) Support for 70th Division and New Zealand Brigade

The main day bomber effort on 26th November was directed towards help No. 70 Division (the Tobruk Garrison) in its advance in the El Duda area and the 4th and 6th New Zealand Brigades in their advances a few miles further east and south. In the course of the day, while fighter sweeps operated over the whole area, escorted bomber formations operated as follows:-

Seventeen Blenheims of Nos. 14 and 84 Squadrons attacked enemy mechanised units and road transport west of El Duda, on the El Adem - Tobruk by-pass, many fires being reported. Eighteen Marylands of Nos. 12 and 21 Squadrons and 9 Blenheims of No. 11 Squadron bombed A.F.Vs and M.T. in the El Duda area; the Marylands reported many direct hits in a low-level attack and the Blenheims claimed that a column of 30 A.F.Vs was completely dispersed and several ammunition lorries were blown up. On the 27th, in spite of bad weather, the attacks were continued. Eighteen Blenheims of Nos. 14 and 84 Squadrons bombed M.T. dumps and encampments along the El Adem - Acroma road and, in addition to destroying a considerable number of vehicles, blew up an ammunition dump covering an area 200 x 50 yards.

These determined bomber attacks, as in the case of the fighter activity on the general Sidi Rezegh area, greatly heartened our advancing troops. The bomber casualties incurred were surprisingly slight, the worst being suffered by Blenheims of No. 84 Squadron on the 27th. Of the nine aircraft operating one was shot down, one crashed at base (with the crew saved) and all were holed by anti-aircraft fire.

(Page 161)

No. 270 Wing and
No. 11 Squadron
O.R.Bs. S.A.A.F.
Narrative and
M.E.W.O.S.No.7

(c) Attacks on Columns Retiring to Sidi Rezegh Area

No.11 Squadron
O.R.B. and
S.A.A.F.
Narrative

Meanwhile on the 27th the withdrawal of the enemy's columns, which had harassed the frontier area, to the Sidi Rezegh area became increasingly evident. In deteriorating weather conditions 12 Blenheims of No.11 Squadron attacked enemy armoured cars and M.T. withdrawing westwards along the Trigh Capuzzo and their attack was followed up by 9 Marylands of No.21 Squadron. The Blenheims reported the blowing-up and setting on fire of a number of vehicles, but the Marylands found that the vehicles were too dispersed to provide good targets and claimed only a few direct hits. The Marylands were subjected to intense anti-aircraft fire and seven of the nine aircraft operating were damaged.

The air attacks which could be mounted were only sufficient to inflict casualties at a few points and the 7th Armoured Division, as mentioned on page 166 was also not powerful enough to check the Panzer Divisions in their drive back to the Sidi Rezegh battle area.

ILJ 1/63
(A.I.3.(b)Report)

Increased Enemy Air Transport Traffic and Use of Submarines -
Relieves Critical Supply Situation in Forward Area

At the opening of our offensive, it was estimated that 75-100 Ju.52 transport aircraft were regularly employed in ferrying urgent supplies, personnel and equipment to North Africa, operating mainly on the routes Sicily to Tripoli and Brindisi-Araos-Derna and Benghazi. Prior to the offensive it was known that the enemy was short of many vital supplies; in particular it was estimated that the German Air Force had sufficient aircraft fuel in the forward area for only 10-14 days intensive operations and the Italian situation was thought to be little, if any better. In view of our successful interruption of seaborne supplies there was need of an increased effort by air transport aircraft and supply-carrying submarines.

The enemy's shortage of aircraft fuel, ammunition and other supplies became so serious after the first few days' intensive operations that further air transport units were made available, increasing the total in use to an estimated 250 to 300 aircraft. In particular there was a greatly increased Ju.52 traffic from Greece to Derna and submarines were also used to increase stocks at Derna and Bardia. Italian air transport was also used for bringing up ammunition from Tripoli to the forward area and S.82's for transport between Italy, Sicily and Libya.

Our attempts to interfere with this flow of airborne and submarine-borne supplies are mentioned in chronological order in the text. It may be noted here, however, that the enemy's measures met with considerable success; in particular the stocks of aircraft fuel in the forward area were not only maintained but actually increased until our advance towards Benghazi in mid-December enforced the withdrawal of enemy aircraft from Cyrenaica.

/Counter

Counter Air Force Operations (25th-27th November)

A.O.C.-in-C's
Correspondence
with C.A.S.
etc. Part.3
Enclos. 256A

folder
Enclos. 257A

On 27th November the Chief of the Air Staff sent the following signal to Air Marshal Tedder: "All eyes here fixed on Ju.52 fuel traffic Eleusis to Derna, and on submarine ditto from Crete to Derna. Trust you are taking all possible steps." The A.O.C.-in-C. replied on the same day:- "My eyes also on Derna traffic ... Air Traffic very elusive and we used up number Beaufighter sorties last week without result but are going to have another try. All heavies are on Derna tonight and we will maintain pressure". (1)

No. 205
Group O.R.B.

The port of Derna had, in fact, been attacked by 19 Wellingtons of No. 205 Group on the night 26th-27th November, but "no outstanding results" were claimed. On the following night 15 Wellingtons attacked the landing ground and caused severe fires among dispersed aircraft and tents; another Wellington dropped its bombs in the town proper; and four more attacked traffic on the roads west of Derna.

S.A.A.F.
Narrative

The heavy direct support commitments, meanwhile, all but precluded counter air force bombing by day. The only attack in this category occurred on the 27th, when nine Marylands of No. 12 Squadron bombed Gazala No. 2, when the briefed target, Martuba west landing ground, and the alternative target Timimi airfield, were obscured by cloud. The Marylands were just able to discern Gazala and reported three fires caused and two single-engined aircraft destroyed on the ground.

No. 272
Squadron
O.R.B.

The main success in the few fighter straffing attacks on enemy air bases were again achieved by No. 272 Squadron detachment of Beaufighters. On 25th and 26th November a total of eleven aircraft carried out low-flying attacks on Agedabia airfield and claimed eight Italian aircraft damaged on the ground and one destroyed and another damaged in the air. On the 27th in bad weather, Martuba East landing ground was straffed; no dispersed aircraft were seen on this occasion, but encampments nearby were attacked.

Bombing of Naples Renewed

M.E.W.O.S.No.7

On the night 27th-28th Malta-based Wellingtons were once more directed against the enemy's base at Naples. Twenty-one effective sorties were flown against this objective and over 20 tons of bombs, including three 4,000 pounders, were dropped. Direct hits were claimed on the Royal Arsenal, torpedo factory, engine sheds, factories, and oil storage tanks. Sixteen fires were started which could be seen for 50 miles on the return journey; in particular, smoke from three oil storage tanks set on fire reached a height of 3,000 feet.

In addition to the Blenheim shipping strikes, included in the general onus of shipping strikes on page 177 Malta-based Blenheims continued their harassing attacks by day on targets of opportunity, particularly road

/transport

- (1) Air Marshal Tedder also mentioned that he had asked Malta to make determined attacks on fuel ships at Navarino. On the following day Malta-based Blenheims hit two ships there, including a tanker, (A.O.C.-in-C's Correspondence with C.A.S. Part 3 Enclos. 257A and 260A).

transport, in the vicinity of Sirte, Homs and Mellaha (Tripolitania) and Fleet Air Arm Swordfish made a nuisance night attack on Castel Benito airfield.

Enemy Re-captures Sidi Rezegh (Ground Operations
28th November - 2nd December)

Meanwhile, the battle raged again in the Sidi Rezegh area.

C.-in-C's
Despatch Ps. 53-55
and C.S. 14280
Ps. 13-19

As already mentioned, during the night 26th-27th November, New Zealand forces advancing from the Belhamed area made contact with the 70th Division (the Tobruk Garrison) at Ed Duda. To clear the corridor to the 70th Division completely, however, it was necessary to eliminate the enemy still holding out in the valley, who had closed in after the New Zealand battalion had passed through to Ed Duda. This was done on 28th November. Aided by tanks and armoured cars, New Zealand infantry overcame resistance in the valley while the 70th Division dislodged enemy elements from the edge of the escarpment between Ed Duda and Belhamed.

After nightfall H.Q. 13th Corps, the Air Support Control and the New Zealand Divisions administrative echelon passed through the corridor into Tobruk. On arrival H.Q. 13th Corps assumed command of the 70th Division and all troops in Tobruk. Meanwhile, a supply convoy from Tobruk reached the New Zealand brigades, which were then very short of ammunition and supplies. The following day another convoy arrived from the 30th Corps under tank escort(1).

By the afternoon of the 28th, however, the Panzer Divisions which had continued to return from the frontier area in good shape, in spite of the efforts of the re-organised 7th Armoured Division and the day bomber squadrons were ready to assault the positions held by the 13th Corps in order to regain control of the Sidi Rezegh area and again cut off Tobruk.

Idem

On 29th November the enemy ground forces made violent assaults on both flanks of the Ed Duda - Belhamed corridor. The heavy attacks on Ed Duda failed, but the enemy succeeded in making a permanent breach in the southern flank by the capture of Point 175 (east of Sidi Rezegh). Early on the 30th the remainder of the Sidi Rezegh ridge was wrested from the New Zealanders' control. Later in the day the 6th New Zealand Brigade, then reduced to one third of its fighting strength, was overwhelmed by enemy armour attacking from the west and a large force of infantry attacking from the south.

/Unfortunately

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- (1) On 27th November the New Zealand Brigades had made a request for 25 pounder ammunition to be dropped at night by Bombay aircraft of No. 216 Squadron, but this request could not be quickly answered owing to the time needed for loading and emplaning. (C.S. 14280 P.13). Ammunition was flown to the Maddalena area from Matruh and taken up by road transport. (R.A.F. Operations in Western Desert etc. 18th November 1941 to 19th May 1942, Page 21).

Idem

Unfortunately, our re-organised armoured formations were prevented from going to the aid of the New Zealanders. The Germans had protected his eastern flank with anti-tank guns and a full-scale operation would have been necessary to penetrate the screen: this could not be undertaken owing to the need to provide cover for the projected advance of the 1st S.A. Infantry Brigade. The latter was expected to arrive in the Sidi Rezegh area on the morning of the 29th. Owing to a number of mishaps, due in part to insufficient training in desert movement, the Brigade arrived at Point 175 after its capture by the enemy. The 1st and 2nd December were spent by the South Africans in a fruitless attempt to take the position, which was then strongly held.

Meanwhile, the New Zealanders had been forced to retire from Belhamed, which fell on 1st December before a heavy attack delivered by enemy tanks and infantry from Sidi Rezegh. The 4th Armoured Division hastened to help from its leaguer south of Point 175, but arrived in time to cover the New Zealand Division's withdrawal to Zafraan.

In view of the very heavy casualties incurred by the division and the precariousness of the position the New Zealanders and the associated 1st Army Tank Brigade were ordered to make a general withdrawal to the frontier, which they reached "exhausted but in good heart" on 2nd December. At the same time the 1st S.A. Brigade abandoned its attempt to take Point 175 and retired southwards to Taieb El Essem.

Idem

Tobruk was again isolated. Moreover the length of front held by the 70th Division had increased from 27 to ~~41~~ 44 miles. The Garrison had been strengthened by two New Zealand battalions cut off from its Division at Ed Duda, but these hardly offset the heavy casualties suffered. In particular, the tank strength then comprised only 20 runners. Permission was given by General Ritchie for the Garrison to withdraw to the original perimeter, if need be, but the value of holding the salient was emphasised. The Commanders of 13th Corps and the 70th Division decided to stand firm in spite of the odds: indeed, far from yielding ground the Garrison was ready, when the situation again improved to carry out a further advance.

Air Reconnaissance (28th November to 2nd December)

During these five days of intensive military operations the Army Co-operation and other squadrons engaged in reconnaissance worked at full pressure and provided valuable information both for Corps Commanders and the Air Support Controls, in spite of unfavourable weather conditions at times.

No.451
Squadron O.R.B.
C.S. 14280 P.15

No.451 Squadron, R.A.A.F., was called on for almost continuous reconnaissance of the 13th Corps' area and accomplished it without the loss of an aircraft. "During 28th November", the R.A.F. Liaison Officer to the Corps reported "No.451 Squadron TAC/R produced splendid results. Flying under low cloud at about 1,200 feet, they repeatedly faced heavy A.A. to obtain detailed reports of the enemy forces surrounding 6 and 4 New Zealand Brigades and

/Adv.H.Q.

Idem

Adv.H.Q. 13 Corps, on whom they dropped special reprints of the 1/500,000 map, which showed the whole picture, accurate and up to date". After H.Q. 13th Corps moved into Tobruk No.451 Squadron was called on for an even more intensive effort. The Corps had ordered the squadron to move up to Tobruk, but as the land route was soon closed this was impossible. A night service of Bombays was arranged to fly up Army Liaison officers and technical personnel, but the service was erratic owing to the increased enemy air attacks on the Fortress. Two more A.C. Hurricanes were added to the two which had operated from Tobruk from the beginning of the campaign in order to fulfil immediate demands. Normal servicing, apart from the refuelling at Tobruk was generally carried out at the O.L.G. at L.G. 132. From 29th November to 1st December, while the Germans were regaining control of the Sidi Rezegh area, the squadron flew 15 sorties (including "weaver" sorties) over the whole 13th Corps area, reporting the position of tanks, A.F.Vs., M.T., and infantry.

No.208 Squadron
O.R.B.

On 28th November, No.208 Squadron recommenced its tactical reconnaissance duties after the short lull due to the disorganisation of the 30th Corps. On that day and the four following, the squadron flew 24 sorties for the loss of one aircraft, the pilot being saved. The entire 30th Corps front was reconnoitred and, in particular, some good bombing targets were located, particularly enemy concentrations on the escarpment west of El Adem. The areas covered included Acroma, El Adem, Sidi Rezegh, Belhamed, Bir El Gubi, Bir Hakim, Gambut and Bardia.

No.237 (R) Squadron
O.R.B.

No.237 (Rhodesian) Squadron supplemented the reconnaissance of the El Adem and Bir El Gubi areas and also covered the enemy's position at Bardia. Further help with the reconnaissance of the eastern battle area was given by No.24 Squadron, S.A.A.F., Bostons, which located enemy concentrations at Gambut, Bir El Chleta, Menastir and Sidi Omar, as well as covering forward landing grounds and the Derna airfield.

S.A.A.F.
Narrative

S.A.A.F.
Narrative

The photographic survey work of No.60 Squadron, S.A.A.F., was greatly hampered by bad weather conditions, but an important task in the McChili area was completed and roads from Agedabya to Alem El Giofer were also photographed.

No.2 P.R.U.
O.R.B.

Photographic reconnaissance Hurricanes, which previously had operated over the Tobruk, Gazala and Tmimi areas attempted to extend the range of their activities to Agedabia, but were hindered by low cloud. P.R.U. Beaufighters, however, continued to cover Crete and report changes in aircraft dispositions and shipping in harbours.

M.E. W.O.S.
No.7

Beauforts and Blenheims of Nos.39 and 203 Squadrons continued their sea reconnaissance and reported, also, movement of enemy aircraft from Greece and Crete to Cyrenaica.

Air Operations Hampered by Bad Weather (28th November - 2nd December)

The air support effort of both fighters and bombers was hampered, meanwhile, by intermittent bad weather, including low cloud.

/During

M.E. W.O.S.
Nos. 7 and 8
amended from
Squadron
O.R.Bs.

During the five days the Western Desert fighter squadrons carried out a total of 1,186 sorties. The daily effort varied from 151 and 157 sorties flown on 28th November and 2nd December to 240, 311 and 227 sorties flown on the 29th November, 30th November and 1st December, respectively. Fifty-four per cent of the effort was devoted to offensive sweeps and ground attacks over the main battle area, Sidi Rezegh - El Adem; of the remainder, bomber escort duties absorbed most sorties, followed by local defence and shipping protection.

No. 270 Wing and
No. 11 Squadron
O.R.Bs. and
S.A.A.F.
Narrative

No. 205 Group
O.R.B. and
M.E. W.O.S. No. 7

The bomber effort was disrupted to a far greater extent. In all, the day bomber force was able to carry out a total of only 156 effective sorties - all except thirteen (1) of which were devoted to Army support. On the 2nd December, in particular, only seven effective sorties were practicable. Wellingtons of No. 205, meanwhile, on four nights flew a total of 77 effective sorties, bad weather on the night 2nd/3rd December, preventing all projected operations. The main effort was directed against Benghazi, but the airfield at Derna also received further attention. Six Fleet Air Arm Albacores on one night (30th November/1st December) effectively bombed Gazala No. 2 landing ground claiming the destruction of at least two aircraft on the ground, despite 10/10th cloud over the target. The assault on Benghazi was supplemented by the attack of 17 Wellingtons from Malta on two nights. The other offensive sorties from Malta included 23 Blenheim attacks by day on shipping and five Swordfish night sorties against Castel Benito airfield.

Features of the Fighter Operations (28th November - 2nd December)

C.S. 12280
P. 16

The activity of the fighter force continued on the previous lines, the main effort being devoted to offensive sweeps over the main battle in the general Sidi Rezegh area. When sweeps were extended to include Tobruk the landing ground there was in some instances used for refuelling. The R.A.F. detachment commander (Wing Commander Black) had not sufficient staff or facilities for this purpose, but arrangements were made with H.Q. 13th Corps to provide army lorries and drivers and personnel to help with the refuelling, which had to be carried out from four-gallon tins, using filters. In view of the danger from enemy aircraft located at Gazala, Tmimi and the Martubas, a fighter sweep had to be maintained as a protective cover while the refuelling took place.

Our fighter sweeps in strength continued to ensure our general air superiority over the battle area and there were only three major engagements.

No. 3 R.A.A.F.
and 112 Squadrons
O.R.Bs and
M.E. W.O.S. No.

The combat of 30th November, in which Tomahawks of No. 112 and 3 R.A.A.F. Squadrons were involved, resulted in heavy aircraft casualties being inflicted on the enemy, but these were mainly, if not entirely, Italian aircraft. The Tomahawks were engaged in their usual morning sweep over the Tobruk-El Adem area when they sighted a large force of enemy aircraft, made up of Ju. 87s and escorting Mc. 200s, G. 50s and

/M.E. 109s

(1) Including three attacks on destroyers and a schooner in the Eastern Mediterranean by Blenheims of No. 203 Squadron engaged on the Crete-Libya patrol.

M.E. 109s, comprising some 40 to 50 aircraft in all. The Stukas jettisoned their bombs and dived to ground level. No.3 Squadron followed them down, leaving No.112 Squadron to deal with the enemy fighters, including aircraft reported as Me.109s above. The escorting fighters showed little disposition for fighting. One Australian fighter mentioned in his combat report that "at no time did the enemy fighters (in his case all Italian fighters) make any great effort to be offensive". The Tomahawk squadrons claimed the destruction of fifteen enemy aircraft (six Me.200s, six G.50s and three Ju.87s) and damage to fifteen more (ten Ju.87s, two Me.109s, two G.50s and one Me.200) for the loss of three aircraft, all the pilots being saved(1). German records, however, show no dive-bombers destroyed or seriously damaged on that day (nor incidentally is any damage to Me.109s indicated). It seems possible, therefore, that the Stukas operating, as well as the bulk of the escorting fighters, were Italian aircraft.

Verluste Afrika
(ADIK 103/64)

S.A.A.F.
Narrative P.356
and No.274 Sqdn.
O.R.B.

It was again evident that the German Me.109s provided the real danger to our fighter force. On 1st. December, 24 Hurricanes of Nos.274 and 1 S.A.A.F. Squadrons escorted Blenheims attacking M.T. west of El Adem, the former squadron acting as top cover to the S.A.A.F. fighters. Over the target area No.274 Squadron encountered some 20 Me.109s and G.50s - "consequently a dog-fight took place". The Hurricanes claimed 3 Me.109s destroyed and 2 damaged for the loss of four aircraft and one pilot lost (one pilot who "baled out" was picked up by a Hurricane which landed beside him, another pilot "walked back" after being found by our armoured cars and another was found wounded and sent to hospital). German records do not substantiate the claims, however, no Me.109s being listed as either destroyed or damaged on that day.

ADIK 103/64
Verluste Afrika.
M.E. W.O.S.No.7

On the same day the R.N.(F) and No.250 Squadrons reported, as the result of the interception of 20 Ju.88s escorted by 12 Me.109s and G.50s, one Ju.88 and three G.50s shot down, 2 Me.109s and 2 G.50s probably destroyed and 2 Me.109s damaged for the loss of two Tomahawks. Again, so far as the German aircraft are concerned these claims are not confirmed by enemy records.

ADIK 103/64
No.80 Squadron
O.R.B

During the last three days of November No.80 Squadron Hurricane-bombers flew 35 sorties on their specialised task, in particular considerable damage was claimed from the bombing and strafing operation on the 30th, when encampments and M.T. were attacked on the north side of the El Adem-Ed Duda road; complete surprise was achieved and no anti-aircraft fire was experienced until after the bombing attack was over.

No.272 Squadron
O.R.B. M.E.
W.O.S. No.7

In other low flying attacks No.272 Squadron Beaufighters attacked vehicles on the roads near Derna and Barce and strafed aircraft on the Martuba and Barce airfields. No.33 Squadron Hurricanes, meanwhile operating from their landing ground west of Giarabub, continued the attacks on Italian aircraft on

/landing

(1) The pilot of the No.3 Squadron Tomahawk shot down was picked up by the C.O. of the squadron who landed beside him. It must have been a tight squeeze in the aircraft as the passenger was the biggest man in the squadron. He commented on his return journey in his combat report as "the best ride I ever had". (No.3 Squadron R.A.A.F. O.R.B. Nov.'41 App.)

landing grounds in the Agedaya area and shot up petrol lorries on the Agedabya - Tripoli road.

C.Os of S.A.A.F. Fighter Squadrons Replaced

S.A.A.F.
Narrative
P.326-7

For some time the A.O.C. Western Desert, had not been satisfied with the leadership of Nos.1, 2 and 4 Squadrons, S.A.A.F. At the end of November, Air Vice-Marshal Coningham strongly recommended that new squadron commanders should be appointed as the squadrons were showing signs of being adversely affected by the lack of confidence of the leaders. The Commanding Officers in question were senior officers who had been appointed in the Union from the S.A.A.F. Training Command and had not had sufficient previous experience as flight commanders in actual warfare. The Commanding Officer of No.3 (S.A.) Wing and the S.A.O.A., S.A.A.F., agreed to replacements by S.A.A.F. officers of less seniority but with proved fighting ability.

The subsequent achievements of the S.A.A.F. fighter squadrons showed the wisdom of Air Vice-Marshal Coningham's insistence on vigorous leadership.

Reduced Bomber Support (28th November - 2nd December)

Mention has already been made, on page 170., of the intermittent bad weather which reduced the day bomber effort during the five days 28th November to 2nd December to 156 effective sorties.

No.270 Wing and
No.11 Squadron
O.R.Bs

For the morning of 28th November, No.270 Wing had ordered the continuance of the attacks on the enemy's columns withdrawing towards Sidi Rezegh, and six aircraft each from Nos.14, 45 and Lorraine Squadrons were briefed to attack vehicles on the Trigh Capuzzo near Gasr El Arid. Ten-tenths cloud over the target prevented all the Blenheims except No.14 Squadron delivering their attacks. Nine Blenheims of No.11 Squadron, meanwhile, in an attack on armoured vehicles and M.T. to the north of the Bardia-Tobruk road, were obliged through poor visibility to operate at 1,000 feet, and lost three aircraft on the mission (1). As cloud cover seemed available over the whole of Cyrenaica, it was decided to take advantage of this to attack enemy objectives in the rear, the pilots being told "to use enterprise and initiative in the selection of targets". The aircraft operated individually and times of take-off were staggered. It was intended that a total of 12 Blenheims of Nos. 14, 84 and Lorraine Squadrons should operate in the Barce, Cyrene and Gazala areas, respectively, and 12 S.A.A.F. Marylands in the Derna-Tmimi area. The cloud cover proved patchy, however, and in all only seven effective sorties were possible; the main attacks were made on three M.T. convoys between Bomba and Derna, many near misses and one fire being reported.

No.270 O.R.B.
and S.A.A.F.
Narrative

/The

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- (1) One aircraft was shot down before reaching the target by A.A. from a concentration of M.T. which had identified itself as friendly. One aircraft crash-landed in the target area after bombing and another landed and presumably picked up the crew. This aircraft did not return to base (No.11 Squadron O.R.B.)

Idem and
No.11 Squadron
O.R.B.

The battle had now been joined again in real earnest in the Sidi Rezegh area (page 169) and the main bomber effort was directed towards helping the New Zealand Division and the Tobruk Garrison. On 29th November, in noon and afternoon attacks, 16 Blenheims of Nos.14 and 45 Squadrons and 9 Marylands of No.21 Squadron, S.A.A.F. started fires among groups of vehicles in the El Adem area and 9 Blenheims of No.11 Squadron and 6 Marylands of No.12 Squadron S.A.A.F. hit tanks, armoured vehicles and M.T. to the south-west of Sidi Rezegh. The following day, in much better weather, the main bomber effort, supported by large fighter escorts, was directed against the enemy forces on the escarpment at Sidi Rezegh. Eighteen Blenheims of Nos.14 and 34 and Lorraine Squadrons bombed M.T. concentrations with good effect and 9 Marylands of No.21 Squadron S.A.A.F., followed by 9 of No.12 Squadron, S.A.A.F., hit scattered groups of vehicles and guns, the bombing being carried out individually. Seven more Marylands of No.21 Squadron hit vehicles between El Adem and the Trigh Capuzzo, causing fires, and set on fire what was believed to be a fuel dump to the south-east of El Adem. On 1st December the attacks in the Sidi Rezegh battle area were continued, again with large fighter escorts. Twenty-three Blenheims of Nos.14, 45 and 84 and Lorraine Squadrons hit M.T. and A.F.Vs extending over a wide area and nine S.A.A.F. Marylands bombed enemy tanks, A.F.Vs and M.T. on the line Sidi Rezegh-Belhamed. The results of the Marylands' bombing, however, could not be discerned owing to dust and smoke. Meanwhile, in the rear, pressure was maintained on the enemy's beleaguered strong-hold at Bardia, nine Blenheims of No.11 Squadron blowing up a bomb-dump and causing explosions which were felt by the aircraft flying at 5,000 feet. On 2nd December an attack by No.270 Wing Blenheims on M.T. moving southwards from El Adem was almost entirely abortive owing to bad weather and even S.A.A.F. Maryland sorties against near-at-hand supply targets at Bardia were mainly ineffective, six Marylands only being able to attack their targets.

Although the bad weather had greatly limited the bomber support which could be given to the New Zealanders, it is most unlikely that the fullest support practicable in good weather conditions at this time could have redeemed the situation. Greater interference with the enemy's "thin-skinned" vehicles would have been effected, but once the enemy's armour had come to close grips with our forces the outcome rested mainly on the ground action.

Wellington Effort Against Benghazi and Derna (Nights 28th/29th November to 1st/2nd December)

No.205 Group O.R.B.
and M.E. W.O.S.No.7

Meanwhile, the night bomber effort was directed against enemy supplies - the main attacks being delivered on the port of Benghazi and a continued subsidiary effort against the Ju.52 airfield at Derna.

On the four night 28th/29th November to 1st/2nd December Wellingtons of No.205 Group flew a total of 63 effective sorties in attacks on Benghazi and Malta-based Wellingtons supplemented the attacks on two nights, flying 17 effective sorties. The bomb loads included an increased number of 4,000 lb. and 1,000 lb. bombs. The targets attacked included the moles, harbour installations, railway sidings and shipping; the main

/damage

damage appeared to be done to the moles, but, direct hits were claimed on three ships and a possible hit on another. One Wellington of No.205 Group failed to return from these operations and one crash-landed - inconsiderable casualties in view of the intense anti-aircraft fire and "tenacious searchlights".

Derna airfield was attacked on two nights by a total of 11 No.205 Group Wellingtons and two more bombed the town. The attack on the night 29th/30th November resulted in bombs bursting across the lighted flare-path and among aircraft taking off.

On several occasions, also, Wellingtons bombed and machine-gunned road transport in the Barce and Giovanni areas in the course of offensive reconnaissances.

Enemy Air Force Participation (21st November - 2nd December)

Mention has already been made of the enemy's negligible air effort at the outset of the battle. From 21st November onwards, however, both the G.A.F. and I.A.F. operated on a greatly increased scale. The Luftwaffe's Me.109 force, for instance, was estimated to have flown up to 30 sorties daily.

Characteristically the air effort was primarily directed towards intervention in the battle area. Our rear installations and supply organisation in the Derna and Canal Zone continued to be immune from attack. Tobruk, formerly a main bombing objective also received scant attention.

M.E. W.I.S.
No.75

From 21st to 24th November the enemy's main offensive air action was made against the operations of the Oasis Force and its associated squadrons in Southern Cyrenaica. The success of this Force's operation and the enemy's failure to neutralize L.G.125 have already been indicated.

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Part 3
Enclos. 263A

From 25th November the emphasis of the enemy air attacks was in the main battle areas - attacks being delivered against our ground forces at Sidi Rezegh, Gambut, Bir El Gubi and Gabr Saleh. Air Marshal Tedder in a letter to the Chief of Air Staff summed up the matter thus:- "Generally speaking the enemy's method has been to send out not more than two large mixed bags each day - Ju.87s, G.50s, Me.200s and 202s and Me.109s as top cover. We have arranged for the R.D.F. from Tobruk to get through direct but this is, of course, quite inadequate to allow for us to concentrate and intercept without a great deal of luck. We have been maintaining fighter sweeps of two squadrons apiece up to Tobruk. Usually it is a matter of luck whether they happen to catch the Hun at it, or not, since they can only be at the limit of their patrol for some twenty minutes or so; this is why it is so important for us to get some aerodromes further forward as soon as we can get any defence or security on the ground. As you will see from the reports, these sweeps have been fairly successful in catching the Hun at it". Mention has already been made of the main engagements resulting from our interception.

/In

M.E. W.I.S.No.76

In contrast to our low flying attacks no ground strafing attacks by enemy fighters were reported in the main battle area around Sidi Rezegh, although Italian C.R.42s, operating from Agedabia, made constant bombing and machine-gun attacks against our Gialo column.

Idem

Our railhead at Sidi Barrani was ineffectively attacked on two evenings - on 29th November by Italian bombers operating from Rhodes and 30th November by light Ju.88s. One of the Ju.88s was shot down by a night-flying Hurricane of No.30 Squadron and three of the crew which "baled out" were captured.

November Shipping Strikes

(A) As currently reported.

During November, Malta-based Blenheims, Wellingtons and Swordfish made 63, 20 and 4 effective sorties⁽¹⁾ respectively, against enemy shipping in transit in the Central Mediterranean and Blenheims of No.203 Squadron made a few sorties against naval vessels in the Eastern Mediterranean. The attacks on ports, which on occasions resulted in ships being hit, have already been mentioned.

A.H.B. IIJ1/29

H.Q., R.A.F., Middle East's preliminary assessment of shipping casualties inflicted by Malta-based aircraft was:- three merchant vessels (varying from 1-2,000 to 4-5,000 tons) and one schooner probably sunk, 8 merchant vessels damaged, and unknown results in respect of 10 more ships. The air attacks in the Eastern Mediterranean were believed to have resulted in damage to at least two merchant vessels.

Idem

Force "K" and H.M. submarines operating in the Mediterranean reported the sinking of 10 merchant vessels (varying from 1-2,000 to 7-8,000 tons) and three schooners, the probable sinking of three merchant vessels and damage to two more ships.

The results achieved against enemy naval vessels are not considered in this narrative. (See the Narrative covering the Air/Sea war in this connection.).

Idem

H.Q., R.A.F., Middle East, estimated that as a result of the Naval and R.A.F. action only 14,5000 tons of merchant shipping reached Tripoli out of an estimated "starter" tonnage of 101,000 tons and 33,500 tons reached Benghazi out of 46,900 tons of shipping sailing to that port direct. The attempted sailings from Italy, Greece and Crete were thus put at 147,900 tons and total sinkings, including ships sunk in harbour, were estimated to be 60,720 tons: a number of ships turned back to their departure ports. The total tonnage sunk expressed as a percentage of total sailings (including ships which turned back) was put at 41% and south bound (that is supply-carrying) tonnage sunk at 37%. As already mentioned H.Q. R.A.F. M.E's Conclusions must be treated with reserve.

H.Q.Med./
S.247/49/4
AIR

The Admiralty Shipping Losses Assessment Committee figures for the period 3rd to 30th November agreed, in the main, with H.Q., R.A.F., M.E's estimated sinkings. Twenty merchant ships with a gross tonnage of 56,573 tons were

/adjudged

(1) These are the figures for sorties which led to actual attacks.

adjudged sunk or a constructive loss, five ships totalling 12,300 tons severely damaged and five ships totalling 20,958 tons damaged. Of these totals the loss inflicted by air attack were given by the Anti-Shipping Operations Sub-Committee of the Bombing Committee as 3 ships totalling 6,000 tons sunk, 4 ships totalling 9,300 tons severely damaged and 4 ships totalling 16,000 tons damaged.

(B) Confirmed Enemy Shipping Losses (Identified Vessels)

The confirmed losses of identified enemy merchant shipping in November (see Appendix P for full details) were as follows:- Total tonnage sunk in the entire Mediterranean from all causes:- 44,931 tons (including 36,097 tons sunk by the Royal and Allied Navies and 8,648 tons by the R.A.F. and F.A.A.). It will be noted that the confirmed losses caused by air action are 2,648 tons more than the Anti-Shipping Operations Sub-Committee of the Bombing Committee's Assessment. Losses of shipping adjudged on the African Convoy Route only were:- 38,696 tons (including 31,955 tons by the Royal and Allied Navies and 6,525 tons by the R.A.F. and F.A.A.).

(C) Vice-Admiral Weichold's Comments

A.H.B.1/S.10
Para.79

As in the case of the previous months Vice-Admiral Weichold's figures in respect of sinkings on the supply routes to Libya are lower than the confirmed sinkings of vessels taken as being on the African convoy routes Weichold states that the total tonnage used for African convoys in November fell to 37,000 tons: of this total Weichold put the sinkings at 26,000 tons and damaged at 2,100 tons. Thus, according to Weichold, 77% of the total tonnage was lost or virtually lost, the highest percentage to that date: the remaining 8,400 tons which reached Libya was reported as the lowest monthly delivery ever recorded.

The crucial facts are that our sea and air action had dislocated the enemy's supply system and that unless the enemy could succeed in passing more supplies and reinforcements into Libya "the African Campaign", in the words of Weichold, "was bound to die a natural death".

In particular, our employment of Malta as an offensive base could clearly not be tolerated by the enemy unless he was prepared to abandon Libya and allow us the use of the Mediterranean. The steps taken by the enemy to neutralise Malta are mentioned on page 192.

Preparations for Attacking El Adem

C.-in-C's
Despatch P.8
Idem P.55

In spite of our failure for the second time to secure the Sidi Rezegh position General Auchinleck and General Ritchie were both determined to continue what the former termed "the momentum of attack". On 1st December the Commander-in-Chief had flown to Battle Headquarters near Maddalena in order to be at hand for major decisions and remained there for ten days. The actual direction of the Eighth Army, however, was left entirely to General Ritchie.

/Plans

P.56

Plans for continuing the offensive then centred on El Adem, an area which resembles that of Sidi Rezegh in that the main communications between east and west pass through a valley under observation from ridges to the south and north. If the enemy was still denied access to Bardia and to his dumps to the west of that stronghold and also had his communications severed by our occupation of El Adem, his armour would be forced to leave the valley between Sidi Rezegh and Belhamed, where they were screened by anti-tank guns, and fight in the open.

The general plan for the new operation was for the 13th Corps to push forward from Ed Duda along the El Adem ridge to the Tobruk-El Adem area, while the infantry of the 30th Corps, after capturing the strong point of Bir El Gubi, was to advance northwards and secure the southern ridge and subsequently the western end of the El Adem ridge. Meanwhile, our armour was to lie in wait to the east in readiness to engage the enemy tanks when they emerged.

Idem Ps. 55 and
56

Certain reinforcements were now forthcoming to the Eighth Army which made up, in part, for the heavy losses previously sustained. These comprised an armoured car regiment from Syria, an infantry brigade from Cyprus, three hitherto unbrigaded Indian battalions and the divisional armoured car regiment of the 1st Armoured Division which had recently arrived from the United Kingdom.

The new organisation of the Eighth Army was then as follows:-

30th Corps (Lt. General Norrie)

7th Armoured Division, 4th Armoured Brigade, 7th Support Group, 4th Indian Division, 1st S.A. Infantry Brigade Group and five armoured car regiments.

13th Corps (Lt. General Godwin-Austin)

70th Division, 32nd Army Tank Brigade, Polish Carpathian Brigade Group, Polish Carpathian Cavalry, 18th and 19th New Zealand Infantry Battalions, 2/13th Australian Infantry Battalion and 11th Czechoslovak Battalion.

2nd S.A. Division (Major General de Villiers)

3rd and 6th S.A. Infantry Brigade, 5th N.Z. Infantry Brigade Group (attached) and 1st Army Tank Brigade (attached).

Rear Area

New Zealand Division (4th and 6th Brigades) 38th Indian Infantry Brigade and 5th S.A. Infantry Brigade.

Matruh Fortress

2nd and 4th S.A. Infantry Brigade Groups.

/Air Marshal

Air Marshal Tedder's Views on the Situation (Early December)

On 3rd December after a visit to Battle Headquarters and the fighter landing grounds Air Marshal Tedder signalled his views on the situation to the Chief of Air Staff.

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Part 3
Encs. 262A

The A.O.C.-in-C., was impressed by the resolute way in which the "new Army management" was facing up to the reverse at Sidi Rezegh. His reading of the land situation was that up to that time our forces had been repeatedly outmanoeuvred "by an enemy who though practically blinded in the air and despite jamming interference nearly always managed to have his mobile forces under full control". A senior soldier in the Eighth Army had summed up the armoured battles as "professional versus amateur". Air Marshal Tedder reported that as evidence pointed to the fact that the enemy's successful resistance was due in great measure to General Rommel's personal leadership, he had urged on the Army the importance of hunting him by the use of D.F. Steps had also been taken for the R.A.F. D.F. facilities to be used to this end.

So far as direct support was concerned the Army was "still very pleased". In particular, Major General Freyberg, G.O.C., New Zealand Division, had made a special visit to say: "Your fellows have been simply magnificent and my men are full of admiration and gratitude". Improvement in the provision of direct support, still depended largely on better Army communications and control of the ground forces. It was fully realised, however, that the air effort was likely to have its most decisive effect on the battle by continuing to attack the enemy's "vulnerable tail of transport and supply", both in the battle area and along the lines of communication.

The squadrons were reported to be in a good state "both as regards morale and material". The serviceability of the fighter squadrons was, in the main, satisfactory and squadrons were able to maintain full squadron formations. The Blenheim serviceability was less satisfactory owing to a "spate of engine changes due to oil pressure". With regard to aircraft reinforcement the Kittyhawk situation had improved and one squadron (No. 3 Squadron, R.A.A.F.) was due to re-arm with them. It was reiterated, however, that a squadron of Spitfire Vs would be invaluable to counter the enemy's Me.109 Fs. A greater flow of Beaufighters was also urged to operate and control the projected three Coastal Beaufighter squadrons. The day bomber situation was giving grounds for anxiety. In particular, the deliveries of Marylands from the United States had been completed and the Baltimores were arriving long behind schedule. The "air transport menagerie ranging from Audax to Ensign and including British Airways" was working well: "both we and the Army would have been in some awkward jams", Air Marshal Tedder remarked "if this menagerie had not pulled its weight and more".

Idem Enc. 263A

Idem Enc. 262A

The R.A.F.'s most pressing operational need at that stage was to secure fighter landing grounds further forward and sites near Sidi Omar were examined with a view to refuelling forward. The landing ground at

/Tobruk

Tobruk was already being used for refuelling a limited number of aircraft for special operations. Meanwhile, full preparations were being made for the general move westwards.

The Last Enemy Thrusts Eastwards

C.-in-C's
Despatch P.56 and
CS 14280 P.19
No.208 Squadron
O.R.B.

While the Eighth Army was preparing to attack El Adem the enemy made two final thrusts towards the frontier.

No.237 (R)
Squadron
O.R.B.

On 3rd December two strong patrols set out for Bardia, one taking the coast road and the other the Trigh Capuzzo. The movement was observed and reported on by No.208 (A.C.) Squadron. In particular, at one stage in the morning 1,000 M.T. were reported in the wadis and along the escarpment three-quarters of the way from Sidi Rezegh and almost up to Bir El Chleta. In addition, the Gambut area was reconnoitred. Meanwhile, No.237 (Rhodesia) Squadron covered Gambut - Sidi Azeiz, the Capuzzo - Bardia road, Gambut, and a stretch of the Trigh Capuzzo, including Bir El Chleta.

C.-in-C's
Despatch P.56

No.270 Wing and
No.80 Squadron
O.R.B.

The two enemy patrols were attacked both on the ground and from the air. The column on the coast road was opposed by the 5th N.Z. Infantry Brigade and that on the Trigh Capuzzo was engaged by a detachment of the 5th Indian Infantry Brigade near Sidi Azeiz. Both the enemy raiding forces were routed with heavy loss. The enemy vehicles on the Trigh Capuzzo were successfully attacked in the early afternoon by No.270 Wing Blenheims and No.80 Squadron Hurricane-bombers, the targets being selected from the morning tactical reconnaissance reports. Six Blenheims from Nos.14, 45 and 84 and Lorraine Squadrons were briefed to attack M.T. concentrations from a point on the Trigh Capuzzo between Gasr El Arid and Bir El Chleta westwards towards El Adem, and 22 effective sorties were flown with fighter escort. In spite of cloudy weather several concentrations of vehicles were hit, including light armoured vehicles about four miles west of Bir El Chleta. The bombing and strafing attacks by 10 No.80 Squadron Hurricanes, meanwhile, on groups of vehicles on the trigh and wadis alongside it between Sidi Rezegh and Bir El Chleta were reported as a "highly successful operation". The weather conditions, which were still far from favourable for air operations, prevented the S.A.A.F. Maryland squadrons operating on this day.

C.-in-C's
Despatch P.56

No.208 Squadron
O.R.B.

The following day (4th December) a more powerful enemy column, including a formidable tank escort, left the main leaguer at Sidi Rezegh and drove down the Trigh Capuzzo. Its progress and its increased strength during the day were reported by the tactical reconnaissance Hurricanes of No.208 Squadron. No.237 (Rhodesia) Squadron, meanwhile, covered the areas Bardia - Gambut - Bir El Chleta, east of Sidi Azeiz and Gambut - Gasr El Arid, and further information on vehicles at Bir El Chleta was provided in the course of tactical reconnaissances by Nos.24 Squadron, S.A.A.F., Bostons.

/Thirty

No.270 Wing
O.R.B.

Thirty Blenheims of No.270 Wing were briefed to attack the large concentrations of M.T. and A.F.Vs along the escarpment and wadis south of the Trigh Capuzzo from east of Sidi Rezegh to east of Bir El Chleta. The projected programme was curtailed, however, by a collision between a Blenheim of No.45 Squadron and one of the Lorraine squadron when taking off. The former aircraft blew up and the crew was killed and the Free French aircraft was wrecked, although the crew escaped with minor injuries. Owing to the runway being blocked only eleven effective escorted Blenheim sorties were possible. Several large concentrations of vehicles were hit and some of the fires caused could be seen for 45 miles on the return journey. Concentrations of M.T. and A.F.Vs off the Trigh Capuzzo about four miles east of Sidi Rezegh, attacked by some of the Blenheims, were later bombed by 18 escorted Marylands of Nos.11 and 21 Squadrons, S.A.A.F. The bombing was done selectively and independently by the bomb-aimers and further hits were registered and more fires started. No.80 Squadron Hurricane-bombers were not available for bomber attack on 4th December as the squadron was required to form a temporary flying wing with the R.N.(F) Squadron.

S.A.A.F.
Narrative

No.80 Squadron

G.-in-C's
Despatch
P.56

The enemy column failed to achieve its apparent object in reaching Bardia. General Auchinleck attributed its failure to the combined effect of the air attack and the ground action by the Support Group and units controlled by the 2nd South African Division.

The enemy raids were considered to have been a final attempt to secure supplies, particularly petrol, from the beleaguered stronghold of Bardia⁽¹⁾ and possibly to rescue some of the troops there. These diversionary movements may also have been intended to provide cover for the heavy assault on our Tobruk salient mentioned below.

Enemy Falls Back to El Adem - Bir El Gubi Line

CS.14280 P.19
and No.451
Squadron O.R.B.

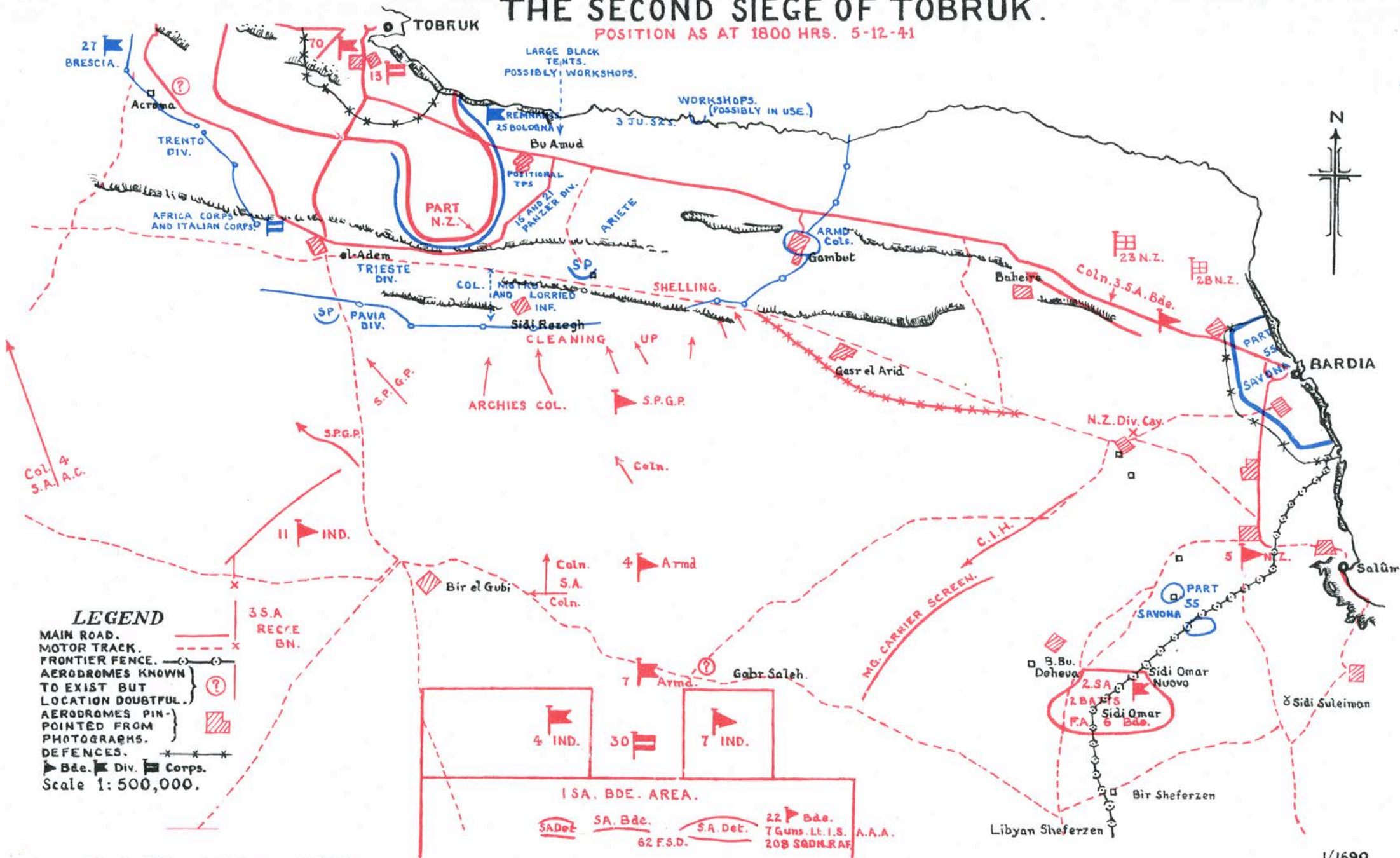
On 3rd December the enemy pressure on the Tobruk corridor was reported to be considerably reduced. Early morning tactical reconnaissance reported only 600 - 700 M.T. in the area Zaafran - Sidi Rezegh and a general decrease of enemy M.T. to the east and south of the Tobruk perimeter.

A successful artillery reconnaissance shoot⁽²⁾ with No.144 Field Regiment was carried out later in the

/morning

- (1) It was suspected that enemy submarines were unloading supplies by night at Bardia (A.H.B. II J6/7/4).
- (2) This was the first of several artillery reconnaissances carried out by No. 451 Squadron aircraft from Tobruk. They were made possible by the fact that a Flt.Lt. Ferguson who had forced-landed at Gasr El Arid in late November and had been taken to Tobruk, had recently come from the Army Co-operation School at Aqir. Preliminary training with the Tobruk 25 pounders was arranged and then artillery reconnaissance was carried out against the enemy's 150 m.m.guns. Initial ranging was almost unnecessary as sound ranging and flash-spotting combined with photographic reconnaissance had enabled the gun positions to be pinpointed. The enemy, however, had several positions and moved the guns to different pits during the night. (CS.14280 P.17).

POSITION AS AT 1800 HRS. 5-12-41



morning by a No.451 Squadron, R.A.A.F. Hurricane operating from Tobruk against enemy guns shelling the harbour; two targets were successfully engaged, 120 rounds being fired.

CS. 14280 P.19

No.451 Squadron

The "reduced pressure" on the salient was short-lived. Early in the morning of the 4th the enemy attacked Ed Duda from the west, southeast and northeast, but all the attacks were successfully repelled. An attack on Belhamed was also beaten off, the enemy withdrawing southwards. No.451 Squadron covered the Belhamed area and gave the position of the few tanks observed and later reported the presence of some 1,500 vehicles in the wadis at Bu Amud.

CS. 14280 P.19
and C.-in-C's
Despatch P.57

During the afternoon an enemy force advanced north across the by-pass road between Ed Duda and Belhamed and obtained a foothold on the north-east face of Duda. This attack was supported by heavy anti-tank guns brought up within close range which succeeded in smashing a number of the 32nd Army Tank Brigade's few remaining tanks. Deep inroads were made by the enemy into the salient and although our troops counter-attacked they could not recapture all their lost positions. Preparations were made to continue these counter-attacks during the night but it was found that the enemy had withdrawn. Early next morning No.451 (A.C.) Squadron, R.A.A.F. reported that the Belhamed area gave the impression of being empty.

Under cover of the fighting on the 4th the Bologna Division began a disorderly evacuation of the eastern sector of the siege lines and this retreat continued through the night. The German units attached to the division and many of the Italian Officers were reported to have seized the available transport, leaving most of the rank and file to make the journey on foot; many of these became willing prisoners. On the 5th the Afrika Korps and the Italian Mobile Corps, which had been concentrated around Sidi Rezegh, began to withdraw. Covered by guns sited on the southern escarpment they fell back to the new line El Adem - Bir El Gubi.

No.270 Wing
O.R.B. and
S.A.A.F.
Narrative

No.80 Squadron
O.R.B.

Severe dust storms on the 5th rendered the day bomber landing grounds unserviceable, but two successful operations were carried out by No.80 Squadron Hurricane-bombers against enemy forces retiring from the Sidi Rezegh area. In the morning a large M.T. convoy moving westwards from north of Sidi Rezegh was attacked by 12 aircraft. The bombing was reported to have been accurate and lorries filled with troops were effectively strafed. In the afternoon the convoy, then stationary, was attacked by 12 more aircraft with even greater effect. After the bombing had caused confusion strafing was again carried out, resulting in the destruction of several staff cars, the blowing up of two ammunition lorries, the setting on fire of two fuel lorries and one light tank and many other lorries being immobilised.

Night Bombers Directed Against Battlefield Targets

No.208 Squadron
O.R.B. and
S.A.A.F.
Narrative

As mentioned on page 178 the Army plan was now concerned with an attack on El Adem. On 3rd December both No.208 (A.C.) Squadron and No.24 Squadron, S.A.A.F. covered El Adem in the course of their reconnaissances and the former squadron reported signs of the enemy digging in there.

No. 205 Group
O.R.B.

That night No. 205 Group aircraft and the Fleet Air Arm Albacores of No. 826 Squadron were directed against pin-pointed positions and M.T. concentrations in the El Adem area as a preliminary to our imminent ground offensive. Wellingtons of Nos. 37, 38 and 70 Squadrons flew 35 effective sorties (involving two sorties for most of the aircraft involved) during the night and attacked their targets from heights varying between 5,000 and 1,500 feet without incurring any losses. Some of the bombers also machine-gunned M.T. leaguers in the area. Fires started during the first attack, at 20.00 hours were still burning when the last aircraft left shortly before dawn. Twelve Albacores of No. 826 Squadron for their part reported the destruction of eight vehicles (including an ammunition lorry) and damage to many more. The S.O.O., A.H.Q., Western Desert wrote: "Our troops had a grandstand view of the whole bombardment. They were much impressed. The moral support was as great as the material damage."

No. 270 Wing O.R.B.
and M.E.W.I.S.
No. 7

During this particular phase of the land battle - up to the final relief of Tobruk - the night bombers ensured round-the-clock pressure from the air on the enemy ground forces. Their operations on the night 3rd/4th December and the following few nights, detailed later, foreshadowed the similar but more intensive tactical employment in the battle for Egypt in the following year.

Ground Action Leading to Relief of Tobruk

C.-in-C's
Despatch P. 57 and
CS. 14280 P. 21

The Eighth Army renewed its offensive proper on 4th December. Reconnaissance had revealed that the enemy's strongpoint at Bir El Gubi was then strongly held. It was considered advisable therefore for the 30th Corps to capture the strongpoint by a preliminary operation so that the timing of the main operation - the co-ordinated advance towards El Adem by the 30th and 13th Corps - should not be upset. The defence of Bir El Gubi, although held mainly by Italians, was so resolute that the attacks delivered by the 11th Indian Infantry Brigade on the 4th and 5th were beaten off. In the meantime, however, the 1st S.A. Brigade, operating in the enemy's rear, achieved success by destroying considerable supplies of petrol and Diesel oil some 15 miles to south-west of the strongpoint.

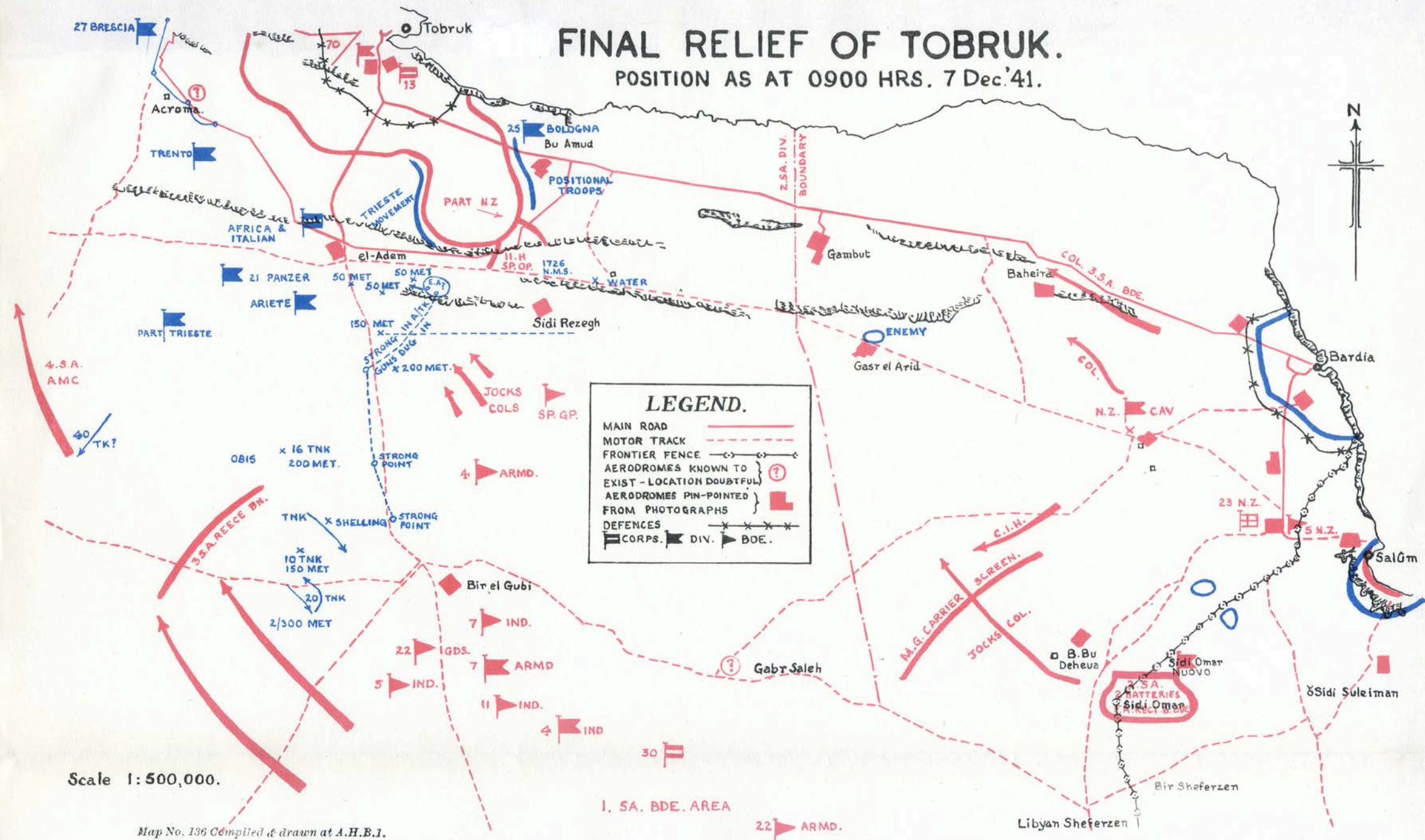
C.-in-C's
Despatch P. 57

It was then considered that the enemy was playing for time before making a further withdrawal. General Ritchie was anxious, therefore, that the co-ordinated attack on El Adem should begin without delay. The G.O.C., 30th Corps, intended, for his part, to advance northwards with the 4th Indian Division on the evening of the 6th December. During the morning of that day, however, reconnaissance (including reports from No. 208 (A.C.) Squadron) revealed that the 15th and 21st Panzer Divisions had taken up position astride the Indians' intended line of advance north-west of Bir El Gubi. The infantry of the 30th Corps were ordered, accordingly, to take up positions to the south of Bir El Gubi, while the Armoured Brigade sought to engage the enemy's armour. Contacts during the morning of the 6th proved

/elusive

FINAL RELIEF OF TOBRUK.

POSITION AS AT 0900 HRS. 7 Dec.'41.



elusive, but in the afternoon the 15th Panzer Division appeared to be forming up to attack the 22nd Guards Brigade to the west of Bir El Gubi, but the enemy armour withdrew as soon as the artillery of the Guards' Brigade opened fire. (1) On the 7th the Armoured Brigade resumed their attempt to eliminate the enemy tanks protecting Bir El Gubi, but although much damage was claimed to have been inflicted the enemy's armour was not routed.

Idem

Meanwhile, the "Jock" columns of the Support Group (named after Brigadier "Jock" Campbell, V.C.) had been ranging the desert from Bir El Gubi almost to Sidi Azeiz, taking their toll of the enemy vehicles and light tanks. The Support Group then rejoined the 7th Armoured Division.

The G.O.C., Eighth Army, was not disposed to delay the advance on El Adem any longer as he was convinced that the enemy were preparing positions in the rear. He accordingly ordered the 13th Corps to carry out their part of the operation. Shortly after nightfall on the 7th the 23rd Infantry Brigade began its advance along the Ed Duda ridge. By dawn on the 8th our forces were little more than a mile from the Tobruk - El Adem road: by the evening the enemy's defences south-east of Tobruk had been cleared.

No. 208 Squadron
O.R.B.

C.-in-C's
Despatch P. 57

In the meantime reconnaissance on the 8th December - including 5 reconnaissances by No. 208 (A.C.) Squadron of the area around Bir El Gubi and Acroma - showed that the enemy had begun an orderly withdrawal to Gazala. The Armoured Division was at once directed to advance on Knightsbridge (the road junction a few miles west of El Adem) in the hope that it would bring our armour against the enemy's western flank. The 13th Corps continued its advance on El Adem and began working westwards round the Tobruk perimeter.

Tobruk had now been relieved. The eight months siege may be said to have ended entirely when the coast road west of the perimeter and the Acroma area were cleared on 10th December.

Scope of the Direct Air Support (3rd to 8th/9th December)

No. 205 Group
No. 270 Wing
No. 11 Squadron and
No. 80 Squadron
- O.R.Bs and S.A.A.F.
Narrative

From 3rd to the night of the 8th/9th our bomber squadrons carried out the following effective sorties on direct support:- by day, Blenheims 75, Marylands 56, Bostons 12, Hurricane-bombers 71; by night, Wellingtons 101 and Fleet Air Arm Albacores 33. The main direct support consisted of attacks on the enemy's "vulnerable tail of transport and supply" (page 180).

/The

(1) The Commander of the 15th Panzer Division was killed by a shell and this may have resulted in indecision. It is more probable that the enemy did not wish to be committed to an engagement with a numerically superior tank force.

The bomber operations were restricted by bad weather on 3rd December and there was a blank day and night - the 5th and 5th/6th - owing to severe dust storms. The restriction of the day bomber support due to the inability to determine targets is considered later.

The day bomber and fighter-bomber action against enemy columns on the Trigh Capuzzo on 3rd and 4th December, the Wellington and Fleet Air Arm Albacore effort against M.T. concentrations in the El Adem area on the night of the 3rd/4th, and the Hurricane-bomber attacks on the Sidi Rezegh area on the 5th, have already been mentioned.

No. 208 Squadron
O.R.B.

Early on 6th December No. 208 (A.C.) Squadron reported bombing targets north-west of Bir El Gubi comprising M.T. concentrations of the Panzer Divisions which were blocking the intended advance towards El Adem of the 30th Corps. No. 270 Wing laid on an operation to bomb these armoured vehicles and M.T. around noon, when it was anticipated that they would be refuelling. Twenty-two effective sorties were carried out by escorted Blenheims of Nos. 14, 45, 84 and Hurricane Squadrons. Many direct hits were reported on the concentrations, but full observation was obscured by cloud; two of the concentrations bombed were stationary and may have been refuelling as expected. The formation was intercepted after bombing by a number of enemy fighters reported to be Me. 202s and Me. 109 Fs: one of the Free French Blenheims was shot down, but the escorting Hurricanes of No. 1 Squadron, S.A.A.F. and No. 274 Squadron claimed one Me. 202 probably destroyed and damage to 3 Me. 109 Fs. and one Me. 202. (1)

No. 270 Wing
O.R.B.

M.E.W.O.S. No. 8

S.A.A.F.
Narrative

The S.A.A.F. Maryland Squadrons, on the 6th operated against concentrations of A.F.Vs and M.T. further north in the El Adem area. Seventeen escorted aircraft operated from low level (3,500 feet) on account of cloud. Vehicles and buildings were hit on the landing ground and No. 21 Squadron Marylands dropped 40 x 250 lb. bombs on some 250 poorly dispersed vehicles, including A.F.Vs., in the vital area east of Sidi Rezegh (in the area between the escarpment and the bend in the road) which "must have caused a great deal of damage." No. 80 Squadron Hurricane-bombers, for their part, made a highly successful attack, involving 13 effective sorties, on a convoy of about 40 vehicles moving north-west about 12 miles south-west of El Adem. The vehicles were first scattered by accurate dive-bombing and then strafed at leisure, as no opposition was encountered. The convoy, which, it was learnt later, comprised an Italian Divisional Headquarters was virtually wiped out. The C.O. of the squadron reported: "There was no doubt that this type of target was eminently suitable for the squadron to attack, the bigger convoys being left to the Blenheims and Marylands."

No. 80 Squadron
O.R.B.

/During

- (1) German records, however, show no losses or serious damage incurred by Me. 109s on the 6th.
(ADIK 103/64).

No. 205 Group
and
No. 270 Wing O.R. Bs

During the night 31 Wellingtons of No. 205 Group and six Fleet Air Arm Albacores of No. 826 Squadron kept up the pressure on the enemy's rear M.T. concentrations along the El Adem - Acroma - Gazala road.

S.A.A.F.
Narrative

The bombing of this "vulnerable tail" was continued on 7th December by 14 Marylands of Nos. 12 and 21 Squadrons, S.A.A.F., escorted by S.A.A.F. Tomahawks. After following the main road from El Duda to Acroma, individual targets were attacked on and near the road as far as the junction with the Gazala - Tobruk road: many vehicles and a supply dump were reported destroyed. Further south (8 miles south of Acroma) 12 Hurricane-bombers of No. 80 Squadron selected a small M.T. convoy and claimed it as "wiped out". During the hours of darkness 29 Wellingtons of Nos. 38 and 148 Squadrons continued the attacks on the rear M.T. concentrations on the road between Acroma and Gazala, bombing from 9,100 to 900 feet and carrying out machine-gunning. A few more Wellingtons extended their activities to Derna and even as far as Benghazi. Eight Albacores, meanwhile, attacked dispersed M.T. and tanks, and encampments and stores along the El Adem - Acroma road and the general Acroma area.

No. 80 Squadron
O.R. B.

No. 205 Group
O.R. B.

No. 270 Wing O.R. B.
and M.E.W.O.S.
No. 8

No. 270 Wing and
No. 11 Squadron
O.R. B.

On the 8th, when it was apparent that the enemy was making a general withdrawal, 20 Blenheims of Nos. 11 and 84 Squadrons bombed the enemy's columns south-west of El Adem. The weather was hazy with 8/10ths high cloud, but bombs dropped from 6,000 feet were seen to fall on 200 to 300 dispersed and stationary M.T. on both sides of the track and off it, causing some fires and small explosions. Further afield these Hurricane-bombers of No. 80 Squadron successfully bombed and strafed M.T. between Acroma and the coast road. The main Wellington effort during the night, as mentioned later, was directed against the Derna landing grounds, but six aircraft continued the attacks on M.T. on roads in the rear. Seven Fleet Air Arm Albacores of No. 826 Squadron operated over the El Adem battle area, bombing a concentration of 30 tanks (a direct hit was observed on one of them) and carrying out machine-gun attacks.

No. 80 Squadron
O.R. B.

M.E.W.O.S. No. 8
and No. 270 Wing
O.R. B.

S.A.A.F.
Narrative

In addition to the attacks directed towards influencing the outcome of the main battle, the opportunity was taken of maintaining pressure on the enemy's isolated stronghold of Bardia. In particular, the Bostons of No. 24 Squadron, S.A.A.F. which had been operating under the forward fighter wing on tactical reconnaissance since 17th November, now returned to the control of No. 3 (S.A.) Wing in order to operate as bombers. A mission against Bardia on 7th December was thwarted by bad weather conditions, but two attacks by 12 aircraft on the following day marked the beginning of the Boston bombing operations - operations which in the months to come were to have a profound effect on the Middle East campaign. The Marylands also carried out limited operations against Bardia. On the 8th seven aircraft of No. 12 Squadron, S.A.A.F., bombed the harbour when cloud obscured the primary target at Derna, but a search for a ship reported by that squadron, carried out by aircraft of No. 21 Squadron proved unavailing.

/Restrictions

Restrictions on Use of Day Bomber Force on Direct Support Continues

A.O.C. 11
Part 2
Encl. 43A

Idem
Encl. 45A

Idem 43A

The air attacks during the six days before the enemy's general withdrawal undoubtedly caused confusion and helped to undermine enemy moral and endurance, but the use which could be made of the day bomber force on direct support was still far less than expected. This was due partly to the large areas over which the ground forces were operating and the consequent difficulties of their immediate control and partly to the inadequate recognition methods already mentioned. It was hoped, however, that recognition would from then onwards be facilitated by the fact that the enemy had taken steps to mark all his vehicles and A.F.Vs distinctively. Air Marshal Tedder reported to the Chief of Air Staff that "P.M. on 7th attack by bulk of this force (the day bomber squadrons) laid on to meet request for close support but called off at last minute owing to Army doubts as to possible pressure in area of raiding columns of our own. By time this decision confirmed too late for force to operate against any alternative targets before dark. This merely typical". The A.O.C.-in-C. again hammered home the point that the "solution depends on better control of land forces which depends on better communications plus training and better recognition methods".

Further Attacks on Derna

Idem

S.A.A.F.
Narrative

No. 205 Group
O.R.B.

It was realised that as the enemy was pushed westwards his airfields would decrease in number and congestion would result at times which would render his air force vulnerable. The air attacks on the Derna landing grounds at the outset of the enemy's withdrawal were cited by the A.O.C.-in-C. as examples of this tendency. In actual fact these particular raids were primarily aimed at continuing the interruption of the considerable airborne flow of supplies from Crete. On 8th December the S.A.A.F. Maryland bomber effort was directed against the landing grounds at Derna. Cloud banks prevented No. 12 Squadron delivering an attack, but seven aircraft of No. 21 Squadron made a successful attack on the main landing grounds. Photographs revealed extensive damage. Two of the four fires started north of the hargars developed into tremendous blazes (this area had been suspected of containing much fuel and ammunition) and nine aircraft, (1) including 5 Ju. 52s were reported set on fire. It was estimated by the crews that about 90 aircraft, mostly Ju. 52s were on the landing ground and satellite landing ground. During the night 15 of the 21 Wellingtons of Nos. 70 and 108 Squadrons which operated bombed the dispersal areas on the Derna landing grounds from 9,000 down to 2,000 feet. A few fires and explosions were reported to have been caused, but no damage was claimed to aircraft observed along the north and east sides of the main landing ground.

/Malta

(1) German records show 9 "other types" aircraft destroyed on this day and there are indications that these "other types" were destroyed on the ground (ADIK 103/64).

Malta Continues Bombing of Naples (Bombing Operations
3rd to 8th December)

M.E.W.O.S.
No.8
Appendix A

Meanwhile, Malta-based bombers continued their attacks on the enemy's supply ports. The departure port of Naples was bombed on two nights (5th/6th and 6th/7th December) by a total of 30 Wellingtons, which dropped approximately 40 tons of bombs, including several 4,000 pounders. Direct hits were secured on the arsenal, torpedo factory, marshalling yards, docks and airframe factory and large fires and explosions were caused⁽¹⁾. On the night 7th/8th December, also, Tripoli was attacked by two Wellingtons which dropped two 4,000 lb. bombs.

Idem

Some pressure was also maintained on the Tripolitanian air bases at Castel Benito and Mellaha by a total of 5 Fleet Air Arm Swordfish and 6 Wellington and four more Swordfish made nuisance attacks on the Catania airfield, Sicily. In other attacks four Blenheims reported the destruction of a train of 24 petrol tankers at San Giovanni (the Italian end of the Messina ferry route); Fleet Air Arm Swordfish made a nuisance attack on the railway line at Noto, Sicily; and five more Swordfish continued the attacks which had been periodically delivered against the barracks at Homs, Tripolitania. A warning to A.O.C., A.H.Q. Malta, not to expend an effort on diversionary attacks is mentioned on page 200.

M.E.W.O.S.
No.8
P.13

There were no attacks by Malta-based aircraft on shipping in transit during the week 2nd - 9th December owing to bad weather conditions. It may be noted, however, that reconnaissances were maintained covering Taranto, the Ionian sea, Corfu, Cephalonia, Zante Kerkenna, Pantelleria and Sicily. Photographic reconnaissance was maintained to discover the departure and arrival of shipping, particularly at Argostoli, Navarino and Tripoli.

Air Combats (3rd to 8th December)

M.E.W.O.S.
No.8

Meanwhile the Western Desert fighter squadrons continued to operate at intensity. During the six days 3rd to 8th December sorties totalled 850, comprising 468 sorties on offensive sweeps and ground attack, 205 on bomber and reconnaissance escort, 96 on shipping protection and 81 on local defence.

A.O.C.11 Part 2
Encls.48B

During these days a "steady and possibly accelerated reinforcement of the German Air Force"⁽²⁾ had already become apparent and combats were numerous.

/Most

- (1) The C.A.S. signalled to the A.O.C.-in-C. on 8th December: "Your bombing attacks on Naples appear to be directed against town and railway installations. Will you consider attacking shipping in harbour as damage to battleships could be most important in view of developments in Far East while hits on M/Vs would assist Libyan battle. (A.O.C.-in-C's correspondence with C.A.S. etc. Part 3, Encls.270B.).
- (2) The re-organisation of the Luftwaffe in the Mediterranean Theatre at this stage is considered in the next sub-section.

M.E.W.I.S.
No.77

Most of the combats resulted from the interception of large formations of escorted Stukas which endeavoured to stem our advance in the Sidi Rezegh - El Adem - Bir El Gubi area. This increased dive-bomber effort met with some success, the attacks being pressed with determination and causing, on occasion, severe damage to vehicles and considerable casualties to our troops.

M.E.W.O.S.
No.8

CS.14280
P.20

On every day 4th to 7th December our fighters, operating in strength on offensive sweeps, succeeded in intercepting large formations of escorted Ju.87s and claimed the infliction of heavy casualties. Reports of bombing of our troops were received from tentacles and relayed at once to fighter wings direct by A.S.C's at Corps to enable sweeps in the air to make interceptions or "to beat up" the enemy airfields as the returning bombers were refuelling.

Idem Ps.20-22
M.E.W.O.S. No.8
Ps.7-9 and
Appendix B
Squadron O.R.Bs
and S.A.A.F.
Narrative

At 08.35 hours on the 4th, 10 Tomahawks of No.2 Squadron, S.A.A.F., engaged a formation of about 30 Stukas, escorted mainly by G.50s., which was bombing the 11th Indian Infantry Brigade about 5 miles north-west of Bir El Gubi. This sweep was one of a number arranged to take place at the time when the 30th Corps was concentrating in preparation for the advance northwards to El Adem. The Corps had reported that dive-bombers (reported as Italian) had been operating in this area at routine times. The S.A.A.F. fighters claimed 5 Ju.87s and 2 G.50s destroyed, one Ju.87 probably destroyed and five damaged at a cost of one aircraft lost and another damaged.

Idem

Later the same morning Nos.1 S.A.A.F., 274, 112 and 250 Squadrons comprising 23 Hurricanes and 21 Tomahawks, returning from an offensive sweep encountered a mixed enemy force of 60-70 Stukas and escorting fighters some 15 miles north-west of Bir El Gubi. About 12 of the Ju.87s were reported to have made their attack but the remainder jettisoned their bombs and made off at ground level. Our fighters' claims as the result of the combats were:- one Ju.87, one Me.109, 3 G.50s and 4 Me.202s shot down, one Ju.87, one Me.109, one G.50 and 3 Me.202s probably destroyed and 3 Me.109s and 3 Me.202s damaged.(1) Our losses were one Tomahawk and 2 Hurricanes, with 2 of the pilots saved.

Idem

At noon on the following day, 5th December, 19 Tomahawks of Nos.112 and 250 Squadrons broke up another "Armada" - reported to consist of 30-40 Ju.87s, escorted by 15-20 G.50s, and Me.200s with a top cover of 12 Me.109 Es and Fs. Some of the Stukas caught diving to bomb our forces in the

/area

- (1) So far as German operational losses were concerned the official records for 4th December show one Me.109 and one Me.110 destroyed and 2 Ju.87s damaged. The Me.110 destroyed was presumably that claimed as a "probable" by a Hurricane of No. 274 Squadron 40 miles south-west of Maddalena (ADIK 103/64 Verluste Afrika)

area south-east of El Adem were pursued by aircraft of No.112 Squadron; the other dive-bombers jettisoned their loads on being attacked by No.250 Squadron; and the remainder of No.112 Squadron attacked the escorting fighters.

The claims arising from the combats were:-

Destroyed:	17 Ju.87s	1 Me.109	1 Mc.200
	and	1 G.50.	
Probably destroyed:	3 Ju.87s	2 Me.109	1 Me.200.
Damaged:	1 Ju.87	2 G.50s	1 Mc.200
	and	1 Me.109	(1)

On our side 4 Tomahawks were lost.

II J6/7/4

M.E.W.O.S.
No.8 and
Squadron O.R.Bs.

It was believed that the success achieved on the 5th induced the enemy to change his tactics to provide more protection for the Stukas. At any rate, on the following day, when the Hurricanes of Nos.229 and 238 Squadrons encountered a formation of 20 Ju.87s, escorted by Italian fighters with a number of Me.109s as top cover, it became apparent that the escort was much closer than formerly and the German fighters joined the conflict at once instead of remaining on high. The Hurricanes in their initial attack claimed the probable destruction of one Me.109 and damage to two Mc.202s and another Me.109(2). Their formation became split, however, and five Hurricanes were shot down by Me.109s, which took advantage of cover given by broken cloud and "jumped" our fighters as they became isolated.

Idem

On 7th December 20 Hurricanes of Nos.1 S.A.A.F. and 274 Squadrons, returning from patrols over the Tobruk area, engaged a formation of 15 Stukas, escorted by 30-35 Italian and German fighters, which had completed its bombing mission. Our combat claims were 2 Ju.87s, 2 Mc.200s 1 Mc.202 and 1 G.50 shot down and 2 Mc.200s, 1 Ju.87 and 1 G.50 probably destroyed(3) for the loss of 5 Hurricanes.

/The

- (1) In spite of the fact that some reports give details of the aircraft seen to crash - for instance the S.O.O., Western Desert in his report states: "Four aircraft exploded in the air, another three exploded on hitting the ground, and a further eleven were seen hurtling towards the ground on fire" - it must be recorded that the official German records of operational losses do not confirm the Stuka losses. Ju.87 casualties on 5th December are listed as 2 destroyed and one damaged. The Me.109 losses - four - agree well enough with our claims for the day, including a few minor combats not mentioned in the text. (ADIK 103/64 and Squadron records).
- (2) German records indicate no casualties incurred by Me.109s on 6th December (ADIK 103/64 Verluste Afrika).
- (3) German records show 3 Ju.87s destroyed on 7th December (ADIK 103/64).

The air combats on the 8th were clashes between fighter aircraft only. In the morning, eleven Hurricanes of No. 274 Squadron encountered a formation of 30 Me.109s and Me.200s and 202s a few miles south-west of El Adem. No. 274 Squadron with No.1 Squadron, S.A.A.F. had been escorting Blenheims bombing in the El Adem area, but the S.A.A.F. fighters and the bombers did not come into contact with the enemy fighters and continued their flight to base(1). No. 274 Squadron's claims were:- one Me.109F, and one Me.202 destroyed, one Me.109E and one Me.202 probably destroyed and four Macchis damaged(2) for the loss of two Hurricanes and one crash-landed, with the pilot saved. "The tactics of the Macchis were to stay and dog-fight while the Me.109s dived in and out continually". During the morning also, No.80 Squadron Hurricane-bombers gave a good account of themselves in the air and on the ground simultaneously. (Page 187 refers to the ground attack). After bombing in the Acroma area the Squadron split up - six engaging in straffing and the remainder acting as top cover. The latter beat off an attack by a dozen Me.109s and Me.202s, claiming the destruction of two Messerschmitts(2), the probable destruction of one and damage to another without loss. Other contacts with Me. 109s over the Bir El Gubi area during the day, in which a Tomahawk flying wing (Nos.2 and 4 Squadrons, S.A.A.F.) and a Hurricane flying wing (Nos.94 and 260 Squadrons) took part, were inconclusive.

Strengthening of the Luftwaffe in the Mediterranean

It had become apparent at this stage that the Luftwaffe in the Middle East - Mediterranean theatre was being re-organised and reinforced.

Since the capture of Crete by the Germans in the previous May the Luftwaffe in the Middle East-Mediterranean area had been organised as a Fliegerkorps. In November Luftflotte 2, which had been operating on the Russian front in the Moscow area, was transferred to the Mediterranean area. The Luftflotte took over Fliegerkorps X and later included another Fliegerkorps, Fliegerkorps II. The expansion of the command into a Luftflotte involved the appointment of Marshal Kesselring as the Officer Commanding-in-Chief with Headquarters in Rome and General Loerzer as A.O.C. Fliegerkorps II, with Headquarters in Sicily.

The arrival of a second Fliegerkorps suggested that the strength of the German Air Force would be eventually doubled.

A.O.C.11 Part 2
Encls.48B(letter
from A.O.C. WD.
to A.O.C.-in-C.
10.12.41.)

Report by M.E.
Intelligence M.E.
Review No.3

Appendix 'R'

German records show the following increase in respect of orders of battle of the G.A.F. in the Middle East - Mediterranean theatre for 15th November and 13th December, 1941. The establishment of operational type aircraft had increased from 464 to 798 and strength from 400 (206 immediately available) to 637 (339 immediately available). In particular,

/the

- (1) Some reports state that the enemy fighters tried to attack the Blenheims and cite the combat as evidence of a successful bomber escort, but squadrons records make it clear that the Blenheims and S.A.A.F. Hurricanes were unaware of the enemy fighters.
- (2) German records show 2 Me.109s destroyed on the 8th (ADIK 103/64 Verluste Afrika).

the establishment and strength of single-engine fighters were doubled (establishment 248 and strength 217 on 13th December) and immediate availability increased eightfold (180 immediately available on 13th December); the Ju.88/He.111 establishment rose from 151, strength 139, to 276, strength 232, and aircraft immediately available from 61 to 79; and a strong night force was added. On the other hand, the dive-bomber strength fell from 107 to 85 and aircraft immediately available from 86 to 43.

II J1/63

The disposition of the G.A.F. in mid-December is not available from German records held, but it is definite that the bulk of the reinforcements went to Sicily. An A.I.3(b) report put the German force there at 140, but this is probably an under-estimate, as it is based on an overall ~~strength~~ ^{strength} figure of 520 aircraft instead of the actual strength of 637. So far as the G.A.F. in Libya was concerned, it is clear that the single-engine fighter strength had been increased.

Lecture prepared by member of 8th Abteiling (Archive and Historical Branch of the German Air Min.) March, 1944

The primary reason for the strengthening of the Luftwaffe was to ensure the neutralisation of Malta as a sea and air base - a commitment which the Italian Air Force had failed to fulfil. The Germans appreciated, in fact, that "the primary condition for holding the Axis position in North Africa was supremacy in the air and on the seas which was to be achieved by the Luftwaffe. From the enemy's (that is the British) point of view, Malta was the centre of Mediterranean strategy, the aim being to paralyse the German/Italian traffic to Africa, to keep open the sea route from west to east for their ships and to make possible an attack on Italy." The G.A.F. reinforcement paid tribute in effect, to the success achieved in cutting the enemy's supply lines to Libya. Although the main effect of the reinforcement was to be felt by Malta(1) the campaign in Libya was inevitably affected both directly and indirectly.

Appendix 'T'

In addition, as the A.O.C.-in-C. had expected, an appreciable Italian Air Force reinforcement took place in Libya during the first month of the campaign, the total I.A.F. strength there increasing from 474 operational aircraft on 18th November to 548 on the 18th December. The main concentrations of aircraft were now in the western and central sectors instead of in the eastern sector as at the beginning of our offensive. A.I.3(b) considered that serviceability was maintained at 55 per cent.

II J1/63

The Enemy's Withdrawal to Gazala and our Arrangements for the Advance (8th-12th December)

P. of the Narrative

Phase Three of the offensive, as envisaged in the "Crusader" Plan, was expected to last for about 5 days (D + 1 to approximately D + 5). In the event, "the period of battle and relief of Tobruk" had been prolonged until 8th December, when the enemy fell back from the Tobruk-El Adem line. Even then, Phase Four of the offensive - "the subsequent unpredetermined period

Idem P.106

/covering

(1) See page 192.

C.-in-C's Despatch
P.59

covering the enemy's retreat" and the pursuit by our own forces was not reached, as the enemy now made a stand on a line running south from Gazala. Thus an interlude occurred before the final phase of the offensive (the pursuit proper), which may be regarded as an unexpected extension of Phase Three.

Idem

The 13th Corps, although well placed to interfere with the enemy's withdrawal, was unable to disrupt it owing to lack of reserves. Consequently, the enemy extricated the Italian divisions besieging the Western face of the Tobruk fortress and developed his Gazala line in some strength. The aim now was to dislodge a defeated but still organised force from entrenched positions and prevent a further orderly withdrawal.

Idem and
A.O.C.-in-C., to
C.A.S. Part 3 and
AOC/II Part 2
Passim

From this point the maintenance and supply of our ground and air forces became increasingly difficult and began seriously to limit the size of the forces which could be kept in contact with the enemy. For a short time there was a check in our pursuit as the 30th Corps had outrun its supplies. The changing of the supply base from desert railhead to Tobruk was achieved, however, with the minimum of delay and some of our main forces were able to follow up the enemy's withdrawal 24 hours after a halt had been called.

C.-in-C's Despatch
P.59

The G.O.C., Eighth Army decided to entrust the conduct of the following-up operations to Headquarters 13th Corps and to send Headquarters 30th Corps back to direct operations against the enemy's isolated position at the frontier(1). The main reasons which prompted this decision were that one Headquarters would suffice to control the operations of the limited forces which could be maintained forward and Headquarters 13th Corps was already conveniently established at Tobruk.

It must be emphasised however, that the elimination of the isolated enemy garrisons on the frontier was a matter of importance as it was evident that supplies by sea would have to be supplemented from railhead and the long detours imposed on M.T. convoys was absorbing transport needed for subsequent stages of the advance. It was arranged that the 1st S.A. Infantry Brigade should be detached from the 13th Corps for frontier operations as soon as it was practicable.

No. 208 and 451
Squadrons O.R. Bs

The change in the roles of the Corps Headquarters involved a new allotment of the Army Co-operation (tactical reconnaissance) squadrons, No. 208 (A.C.) Squadron being then placed at the disposal of the 13th Corps and No. 451 (A.C.) Squadron, R.A.A.F. at the disposal of the 30th Corps. These new arrangements were not effected until 15th December; for the week previous and even a few days after that date both squadrons continued to cover the forward area. No. 237 (Rhodesia) Squadron continued to operate under Battle Headquarters.

/Tactical

- (1) Before he left to direct the frontier operations, on 12th December, Lt. General C.W.L. Norrie, Commander 13th Corps, placed on record his appreciation of the "magnificent co-operation of the Royal Air Force" and paid a tribute to the Corps' Army Co-operation Squadron (No. 208 Squadron). (A.O.C.-in-C's Correspondence with C.A.S. etc. Part 3, Enc. 281A).

Tactical Air Reconnaissance (9th-12th December)

Squadron O.R.Bs

No.451 (A.C.) Squadron, R.A.A.F. - at this juncture still operating under the 13th Corps - moved up to Tobruk on 9th December (where a detachment had been operating from the beginning of the offensive) and some days later also operated some aircraft from Acroma. No. 208 (A.C.) Squadron - still under the 30th Corps - began operating from Bir El Gubi on 10th December.

Idem and
CS.14280 Ps. 25

The No.451 Squadron reconnaissance aircraft operating from Tobruk on the 9th reported 2,000 M.T. in the general area stretching 10 miles south of Acroma, being the greater part of the 15th and 21st Panzer Divisions and Ariete Division. It was established that the Pavia division had withdrawn west of the by-pass road supported by the Trento division. The Brescia division remained on the coast. Further tactical reconnaissance by No.451 Squadron reported only a few M.T. and tanks remaining in the El Adem area and photographs were taken and a report made on weapon-pits dug at Gazala. No.208 Squadron on the same day reconnoitred the Bir El Gubi area and Bir Hakim area (where the 22nd Guards Brigade were engaging minor pockets of the enemy) and confirmed that the enemy was falling back to Gazala. On the 10th No.451 Squadron continued their reconnaissance of the Gazala defences, while No.208 Squadron covered the areas Bir Hakim-Gazala and Bir El Gubi-Acroma-El Adem. The following day No.451 Squadron reported considerable M.T. movement on the Tobruk-Acroma road. No.208 Squadron covered the Trigh El Abd to some 30 miles south-west of Gazala and on the return flights took in Knightsbridge and Bir Hakim, checking up on any possible outflanking movements. On the 12th No.451 Squadron continued their reconnaissance of the Gazala area, reporting, in particular, on M.T. and tanks in the area south-east of Gazala, and a stream of traffic withdrawing north-west from Gazala. No.208 Squadron's operations followed the lines of the previous day.

The above tactical reconnaissance operations supplied valuable information for both Corps during a very fluid period and indicated bombing targets from the enemy's M.T. columns.

No.237 Squadron

S.A.A.F.
Narrative

Apart from covering the area north of Gambut on the 9th No.237 (Rhodesian) Squadron did not operate during the days under review owing to the necessity to stand by for its imminent move forward. Unfavourable weather prevented the Survey Flight (No.60 Squadron, S.A.A.F.) operating on 9th and 10th December, but on the 11th and 12th selected areas in the enemy's rear, including El Agheila, were photographed for mapping purposes and reports on enemy dispositions and M.T. concentrations observed were also made.

Ground Operations during the Advance to Gazala (8th - 12th December)

C.-in-C's
Despatch P.58

On 8th December, as mentioned on page 185 the 7th Armoured Brigade had been directed to advance towards Knightsbridge. Instead of making contact with the enemy's western flank, however, as expected, the Brigade came up against the centre of the position the enemy rearguard

/had

had taken up astride Genadel ridge. The enemy's screen of anti-tank guns prevented an attempt to turn the position on either flank. The next day, in following up the enemy's withdrawal, the Armoured Brigade made contact with a rear-guard position running north-east from Bir Harmat, covering Knightsbridge. The Armoured Division achieved some success in its attacks and, in particular, prevented enemy tanks turning back to harass our infantry who had then occupied El Adem. The Armoured Division was then forced to call a halt owing to lack of petrol.

Idem

Although our armour had been brought to a standstill "the momentum of the advance" was kept up to some extent by columns of the Support Group and the 4th Indian Division, later relieved by the 1st S.A. Infantry Brigade. On 10th December the Support Group was in touch with the outposts of the enemy's Gazala line. Meanwhile, the 7th Indian Infantry Brigade, striking northwards had made contact with the 23rd Infantry Brigade at El Adem; the 5th Indian Infantry Brigade had drawn level some 15 miles to the west; and on the western flank the Indian divisional motorised cavalry, re-inforced by infantry, engaged the enemy's rearguard at Bir Harmat and occupied Hagaig Er Raml.

Idem

The 13th Corps, advancing westwards around the Tobruk perimeter, "continued to roll up the enemy". On the 10th elements of both Corps carried out a concerted movement against Aeroma and operations were successfully carried out further west. Thus the eight months' siege of Tobruk came to an end.

Idem.P.60

During the afternoon of 11th December the 13th Corps began its advance. The 5th New Zealand Infantry Brigade, which the G.O.C., Eighth Army, had ordered to join 13th Corps, with its left flank protected by the 32nd Army Tank Brigade, masked Gazala; the 4th Indian Division was directed south of Gazala on Tmimi and Bir Halegh el Eleba. The main commitments of the 7th Armoured Division (4th Armoured Brigade and 7th Support Group) were to protect the left flank of the Indian division and also send columns to harass enemy communications near Tmimi and patrol towards Mechili. The movement of the Armoured Brigade were restricted, however, by supply difficulties until 13th December. The New Zealand Brigade and the Indian Division came up against the enemy position late on 4th December.

Restrictions on Air Support (9th-12th December)

A.O.C./II Part 2
Enclos.44A

On 9th December, Air Marshal Tedder signalled Air Vice-Marshal Coningham: "Understand there are indications enemy in retreat. Trust you will be able to exploit to maximum power of air force to turn retreat into rout. Fully realise difficulty identifications but suggest acceptance risks now may have vital effect (on) whole campaign". This hope, as already indicated, was not realised. In the first place our military action, due partly to supply difficulties, was not decisive and, secondly, conditions restricting the air power which could be brought to bear on the battle still persisted.

Idem
Enc.48B

Some of these restrictions were mentioned in a report by an Operations Liaison Officer⁽¹⁾ on a visit to Advanced Air Headquarters, Western Desert, 8th-10th December, for the information of the A.O.C.-in-C., and departments concerned at H.Q. R.A.F., Middle East. It was reported that scattered fighting in the El Adem area had made it impossible up to that time to establish fighter landing grounds between Maddalena and Tobruk. The westward movement of the enemy had resulted in our aircraft working at maximum range in order to provide cover for our ground forces west of the Bir el Gubi-El Adem area. The country west of Tobruk was outside normal fighter range. This situation reacted also on the bomber effort allocated to direct support as fighter escorts could not reach points where enemy M.T. columns and other suitable targets were then located. It was pointed out that Marylands were, meanwhile, attacking more distant targets, e.g. Derna, and it was intended to use Blenheims when cloud cover was available. When the fighter squadrons were established in the El Adem-Sidi Rezegh area (actually effected late on 11th December, page 198 refers) sweeps covering the ground forces and fighter escorts could be provided up to the Derna area. It was reported that our bomber effort in close support was still being delayed and restricted by lack of speedy information from forward areas⁽²⁾. It was confirmed that air attacks against tanks as a primary target was considered a misemployment of aircraft as tanks were generally well dispersed and nothing but a direct hit from a 250 lb. bomb was at all effective; cannon fire from aircraft was decidedly ineffective. The limitations on the success of our fighter operations imposed by poor training and the superior performance of the Me.109F are mentioned later. (Page 203).

Idem
Enc.48B

A postscript to a letter written by Air Vice-Marshal Coningham to Air Marshal Tedder on 10th December more strongly indicated the continued delay in getting information for the determining of targets:- "P.S. 1200 hrs. Very hectic today. The most intensive fighting on the front is here - my fighting for targets !!! Taken 3½ hours this morning."

In addition to the foregoing restrictions, other factors which limited the bomber effort included:-

- (1) More westerly landing grounds for the bomber squadrons were not yet available.
- (2) The diversion of Marylands on missions to intercept Ju.52 traffic (mentioned in page 201).
- (3) Increasing unserviceability and strain due to the sustained air operations.
- (4) Bad weather spells.

/The

-
- (1) Periodically from this date a Senior Officer was sent to the forward area to bring back to Air Marshal Tedder a concise picture of how the campaign from the air aspect was progressing.
 - (2) It was reported: "A simpler and quicker method of calling for air support is urgently needed. This would be greatly assisted by some means of identification on our vehicles, such as a white disc painted on the top of each tank and lorry".

The Fighter Force Moves Forward

No.262 Wing O.R.B.
and Appendix V
of Narrative

On 11th December H.Q. No.262 Wing moved forward to El Adem in order to control the fighter squadrons of Nos.258 and 262 Wings which then took over advanced landing grounds at El Adem, Sidi Rezegh, Tobruk and Bu Amud. This advance removed the restrictions caused by the insufficient fighter range mentioned in the previous sub-section. The individual locations of the fighter squadrons late on 11th November are given at Appendix V. During the period of the move H.Q., No.258 Wing remained in the Maddalena area in accordance with the scheme for controlling the fighter force during periods of movement. (Pages 161 and 162 of the narrative refer).

CS.14280 P.27

On the 11th, also, Battle Headquarters, Eighth Army (and Advanced Air Headquarters, Western Desert) was established at Bu Amud in order to control the operations around Gazala.

Restricted Western Desert Bomber Operations (9th-night 12th/13th December)

A.O.C.-in-C's
Correspondence with
C.A.S.Part 3

Air Marshal Tedder commenting on the aim of the Air Force participation at this stage to the Chief of Air Staff signalled: "Crux of both land and air battles is more than ever one of supply. At present we are concentrating against enemy petrol supplies from the west by road, from the north by air and sea, movements on roads in Cyrenaica and dumps at aerodromes if we can ground his air and starve his M.T. we shall be well on the way." The bombing operations, due to the restrictions already mentioned were, however, greatly curtailed.

No.205 Group,
No.270 Wing and
No.11 Squadron O.R.Bs

S.A.A.F.Narrative
M.E. W.O.S.No.9
and CS.14280 P.27
IIJ6/7/4

Direct support operations during the four days and nights under consideration comprised:- by day: 11 Blenheim, 6 Maryland, 6 Boston and 12 Hurricane-bomber effective bomber sorties and by night: 18 Wellington and 5 Fleet Air Arm Albacore effective bomber sorties. In addition, Fleet Air Arm Albacores helped the Wellington operations by flare-dropping. The operations were directed against enemy M.T. columns withdrawing westwards, a bomb-line being agreed upon each day by the Corps Commanders, G.O.C., Eighth Army and A.O.C., Western Desert. On the 9th 12 Hurricane-bombers of No.80 Squadron bombed and machine-gunned an M.T. convoy retiring along the Acroma road, causing in particular, four fires by strafing. The squadron was successfully attacked by a number of Me.109s and as a result of the engagement two Hurricanes failed to return and two more crashed (with the pilots saved but injured⁽¹⁾). The next day (10th December) No.270 Wing Blenheims were briefed to attack M.T. retreating along the track from Tiel El Esem to Mechili and on the coast road between Gazala and Tmimi. As the areas were then beyond fighter range the Blenheims were ordered to operate independently using cloud cover. The sixteen aircraft which operated, however, were either recalled or returned

/with

(1) The C.O. of the Squadron (Sqn.Ldr. Stephens) had his aircraft set on fire and was wounded in both feet. As he was about to bale out he saw an enemy fighter overshooting, so he got back into the cockpit and shot the enemy aircraft down. He was later awarded the D.S.O. for this action. (No.80 Squadron O.R.B.)

S.A.A.F.
Narrative

No. 270 Wing O.R.B.
and M.E. W.O.S.No.9

No.80 Squadron
O.R.B.

No.205 Group O.R.B.

No.270 Wing and
No.11 Squadron
O.R.B. and S.A.A.F.
Narrative

No.205 Group
O.R.B.

with their bombs⁽¹⁾ owing to bad weather. A mission by six Bostons of No.24 Squadron, S.A.A.F., against a retreating enemy transport heading towards echili ended in disaster. After completing their bombing the Bostons were attacked by 12 to 16 Me.109 Es and Fs, which shot down all except the leading Boston, which succeeded in returning to base on one engine. Six Marylands of No.21 Squadron, S.A.A.F., on the same day were given the task of bombing the Grand Hotel at Cirene where it was believed, an enemy General Staff meeting was to be held. The attack was a failure as the nearest bomb dropped fell 75 yards from that building. As no staff cars were seen in the vicinity, however, it seemed unlikely that a conference was in progress. On 12th December, as the Fighter Force had then moved forward, No.270 Wing Blenheims were able to resume operations with fighter escort, the bombers being briefed at El Adem airfield⁽²⁾. Enemy transport on the coastal road west of Gazala, in the Tmimi area, was successfully bombed by 11 aircraft of Nos.14 and 45 Squadrons in clear weather. The escorting fighters succeeded in warding off enemy fighters but not without loss to themselves. Coastal road traffic was also attacked by No.80 Squadron Hurricane-bombers, escorted by No.250 Squadron and R.N.(F) Squadron, in the area south of Martuba. Although the M.T. was too scattered to form a good target several direct hits were scored and four lorries were set on fire. As on the previous bombing mission, on the 9th⁽³⁾ No.80 Squadron was attacked by enemy fighters (reported as Me.109 Fs and Mc.202s) and four Hurricanes failed to return. During the night (12th/13th December) pressure on the enemy's road transport was maintained by No.205 Group Wellingtons, 12 of the 24 aircraft of Nos.37 and 70 Squadron despatched on that night bombing with good effect M.T. on the roads around Derna.

Meanwhile, a daily effort against the enemy's forward landing grounds made by unescorted Blenheims and Marylands proved largely abortive owing to lack of cloud cover or the presence of enemy fighters. Thus from 9th to 12th December the day bomber effective sorties flown against the landing grounds at Gazala, Tmimi and Martuba (the two latter were then also advanced bases) totalled only 7 and only 9 against the Ju.52 reception airfield at Derna. The night bomber counter air force attacks comprised 4 effective sorties flown against Gazala, 5 against Derna

/and

- (1) It was later ruled that the bringing back of bombs was to be avoided. When the briefed target could not be attacked bombs were to be released over territory definitely known to be enemy lands or on fixed objectives such as Bardia, Sallum and Halfaya. (No.270 Wing O.R.B., December 1941, Appendix XXI).
- (2) No.270 Wing Blenheims went up daily to El Adem to be briefed etc. for direct support operations until 18th December, when the Wing Headquarters and Nos.14, 45, 84 and Lorraine Squadrons were established at Gambut (No.270 Wing O.R.B.)
- (3) Between 9th and 12th December, No.80 Squadron was on the move to the Tobruk area or flying fighter patrol (No.80 Squadron O.R.B.)

and 20 against Maleme, Grete, the departure airfield for the Ju.52s. This last raid was credited, in particular, with destroying enemy petrol stores. It is evident, however, that the restricted bomber effort at this stage did little to help with the desired object of grounding the enemy's air.

Interference with the enemy's Ju.52 traffic en route to Cyrenaica and the current fighter operations are mentioned later.

M.E. W.O.S. No.9
Appendix A

Malta "Takes Eye off the Libyan Ball"

Meanwhile, Malta-based bombers carried out the following effort 9th to 12th December: 29 effective Wellington sorties against the supply ports of Tripoli and Benghazi (31 tons of bombs dropped on the former and 13 tons on the latter): 17 effective Wellington and 7 Blenheim sorties against shipping in Western Greek and Sicilian harbours: 2 effective Blenheim sorties against factories in Southern Italy: 3 effective Fleet Air Arm aircraft sorties against Castel Benito airfield, 9 effective escorted Hurricane-bomber sorties against Comiso airfield; one effective Wellington sorties against a Greek airfield (bombed as an alternative target): and one effective Blenheim sortie against a viaduct and M.T. in Southern Italy. The attacks on the supply and shipping targets⁽¹⁾ achieved, in general, very satisfactory results and the airfield attacks, within the limits of the small effort expended, were also successful.

A.O.C.-in-C's
Correspondence
with C.A.S. etc.
Part 3. Encs. 277A
and 278B

Both the Chief of Air Staff and the A.O.C.-in-C., took the view at this stage that "Malta's effort should surely be directed in the most economical manner possible towards obtaining their main objects:- (a) Defence of Malta, (b) Interruption of sea communications with North Africa". All other attacks were then "altogether out of court" and implied not keeping both eyes on "the Libyan ball". In particular, the F.A.A. torpedo-bombers ought only to have been used against merchant shipping and battleships⁽²⁾ and it was necessary to conserve fighter strength as "if the Germans wish to re-establish themselves in North Africa a heavy scale of attack will be directed against Malta".

The warning given to Malta to abandon diversionary attacks in no wise implied that the Air Force there was not continuing to play a most vital part in the battle for supplies; it was given to check on exuberance which could not then be afforded.

The situation precluded the diversionary attacks which had been undertaken largely to provide short reliefs from sustained and costly operations and maintain high morale.

/Attempt

-
- (1) The results of the shipping attacks in December are mentioned on page 235.
 - (2) On 8th December the C.A.S. signalled that "damage to warships would be most important in view of developments in the Far East". (A.O.C.-in-C's Correspondence with C.A.S. etc. Part 3 Enclos. 270B).

Attempt by Marylands to Interfere with Ju.52 Traffic
(11th and 12th December)

A.O.C./11
Enc. 43B

Idem Encs.48A
and 48B

Idem Enc. 49A

S.A.A.F.
Narrative

Mention has already been made in the narrative of attempts made at various times to interfere with the air transport flying between Crete and Cyrenaica by the bombing of the air bases concerned and Beaufighter interception patrols. On 8th December Air Marshal Tedder drew Air Vice-Marshal Coningham's attention to the increase in this traffic, as indicated in No.201 Group's daily sighting reports and other reports and suggested that it was essential to "put maximum Beaufighter effort on Ju.52 traffic". Early on the 11th, also, the A.O.C.-in-C., informed Air Vice-Marshal Coningham that he considered that the employment of Beaufighters on interrupting the Ju.52 traffic would pay "better dividends" than using them in the contemplated bomber and fighter raids on the enemy's main air bases, which were heavily defended. Air Marshal Tedder also suggested that Marylands might be used "for intruding on this traffic". The same morning information reached H.Q., R.A.F., M.E., that the enemy intended sending considerable numbers of Ju.52s to Cyrenaica⁽¹⁾, as the A.O.C., Western Desert, was out of communication Air Marshal Tedder arranged direct with Rear Headquarters, Western Desert, "to lay on the Marylands and Beaufighters to attack Ju.52s in flight".

The S.A.A.F. Marylands began their intrusion in the afternoon. Two pairs of No.12 Squadron aircraft covered the area - 15-30 miles either side of a course 210° Maleme-Apollonia and four pairs of No.21 Squadron aircraft, sent off at intervals, patrolled 40-60 miles north of Derna. The following morning the patrols were continued by three pairs of No.12 Squadron aircraft and four pairs of No.21 Squadron aircraft. During the two days operations the Marylands engaged a total of 19 Ju.52s and 5 more were sighted but escaped; on the 12th, also, two Do.24s and two Me.110s were encountered. The Ju.52s were very effectively camouflaged in black and green and flew very low. The S.A.A.F. crews found difficulty in attacking the Ju.52s from the front as they turned away and forced the Marylands into beam and stern attacks. The Junkers were reported to be equipped with heavy machine-guns situated close behind the pilot, a rotatable cannon in the rear cockpit and a machine-gun in the rear which seemed to be fixed. On the Second day's operations No.21 Squadron carried bombs in case air-to-air bombing was practicable, but an attempt to hit a Dornier 24 in this way was unsuccessful.

Idem

The two day's intrusion proved very costly for the Marylands⁽²⁾: 6 aircraft were lost (with one crew saved)

/and

- (1) In particular, the Ju.52s were believed to be transporting petrol and technicians from Maleme to Appolonia.
- (2) Feeling ran high in the Maryland squadrons against being used on these intrusions, as the following extracts from No.21 Squadron S.A.A.F. War Diary indicate:- 11.12.41: "Let's hope it's the last we hear of these stupid fighter sweeps - the Maryland was not built for them". 12.12.41: "One observation about this sorry loss of our.- surely we give our enemy credit for being able to 'spot' a Maryland and signal that information to base on or after yesterday's efforts and what more natural thing than that a trap be baited for us on the second occasion". The second comment refers particularly to the fact that 2 Me.110s were encountered and one Maryland failed to return after the combat.

Idem

A.O.C./II Part 2
Enc. 51B

No.55 Squadron
O.R.B.

No.272 Squadron
O.R.B. and
M.E.W.O.S.No.9
Appendix D

A.O.C.-in-C's
Correspondence
with C.A.S.Part 3
Enc. 263B and
Passim.

M.E. W.O.S. No.9

and 3 were damaged (including one seriously damaged). The S.A.A.F. claims were:- 5 Ju.52s destroyed and 6 damaged and one Do.24 damaged(1). In view of the need to conserve Marylands at this time - the A.O.C.-in-C., signalled the A.O.C., W.D. on 14th December: "Fully realise importance conservation Marylands and Bostons - the decision to employ the Marylands on long-range fighter duties must be regarded as an unfortunate one.

On the 11th also, 5 Blenheims of No.55 Squadron carried out an anti-Ju.52 sweep off Derna. Although several other enemy aircraft were sighted only one Ju,52 was seen and no combat took place. The same day two more Blenheims of No.55 Squadron, engaged in a normal shipping sweep off Derna, encountered two Ju.52s. The combats were inconclusive.

On the 12th, No. 272 Squadron Beaufighters again patrolled between Derna and Crete in an endeavour to intercept air transport traffic. Patrols by three pairs of aircraft encountered 13 Ju.52s during the day and claimed one Junkers shot down and six or more damaged(1) for one aircraft damaged. The following day three more patrols resulted in claims of one Do.24 and one Me.110 escorting fighters damaged(1) for the loss of one Beaufighter and another damaged. On the 15th two Beaufighters claimed one Ju.52 probably destroyed and one damaged at the cost of one aircraft damaged. The Junkers on this occasion were reported to have had Italian markings.

The attempts to interfere with the air transport traffic clearly indicated the need for a greater Beaufighter reinforcement which had been constantly urged by R.A.F. Middle East and accepted in principle by Air Ministry.

Increased Success of the Me.109s and Counter Measures taken (9th-12th December)

During the four days 9th-12th December the fighter squadrons under the control of A.H.Q. Western Desert carried out a total of 793 sorties, including 288 on 11th December. The analysis of sorties was as follows:- 581 on offensive sweeps and ground attack, 105 on local defence, 54 on shipping protection and 45 on reconnaissance and bomber escort. The inability to provide bomber escort from 9th to 11th December owing to the Army support targets receding beyond our fighter range has already been commented on. The increased effort on local defence was necessitated by the danger of enemy low flying attacks on our landing grounds, which by enemy standards, had weak A.A. defences(2).

/The

- (1) German records show 3 "other types" destroyed and one damaged on 11th December and 7 "other types" destroyed on the 12th (ADIK 103/64 Verluste Afrika). One Ju.52 on the 11th, it should be noted, was reported shot down by the New Zealand Brigade (CS.14280 P.28).
- (2) On 10th December Air Marshal Tedder signalled to Air Vice-Marshal Coningham: "Feel also we must anticipate serious increase in number of low flying attacks on our landing grounds". (A.O.C./11 Part 2, Enc.45A). In the event the attacks were few and ineffective.

A.O.C./11
Part 2
Enc.48B

The main feature of the fighter activity was the success achieved by the enemy's Me.109s. "You will have seen", wrote Air Vice-Marshal Coningham to Air Marshal Tedder concerning the combats of 9th December, "that small formations of three, four and six Me.109s succeeded on all occasions that they made contact with our much larger forces of 20 to 24, in knocking down one or two practically without loss to themselves". The results of the three main encounters of this kind which all occurred at the general El Adem area were as follows:-

Sqdn. O.R.Bs and
M.E. W.O.S. No.9

ADIK 103/64

Squadron O.R.B.
and M.E. W.O.S.
No.9

ADIK 103/64

The flying Wing of No.3 R.A.A.F. and No.112 Squadron (Tomahawks) lost four aircraft (including one which forced-landed); Nos.94 and 260 Squadrons (Hurricanes) lost one aircraft; and Nos.229 and 298 Squadrons (Hurricanes) lost three aircraft. At least two pilots were known to have been saved. Our combined claims amounted to one Me.109 destroyed and four damaged, but enemy records show that two Me.109s were destroyed on that day. In other encounters on 9th December four Hurricane-bombers of No.80 Squadron were shot down (Page198 refers) and for our part, in the course of patrols over the battle area, Tomahawks of Nos.2 and 4 Squadrons S.A.A.F. claimed one Ju.88 shot down of two encountered north-west of El Gubi, No.250 Squadron (Tomahawks) and R.N.(F) Squadron (Hurricanes) claimed one Me.110 shot down south of El Adem and Nos.73 and 274 Squadrons (Hurricanes) claimed one Ju.87 shot down south-west of Halfaya. Enemy records indicate that one Ju.88 was destroyed and one damaged and two long-range reconnaissance were destroyed but no dive-bombers are recorded as lost or seriously damaged.

A.O.C./11 Part 2

The A.O.C., Western Desert reported to the A.O.C.-in-C., that the causes of our fighter losses on 9th December were:-

- " (i) the superiority in both climb and speed of the Me.109 F.
- (ii) the 20 mm. armament of this aeroplane against which we have nothing comparable in range or hitting power.
- (iii) The lower standard of experience of our pilots, principally in fighting airmanship and gunnery.
- (iv) Unjustified over-confidence due to the weak opposition of the past weeks and to the numbers employed".

Idem

The implications of the disproportionate losses were considered serious in view of the German reinforcement (Page 192) refers. The most urgent needs as the fighting intensified over the reduced area held by the enemy were held to be:-

/ (i)

- " (i) New squadrons of/or re-equipped with either Spitfires(1) or Airacobras(2) - something with equal speed and fire power is essential.
- (ii) Intensive fighting practice, fighting formation flying which comprise weaving, air-to-air gunnery, and real dog-fighting, at the O.T.Us(3)."

Idem

Air Vice-Marshal Coningham cited the case of an inexperienced pilot during the Junkers battle of 5th December (Page 190 refers). This particular pilot "had fired at five or six but had seen no result and did not know that you had to concentrate on one aircraft at a time. He later fired at a G.50 at full deflection but aimed at the nose because he did not know the full deflection "The fact is, "the Air Vice-Marshal continued, "we have practically no marksmen because there is no practical air-to-air firing until they are thrown into the battle when ... they are all worked up and do not know what they are doing. It is then too late except for the lucky and perhaps more experienced ones who survive".

Idem

Air Vice-Marshal Coningham's immediate plan was to put an experienced nucleus in each formation at the top, so that they could take the continuous diving of the Messerschmitts from above and protect the less experienced pilots below. Subsequently large scale bomber and fighter attacks were to be delivered so that each main enemy air base could be "swamped" in turn and maximum damage done on the ground.

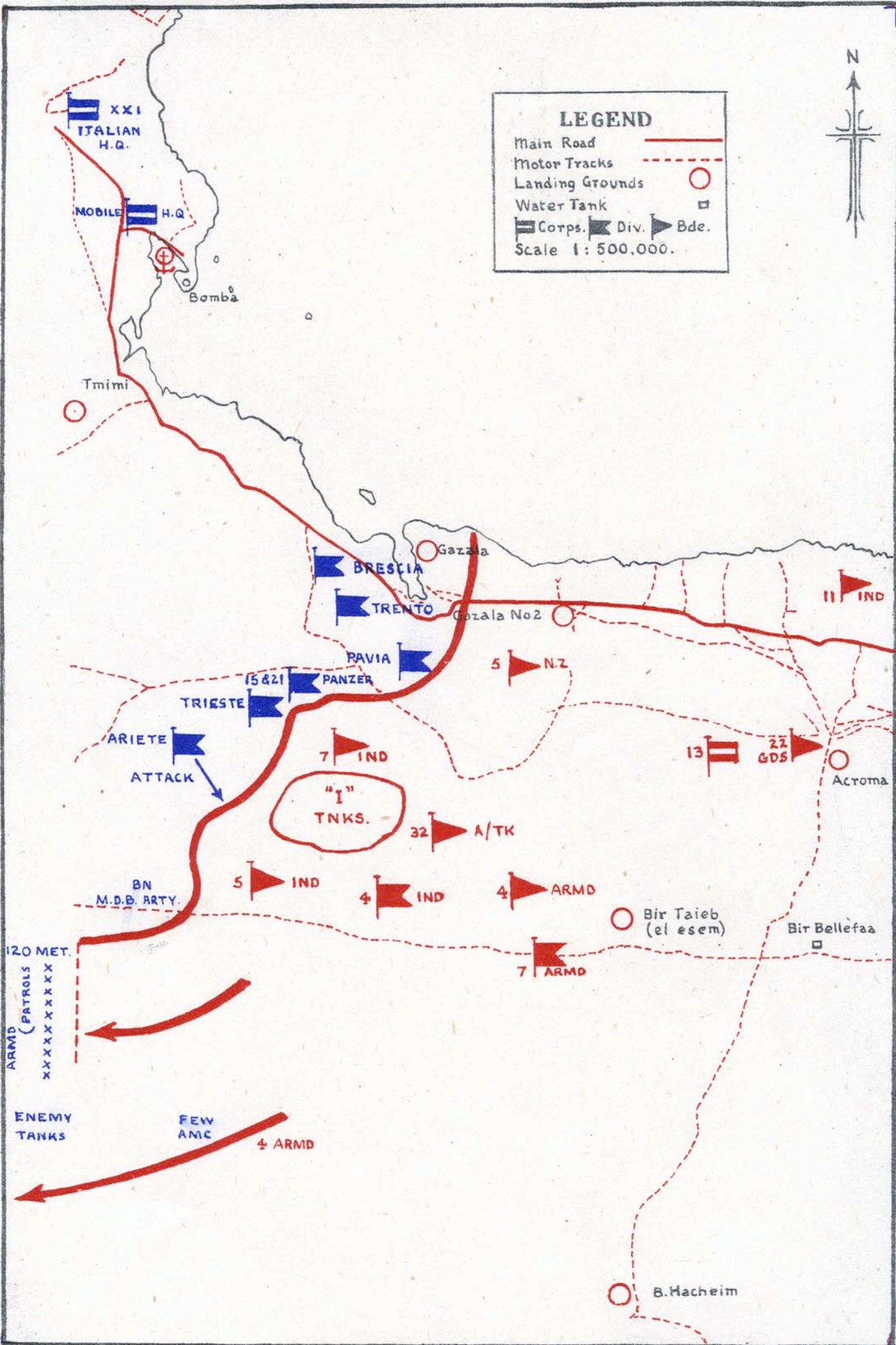
A.O.C./11 Part 2
Enc.50A. M.E.W.O.S.
No.9 and Squadron
O.R.Bs and S.A.A.F.
Narrative

During the following three days (10th-12th December) there were signs of the new fighter tactics beginning to have effect. On the 10th, 23 Tomahawks of No.2 and 4 Squadrons, S.A.A.F. engaged 12 Me.109s in the course of an offensive sweep south of El Adem; the Tomahawks claimed one Messerschmitt probably destroyed and one damaged (4) for the loss of one aircraft (the pilot being picked up by another Tomahawk). The following day the main engagements were as follows:- No.250 Squadron

/Tomahawks

- (1) In the event, Spitfires did not become available for North African operations until May 1942, during the Battle for Egypt. On 10th December, 1941, Air Vice-Marshal Coningham reported that experimtns with Kittyhawks indicated that they would not alone do for the Desert front.
- (2) Airacobras (P.38s) never became available for the Western Desert Air Force, but were employed by the U.S.A.A.F. in Tunisia at the end of 1942.
- (3) An immediate need was a strong target-towing unit, the equipment for which was thought to be made possible from M.E. resources. The A.O.C.-in-C., instructed the S.T.S.O. (Group Captain Howard) to institute some training "in collaboration with Western Desert at once as elimination of indecisive combats is main means of compensating for disparity in aircraft performance". (A.O.C./11 Part 2 Enc. 50A).
- (4) Enemy records show 2 Me.109s lost on 10th December. (ADIK 103/64).

THE GERMAN ACTION AT GAZALA POSITION AS AT 0900 HRS. 15 DEC. 1941.



Tomahawks, in the afternoon, claimed 2 Ju.88s and 2 Me. 109s destroyed from a formation of 24 Ju.88s, escorted by 10 Me. 109s, encountered over the forward area, and later engaged 6 Me. 109s near Tobruk, claiming 2 shot down and 3 damaged(1). No.250 Squadron lost one aircraft forced to land through enemy action. Shortly afterwards the Squadron engaged 6 Me. 109s near Tobruk and claimed 3 enemy aircraft shot down and 2 damaged without incurring any loss. Meanwhile, 22 Hurricanes of Nos.229 and 238 Squadrons patrolling over the Acroma area intercepted nine Me. 110 fighter-bombers, escorted by 6 Me. 109s, and forced the Me.110s to jettison their bombs and seek cloud cover; the subsequent attempt by the Me. 109s to stalk the Hurricanes by using cloud cover was foiled by the employment of the new counter-measure. Four Hurricanes failed to return, however, from other patrols during the day. On the 12th the Fighter Force had four combats with the enemy which resulted in considerable losses on either side. The formations concerned were Nos.1 S.A.A.F. and 274 Squadron and Nos.3 R.A.A.F. and 112 Squadrons, while carrying out wing sweeps over the Tmimi area, and Nos.2 and 4 Squadrons, S.A.A.F., and No. 250 Squadron, engaged on bomber escort duties. The combined claims were:- 5 Me. 109s and 2 Me. 202s destroyed, 3 Me. 109s, 1 Me. 110 and 1 Ju. 88 probably destroyed and four Me. 109s, three Me. 202s and one Ju. 87 damaged for the loss of one Hurricane and 8 Tomahawks (including two No.3 Squadron R.A.A.F. aircraft lost as a result of a collision). Other losses due to Me. 109 action - four Hurricane-bombers and five S.A.A.F. Bostons - have already been mentioned (Pages 198 and 199 refer).

The Enemy's Stand at Gazala (13th-16th December)

C.-in-C's
Despatch P.60

General Auchinleck in his despatch on the operations described the enemy's positions at Gazala as follows:-

".... By the 12th it was clear that the enemy was firmly established on a defensive line running south-west from Gazala and the Trigh El Abd. A strong well-prepared position straddling the escarpment to the east of the Gazala inlet was occupied in strength by Italians, and another prepared position on the ridge at Alem Hamza was also held by Italians. From Alem Hamza the line ran due south and then turned west along the Trigh El Abd; this sector was not so well prepared or so strongly manned, but the superior fighting qualities of the German defenders and the superiority of German heavy anti-tank guns made it formidable. What remained of the German and Italian armoured formations were held in the rear."

Idem and
CS.14280

The 13th Corps' attacks on the enemy's line on 13th December were beaten off at practically all the points threatened, but the Support Group, reinforced by an armoured regiment, succeeded, at the expense of severe tank casualties in making the enemy give way on the southern flank.

/It

- (1) German records show 2 Ju. 88s and 2 Me.109s destroyed on 11th December. (ADIK 103/64)
- (2) German records show 3 Me. 109s, 2 Ju. 88s and 2 Ju.87s destroyed on the 12th and one Ju. 88 damaged. (ADIK 103/64).

It was known that practically all that remained of the German and Italian formations were facing the Eighth Army on the Gazala line. The G.O.C., therefore instructed the Commander of the 13th Corps to strike a decisive blow with his armour.

Accordingly, the 4th Armoured Division covered by the Support Group, was ordered to move wide round the enemy's southern flank⁽¹⁾ while the 5th N.Z. Infantry Brigade and the Polish Brigade Group assaulted the Gazala position and the 4th Indian Division, helped by the 32nd Army Tank Brigade, attacked Alem Hamza. It was hoped that the enemy's line of retreat would be cut and his forces eliminated.

The attack in the north went well and by 16th December the New Zealanders and Poles between them had captured half the position. The Indian Division, however, was held up at Alem Hamza and some of its troops to the south-west were over-run. Nevertheless the enemy's situation was growing critical.

Enemy dispositions on the 16th were confirmed as, southwards from Gazala, the Italian divisions, Brescia, Pavia, Trento (southwest of Gazala), then Trieste, Ariete and German Afrika Division on their right flank, with the 15th and 21st Panzer Divisions behind the right flank. The enemy's M.T. was concentrated mainly at Bir Temrad⁽²⁾. He had obviously concentrated all his available forces to protect Derna and our entry into the Jebel.

The stage seemed set for the final act. So much depended on the speed and daring of the 4th Armoured Brigade and other 7th Armoured Division columns that Lt. General Godwin-Austin signalled Major General Gott on the 16th: "..... Hope you realise present unique situation. Enemy is completely surrounded provided you block his retreat. You have more than sufficient force to achieve this and worry him incessantly. You can and must inflict shattering blows on his soft stuff. Never in history has there been fuller justification for intrepid boldness. If we miss this opportunity we are disgraced. Frank (Major General Massery 4th Indian Division) will stage advance 18th December. Till then you must relentlessly smash enemy in rear and stop withdrawal".

CS.14180 P.33

/In

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- (1) No.451 (A.C.) Squadron, R.A.A.F. carried out extensive reconnaissance in support of his encircling movement, covering the Desert as far west as Mechili and south to the Trigh El Abd. No.208 (A.C.) Squadron did not operate 14th-16th December as one flight was under orders to proceed with "Bencol". (The air component was later found to be unnecessary. Page refers) and the remainder of the squadron withdrew to operate with the 30th Corps at the frontier. (Afterwards allocated to the 13th Corps. No. 237 (Rhodesian) Squadron was in process of moving to Gambut. (Squadron O.R.B.)
 - (2) The concentration at Bir Temrad was reported by No.451 Squadron, R.A.F., and our bombers later took their toll of it.

In the event, "the unique situation" was not exploited, as our armoured columns never arrived in force and in time to cut off the enemy's anticipated withdrawal, although the exacted considerable toll of the enemy's forces. The withdrawal began some time on the 16th and was continued throughout the night. The final judgment on our failure must be left to the Military Historian, but it was apparently due in part to soft sand hindering the progress of supply vehicles.

C.-in-C's
Despatch P.61

R.A.F. opinion at the time was very critical of the armoured forces' handling of the situation, particularly of the failure of a column sent to block the road at Tmimi. Air Vice-Marshal Coningham writing to Air Marshal Tedder on 17th December bluntly reported: "Last night there was a tactical blunder in that the Armoured Forces did not send a strong enough column to hold the road near Tmimi." The S.O.O., Western Desert, in a report written some months later was far less restrained in his criticism, declaring that the column "withdrew hurling to the winds an opportunity which will never return again".

A.O.C./11 Part 2
Enc.53C

A.H.B.IIJ6/7/4

Whatever the right and wrongs of the matter may have been, the fact remains that by 17th December Rommel's Army was in full retreat, having eluded annihilation - the remnants of the armoured division and the Italian Mobile Corps withdrawing by the desert through Mechili and Msus and the Italian 21st Corps, in very bad shape, by the main roads through the Gebel Akhdar(1).

C.-in-C's
Despatch P.61

Our Fighter Superiority (13th - 16th December)

M.E.W.O.S.
Nos.8 and 9

During the period of the Gazala battle the Western Desert fighter squadrons reported the carrying out of 584 sorties. The analysis of effort was as follows:- 300 sorties on offensive sweeps and ground attack; 135 on local defence; 96 on shipping protection; and 53 on bomber and reconnaissance escort. The effort was restricted on occasion by unfavourable weather; in particular, the bad conditions prevalent on the 15th (dust storms, gales and rain) reduced the effort to 110 sorties. It was not until the 16th that a strong effort (241 sorties) was again possible.

/Enemy

- (1) The R.A.F. Liaison Officer with H.Q. 13th Corps (Wing Commander Geddes) held the opinion that the B.B.C. unwittingly gave the enemy some information. "During the afternoon (16th December) a talk was given by the B.B.C. saying that most of the N.Z. Division was resting and refitting. In the evening news at 1800 hours B.S.T. from the B.B.C. it was stated that there were New Zealanders on our right flank at Gazala. By simple deduction, the enemy knew that we had a N.Z. Brigade there. Also in the news bulletin, it stated that our armoured force was behind the enemy about to cut him off. This unwise declaration of our dispositions and intentions appalled 'A' Mess Adv. H.Q. 13th Corps when we heard it at 2000 hrs. (Desert Time)". (CS.14250 P.33). It is not known if the enemy actually derived any confirmation from the broadcast. It may be noted that special arrangements were made to ensure as full publicity as possible "subject only to the imperative needs of security", during "Crusader" as in the past "justifiable complaints at the scantiness and tardiness of material had been made by the Commons, the Press and the Public". (Idem Appendix H - Letter by General Auchinleck to G.O.C., Eighth Army.

Squadron
O.R. Bn.

Enemy air activity over the forward area steadily decreased. Nos. 258 and 262 Wings, carried out continuous sweeps over Gazala and further west, claiming 16 enemy aircraft destroyed and 15 damaged, all except No. 112 Squadron reporting successes. Five of our fighters were lost, but of these two pilots returned safely. Most casualties were inflicted on the 13th December when 10 enemy aircraft were claimed to have been shot down (7 Me.109s, 2 Ju.88's and 1 Ju.87) and 6 damaged for the loss of 3 fighters. On the 14th four enemy aircraft were claimed as destroyed (1 Cap. 135, 2 Me.109's, and 1 Ju.87) and 9 damaged for the loss of 2 fighters. (1) As already mentioned bad weather on the 15th hampered operations considerably, but some of the squadrons were able to carry out sweeps and throughout the entire day only one Me.110 was sighted. A similar absence of enemy air activity was reported on the 16th, when it became clear that full local air superiority had been achieved. Again only one Me.110 was sighted and this time it was claimed destroyed by No. 2 Squadron S.A.A.F. (2)

The main ground straffing attacks were carried out by No. 33 Squadron, which claimed during the three days 14th, to 16th December four lorries and one trailer destroyed, 75 lorries and three bombers damaged and heavy casualties inflicted on enemy troops in attacks on enemy road transport in the rear, on the roads from Ghelines to El Agheila.

No. 272 Squadron Beaufighters again attempted to intercept the enemy's air transport between Crete and Libya, but claimed only one Do. 240 damaged and one Me.110 possibly destroyed for the loss of one Beaufighter and another damaged.

M.E.I.W.I.S.
No. 78

The increased effort required on local defence was necessitated by the potential danger from enemy air attack to our lengthened lines of communication and advanced landing grounds. The increased attention to shipping protection indicated the increased use being made of Tobruk. Long-range bombers (including nine-laying aircraft) operating mainly from Greece, attempted to interfere with our bringing Tobruk into use as a supply port by delivering small-scale attacks at dusk or by night, when fighter opposition was absent, but no significant results were reported. On the 14th our defensive fighters intercepted a Ju.88 over Tobruk and shot it down (3). On the 15th however, a German torpedo-bomber attack on a ship off Burg El Arab resulted in the vessel being hit, but it was towed into Alexandria. Air attacks on our landing grounds, meanwhile, were on a negligible scale. The few raids reported included an attack on the Bu Amud landing ground by 3 Ju.88s on the 14th which caused no damage to aircraft on the ground and only a few casualties and a machine-gun attack by a single Italian aircraft the same day on the landing ground of our aircraft operating with the Oasis Force which caused no damage or casualties.

/Restricted

- (1) G.A.F. records show 4 Ju.87's destroyed and 2 damaged, 2 Me.109's destroyed and 1 damaged, and 1 Ju.88 damaged on the 13th December, and on the 14th 5 Me.109's and 1 Ju.88 destroyed. (ADIK 103/64).
- (2) Enemy records show 2 Me.110 destroyed on the 16th in addition to 3 short and 2 long reconnaissance aircraft and one "other type", (ADIK 103/64).
- (3) German records show one Ju.88 lost on the 14th (ADIK 103/64)

Restricted Bomber Effort During Battle of Gazala
(13th - 16th December)

Air Vice-Marshal Coningham in a letter to Air Marshal Tedder on 17th December commented on the "great disappointment" of the Gazala battle in the following words:-

A.O.C./11
Part 2
Enc. 53C

"The battle of Gazala has been a great disappointment in that there was promise of a complete encirclement and defeat of the enemy which has not been fulfilled. From my point of view the operational aspect regarding bombing could not have been worse. I pointed out to Neil (General Ritchie) last night that the whole of the enemy land fighting force had been in a comparatively small area south-west of Gazala for nearly three days and had not had one bomb dropped on them, although we had absolute superiority without any hostile interference in the air for two days. During that time squadrons of bombers have been 'at call' here but always their operations have had to be called off because of the lack of identification and the close contact of the enemy forces with our own. Outside the battle area there have not been any targets suitable for bomber formations or that justified the weakening of the fighter patrols for escort duties, particularly in view of the known threat of large air forces against our isolated armoured Brigade." From the reports of Brigade Commanders it appeared that after our effective bomber attacks during the first week of the offensive the enemy, unlike ourselves "learnt the lesson of full dispersal." The Air Commander was forced to choose, therefore, "between the expenditure of ineffective fighter and bomber effort or wait until a favourable target present itself". The latter policy was considered the better one.

No.205 Group and
No.270 Wing
O.R.Bs.

S.A.A.F.
Narrative and
No.3 (S.A.) Wing
War Diary

In addition to the above, other factors which restricted the bomber effort were:-

1. Unfavourable weather, particularly on 15th December, when gales, rain and sand storms occurred.
2. The standing-by on the 14th of the S.A.A.F. Maryland Squadrons and No.11 Squadron (at Sidi Rezegh and Sidi Barrani respectively) for a possible attack on an enemy convoy, which, in the event, was not required.
3. Breaks in cloud cover which limited the effective effort of bombers engaged on cloud-cover raids beyond the battle area.

No.205 Group,
No.270 Wing and
No.11 Squadron
O.R.Bs.

S.A.A.F.
Narrative and
M.E.W.O.S.No.9

The Western Desert effective bomber effort,
13th - 16th December, accordingly, was as follows:-

By Day

13th December: 6 Blenheims of No. 84 Squadron
bombed targets on the Derna road
and 11 Blenheims of No.11 Squadron

/bombed

bombed M.T. between Bomba and Derna⁽¹⁾ (Escorted raids.)

- 14th December: 3 Blenheims of No.14 Squadron bombed M.T. on Cirene - Barce road.
3 Blenheims of No.84 Squadron bombed M.T. on the Gazala-Derna-Barce road.
3 Blenheims of Nos.14, 45 and Lorraine squadrons bombed Bardia as an alternative target. (Cloud-cover raids)
- 16th December: 5 Blenheims of No.45 Squadron bombed Martuba airfield. 5 Marylands of No.21 Squadron bombed Benina airfield. The Blenheims' bombing was reported as accurate and the Marylands reported damage to 9 "large aircraft". 12 Blenheims of No.11 Squadron bombed targets near Bardia.

By Night

- 13th/14th December: 19 Wellingtons of Nos.38 and 108 Squadrons bombed the landing ground at Derna, causing two large fires, and hit the M.T. depot and barracks in the town. One Albacore of No.826 Squadron, F.A.A., bombed aircraft at Derna.
- 14th/15th December: 3 Albacores of No.826 Squadron, F.A.A., bombed facilities at Derna airfield. (Poor visibility).
- 16th/17th December: 9 Albacores of No.826 Squadron, F.A.A., bombed dispersed aircraft on Derna airfield.

The bombing of roads and bases in the enemy's immediate rear thus hardly exceeded a nuisance effort. The effort against airfields may be considered as the beginning of the intensified attacks during the following week.

Bomber Effort from Malta (13th - 16th December)

M.E.W.O.S.
Nos.8 and 9
and II J1/29

The bomber effort from Malta, meanwhile, was directed entirely against enemy supplies and Italian naval units.

In view of the enemy's deteriorating military situation and need of supplies, interference with Benghazi at this stage was of prime importance. On the night of the 13th/14th 4 Wellingtons mined the harbour while 4 more carried out diversionary bombing of shipping and wharves; on the following night 10 more Wellingtons continued the bombing. Port facilities were hit but no

/damage

- (1) The R.A.F. Liaison Officer with H.Q. 13th Corps reported that "a close-up column of 10 ton trucks loaded with petrol and bombs was hit and totally destroyed. We found 52 Italian bodies most of them burnt and beheaded beside the wreckage. They could not be buried for about a fortnight and during the advance to Benghazi they served as an object lesson beside the road for our convoys, whose road discipline noticeably improved after passing the gruesome spectacle". (CS.14280 P.30)

damage was done, apparently, to shipping. On two other nights (15th/16th and 16th/17th) a total of 30 Wellingtons attacked Italian naval vessels which had been reported by reconnaissance aircraft at Taranto(1), but an effective smoke screen prevented the observation of bombing results.

Blenheim attacks were continued on two days against concentrations of shipping, including tankers, in Argostoli harbour, Western Greece. Strong anti-aircraft fire and fighter protection made these missions extremely hazardous (3 aircraft lost or missing and others damaged out of 15 effective sorties) and prevented accurate bombing.

By night Fleet Air Arm Swordfish resumed their night attacks on enemy vessels at sea, claiming a merchant vessel sunk off the Tripolitanian coast(2).

General Features (from the Air Aspect) of the Campaign
(1st November - 16th December)

It may be useful here to recapitulate in general terms some of the main features, from the air aspect, of the offensive from its outset to the end of the Battle of Gazala. Where the conclusions have already been sufficiently vouched for in the text authorities are not again quoted. In the case of additional or possibly controversial conclusions authorities for the conclusions are given as customarily. A more comprehensive Conclusion covering the whole "Crusader" offensive is given at the end of the Narrative.

I. General

- (a) Throughout the period the R.A.F. maintained, in general, a state of air superiority.
- (b) This superiority was achieved principally by maintaining numerically superior forces of fighters over the forward area.
- (c) In spite of the fact that air superiority was attained it was evident that the training of fighter pilots in the undeveloped O.T.Us then available was inadequate for battle conditions.
- (d) Our air superiority was constantly menaced by the superior performance of the Me.109E and F.
- (e) In addition, the expansion of the Luftwaffe in the Mediterranean had become evident.
- (f) This emphasised the need of later types of Allied aircraft in the Middle East - Mediterranean theatre. In particular, the menace of the Me. 109 could not be effectively countered until Spitfires could be allocated.

/(g)

-
- (1) These vessels took part in the escorting of an enemy convoy to Tripoli.
 - (2) In this particular case not confirmed by E.S.L.A.C. or enemy records. For December enemy shipping losses see page 235.

- (g) The effect of our bombing was most striking during the first week of the offensive, before the enemy learnt the lesson of dispersal.
- (h) Subsequently our direct support bombing effort was disappointing. (See II later.)

A.A. H.Q. W.D./II
Air (Close Support
Policy Part I)
Enc. 20A

- (i) Bomber and fighter ground attacks were most effective against concentrations of thin-skinned vehicles, particularly in defiles. The bombing of tanks at that time produced little effect.
- (j) It was evident that bombers operating over the forward area by day needed fighter escort.
- (k) The success of the Hurricane bomber squadron clearly called for a larger force of fighter-bombers.

A.A. H.Q. W.D./II
Air Enc. 20A

- (l) The moral effect on our own troops of seeing bombed or seeing our fighter and/or escorted bomber formations en route to targets was considerable. (e.g. the New Zealand Division's resistance at Sidi Rezegh, Belhamed and Ed Duda was due in great part to the above).

Idem Enc.3C

- (m) The A.A. defence of the army was inadequate compared with the enemy's A.A. protection. The Stuka attacks could not be expected to be invariably intercepted by our fighter sweeps. Adequate A.A. defence was the first essential.
- (n) The night bombing of battlefield targets (when sufficient concentration or M.T. movement was evident) was valuable in ensuring constant pressure from the air.
- (o) The use of Malta as an air base for interfering with the enemy's sea-borne supplies and exerting air action on the enemy's flank continued to be of the utmost importance.
- (p) It was appreciated that the Luftwaffe expansion in the Mediterranean implied a later attempt to neutralise Malta as a sea and air base.

A.O.C./II
Part 2
Enc. 53C

- (q) The German bomber and air effort generally was largely ineffective. The A.O.C. Western Desert, in fact, reported to the A.O.C.-in-C.: "I think that we can definitely say that German air superiority or real effective bombing would have ended this offensive weeks ago".

A.O.C./II Enc.52B
II J1/63 and
Various

- (r) There was evidence that the enemy air forces were on occasion short of fuel, due to our successful interference with the Axis supply system, and this restricted their operations.

- (s) The arrangement for the movement of the Air Force and construction of landing grounds proved satisfactory.

R.A.F.Ops in the
Western Desert
1st November '41 -
9th May '42. P.36.
and Various

- (t) The destruction of or pilfering from enemy aircraft found on the ground and, in some cases, our own forced-landed aircraft by our ground forces and sometimes Air Force personnel indicated ignorance and a lack of discipline which required firm action.

A.A.H.Q.W.D./
II/Air Part I
Enc. 20A

Idem
Encs. 3A, 9A
and 25A

II. Co-operation with the Army

- (a) It was proved that it was normally necessary for the allotment of air support to be determined by A.C.C. at the combined Army/Air Headquarters, as arranged immediately prior to the offensive. This allowed for a due assessment of the general air situation and of the degree of fighter support required for the particular bomber task.
- (b) The delay in determining suitable targets, due in great part to lack of definite information from the Army, prevent full use being made of the day bomber force.
- (c) The problem of recognition remained unsolved.
 - (i) The problem was complicated by the fact that the enemy was using many of our captured vehicles and movement of M.T. targets after their recording was considerable.
 - (ii) The provision of the "Undisout" banner to vehicles was meagre and they were often lost or mislaid. In addition it was often impossible for armoured forces to halt and display signs under battle conditions.
 - (iii) The smoke, ground strips and coloured light signals were considered satisfactory where displayed. The issue of illuminating cartridges, however, was insufficient.
 - (iv) It was increasingly clear that it was necessary for our vehicles to bear identification signs.
 - (v) In general, it was considered impracticable for the day bombers to give support nearer than 5 miles from our forward troops, as the bombers could not make attacks below 6,000 feet, owing to the enemy's light A.A., and from that height none but the largest signs (15 feet long at least) could be identified.
 - (vi) A few instances occurred of our bombers and fighters attacking our own troops in error, but many more mistakes were made by the enemy attacking his own troops with Stukas.
- (d) There was an average time-lag of $2\frac{1}{2}$ to 3 hours between the initiation of a call for support and the actual bombing. The main causes of this time-lag were:-
 - (i) The delay caused by the relay of messages from A.S.C. at H.Q. Corps to Battle Headquarters.
 - (ii) The distance from the bomber airfields to targets (sometimes as much as 200 miles).
 - (iii) The unavoidable delay caused by picking up fighter escorts at fighter airfields or a rendezvous.

Idem and
CS. 14280
P.2 and 3

/ (iv)

- (iv) The time taken to brief pilots on the new airfields once the advance had started.
(During the period under immediate review this only applied to the use of El Adem airfield by No. 270 Wing aircraft; it was more evident later.)
- (v) Difficulties of navigation and identification of targets in the bare desert with few landmarks - particularly when M.T. targets had moved from their originally indicated position. Moreover, visibility was often poor due to dust haze.

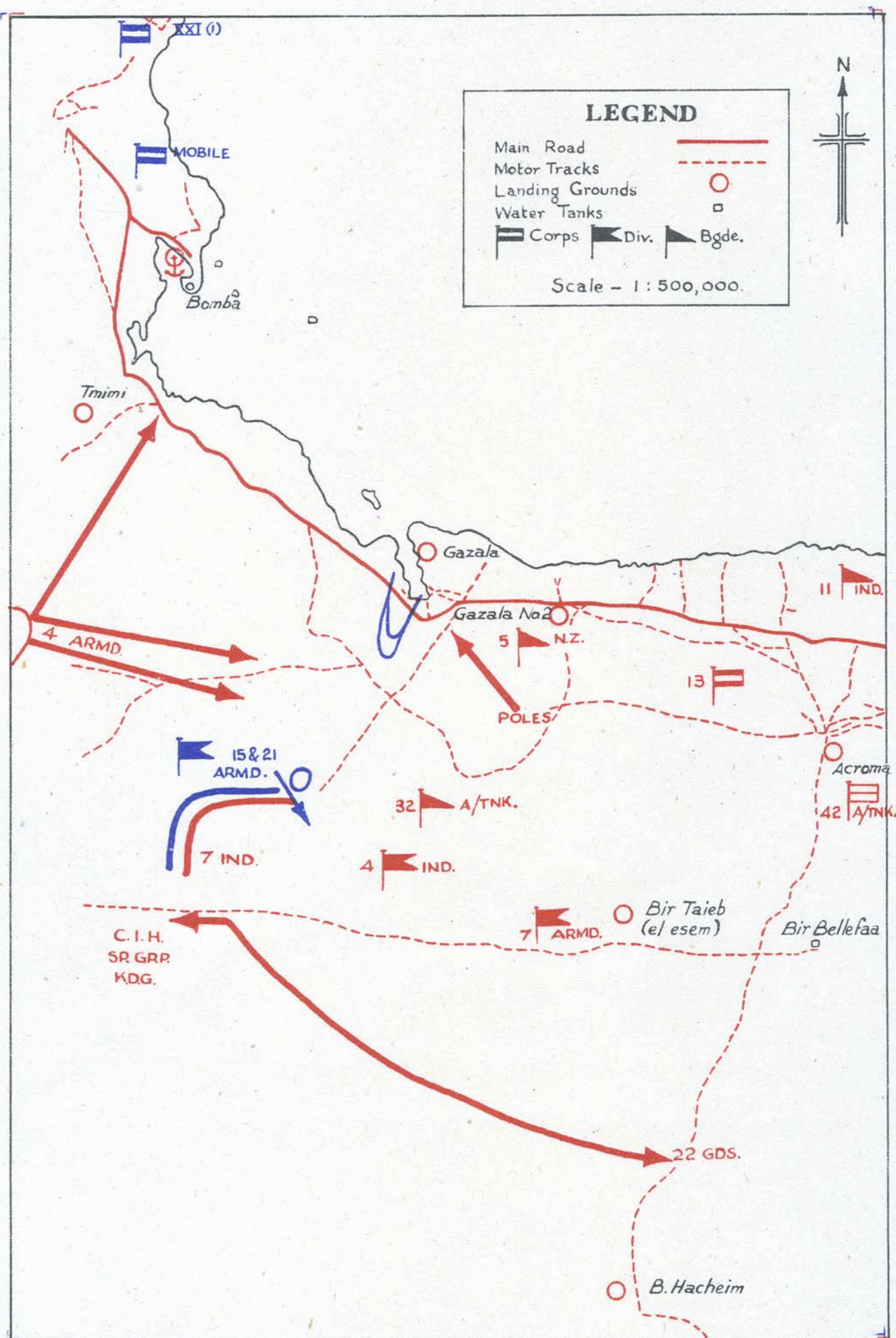
A.A.H.Q. W.D.
11/Air Part I
Enc. 20A and
CS.14280
Appendix N

Idem and
Enc. 3C

- (e) During the advance up the Trigh Capuzzo, where the escarpment and clear weather gave unusual command of the ground more targets were found by tentacles than by air reconnaissance. This was a local effort, however, and not general subsequently.
- (f) The signals organisation of the Air Support scheme functioned well except for air to ground radio telephony.
 - (i) The T.R.9.D used in the Hurricane proved unreliable and its power was inadequate to provide the range required over an Armoured Corps front.
 - (ii) Training in the use of R/T was inadequate. In particular, more training and insistence on correct procedure was considered necessary in the Army Co-operation O.T.U.
 - (iii) The Bendix equipment used on the Boston when employed on reconnaissance work proved satisfactory.
- (g) The successful use of Bostons on deep tactical reconnaissance indicated the need for an authorized allotment of fast twin-engined aircraft on this work and to meet photographic demands.
- (h) It was felt that No.208 (A.C.) Squadron was not used by H.Q. 30 Corps to the fullest advantage.
 - (i) Insufficient information was given to the pilots about our own and the enemy's forces and the Commander's intentions.
 - (ii) Too many reconnaissances were required to report the progress of the battle.
 - (iii) It was at times not appreciated that the squadron was divorced from the normal R.A.F. organisation and dependent on the Corps for the "Q" Side.

A.A.H.Q.W.D./
II/Air Part I
Enc. 23A

ENEMY'S INITIAL POSITION AS AT 0900HRS. 17TH DEC. 1941



PART VII

PHASE FOUR - THE PURSUIT

SECTION ONE - THE PURSUIT TO AGEDABIA

Phase Four of the "Crusader" offensive - the Pursuit - started in real earnest on 17th December, the main battle (including the enemy's stand at Gazala) having lasted a little over three weeks longer than anticipated (pages 85 and 86 refer).

A.H.B.
IIJ6/7/1

The situation obtaining at the outset of Phase Four as envisaged in the original "Crusader" plans was, accordingly, quite different from the actual one. The ~~next~~^{next} picture of the main enemy armoured forces being broken and in retreat towards Benghazi and beyond, "pursued by our Armoured Division and mobile infantry", after six days of battle, gave place to the grim reality of our depleted ground and air forces following up an enemy still capable of prolonged delaying actions.

Idem

The original Air Plan for Phase Four was little more than a forecast of the general situation and a few notes on the air commitment and expected movements of the main air forces. "Action by our Air Forces" was given in the following terms: "Fighters and bombers will continue to operate on the same general lines, but it will be necessary now to allocate fighter squadrons of the Base Wing for the Close Defence of ports such as Tobruk and Derna when captured....The enemy air forces in Cyrenaica, should, by this time, be in disorder if not destroyed and so the weight of our effort in the north can now be put on the retreating ground forces although it will be still necessary to carry out attacks on aerodromes still being used by the Italians and Germans". The movements of the Western Desert squadrons during the early stage of Phase Four were expected to be as follows:- the main fighter force would operate from Tobruk and Gambut and the squadrons at the latter airfield would move to Mimi and Mechili as soon as those landing grounds were secure: the day bomber squadrons would move up to Gambut: and the fighter squadrons operating with the Oasis Force would leave L.G.125 with the ground column for landing grounds in the Es Schegheigh area. In the event, as considered later, the movement of the main fighter force was from the El Adem, Tobruk, Sidi Rezegh and Bu Amud landing grounds to Gazala, Mechili and then Msus; No.270 Wing was established at Gambut, as anticipated; No.3 S.A.Wing moved up to Sidi Rezegh, when the landing ground there was vacated by the fighter squadrons, and then transferred to Bu Amud; the only effective fighters then attached to the Oasis Force (No.33 Squadron)⁽¹⁾ remained at L.G.125 as the ground and air forces were not strong enough to take a direct part in the fighting around Agedabia, although they were still able to continue their harassing role.

Meanwhile plans were being drawn up for the continuance of the advance to include the capture of Tripolitania (Operation "Acrobat"). A memorandum on the R.A.F. aspects and outline maintenance project drawn up by the A.O.C., Western Desert towards the end of December is mentioned on pages 237 and 238.

Ground Operations
17th-26th December

C.in C's
Despatch

The Army plan for the first stages of the pursuit involved the troops of the 13th Corps following the line of retreat taken by the Italian 21st Corps by way of the Gebel Akhdar, and the 7th Armoured Division that of the remnants of the German Panzer Divisions and the Italian Mobile Corps over the Desert through Mechili and Msus.

Idem &
M.E.W.O.S.
No.10

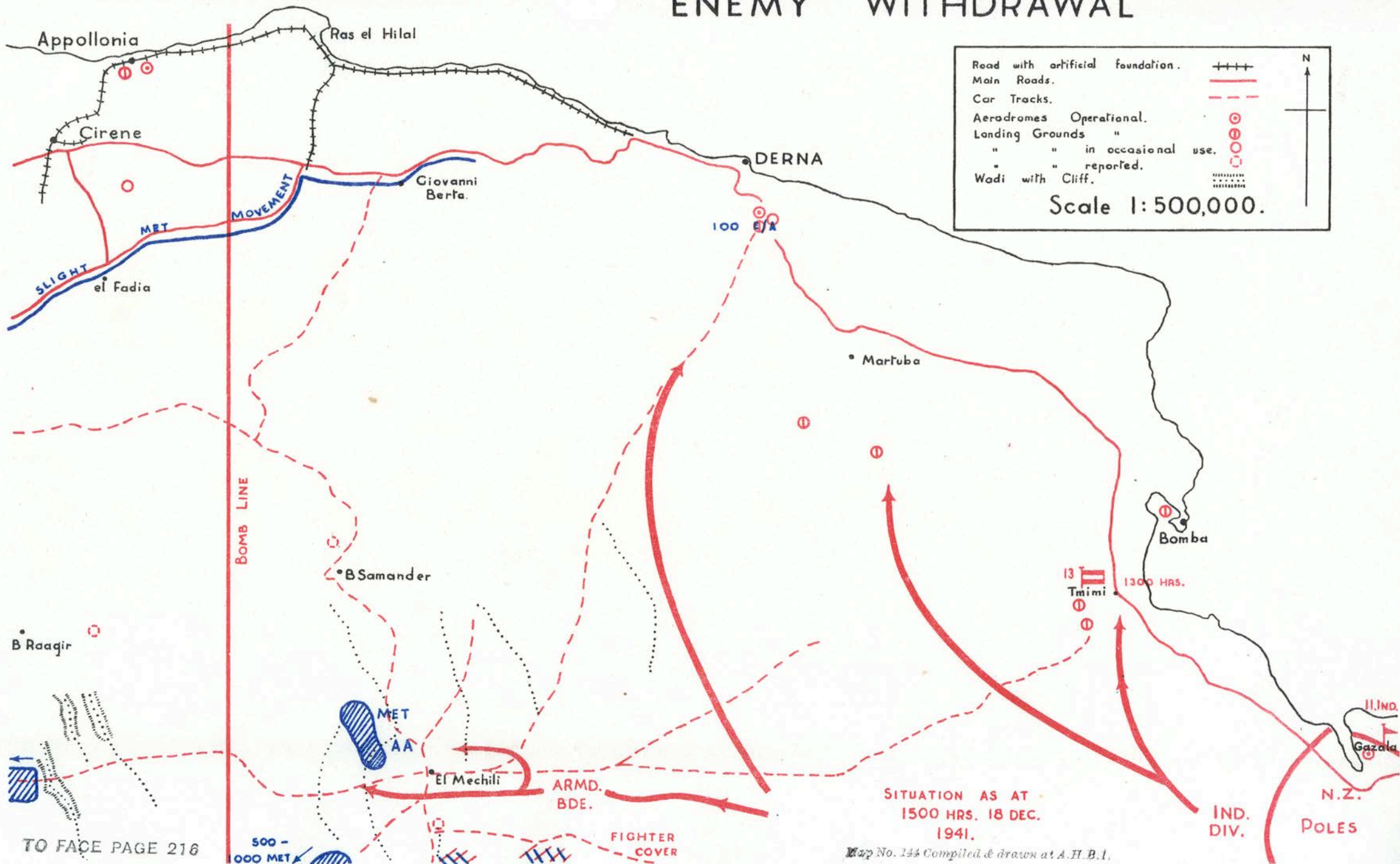
(a) 13th Corps' Advance

The 4th Indian Division took up the chase on the morning of the 17th. The time-table of its advance in terms of localities occupied was as follows:-

/Nights

(1) No.33 Squadron joined the Fighter Wing at Msus.

ENEMY WITHDRAWAL



Nights 17/18th December:	Tmimi airfield
18th	" Martuba & Derna airfields
19th	" Derna town and Lamluda
20th	" Giovanni Berta
22nd	" Cirene and Appolonia
23rd	" Barce

The main resistance encountered was at Giovanni Berta, where the enemy fought a small-scale rearguard action, and at Barce.

By 26th December all organised resistance in the Gebel Akhbar had ceased and the 4th Indian Division became responsible for restoring law and order in the hill country up to Benghazi (captured by a detachment of 7th Armoured Division). The Indian Division was then obliged to give up all but the bare minimum of its transport in order to provide as much as possible for the Desert sector where supplies and maintenance difficulties were acute.

(b) 7th Armoured Division's Advance

C.in C's
Despatch
P.62.

The pursuit by the 7th Armoured Division was held up for a day (17th December) at Gazala, while the necessary transport and supplies were assembled. The opportunity was taken, however, of hastening the departure of the enemy's rear elements. The following day the Support Group advanced swiftly to Mechili and engaged enemy concentrations to the west; by nightfall practically all of these had dispersed westwards. The 4th Armoured Brigade then swung south in an endeavour to cut off the enemy's retreat. The attempt failed, however, due to waterlogged country forcing the brigade to make a wide detour over rough ground which slowed down its advance.

Supply difficulties were then acute and until a field maintenance centre could be established it was practicable to employ only the Supply Group and the two armoured car regiments. One of these regiments was despatched towards Msus to maintain contact with the enemy and the other towards Charruba in order to watch the tracks leading out of the Gebel. Meanwhile, the Support Group was ordered to advance on Benghazi to cut off the retreat of the Italian 21st Corps on the lines of the successful manoeuvre in the previous winter. This move was frustrated by the waterlogged state of many parts of the southern slopes of the Gebel Akhdar, caused by unusually heavy rains, which greatly retarded progress, particularly of the supply echelons. On the 21st the projected swoop on Benghazi was abandoned and the main body of the Support Group was ordered to advance on Antelat, leaving one small column to press on to Benghazi.

In the event, the enemy evacuated Benghazi without pressure on the part of our ground forces, as from 23rd December onwards the 13th Corps was faced with severe problems of maintenance and supply. Armoured cars reconnoitring the coastal road south of Benghazi on the 22nd found the passes down the escarpment at Sidi Brahim, Sceleidimi and to the south held by the enemy. On Christmas Eve, however, a squadron of armoured cars approaching by the road from El Abiar found the town evacuated and the harbour empty of active shipping.

(c) Guards Brigade's Operations at Antelat and the "Bencol" Plan.

The desirability of sending a strong mobile force westwards to cut off the enemy's line of retreat had been recognised from the outset of the campaign. As early as

A.O.C./II
Part 2
Encl. 38B
& C.

26th November the A.O.C. Western Desert had pressed the G.O.C. Eighth Army to send "a column containing A.F.Vs" (1) to Benghazi, appreciating the situation then as follows: (a) The enemy's reaction to the Giarabub operations indicated that a successful attempt on his base at Benghazi would have been fatal to him; (b) The defences at Benghazi were thin; (c) We had ample air superiority to spare sufficient fighter squadrons to protect the column and ensure air superiority over Benghazi. (2) Owing to the uncertainty of the ground situation at that stage the bomber force could not be fully used. (d) Success at Benghazi would lead to success at Derna and would effectively stop reinforcements from Tripoli.

A.O.C./II
Part 2
Encl. 53C

The reverses later suffered by our armoured forces and the subsequent stand of the enemy at Gazala resulted in postponing the "Bencol" plan, as it was called. Air Vice Marshal Coningham writing to Air Marshal Tedder on 17th December stated: "Owing to the course of the Gazala Battle..... it was decided to retain the 22nd Guards Brigade in support. As they are the main part of "Benforce" it looked as if the operation was going to be further delayed. This morning, however, Neil (General Ritchie) is further impressed with the need to go west as soon as possible and has instructed 13th Corps to release the Guards....." Under the new arrangements the accompanying fighter force was to be reduced from six to four squadrons, because of administrative difficulties; a flight of No. 208 (A.C.) Squadron was to be attached for tactical reconnaissance. Air Vice Marshal Coningham felt, however, that it was "a great tragedy" that the column was not sent when originally proposed as a considerably greater opposition could then be expected. It was hoped that it would be possible to break the coastal road south of Benghazi; and to hold Agedabia while the main forces worked round through Derna.

Idem and
No. 208
Squadron
O.R.B.

C. in C's
Despatch P. 63
A.O.C./II
Part 2
Encl. 53B.

In the event, the departure of the Guards Brigade westwards was delayed until 20th December. It was then found "in view of the rapid course in the ground situation and the modified "Bencol" plan, air cover for this cover could be provided by fighters from Mechili". The air component of the column was therefore withdrawn.

/The

- (1) The tentative Army plan was to send a Brigade Group consisting of 50 to 60 American tanks and sufficient forces to take over Benghazi. It was realised that the Oasis Force was not strong enough to meet major enemy forces (A.O.C./II Part 2 Encl. 38C & C. in C's Despatch P. 63).
- (2) The R.A.F. proposal was to send 3 squadrons of Tomahawks and 2 of Hurricanes to be joined on the second day by No. 33 Squadron (from L.G. 125). The bombers would remain in the east until sent for. (AOC/II Part 2 Encl. 38C).

C.in C's
Despatch
P.63

The modified plan resultant on the changed ground situation involved the 22nd Guards Brigade being directed on Antellat (three-quarters of the way along the track from Benghazi to Agedabia and at the junction of the tracks from Msus and Saunnu). When the Brigade reached Antellat on 22nd December it found an armoured force at Beda Fomm, to the north-west covering the enemy's withdrawal along the coastal road. One of the Guards battalions which had occupied Antellat was expelled by a detachment of this force on the 23rd. The Support Group had meanwhile been directed against Caroura, off which seven ships were reported lying; when the news of the attack on the Guards Brigade was received the Support Group was ordered to turn about and render assistance. The enemy detachment wisely avoided combat with the two brigades and withdrew from Antellat to Agedabia. The immediate pursuit of this force by our columns was prevented by lack of fuel.

An enemy flank-guard remained at Beda Fomm and to the west of Antellat until 26th December. The attempts of the Guards Brigade to dislodge the enemy there were foiled by the enemy's superior artillery, but the Brigade was able to harass the detachment's subsequent retreat to Agedabia. The coastal area further north, meanwhile, had been cleared by the Support Group.

Tactical Air Reconnaissance
(17th - 26th December)

The advance of our ground forces implied a similar move forward of the Tac/R squadrons.

No.208
Sqn.
O.R.B.

No.208(A.C.) Squadron, as mentioned on page 194, had now been allotted to the 13th Corps; the squadron was established at Tmimi on 18th and 19th December. On the following day an advanced flight moved up to the landing ground at Mechili. On the 22nd several long-range Hurricanes and pilots were attached to No.208 Squadron from No.33 Squadron in order to assist with reconnaissance beyond normal S/E fighter range. Several of these moved forward with a detached flight of No.208 Squadron to Msus on 23rd December and four were retained at Mechili to carry out reconnaissance required particularly by the A.O.C. Western Desert.

A flight of No.451 Squadron, R.A.A.F., continued to operate from Tobruk on 17th and 18th December, but this was then withdrawn to help with the frontier operation considered later (page 255).

No.237
Sqn.
O.R.B.

No.237 (Rhodesia) Squadron, under Battle Headquarters, moved up from Gambut to Tmimi on 20th and 21st December. On the 25th the squadron received a warning order to proceed to the Benghazi area; this move and the settling-in process accounted for the remaining days of the year and prevented reconnaissance operations.

No.223 Sqn.
O.R.B.
S.A.A.F.
Narrative

Meanwhile the Strategic Reconnaissance Unit provided at times useful information about enemy movements, particularly in areas beyond the range of the Army Co-operation Hurricanes, as well as covering enemy airfields and photographing rear defences. On 19th December the unit moved from BU Amud to El Gubbi. No.60 Squadron S.A.A.F., which moved up from Fuka first to Bu Amud and then to Tmimi (27th December) continued to fulfil its survey commitments, when weather conditions allowed.

No.451
Sqn.
O.R.B.

During the first two days of the enemy's retreat (17th and 18th December) the No.451 Squadron flight at Tobruk kept close watch on the enemy columns retiring from Gazala line, pin-pointing the position of all considerable vehicle concentrations. In particular, columns of up to 2,000 M.T. and all arms were

No.237
Sqn.
O.R.B.

M.E.W.O.S.
No.10.

No.208
Sqn.
O.R.B.

reported withdrawing through the Mechili area. No.237 Squadron flew three sorties covering the withdrawal on the 17th, reconnoitring, in particular, the areas north of Si Zaid and north-west and west of El Ezzeiat. The Strategic Reconnaissance Unit also reported the movement of the enemy forces during the first few days of the retreat, but the withdrawal westwards soon demanded the extension of the reconnaissance to cover Agedabia, Faida, Slonta and Agheila. In view of the strong possibility of reinforcements coming from Tripoli the Gulf of Sirte up to Nofilia was also covered. On the 19th No.208 Squadron began to operate extensively under the 13th Corps and progressively followed the enemy's movement along the coastal road Derna-Giovanni Berta-Cirene-Barce-Toora-Benghazi-Ghemines, the southerly route Mechili-Charruba-Msus-Antellat, and further south to Agedabia, Marsa Brega, Asheila and the Marada Oasis. Two aircraft (including a long-range Hurricane which was carrying out a sortie to Nofilia) failed to return on the 26th. It appeared that enemy fighters were lying in wait for single aircraft, not having sufficient strength to challenge our fighter formations. It was arranged, accordingly, that fighter sweeps of the reconnaissance areas should be routed over No.208 Squadron's landing ground and that Tac/R aircraft should not take off until the sweep had passed overhead.

In contrast with the Squadron's somewhat checkered career with the 30th Corps, it was reported that there was complete harmony with the 13th Corps and "with the material available very little left to be desired".

Fighter and Day Bomber Forces Move Up
(17th - 26th December)

C.in C's
Despatch
P.62

It was appreciated that if our air forces could operate speedily from landing grounds close behind our forward troops this would help to "compensate for our inability to send large land forces in pursuit of the enemy". In general the advance of the fighter and day bomber forces in spite of supply difficulties was effected smoothly and speedily.

II J1/12
P.29 &
A.O.C/II
Part 2
Encl.66A.

For two days before the enemy's retreat from the Gazala line working parties had been busy on the Gazala landing grounds and 10,000 gallons of petrol had been dumped in spite of spasmodic shelling by the enemy. (1) On the 18th the fighter force was operating from the landing grounds. During the short stay of No.258 Wing at Gazala, No.510 A.M.E.S.(C.O.L.) was attached to the Wing and was used to give warning of the approach of enemy aircraft. Subsequently, until the Wing reached Antellat in mid-January, constant moves prevented the use of R.D.F.

II J6/14
App.F(i)
IIJ1/12
P.29

As the last of the enemy left Mechili (which had been covered by our fighters operating from Gazala) on the 18th an advance R.A.F. party arrived on the landing ground there. Next day the landing ground was cleared and as no Army transport could be spared 15,000 gallons of fuel were brought up in a convoy consisting of cars and lorries commandeered from R.A.F. headquarters and other units. By the 20th four fighter squadrons were operating from the landing ground, four more were using it for advanced refuelling and skeleton W.O.U. and A.A. services were established.

Meanwhile, to keep up with the retreating enemy the next fighter landing ground had to be selected. Msus, without a warning system seemed too close to the enemy, so the A.O.C. Western Desert chose an /area

(1) The A.O.C., Western Desert wrote: "For two days our working party were in advance of the front line". (A.O.C.(2).Part 2 Enclos.66A).

area some 20 miles east of Msus on the Mechili-Msus road. Another fuel convoy, with 60,000 gallons, left 10,000 gallons at Mechili and went on to the new site with a party for preparing the landing ground. Air defence for the column was provided by fighters on their way to and from Mechili. On the 21st it was reported that no suitable landing strips could be found short of the Msus area. As our ground forces were then at Antellat the A.O.C. Western Desert, judged the risk not excessive and ordered the convoy on the Msus. The working party was advised that a landing ground would be needed by noon on the following day (22nd December) as proposed operations rendered it necessary for fighters to refuel there. At Msus the anticipated mud flat was found to be a lake and another area had to be selected. When the convoy reached this site everyone, irrespective of rank, helped to clearaway stones and other obstructions. By 11.30 hours a "T" landing ground, with runways, 1000 x 150 yards was nearing completion as the first squadron arrived. Modified dispersal was ready by the evening; on the next day four squadrons (including No.208 (A.C.) Squadron) moved in and other fighter squadrons came in for refuelling. Another landing strip was found two miles away and by 26th December Msus was occupied by eleven fighter squadrons and one Army Co-operation squadron and Blenheims of No.11 Squadron awaiting briefing. The No.262 Wing advance party, which left Mechili on Christmas Day to take over control at Msus, arrived on 27th December.

Meanwhile, the day bomber squadrons were moving up with necessarily shorter strides.

No.3(S.A.) Wing War Diary The advance party of No.3(S.A.) Wing and advance parties of Nos.12, 21 and 24 Squadrons, S.A.A.F. and No.11 Squadron left L.G.76 for Sidi Rezegh on 13th December and arrived there on the 15th. From 17th December No.11 Squadron Blenheims were briefed at Sidi Rezegh, and by the 20th all the serviceable aircraft of the Wing were established at the same place. The following day, A.H.Q. Western Desert, vacated Bu Amud and moved to Tmimi. No.3(S.A.) Wing and Nos.12 and 21 Squadrons, S.A.A.F. and No.11 Squadron then transferred to Bu Amud for operations and No.24 Squadrons, S.A.A.F. followed later. From 26th December No.11 Squadron flew up to Msus for briefing and provision of fighter escort.

No.270 Wing O.R.B. No.270 Wing and its squadrons (Nos.14, 45, 84 and Lorraine squadrons) began using Gambut as their operational landing ground on 19th December. Almost immediately afterwards the Blenheims used Gazala for briefing and provision of fighter escort; after 23rd December the Blenheims joined with the fighters at Msus. On 27th December, it may be noted, No.270 Wing was allotted the task of co-operating with the 30th Corps in the reduction of Bardia. These operations are considered later on pages 255-258.

Towards the end of the year, however, a proportion of the Wing's aircraft was switched back to operations against the enemy's main forces, being briefed at Msus.

Difficulties of supply precluded a move forward of the Wellington squadrons of No.205 Group.

Analysis of Effective Air Effort (17th to 26/27th December)

During the period of the enemy's retreat from the Gazala defences to Agedabia the air effort, expressed as effective sorties, was as follows:-

/From

From the Western Desert

Fighter Effort

M.E.W.O.S.	Offensive sweeps and ground attack; 632 sorties.	Bomber escort
Nos. 10 & 11	(and some escort to Tac/R A/C);	335 sorties
	Shipping protection:	233 sorties
	Local Defence:	213 sorties
	Total:	1413 sorties

Daily totals for 17, 18th and 19th were 241, 192 and 190 sorties, respectively, but for the last three days of the period, 23rd to 26th December, the daily totals fell short of the 100 mark.

No. 205 Gp; Bomber Effort

No. 270 Wing

Nos. 11 & Direct Support Attacks

80 Sqdns.

O.R.Bs. By day: 78 Blenheim, 18 Boston and 18 Hurricane bomber effective sorties.

S.A.A.F.

Narrative

M.E.W.O.S. By night: 13 Wellington and approximately 10 F.A.A. Albacore effective sorties.

Nos. 10 &

11 &

II J1/29 Attacks on Airfields and Landing Grounds

By day: 25 Maryland, 18 Boston and 19 Blenheim effective sorties.

By night: 60 Wellington effective sorties.

Attacks on Ports & Bases

By night: 25 Wellington effective sorties (these included mine-laying operations).

Attacks on Shipping at Sea (including submarines)

By Day: 7 Blenheim effective sorties

Total: 281 effective bomber sorties

From Malta

Attacks on Ports & Bases

M.E.W.C.S. By day: 5 Blenheim effective sorties

No. 10 &

11

By night: 34 Wellington, 10 F.A.A. Albacore and 8 F.A.A. Swordfish effective sorties. (These included mine-laying operations).

Attacks on Lines of Communication

By day: 25 Blenheim effective sorties

By night: 10 Wellington and 4 Albacore effective sorties

Attacks on Airfields and Landing Grounds

By night: 17 Wellington effective sorties.

Attacks on Shipping at Sea

By day: 6 Blenheim effective sorties

By night: 1 Wellington, 6 Albacore and 4 Swordfish effective sorties.

Total: 130 effective bomber sorties.

The factors which seriously limited the offensive air effort are mentioned later, in respect of the air operations carried out under A.H.Q. Western Desert, on page 230, and in respect of Malta-based aircraft on page 232.

Features of the Western Desert Fighter Activity
(17th - 26th December)

AOC/II
Part 2
Enc. 53B.

Air Marshal Tedder's Operations Liaison Officer visiting Advanced A.H.Q., Western Desert 17th - 19th December reported: "Consideration of the general retreat of the enemy led the A.O.C. Western Desert to appreciate that air operations on the 18th, 19th and 20th December might prove the decisive factor in turning the retreat into a rout. He therefore planned to employ his air forces generally in attacking roads and enemy columns moving west, as this appeared to be the best chance of exterminating them. He felt it unlikely that serious air opposition would be encountered owing to the enemy's lack of fuel and general disorganisation. This appreciation proved to be correct and up to p.m. 19th December attacks on roads and enemy columns generally had been carried out with much reduced opposition, both from the air and from flak. The operations were highly successful; much damage being done to enemy transport, the moral effect of which appeared to have thrown the enemy into confusion." (1)

The participation of the Fighter Force in this harassing role during the first three days of the retreat from Gazala is indicated by the following figures:- Of the 409 fighter sorties flown on offensive tasks (i.e. excluding 214 sorties flown on shipping protection and local defence), 220 sorties were devoted to bomber escort duties, 128 to ground attacks, 53 to offensive sweeps and 4 to escorting Tac/R aircraft.

S.A.A.F.
Narrative
&
M.E.W.O.S.
No. 10

Typical of the fighter ground attacks in the forward area 17th-19th December, were the attacks by 14 Tomahawks of Nos. 2 and 4 Squadrons, S.A.A.F., (the former squadron providing top cover) against an enemy column of some 3,000 vehicles moving west from Mechili on the 18th and an attack on the following day by 24 Hurricanes (including top cover) of Nos. 1 S.A.A.F., 94 and 260 Squadrons against retreating vehicles taking the more northerly course on the Derna-Marau-Barce road, between Faidia and Slonta. Both missions were successful and in the latter, particularly, a large number of vehicles were claimed destroyed. Further south and west long-range fighter aircraft-long-range Hurricanes of No. 33 Squadron (operating from L.G. 125) and Beaufighters of No. 272 Squadron - harried vehicles far beyond the battle area. (2) The long-range Hurricanes which had been paying attention to the enemy's traffic between Ghemines and Agheila now concentrated on the lesser

/stretch

AOC-in-C's
Correspondence with
C.A.S. etc.
Part 3 Enc.

- (1) "Air Marshal Tedder signalled to the C.A.S. "Yesterday and today Coningham has for the first time been able to let his hounds loose.....Today the effort has been at maximum, including low flying attacks by fighters and bombers against retreating columns. There is already evidence of confusion as far back as Benghazi as a result. This will continue at maximum pressure..." In the event, after the 19th owing to the various limiting factors mentioned on page 230 this pressure could not be maintained at the same intensity.
- (2) One of the Beaufighters was forced to land through enemy A.A. action. Another Beaufighter landed to pick up the crew, but was driven off by enemy tanks and armoured cars. Later the pilot of the forced-landed Beaufighter escaped his captors and returned to the squadron.

stretch of roads south of Agedabia to Agheila. As a result of 21 sorties (one aircraft destroyed) during the first three days of the retreat the destruction was claimed of three 1,000 gallon petrol tankers and a heavy lorry, damage to 82 vehicles (including bowzers and staff cars) and considerable casualties inflicted on lorried troops. On the 19th 5 Beaufighters strafed closely packed retreating convoys on the roads leading to Benghazi from Tocra and Barce with excellent effect. On the former road it was reported "Numerous vehicles were destroyed and damaged and many casualties were inflicted on personnel"; on the south Barce road "Many lorries and tankers were destroyed and damaged.....personnel were wounded and killed...."

No.272 Sqn.
O.R.B.

AOC/II
Part 2
Encl.57C.
Nos.94 &
260 Sqn.
O.R.Bs.
M.E.W.C.S.
Nos.10 &
11.

No.272 Sqn.
O.R.B.

M.E.W.O.S.
Nos.10 &
11 &
S.A.A.F.
Narrative

Although from 20th to 26th December the fighter effort decreased - due to increased unserviceability and targets being beyond S/E fighter range at various times - a considerable part of the offensive effort continued to be devoted to ground attacks on enemy columns although the confused tactical position limited the operations of both fighters and bombers on direct support. By the 25th our S/E fighters had extended the range of these attacks to the Agedabia area, 21 Hurricanes of Nos.94 and 260 Squadrons on that day shooting up large concentrations of enemy M.T., armoured vehicles and guns to the southeast of Agedabia with good effect.⁽¹⁾ Nos.33 and 272 Squadrons continued to harass the enemy further afield on the roads from Agedabia to west of Agheila. Between 20th and 26th December the long-range Hurricane squadron carried out 41 sorties against M.T., mainly troop-carrying lorries, claiming 14 lorries and one full petrol trailer destroyed, 130 lorries damaged and numerous casualties inflicted on troops for the loss of two aircraft (one pilot saved). No.272 Squadron made 12 sorties against similar targets with excellent results.⁽²⁾ for the loss of three aircraft.

Meanwhile the plan for hitting the enemy's air force on the ground (page 204 refers) was implemented. The main fighter attack in this category occurred on 22nd December, in the course of a sweep over the Soluch-Magrun area. At the Sidi Ahmed El Magrun landing ground No.2 and 4 S.A.A.F. and 112 and 250 Squadrons attacked about 25 aircraft - some on the ground and some intercepted after taking off. The claims totalled: one Ju.88, 4 Ju.87s., one Me.202, one Me.109 and two Ju.52s. Destroyed, one Ju.52 probably destroyed and one Ju.88, one Do.215, 2 Ju.87s. and one Ju.52 damaged.⁽³⁾ As our fighters departed they saw 15 more Ju.52s. escorted by Me.109s. coming into land, but they could not make any further attacks as they had exhausted all their ammunition. The attacks were later renewed by Bostons and Blenheims (page 228). In other successful low flying attacks on landing grounds No.272 Beaufighters strafed Stukas and Ju.52s. on Nofilia landing ground on the 23rd and Tomahawks of Nos.2 S.A.A.F., 112 and 250 Squadrons hit several Ju.52s. and other unidentified aircraft on a landing ground at Agheila on the 24th.

AOC/II
Part 2.
Encl.53B

Although the enemy's air opposition, owing to the disorganisation resultant on the retreat and fuel shortages, was restricted and our fighters maintained air superiority over the forward area extending

/progressively

- (1) Once again an instance occurred of the pilot of a shot-down Hurricane (No.260 Squadron) being picked up and brought back by another pilot.
- (2) On 24th December the AOC-in-C signalled O.C.No.272 Squadron "....The capture of Benghazi today rounds off a period of magnificent work by your squadron....."
- (3) German records of aircraft casualties on 22nd December included:- one Me.109 destroyed and one damaged and one Ju.88, 2 Ju.87s. and 4 "other types" destroyed. (ADIK103/64) It should be noted, however, that bombers also attacked Magrun landing ground on the 22nd (Page 205 refers).

progressively southwards and westwards to Agedabia and beyond, the Me.109s were still an ever-present menace. In particular, a few successful interceptions of our bomber formations, including escorted formations, were effected. On the 17th 8 Hurricanes of No.1 Squadron S.A.A.F., providing close escort to a formation of Blenheims, were attacked by 12 enemy Me.109s. on returning to base from Derna. No.1 Squadron had lost contact with No.274 Squadron, its top cover, and bore the brunt of the enemy attack. The Blenheims were successfully protected (although the aircraft were hit) but at the cost of 4 Hurricanes shot down for two Me.109s claimed destroyed and one damaged. (1) Fighter pilots returning from bomber escort duties reported great difficulty in providing adequate cover when the bomber formation split up on being attacked by enemy fighters. The danger of this action was well illustrated on 20th December when Tomahawks of Nos.112 and 250 Squadron escorted 12 Blenheims of Nos.45 and Lorraine Squadrons, despatched to bomb M.T. on the Tocra-Benghazi road. Over the Barce-Tocra area the formation was attacked by 12 to 15 Me.109s. and the Blenheims jettisoned their bombs and broke formation. As a result of the ensuing combats five of our fighters and four of the bombers failed to return; our claims totalled 3 enemy fighters destroyed and one probably destroyed. (2) The enemy successes against escorted bomber formations cited above were however the exception rather than the rule.

The encounters of unescorted bomber formations with enemy fighters are mentioned in the sub-section dealing with bomber operations 17th-26th December on page 227.

Our fighters on offensive sweeps, in spite of the difficulties of operating from advanced landing grounds, outnumbered the fighters which the enemy were able to send up over the forward area and the few combats which ensued were generally inconclusive.

Our ground forces were, for the time being, virtually immune from air attack; in particular no Ju.87 activity was reported during the first week of the enemy's retreat.

Need for Organised Fighter Defence of Lines of Communication in View of Proposed "ACROBAT" Operation

On 27th December, "the A.O.C., Western Desert, was of the opinion that as the enemy air forces on the Western Front had been almost entirely neutralised by air action and shortage of fuel that attacks on fresh points, such as railheads, roads and aerodromes along the lines of communication would provide the enemy with the most profitable targets. That this was likely seemed to be demonstrated by the fact that enemy low-flying attacks on Gazala and Derna took place on the 26th December, while Tmimi was bombed at night on the 25th December. Since it was not possible at these points to offer any opposition from the air or from the ground it seems likely that the enemy might increase this form of attack unless a fighter defence for L.of C. were provided on an organised basis. The A.O.C. considered that he should be freed entirely from the responsibility for rear defence in Cyrenaica during

/the

- (1) German records show 4 Me.109s destroyed on 17th December (ADIK103/64).
- (2) German records show only one Me.109 lost on 20th December (ADIK. 103/64).

the forward phase of the advance into Tripolitania."⁽¹⁾

The arrangements made to put into force this rear defence are mentioned on page 272. In brief, they consisted first in H.Q. Advanced 201 Group, at Tobruk and later Benghazi, and No.234(ex 269), Wing, under A.H.Q. Egypt at Maaten Bagush, controlling the defensive fighters and later the formation of No.211 Group (under A.H.Q. EGYPT) to be responsible for the air defence of shipping between Sollum and Benghazi and the Cyrenaican ports. The enemy's advance on 21st January prevented the carrying out of the latter arrangements.

Direct Support Bombing
(17th - 26th December)

AOC-in-C's
Correspondence with
C.A.S. etc.
Part 3
Encl. 283A.

No. 270 Wing
No. 11 Sqn.
No. 80 Sqn.
& No. 37 Sqn.
O.R.Bs.

S.A.A.F.
Narrative &
M.E.W.O.S.
Nos. 10 &
11

On 18th December Air Marshal Tedder signalled the Chief of Air Staff: "Yesterday and today Coningham has for the first time been able to let his hounds loose. Yesterday was the biggest bombing day since the battle began....."

Nevertheless due to the various limiting factors considered later, the bomber effort, expressed in terms of effective sorties, remained disappointing. On the 17th the effective direct support bombing operations comprised 24 effective sorties by No.270 Wing and No.11 Squadron Blenheims, 6 by No.24 Squadron, S.A.A.F. Bostons and 11 by No.80 Squadron Hurricane bombers. The main effort was directed against the enemy columns streaming along the Derna escarpment road and a lesser effort against those withdrawing via Mechili. The S.A.A.F. Maryland effort on this and the following day was directed against enemy landing grounds (considered on page 227). On the following day, in spite of preparations for intensive operations by the Blenheim squadrons, these in the event flew only 16 effective sorties, S.A.A.F. Bostons flew 6 and No.80 Squadron Hurricane-bombers 7. Most of the attacks were on M.T. columns in the Mechili area, the pursuit of which, as already mentioned, had then been started by the Support Group. During the night 8 Albacores of No.826 Squadron, F.A.A., bombed and machine-gunned M.T. on the Derna-Barce road and a proportion of the No.205 Group Wellington effort - 7 aircraft of No.37 Squadron - bombed the M.T. concentrations further afield in the Benghazi area. On the 19th the Blenheims flew 25 effective sorties on direct support operations, concentrating mainly against M.T. columns in the Charrub area (half-way between Mechili and Benghazi) and to a lesser extent against the thinning convoys on the Derna-Barce road between El Paidia and Slonta. No.80 Squadron were then unable to continue their fighter-bomber operations owing to lack of serviceable aircraft. No.24 Squadron, S.A.A.F., finding that its briefed target of retreating M.T. on the Maraua-Barce road was too meagre to warrant attack, turned to the more lucrative landing ground target nearby. Direct support targets for the night bombers could not be determined owing to the lack of information as to the whereabouts of our own forward troops. On the 20th it was planned to employ the Blenheims against enemy concentrations north and south of Benghazi. "The first sortie (was) to be escorted by two squadrons of fighters to test the strength of the enemy air opposition. If this proved to be negligible subsequent escorts (were) to be reduced to one fighter squadron and

AOC/II
Part 2
Encl. 53B
Idem

(1) The hope that we should be able to establish forces at the Tunisian border expressed in the "Crusader" plans (Page 85 refers) had already hardened into a concrete project - Operation "Acrobat". On 23rd December Air Vice Marshal Coningham wrote to Air Marshal Tedder: "There is to be no pause at Agedabia, the aim being to go on to Buerat area and secure Sirte before making the final jump". In the event our inability to maintain strong forces in the forward area and Rommel's opportunist advance in late January 1942, prevented not only the implementation of operation "Acrobat" but involved a retreat to Gazala.

later bombers might be employed without escort. It was intended, as far as possible, to lay on bomber sorties once every hour." As already mentioned on page 224 the first mission came to grief through the Blenheims breaking formation on being attacked by Me.109s. Later dust storms hindered operations. Accordingly the retreating enemy was immune from bomber attacks on the 20th, although a small effort was possible on counter air force operations; 5 Blenheims were lost as a result of the abortive direct support effort - four shot down by Me.109s and one which blew up while attempting to land at Gambut in a sand storm.

No.270 Wing
O.R.B.

Although the bomber effort against the enemy columns during the first four days of the retreat was limited, the actual attacks delivered against the excellent targets provided by closely packed columns of vehicles, supplemented by the more wide-spread fighter ground attacks already mentioned, achieved a high degree of material and moral success.

AOC-in-C's
Correspondence with
C.A.S.
Part 9
Encl.283A

As already mentioned (Page 222 Footnote 1), even after the first two days operations Air Marshal Tedder was able to report to the Chief of Air Staff: "There is already evidence of confusion as far back as Benghazi". The fact remains, however, that the serious limiting factors considered in the following sub-section prevented a sufficient application of air power to turn the enemy's retreat into a rout.

AOC/II
Part 2
Encl.570

With the approach of our ground forces to Benghazi and later Agedabia and the "resultant confused tactical position" direct support targets became increasingly difficult to secure. No.270 Blenheims "stood by" for targets which could not be determined in time for operations. From 21st to 26th December there was only a token day bomber effort against enemy forces in the Agedabia area and such ground attacks as were practicable were carried out by fighter aircraft (Page 223 refers). In the meantime a more appreciable effort was directed against enemy airfields.

Idem &
II J6/7/4

From 26th December onwards in an effort to maintain bomber pressure by day boxes of (usually) six Blenheim aircraft were sent up to the advanced fighter landing ground at Msus. Escorts were then co-ordinated by the Fighter Wing Commander and a member of the Bomber Wing staff who went up for the purpose. Liaison Officers direct from H.Q. 13th Corps contacted the Fighter Wing Command and the Bomber Wing Staff officer and the bomber crews could be briefed on the spot. Air Marshal Tedder's Operations Liaison Officer reported: "On the evening of 25th December an arrangement was come to with the Army whereby fighters observing suitable targets inside the bomb-line were to report the fact to 13th Corps immediately on landing at Msus. 13th Corps would then decide at once whether an attack on the target might be carried out. This system works quite well while 13th Corps are along the Fighter Wing at Msus."

No.205 Gp.
O.R.B.
AOC/II
Part 2
Encl.570.

In the meantime No.205 Group Wellingtons carried out operations against M.T. on the Agedabia-Sirte road in moonlight on the night of 24/25th December (12 effective sorties by aircraft of Nos.70 and 108 Squadron), but in general the direct support targets then available were "not worth the effort". Thus, apart from a participation in the current counter air force operations on a few nights, the entry "Operations cancelled" in No.205 Group's Operation Record Book became for the time being a fairly consistent one - appearing five times in respect of the eight nights 20th/21st to 28/29th December.

/Bomber

Bomber Attacks by Aircraft Operating Under A.H.Q., Western Desert, on enemy Airfields and Landing Grounds
(17th - 26th December)

Meanwhile, the time was opportune for implementing the plan mentioned on page 204 for intensifying the attacks on enemy airfields. As the front receded over westwards the progressive withdrawal of the enemy air forces led at times to considerable concentrations of aircraft on landing grounds from which help was practicable, even though only for brief periods, to the retreating Axis forces. On the first day of the retreat (17th December), for instance, a reconnaissance carried out by the Strategic Reconnaissance Unit showed that there were over 100 aircraft on Derna airfield. In general however, the German Air Force had already withdrawn to the Benina-Maraua area - the S.R.U. reported the presence of 80 aircraft at Benina on the 17th and this number rose to 200 two days later - and the Italian desert squadrons had withdrawn from their advanced bases at Gazala, Martuba and Derna mainly to the landing grounds at Barce and Berka.

No.205 Gp.
O.R.B. &
S.A.A.F.
Narrative

Prior to its capture on 23rd December, Benina airfield sustained attacks delivered by 24 Marylands and 23 Wellingtons between 17th and 20th December. In all the attacks bombs fell among dispersed aircraft and fires were started among the hangars and administrative buildings. The Marylands, in particular, reported many aircraft destroyed and damaged on the ground. The formation of nine unescorted Marylands operating on the 19th was engaged from the stern by four Me.109s.; one Maryland was lost but two enemy fighters were claimed destroyed.⁽¹⁾ Twelve Wellingtons made the last attack on Benina during the night; two aircraft of No.70 Squadron of the 14 aircraft operating against the landing ground were shot down. The opportunity was also taken of bombing the landing ground at Marau, from which at least 40 Me.109s., and other German aircraft were operating during the first stage of the retreat, when the enemy M.T. in the locality became meagre. Thus on the 19th some of the Blenheims of No.84 Squadron sent to bomb vehicles on the Faida-Slonta road concentrated primarily against the landing ground and on the same day 6 Bostons of No.24 Squadron, S.A.A.F., escorted by Tomahawks of Nos.2 and 4 Squadrons, briefed to attack retreating columns on the Maraua-Barce road, turned to the more promising landing ground target and reported: "Full damage not seen but estimated to be heavy."⁽²⁾ Meanwhile attacks were made on Barce and Berka airfields. The former was attacked by 9 Marylands on the 17th and 8 Blenheims of No.14 Squadron three days later. The Marylands, in particular claimed hits on 15 Ju.52s.⁽³⁾ Berka airfield was effectively bombed without opposition from the ground on the night 18/19th by 7 Wellingtons of No.108 Squadron (intended also as a diversion "to hide the activities of aircraft planting cucumbers (mines) at Benghazi").

No.84 Sqn.
O.R.B.
No.10
M.E.W.O.S.
S.A.A.F.
Narrative &
No.24 Sqn.
War Diary.

No.14 Sqn.
O.R.B. &
S.A.A.F.
Narrative

No.108 Sqn.
O.R.B.

By 21st December it became evident that the landing ground at Sidi Ahmed El Magrun was being used extensively by the enemy for providing air support for the ground forces retiring to the Agedabia

/area

- (1) German records show 2 Me.109s lost on 19th December (ADIK 103/64)
- (2) M.E.W.O.S.No.10 Appendix A, states that 5 Me.109s. attacked the Boston formation and the latter claimed one shot down. There is no mention of this combat in S.A.A.F. records.
- (3) German records show 8 "other types", presumably Ju.52s., destroyed on 17th December (ADIK 103/64)

No.205 Grp. area. On the night 21/22nd 21 Wellingtons of Nos.148 and 38
& No.220 Squadrons operated against the landing ground. Bad visibility
Wing hindered the attack - six sorties were ineffective and the majority
O.R.Bs. of the remainder were unable to locate the target accurately, although
S.A.A.F. some fires were reported started on the landing ground. The
Narrative following day the attack was continued by fighters and bombers.
& The low-flying Tomahawk attack is referred to on page 223. At mid-day
M.E.W.O.S. 9 Bostons of No.24 Squadron, S.A.A.F., bombed a concentration of
No.10. aircraft on the ground estimated to number 60-70, including about
30 Ju.52s., accurate bombing ensured eight 500 lb. and twenty-eight
250 lb. bombs falling either in or just short of the dispersal area,
starting several fires and apparently destroying at least four
aircraft. A force of Marylands of Nos.12 and 21 Squadrons
arrived shortly afterwards but the mission was abortive owing to
10/10th cloud on the target area. The weather cleared in the
afternoon allowing a final attack to be made by eleven Blenheims
of Nos.84, 14 and Lorraine Squadrons, escorted by Tomahawks. The
bombers claimed direct hits on two Ju.52s. reported to be left in
flames, two more probably destroyed and two damaged. Throughout
the day's operations enemy fire from A.A. batteries was intense,
but the only casualties sustained by our aircraft from enemy action
was slight damage to two of the Blenheims.

M.E.W.I.S. The enemy airforces in view of our advance were then obliged
79 & 80 to make a further withdrawal. The German squadrons retired first
to various landing grounds between Agedabia and Tripoli and were
later grouped in the Merduma-Arae Philaenorum area. The I.A.F. in
North Africa, meanwhile, was in process of withdrawal to the
Tripolitanian bases at Castel Beniro, Misurata, Surman and Suara,
with more advanced bases further east for the Mc.202 fighters.

No.205 Gp. Airfield targets, particularly in view of the need to conserve
O.R.B. bomber strength as much as possible, could then be safely disregarded
for a time. On one night - 23/24th December - 20 Wellingtons of
Nos.37 and 148 were sent to operate against landing grounds at
El Agheila and Marble Arch, from which air support could be given
over the forward area, but the operations proved ineffective. At
El Agheila a few fires were started but no aircraft were seen and it
seemed doubtful if all the aircraft actually located the target; at
Marble Arch no aircraft and no results of the bombing were observed.

Evidence of Enemy Aircraft Losses Provided by Examination
of Captured Landing Grounds

AOC/II On 2nd January, 1942, Air Vice Marshal Coningham wrote to Air
Part 2 Marshal Tedder: "As a result of advanced reports by various
Encl.63E Intelligence officers who have made a careful examination of enemy
landing grounds that have been occupied, it would appear that there
is a total of something like 450 aircraft that will have been lost to
the enemy during the past couple of months. This is exclusive of
the wrecks that are generally found concentrated in the local
"grave yard".....When one adds to this the total of aircraft destroyed
in combat, crashed away from aerodromes, destroyed by the L.R.D.G.
and lost on the aerodromes south of Benghazi, the total at present
must be nearly 800."

Idem A detailed list of "aircraft found on captured landing grounds
Encl.64A in the area Gambut to Benina, dated 3rd January, showed that 228
German and 230 Italian aircraft had been abandoned in varying states
of unserviceability. The German total included 71 Me.109s. (of
which 25 were Me.109Fs., 35 Ju.52s., 30 Ju.88s., 31 Ju.87s., 27 Me.110s
and 8 He.111s. The landing grounds which provided the richest
yields were: El Adem (3 German and 75 Italian aircraft, including
64 CR.42s and/or RO.37s); Derna (65 German aircraft, including
18 Ju.52s and 10 Italian aircraft); the Gazalas (32 German aircraft,

/including

including 17 Me.109s. and 39 Italian aircraft, including 20 S.79s); Benina (62 German aircraft, including 22 Ju.88s and 12 Ju.52s., and 2 Italian aircraft); Berka Main and Satellite (51 Italian aircraft, including 20 CR.42s); Gambut (31 German aircraft, including 18 Me.109s. and 11 Italian aircraft); and the Martubas (14 German aircraft and 23 Italian aircraft, including 12 S.79s.).

Idem
Encl. 63E
& 64A

"This is the first occasion in the war that we have over-run the German Air Force", the A.O.C. Western Desert reported, "and the result at Benina should be of great value". Arrangements were made for specialists from H.Q. R.A.F., M.E. to examine the captured enemy supplies and equipment in the Benghazi area, particularly German aircraft including some in a flyable condition and others still in crates) and wireless, armament and medical equipment and supplies. After the examination had been completed the policy was to destroy all German equipment and bombs, which were considered of no value to us, as soon as possible. Meanwhile, measures were also taken, in co-operation with the Army, to protect the equipment found from "the steady stream of unintentional sabotage and souvenir collecting going on".

Last Attacks on Benghazi during "Crusader" Advance
(Nights 17/18th - 19/20th December)

257W/M.57
Encl. 91A

On the morning of 17th December, H.Q. R.A.F., Middle East informed H.Q. No. 205 Group that a convoy was expected to enter Benghazi harbour the following morning and requested mining operations to be carried out.

It was evident in view of the enemy's critical position that it was of paramount importance to deny him the supplies and material which would help him to delay our advance.

Owing to heavy rain both of the forward landing grounds (L.Gs 09 and 60) were unserviceable and this made it impossible to send aircraft up from the Canal Zone for operations during the night of the 17/18th. There were, however, Wellingtons of No. 70 Squadron already at L.G. 60, having been prevented from operating on the previous night by bad weather. These were briefed to attack Benina airfield, leaving L.G. 60 before dusk and returning to Kabrit, in the Canal Zone. It was arranged, therefore, as the mining operation could not be carried out, that the No. 70 Squadron Wellingtons should deliver their attack on Benina and then fly on to Benghazi and simulate a mining attack from a high altitude by dropping empty petrol or tar barrels, with tops and bottoms stowed in, or unfused 250 lb. bombs. On the following night 8 aircraft of No. 148 Squadron, each carrying two mines, were detailed to plant a field at the entrance to Benghazi harbour. Two of these aircraft were prevented from operating owing to unserviceability and a third jettisoned its mines 50 miles east of Benghazi owing to engine failure; the remaining five aircraft successfully planted a rectangular field 900 yards long and 500 yards wide - the longer side being a continuation of the outer mole and the shorter side of the harbour entrance. A diversionary attack on Benghazi town was synchronised with the mine-laying by three aircraft of No. 148 Squadron and seven of No. 38 Squadron, while aircraft of No. 108 Squadron, as previously mentioned attacked Berka airfield. The diversionary attack was completely successful, in that the mine-layers were able to plant their mines undetected and searchlights swung out to sea only after the last aircraft had departed. The concluding attack by two aircraft of No. 38 Squadron concentrated on shipping in the harbour, but no hits were claimed.

Idem &
No. 205 Grp.
O.R.B.

On the following night (19/20th December) the main Wellington effort, as already mentioned, was directed against Benina airfield, but 2 Wellingtons of No. 148 Squadron dropped two 4,000 lbs. on the harbour; 6/10th and 8/10th cloud prevented observation of the results of the bombing.

Factors Which Limited the Western Desert Air Effort
(17th - 26th December)

The main factors which prevented air power being applied to the retreating enemy at a sustained high level were as follows:-

I. Inadequate Information From the Army

- A.H.B.II
J6/7/4
- (a) Little information came in from the 13th Corps, which was responsible for all operations forward.
- Idem
- (b) Unsatisfactory bomb-lines were given to H.Q. Eighth Army by H.Q. 13th Corps. At times the bomb-lines were as far ahead as 50 miles of our most advanced troops.⁽¹⁾
- ACC/II
Part 2
Enc.
- (c) Difficulties of identifying our forces persisted. These increased with the advanced position of isolated columns of our troops. In particular, it limited the use of the Hlenheims brought up to stand-by at Msus.

A.H.B.II
J6/7/4

The S.O.O., A.H.Q., W.D., in his report on the air operations stated that the factors (a) and (b) above "prevented the Air Force from attacking the enemy at his most vulnerable points throughout the retreat to Artellat..... The relentless air attacks against his bases combined with the general Axis withdrawal produced a state of dis-organisation amongst the enemy Air Forces which opened up the great chance for our Air Force to turn the enemy withdrawal into a rout In retrospect it appears that our Army committed an act of suicide in stultifying the Air Force at this critical moment." This view cannot be accepted without qualification. Inevitably the failure to supply the Air Force with a prompt and accurate picture of the ground operations and movements seriously limited the direct air support, but there were other factors, detailed in II below, which, in any case would have prevented a maximum sustained air effort, particularly by the bomber forces, necessary to rout the enemy's retreating armies.

II. Factors Limiting the Air Power Which could be made Available

- A.H.B.II
J1/12
AOC/II
Part 2
Encl.57C
- (a) The advance of our air forces and their establishment on more advanced landing grounds involved great difficulties in getting forward sufficient supplies, particularly fuel, from the previously occupied airfields and from Tobruk and railhead. The improvised transport which prevented the fuel shortage becoming critical during the early stages of the pursuit have been mentioned on page 219. In addition, arrangements were made among the squadrons to interchange the oil and petrol available in order to operate as many aircraft as possible. On 27th December the S.O.A., Advanced A.H.Q., Western Desert, stated that owing to the Army being unable to supply the R.A.F. needs for transporting fuel he had created an auxiliary supply column from H.Q. units vehicles and abandoned enemy vehicles of about 80 lorries, with which he could haul 15,000 gallons of fuel per day up to a distance of 80-100 miles, and he felt confident that this
- No.270 Wing
C.R.B.
19th Dec.
- ACC/II
Part 2
Encl.57C

/together

- (1) The S.O.O., A.H.Q., W.D. stated "The Army War Diary shows repeated requests throughout this period for a reasonable bomb-line".(II J6/7/4). However, as mentioned on Page 226 while 13th Corps was located near Msus fighters returning to the L.Gs. there reported suitable bombing targets within the bomb-line.

AOC-in-C's
Correspondence with
C.A.S.
Part 3.
Encl.297A

together with what the Army could provide would enable him to maintain our supplies. He estimated that 200 lorries were necessary to provide for R.A.F. forward requirements. In the event, owing to the strain on our limited M.T. resources, the fuel shortage at our advanced landing grounds continued during the whole period of the "Crusader" advance.

AOC/II
Part 2
Encl.57C

Idem.

A.H.B.II
J1/12
Page 36
& S.A.A.F.
Narrative

- (b) Although, as already indicated the fighter and day bomber Wings and Squadrons moved up speedily to forward landing grounds, for a few brief periods in the early stages of the pursuit direct support targets receded too far to permit the essential fighter escorts for the bombers.
- (c) Heavy rain delayed supply columns and rendered certain landing grounds, particularly in the Derna-Benghazi area practically unuseable.
- (d) Due to the prolonged and intensive air operations and other causes aircraft strength and serviceability were at a low ebb. Thus:-
 - (i) The availability strength of the Tomahawk squadrons (Nos.2 and 4 S.A.A.F. and Nos.112 and 250 Squadrons) had fallen so low that they could only operate as one Fighter Wing (i.e. at half strength). This was due in part to faulty returns, causing a discrepancy between the A/C M.S.O's aircraft strength figures and those at Advanced A.H.Q., Western Desert. In particular, in the course of the squadrons' moves many Category I aircraft had been left behind awaiting spares, and these had not been included in the "Oprests" (Operational Readiness State Returns) although they had appeared in the "Mayflies" submitted to H.Q., R.A.F., Middle East. The R.S.U. had been informed of aircraft left behind, but considerable delays occurred before salvage took place. Steps were taken for additional aircraft to be made available and for a speeding up of communications between squadrons and the R.S.U. The Squadron Engineer Officer was also instructed to accompany squadrons when they moved in order to keep in touch with the true aircraft state and to ensure that "Mayflies" and "Oprests" were not misleading.
 - (ii) Serviceability and aircraft strength, owing to sustained operations, were also low in the Hurricane squadrons. For example:- No.1 Squadron, S.A.A.F. on 20th December had only seven serviceable aircraft; No.80 Squadron on 20th December became temporarily non-operational owing to low state of serviceability (8 in all), and subsequently was spasmodically employed on local defence duties.
 - (iii) The Blenheim fighters remaining to No.30 Squadron were practically all unserviceable and the squadron had to be withdrawn.
 - (iv) No.3 Squadron R.A.A.F. was withdrawn on 16th December for re-equipping with Kittyhawks and resumed offensive operations twelve days later.
 - (v) The aircraft situation in the squadrons of No.3(S.A.)Wing, was most serious. It was found that the Boston aircraft of No.24 Squadron S.A.A.F. were experiencing engine trouble, a high oil consumption necessitating in some cases engine changes after less than ten hours flying.

AOC/II
Part 2
Encl.53B.

S.A.A.F.
Narrative
& AOC/II
Part 2
Encl.64A

It was necessary therefore, to withdraw the Squadron in order to remedy the matter, the last Boston operations being carried out on 23rd December. Meanwhile the strength of the two Maryland squadrons Nos.12 and 21 Squadrons, S.A.A.F.- has fallen so low that it was decided that they also should be withdrawn for re-equipment with Bostons.⁽¹⁾ "Boston aircraft squadrons to come forward later as required by circumstances." Subsequently it was decided to pool the aircraft of the two squadrons - some 15 in all - and that these should continue to operate under No.21 Squadron "while the Maryland effort was substantial - one squadron strength." There were no Maryland bomber operations from 24th - 29th December, inclusive, and thereafter a restricted effort only was practicable.

- (vi) A diversion of aircraft to the Far East (considered later) was beginning to be effected and became progressively greater.

Malta's Offensive Effort and Air Factors Restricting It
(17th - 26/27th December)

AOC/II
Part 2
Encl.35A

With the loss of Cyrenaican ports and bases and a front approaching the Tripolitanian border the enemy was in dire need of supplies to halt the momentum of our advance. "Shipping into Tripoli is key to future situation", the Deputy A.O.C. in C. reminded the AOCs. Western Desert and Malta on the eve of the fall of Benghazi.

M.E.W.O.S.
Nos.10 &
11

Including
the
App."C".

Reconnaissance of the Tripoli routes lay within Malta's orbit. The principal areas of search were west of the line Homs - Malta, including the harbours concerned. In particular, regular patrols were carried out of the coast route Cape Bon-Kerkenna-Zuara, along which the enemy was passing much of his shipping, and the east coast of Sicily was also covered. Reconnaissance of the south-east Ionian sea was left entirely to G/R aircraft based on the North African mainland.

II J1/12
Appendix
"B" &
M.E.W.O.S.
No.10
App."C"

There were, however, several factors which seriously limited the successful following up of sightings with attacks. In the first place the increased enemy air pressure, due to the G.A.F. reinforcement in the Mediterranean theatre (page 192 refers), was becoming increasingly evident. Enemy raiders in November were a nuisance rather than a menace; early in December the enemy attacking formations had increased, varying from 10 to 25 aircraft. by the end of the month the weekly aircraft number of attacking aircraft had risen to over 300. This effort was small compared with the intensive attacks delivered later in the Spring but was already sufficient to limit Malta's striking power. On the night 18/19th December, for example, enemy bombers succeeded in grounding a force of 14 Wellingtons standing by at Luqa for an attack on a convoy making for Tripoli, which had been sighted north of Homs; in another raid on Luqa, on the 26th, six aircraft were destroyed on the ground and three damaged.

II J1/12
App."B" &
M.E.W.O.S.
No.10

Moreover, weather conditions continued to be bad - electrical storms, sand storms, gales and torrential rains producing at times /impossible

(1) The supply of Marylands had ceased, the policy being to re-equip these squadrons with Bostons and, later, Baltimores. (Pages 27 and 28 of the narrative refer).

impossible flying conditions. In particular, previously sighted shipping targets could not be located by attacking aircraft and at times two of the Island's three airfields became water-logged, limiting the Blenheim effort as well as the defensive Hurricane effort.

Thus in spite of considerable success in the sighting of supply shipping making for Tripoli and neighbouring ports effective attacks were few.

II J1/12
App."B" &
A.O.C.in C's
Correspond-
ence with
C.A.S.
Part 3
Encl.292A.

The difficulties involved in delivering the strikes on shipping at sea are exemplified in the attempt to destroy a large enemy convoy dispatched to Tripoli at the same time that the heavily escorted S.S."Breconshire" was making its way to Malta (page 237 . . refers).⁽¹⁾ The position was further confused by the fact that two enemy naval forces were apparently at sea; it appeared that one of these engaged our naval forces as well as covering the Tripoli convoy and escorting vessels. The A.O.C.in C., M.E. reported to the C.A.S.: "All available reconnaissance aircraft, Marylands and Special Wellingtons (A.S.V. aircraft of No.40 Squadron) were placed at the disposal of the Naval Staff and operated in accordance with Naval wishes following discussion between A.O.C. Malta, and V.A.M". Thus the G/R aircraft concerned had the dual task of searching for naval forces threatening our Malta convoy as well as locating the enemy shipping en route to Tripoli. All the sightings made were by Malta-based aircraft as at no time did the enemy forces come within range of reconnaissance aircraft operating from Libya. Similarly, although the Western Desert day bomber squadrons stood by for attacks none were possible.

Idem &
M.E.W.O.S.
No.10
App."C"

The record of the bomber effort from Malta against the enemy convoy was as follows: On the night 17/18th weaether conditions - low cloud and rain-rendered the planned Wellington attack impossible. On the following day the A.O.C.Malta (Air Vice Marshal H.P.Lloyd), "Considered it inadmissible to use Blenheims (in) low flying attack.. All experience here and at home showed that low flying attack by Blenheims against surface forces in the strength present on (the) 18th would have resulted in aircraft being shot down before they could drop their bombs. Considered medium altitude attack, but cloud rose 2,500 to 3,000 feet and as crews (were) inexperienced at that height considered the risks from Ack Ack far outweighed any very problematical hit by Blenheims". Air Vice Marshal Lloyd wanted A.S.V. Wellingtons of No.40 Squadron to find and illuminate the convoy in preparation for an attack by Wellingtons on the night of the 18/19th, but the available A.S.V. Wellingtons had already been allotted for co-operation with our own surface forces. Accordingly the plan decided on was for (a) The mining of Tripoli harbour (which was done by three aircraft while three more carried out diversionary bombing); (b) A strike by Fleet Air Arm Albacores (6 aircraft were dispatched and four of them attacked with torpedoes, scoring two hits on two merchant vessels in spite of a smoke screen); (c) A strike by Fleet Air Arm Swordfish - this had to be delayed on account of high wind as the aircraft could not have reached convoy and returned under conditions then prevailing; Swordfish were sent off later but the convoy had then reached Tripoli; (d) The fourth projected attack was to be made by the Wellingtons when the convoy was within five miles of Tripoli; the attack could not be delivered owing to the enemy's bombing of Luqa airfield.

P1/4203
App.B(7)
(Enemy
sources)
Enemy Ship-
ping Losses
Assessment
Committee
(Identified
Vessels)

The only confirmed sinking by Malta-based aircraft during the period under immediate review occurred on the night 17/18th, when four Fleet Air Arm Swordfish sank a southbound 1,235 ton tanker⁽²⁾ a few miles off Keliba.

/In

(1) The full account of the passage of the two convoys, the naval manœuvres and engagements, and the air participation is given in the A.H.B.Narrative of the Air/Sea War in the Mediterranean during this period.

(2) Wrongly reported at the time as a 4,000 ton tanker.

M.E.W.O.S.
Nos. 10 &
11
(including
App. "C")

In addition to the mining of Tripoli harbour on the night 18/19th already mentioned, Fleet Air Arm Albacores and Swordfish continued the minelaying almost nightly, generally with diversionary bombing. Meanwhile the Wellington bomber effort was directed against the harbour installations and shipping, effective sorties being flown by 34 Wellingtons between the nights 23/24th and 26/27th December. The enemy's increased use of the harbour at Zuara was hindered by Fleet Air Arm Albacore mine-laying and successful Blenheim attacks on shipping.

Owing to the westward ebb of battle flank attacks on Tripolitanian communications and airfield targets could no longer be regarded as diversionary ones (page 200 refers).

On occasion, Blenheims briefed to attack previously sighted shipping and not able to locate their targets due to bad visibility carried out harassing attacks on enemy road transport. On 20th December 10 Blenheims bombed M.T. on the outskirts of Tripoli, without however, observing results; two days later a slightly larger force attacked a road convoy travelling westwards in the Sirte-Misurata area, destroying 10 lorries and 2 tankers by bombing as well as machine-gunning 130 more vehicles and scoring hits on a packed M.T. park. Such attacks in view of the enemy's retreat, were then likely to have a direct effect on current Libyan operations and again became a feature of Malta's offensive effort.

Similarly, as the enemy's air forces became obliged to withdraw from their Cyrenaican bases the main Tripolitanian airfield at Castel Benito became of increased importance. In an attack delivered on the night 21/22nd by 12 Malta-based Wellingtons hits were reported on dispersed aircraft, with at least seven reported as destroyed, and hangars and buildings were hit. On the evening of the 22nd another attack was delivered by five Wellingtons when the primary target of Tripoli could not be effectively attacked owing to a "flat, calm and perfect smoke screen".

Beginning of Diversion of Air Forces to the Far East

C.in C's
Despatch
App. 10.

Consequent on the outbreak of hostilities in the Far East⁽¹⁾ a diversion of forces from the Middle East Command became inevitable. H.M. Government's policy at this stage was summed up in a telegram from the Chiefs of Staff to the Commander-in-Chief in these words:- "Governing considerations are as follows - (a) Security of Singapore and of sea communications in the Indian Ocean is second only to the security of the United Kingdom and the sea communications thereto. (b) The defeat of Germany must remain our primary object, consequently for the present we should not divert more of our resources than necessary to hold the Japanese. (c) "Crusader" should be exploited to the greatest possible extent subject to the condition that it must not prevent the dispatch of essential reinforcements to the Far East".

AOC.in C's
Correspondence with
C.A.S.
Part 3.
Encl. 271A,
272A and
285A.

The day following the declaration of war against Japan (9th December) the Chief of Air Staff requested 12 Blenheims from the Middle East reserve (including six from Iraq) to be flown immediately to India so that that Command could release a similar number for Singapore. These aircraft were despatched on 11th December. This was the beginning of a considerable diversion of aircraft from the Middle East to the Far East.

C.in C's
Despatch
P. 11

On the 12th the Prime Minister informed the Commander-in-Chief, Middle East, that owing to the threat to the Malay Peninsula and

/Burma

- (1) On 7th December Japan opened hostilities against Great Britain U.S.A. by attacking Pearl Harbour, the Philippines, Malaya and Hong Kong without warning. Great Britain and U.S.A. formally declared war on Japan the following day. The Japanese captured Hong Kong on 25th December.

Burma certain reinforcements on their way to the Middle East had to be diverted to the Far East; in addition to military units and anti-aircraft guns these included four light bomber squadrons.

AOC.in C's Correspondence with C.A.S. ENCL.286A
Idem Encl.288A
Idem Encl.289A

On the 23rd December the Chief of Air Staff signalled to Air Marshal Tedder ; "In order to reinforce Burma and Singapore we may.. need a further five of your Blenheim Squadrons and possibly in addition three or four Hurricane Squadrons. Will you let me have your views on how this will affect "Acrobat" (the projected advance into Tripolitania) after discussion with Auchinleck". Air Marshal Tedder replied that the diversion of the squadrons mentioned ought not to interfere with "Acrobat" operations, but it would be impossible to meet the threat to the Northern Front through Turkey or the Caucasus, "still less through both and even more so if Tunisia were hostile". It was urged that if it were considered essential to send the light bomber squadrons to the Far East it would be better to decrease the number of squadrons sent but increase the 16 I.E. to 24 I.E. with "obvious advantages from point of view of saving overheads, M.T. particularly specialist vehicles and so on" as it was considered that the Far East was more in need of additional aircraft and crews than complete units. This suggestion was accepted and later acted on.

No.84 & 85 Sqdn. O.R.B. January 1942
107 M.U. O.R.B. Jan & Feb.1942.

In early January two Blenheim squadrons, Nos.84 and 45 were withdrawn from operations, refitted and sent to the Far East. This implied the diversion of other Blenheims from the Command in order to make the squadron up to 24 I.E. aircraft. For the diversion of Hurricanes, Operation "Semolina" was ordered, which involved the despatch of H.M.S. "Indomitable" from Port Sudan on January 15th 1942 with over 50 crated aircraft. Soon after the end of the "Crusader" offensive further diversions included a second "Semolina" operation, when another batch of some 50 crated Hurricanes left on H.M.S. "Indomitable" from Port Sudan on 27th February. (1)

Strikes on Enemy Merchant Shipping in December

AHB.
II J1/29

(A) As currently reported and assessed,

(i) By R.A.F., Middle East, and R.N., Mediterranean.

During the month Blenheims of No.55 and No.203, operating from the mainland flew 23 effective sorties⁽²⁾ on shipping strikes on enemy submarines and shipping in transit. In addition, as already mentioned, there were Wellington attacks on Benghazi which resulted in a few hits or possible hits on shipping and unsuccessful Blenheim attacks on shipping in Bardia harbour. Headquarters R.A.F., Middle East, assessed the results of the above mentioned attacks (excluding casualties inflicted on enemy submarines not dealt with in this narrative) as one small vessel, probably sunk, one ship of unknown size damaged and unknown results in respect of four other vessels.

Malta-based aircraft were credited with 35 effective sorties by Blenheims, 37 by Wellingtons, and 15 by Fleet Air Arm Albacores and Swordfish in attacks against shipping in transit or specific attacks on shipping in harbours. Headquarters R.A.F., Middle East, assessed the results of the attacks as:- one merchant ship of 1,500 tons sunk, one merchant vessel of 400 tons and a tanker of unknown size probably sunk, 7 merchant vessels and one tanker damaged and unknown results in respect of six merchant vessels and one tanker.

/Casualties

- (1) By March 16th, it may be noted, 139 Blenheims and 300 fighters had been sent to the Far East from M.E. Command. Further diversions were made subsequently. (AOC/22 Part III Encl.346A).
(2) These figures refer to attacks actually delivered.

Idem

Casualties, inflicted by naval action, as reported by Chief of Intelligence Staff, Mediterranean, were as follows:- seven Merchant vessels ranging between one and seven thousand tons, one merchant vessel of 15,000 tons, one large and one small tanker and 5 schooners or caiques sunk and four merchant ships damaged. Considerable success was also achieved against enemy naval vessels (see the narratives on the Air/Sea war in the Mediterranean).

Idem

H.Q., R.A.F., Middle East's "Analysis of Mediterranean Axis Merchant Ship Sinkings for December 1941", drawn up in early 1942 is of interest, but must necessarily be treated with reserve. Total sinkings (by sea and air action) of shipping plying between Italy, Greece, Crete and North Africa were assessed as 23,600 tons, the south-bound sinkings (including ships sunk in North African ports) being put at 19,600 tons. The total estimated sailings for Italian North Africa were 55,400. The total estimated sinkings on the African route expressed as a percentage of total estimated sailings was 42.6% and south bound sinkings similarly expressed was 35%. In addition, "other Mediterranean sinkings (including Aegean and Ionian Seas)" were assessed as 29,450 tons giving a total for the entire Mediterranean of 64,850 tons of merchant shipping - 24% being adjudged sunk by H.M. Ships, 55% by H.M. Submarines and 21% by the R.A.F. and F.A.A.

(ii) Enemy Shipping Losses Assessment Committee's Estimates.

CS.11260
Part I
Encls.46A
and 47A

The Enemy shipping Losses Assessment Committee's Estimates for December in respect of enemy merchant shipping casualties in the Mediterranean were:- 18 ships totalling 54,769 tons sunk or constructive loss, 4 ships totalling 17,300 tons seriously damaged. and 4 ships totalling 22,000 tons damaged. In particular, air action was credited with the sinking of 4 ships totalling 19,516 tons (but of these the sinking of one tanker of 10,540 tons and one cargo vessel of 1,976 tons was shared with H.M. Ships) and causing damage to two merchant ships totalling 13,000 tons.

(B) Confirmed Losses of Enemy Merchant Shipping

Appendix
P.

A study of enemy records and confirmed reports of the Admiralty Shipping Losses Assessment Committee shows that identified merchant shipping confirmed as sunk in the entire Mediterranean December totalled 44,939 tons. Of this total 32,918 tons were sunk by the Royal and Allied Navies and 12,021 tons (including the two vessels mentioned above as shared with H.M. Ships) by air action. In respect of shipping adjudged plying the North African convoy route, sinkings amounted to 37,096 tons: of this figure 23,319 tons were sunk by the Royal and Allied Navies and 11,775 tons (including the two vessels shared with H.M. Ships) by air attack.

Comments by Vice Admiral Weichold

AHB 1/S10

Vice Admiral Weichold in his essay in the "War at Sea in the Mediterranean" does not give details of sinkings in the last month of 1941 but makes the following statement on losses up to the end of that year: "The average monthly tonnage in Libyan convoys was 114,000 tons with an average loss of 21,000 tons sunk and 9,000 tons damaged, which represents a loss of 26%. A loss alone of more than a quarter of the shipping space allotted to the African convoys meant a tremendous reduction in the shipping pool which in the long run could not fail to have serious consequences".

At the end of 1941 "the period of purely Italian direction of sea warfare in the Mediterranean ending with the second loss of Cyrenaica", which "had been governed by strategic defence", ceased.

/The

"The new German reinforcements for the Navy and Air Force in the Mediterranean are organised under a German commander with the title of 'Oberbefehlshaber Süd' (G-in-C.South). He was, however, not responsible for the command of the Army in Africa nor for the control of sea transport to Libya. These latter responsibilities alone lay completely with the German General representing the O.K.W.

Convoy Movements between Malta and Egypt during December.

Our occupation of Cyrenaican air bases facilitated not only the provision of air protection for our shipping sailing to Tobruk (and in early 1942 Derna and Benghazi), but also greatly reduced the danger attacked to the Malta run. Two convoys were passed between Egypt and Malta in December - (1) S.S. "Breconshire" (15th-18th December) which sailed from Alexandria to Malta, and (2) A convoy of four merchant ships which sailed from Malta to Alexandria (26th-29th December). There is need here only to record the basic facts as fuller details are given in the narrative dealing with the air/sea war in the Mediterranean.

AHB.IIJ1/12
Appendix
'A'

In December Malta was greatly in need of fuel: the "Breconshire" was sent from Egypt with supplies as the Axis control of the western approach to the island ruled out assistance from Britain. The Naval plan provided for three covering forces - one operating from Egypt and two from Malta. Special searches were carried out by aircraft operating both from the island and the mainland. The passage of the "Breconshire" was complicated by the fact that at the same time the enemy was running a convoy to Tripoli and two powerful naval forces, apparently, were at sea. As already mentioned, the air effort which could be brought to bear on the enemy ships was disappointing. The "Breconshire" left Alexandria on 15th December and reached Malta safely on the 18th; the supplies brought helped the island to withstand the Luftwaffe's offensive in early 1942.

Idem and
M.E.W.O.S.
No.11
App."B"

A convoy of four merchant ships, escorted by a cruiser and four destroyers and covered by special air searches from Malta, left the island after dusk on the 16th. Another naval force left Alexandria to meet the convoy on the morning of the 28th, approximately 60 miles north of Ras El Tin. During the day a Martlet of No.805 Squadron, F.A.A. on protective patrol over the convoy intercepted a formation of four unidentified enemy torpedo-bombers about to attack the ship and shot down one of them and forced two others to jettison their torpedoes. The Martlet attacked the fourth and upset the torpedo's direction, but the enemy rear gunner killed the Martlet pilot by a burst of machine-gun fire. Fleet Air Arm Fulmars later intercepted and drove off a large formation of JU.88s which attempted to attack the convoy and forced them to jettison their bombs. None of the ships in the convoy was damaged.

SECTION TWO

OPERATIONS AT AGEDABIA

Memorandum of A.O.C., Western Desert, on the R.A.F. Aspects affecting the Continuance of the present Advance to include the Capture of Tripolitania (Operation "ACROBAT") (27th December, 1942)

From the time of the enemy's retreat to Agedabia Operation "Acrobat" (the capture of Tripolitania), which had been considered for some months, became the agreed policy.

A.A. H.Q.
W.D/Air/14
Encl.4A.

On 27th December the A.O.C., Western Desert, drew up a memorandum on the R.A.F. aspects which clearly showed our intentions and must be borne in mind when considering the operations of the following three to four weeks. In the event, it should be noted (a) by 11th January

AA. H.Q.
W.D/16/Air

it was decided (due to military and supply requirements) that "Acrobat" could not commence until 10th February at the earliest and (b) the German counter-attack and advance which began on 21st January put "Acrobat" out of court altogether.

The memorandum is worth quoting at some length as the implications of the proposed further advance necessarily affected the arrangements and forces available for the concluding phase of "Crusader".

AA. H.Q.
W.D/Air/14
Encl. 4A.

The A.O.C., Western Desert, cited the main factors affecting the implementation of "Acrobat" as:- (1) The defeat of the enemy in Cyrenaica, (2) the degree of reinforcement which the enemy could obtain in Tripolitania and (3) the supply of our forces over the extended communication system.

It was appreciated that the campaign in Tripolitania should be undertaken without delay, as after the expected speedy conquest of Cyrenaica the enemy's forces in Tripolitania would be temporarily disorganised. The enemy's degree of resistance would increase if time were allowed for re-organisation and reception of supplies and reinforcements from Italy and Sicily and to some extent, possibly, Tunisia.

The British forces engaged in Cyrenaica at the end of 1941 required a minimum of 1,400 tons of supplies per day for the maintenance of their effort. In particular, 270-300 tons of specialist supplies (petrol, ammunition, bombs and aircraft spares) per day were required by the R.A.F. and the arrangements then obtaining were for these to be delivered to R.A.F. dumps at Tobruk and transported forward as required. Eight hundred to one thousand tons per day were then provided through Tobruk with onward transport by M.T. and the remainder from railhead with a longer M.T. haul. All available M.T. working at maximum capacity was needed to meet these commitments up to Benghazi. Beyond Benghazi the supply system would be overstrained with the turn round time of vehicles, and would break down altogether under additional load. The opening of the ports of Derna and Benghazi would relieve the situation when shipping could be run to schedule: even then a separate line of supply might be required by M.T. from railhead in case of interference with shipping by enemy air action.

As a result of the limitation of supply it was considered essential to reduce the forces being employed forward of Tobruk and this involved a reduction in the air forces employed for the campaign in Cyrenaica and beyond.

In summarising the probable air situation for the advance into Tripolitania the A.O.C., Western Desert listed as our main assets:- (1) the moral advantage of the air superiority won in Cyrenaica, (2) the disorganisation of the enemy's ground organisation, (3) the assistance of air forces based on Malta and (4) the knowledge that no overwhelming enemy air reinforcement was probable (inter alia the Germans were stated to have temporarily lost air superiority in the Russian theatre which implied sending reinforcements in the Spring). On the debit side, it was appreciated that (1) the enemy had a defensive fighter force in being, using established bases, (2) that our land forces would be open to attacks on the coastal strip from Sicily, without warning and (3) that we would have to construct airfields for the short range fighter force as we advanced.

On the above bases and bearing in mind the limitations of supply, the requirements in air forces for the first phase of the advance to Tripoli - the movement to the general area of Buerat - were estimated as follows:-

/Fighter

Fighter Force⁽¹⁾

- (1) Control Formations:
Fighter Wing Headquarters: - Nos.258 and 262 Wings.
- (2) Squadrons:
Six Tomahawk or Kittyhawk Squadrons
Two Hurricane Squadrons
- (3) One Hurricane long range squadron } under Air Headquarters
One Beaufighter squadron }
- (4) Three S/E Squadrons in reserve in the Benghazi area
(resting, training and reinforcing).
- (5) The remainder of the fighter force would be disposed with
one squadron each at Tobruk, Derna and Benghazi.

The above establishment implied the retention of all the fighter squadrons previously employed plus No.450 Squadron, R.A.A.F., which was arming in readiness to move up to the Desert.

Bomber Force.

In order to avoid the transportation of bombs as much as possible, low flying fighter attacks on airfields and close support targets were to be substituted when possible for day bomber attacks. The static objectives could be attacked satisfactorily by night bombers. No.205 Group Wellingtons could use refuelling airfields in Cyrenaica and thus save the carriage of bombs. Thus it was proposed to limit the bomber forces to assist the advance to the following:-

- (1) Control Formation:
No.3 (S.A.) Wing (Reduced Staff)
- (2) Light (formerly Medium) Bombers⁽²⁾
No.21 Squadron, Marylands
No.11 Squadron, Blenheims
No.826 Squadron, Fleet Air Arm, Albacores.

/ (3)

- (1) The final allocation of operational units for "ACROBAT", it may be noted, was submitted to H.Q., R.A.F., M.E., on 9th January. The original proposals were adjusted owing to the allotment of a further fighter squadron for the defence of Tobruk and the desirability of withdrawing Nos.2 and 4 Squadrons, S.A.A.F. following their recent intensive operations. "Fighter Force moving forward" was then given as:- Nos.258 and 262 Wings (the latter to be an Advanced Wing to go forward as required). The flying wings were to be:- Nos.3 R.A.A.F. and 112 Sqdns: Nos.1 S.A.A.F. and 274 Sqdns: Nos.229 and 80 Sqdns: and Nos.94, 250 and 260 Sqdns. (The last flying wing was to remain at three squadron strength while squadrons were re-equipping - No.94 Squadron was due to re-arm with Kittyhawks forthwith and No.260 Squadron subsequently).

No.33 Sqdn. and No.450 Sqdn, when it came forward, were to be under Advanced Air Headquarters orders. "Fighter squadrons located in Cyrenaica" were to be:- No.2 Squadron (Derna)
No.4 Squadron, S.A.A.F. (Benghazi) and
No.238 and R.N. (Fighter) Sqdn. (Tobruk).

(A.A.H.Q. W.D./16/Air Enc.19A).

- (2) In the final allocation of units it was tentatively put forward that No.14 Squadron and Lorraine Squadron (it was proposed at this time that this squadron should be re-equipped with Blenheim fighters) should be added to the day bomber force. (A.A.H.Q. W.D./16/Air Enc.19A).

- (3) Medium (formerly Heavy) Bombers
 No.205 Group Wellington Squadrons
 To be assisted by Wellington squadrons operating from Malta.

The disposal of the remainder of the Bomber Force was as follows:- Nos.12 and 24 Squadrons, S.A.A.F. to be withdrawn (the particular reasons which necessitated the withdrawal have already been mentioned on page 232 and the Blenheim squadrons Nos.14, 45, 84 and Lorraine and the controlling formation, No.270 Wing, were to be available for disposal on H.Q., R.A.F. Middle East's instructions on the completion of operations in the frontier area.

Army Co-operation Squadrons

The advance to Tripoli had to be undertaken on a comparatively narrow front: reconnaissance tasks were, however, likely to be heavy with a fast moving force. It was proposed to allocate No.208(A.C.) Squadron to the mobile force and retain No.257 (Rhodesia) Squadron under Battle Headquarters as a reinforcement and supplement reconnaissance when required. (1) No.451 Squadron, R.A.A.F., would be available for disposal when the frontier operations were completed.

Air Support Organisation

With the elimination of No.270 Wing, the air support link to this Wing and the set at the Wing Headquarters could be withdrawn.

Miscellaneous Units

The Strategical Reconnaissance Unit and Air Transport Wing, including the Communication Flight, would be required to accompany the force.

Maintenance Project

The daily maintenance requirements of the "Acrobat" air forces were assessed as follows:-

Petrol (Fighters)	: 70 tons
Petrol (Bombers)	: 30 tons
Ammunition (Fighters)	: 15 tons
Bombs	: 20 tons
No.205 Group bombers refuelling (Benghazi area)	: 20 tons
	<u>155 tons</u>
P.O.L.(H.T.) and Rations and Water	: 30 tons
	<u>185 tons</u>

R.A.F. maintenance was to be based on the establishment of a forward dump in the Agedabia area with a subsidiary dump in the Benghazi area. Forward of these, ancillary dumps were to be established in relation and convenience to the operational areas.

While the supply system was based on Tobruk the 185 tons needed would have to be moved by Army Desert convoy from Tobruk to the R.A.F. dump at Agedabia; forward of Agedabia Army transport would again be required to move supplies to dumps in operational areas.

/When

(1) In the final allocation of units Nos.208 and 40 Squadron, S.A.A.F. were suggested as Army Co-operation squadrons. (A.A.H.Q.W.D./16/Air Enc.19a)

When Benghazi port was available the Desert convoy could be proportionately relieved and separate arrangements made with Army transport for the movement of supplies to Agedabia. The daily lift of the 85 tons for the Fighter Force would entail the consistent employment of one R.A.S.C. platoon of 40 vehicles for each 50 miles of lift westwards: this was a commitment independent of the Desert convoy and specifically for R.A.F. use. The transport of R.A.F. supplies from Agedabia to Tripoli would require a total of one and a half R.A.S.C. M.T. companies.

The Army M.T. resources at the end of 1941 allowed for an allocation of only 160 tons per day to the R.A.F. The only arrangement that could be made to reduce R.A.F. requirements was the transportation by sea of aviation fuel for the refuelling of No.205 Group bombers. It was considered that the R.A.F. requirements of 185 tons per day could not be further reduced "without prejudice to operations".

Command

When the advance into Tripolitania began it was considered essential to free the Air Force Commander from the administration of base units of his force. It was recommended that a Cyrenaican formation should be established at once to take over the defence commitments on the lines of supply and base airfields. (Page 272 refers).

Headquarters, Western Desert

The policy of splitting the Headquarters into Rear and Advanced sections had proved satisfactory during the advance in Cyrenaica and it was proposed to continue in that way. Until such time as Tobruk remained the main supply port Rear Air Headquarters, Western Desert, was to remain in the vicinity of that port. The Advanced Headquarters could be reduced so as to form an efficient Mobile Headquarters to move with the "Acrobat" force.

Conclusion

The moral advantage held by us and the assumed existing disorganisation of the enemy combined to stress the urgency of continuing the campaign and retaining the momentum of advance. The administrative project to support the advance was clearly difficult and depended mainly on the volume of shipping to Tobruk in the first instance and later to Benghazi. "Any interference with the shipping schedules may have the gravest effects on the campaign".

The A.O.C., Western Desert concluded: "It is clearly incumbent to proceed with the minimum forces required to ensure success. With the strength of the air forces outlined, the R.A.F. should be in a position to attain a measure of local air superiority and give the necessary aid for our advancing ground forces at Tripoli".

Ground Operations around Agedabia. (26th December, 1941, to 6th January, 1942).

The A.O.C. Western Desert's memorandum of 27th December clearly showed the need for the immediate occupation of Agedabia. In the event the 13th Corps was held up at Agedabia, where the enemy fought a delaying action while positions were being prepared in the marshes around Agheila, from 26th December to the 6th of the following month.

The terrain around Agedabia greatly favours defence. General Auchinleck summed up the situation as follows:-

/"The

A.A.H.Q.
W.D/Air/14
Encl.4A
C.-in-C's
Despatch
P.63.
C.in C's
Despatch
P.63.

"The strip of land between the main road and the coast is swampy, and soft sand dunes make the few dry patches practically impassable for vehicles. The ground to the east and south is also covered with soft sand and is bounded by the Wadi Faregh, which runs in a south-westerly direction from the Gfof El Matar to the Agheila marshes and is a formidable natural barrier. Apart from a side outflanking movement to the south-east of the Wadi Faregh, which it was far beyond the capacity of the 13th Corps to undertake, there were only two courses open to us: either to make a frontal attack on the main enemy position astride road just north of Agedabia village, or to attempt an outflanking movement over the difficult country to the south. General Godwin Austin tried a combination of both".

Idem P.64. As soon as fuel could be provided for the 22nd Armoured Brigade, this formation was directed to work round to the south towards Chor Es Sufan while the Guards Brigade traversed the sand dunes in order to attack Agedabia from the west. The assault of the Guards Brigade on 26th December "failed owing to misdirection". The following day the 22nd Armoured Brigade was engaged by remnants of the enemy's Panzer Divisions which had been located to the south-east. The enemy's armour prevailed as the serviceability of the Brigade's tanks was extremely low due to the long trek across the desert from Gazala.⁽¹⁾ The Brigade thus failed to work round behind the enemy's main position and fell back to El Haseiat. In a further action on 30th December the Brigade lost some more tanks and it became clear that it was too weak for further action. The Commander of the 13th Corps therefore instructed the 7th Support Group to relieve the Brigade and until fresh troops were available harassing action only was possible.

As our forces in the forward area were not strong enough to drive the enemy from their positions at Agedabia and continue the advance, the G.O.C., Eighth Army, ordered the 1st Armoured Division to move up, intending to use this force for the projected operation "Acrobat" (the advance into Tripolitania). In early January, also, the 4th Indian Division was instructed to move forward as soon as the supply and administrative circumstances permitted.

Tactical Air Reconnaissance (26th December - 6th January)

Squadron O.R.B.s. During the period of the ground operations around Agedabia tactical air reconnaissance of the forward area was carried out by No.208 (A.C.) Squadron. No.451 Squadron, R.A.A.F. was engaged in Tac./R connected with the frontier operations (page 255 etc.) and No.237 (Rhodesia) Squadron was inactive owing to successive moves to Benghazi, El Adem and finally Tmimi. It may be noted that the squadron's operations from this last airfield for the remainder of the "Crusader" advance consisted purely of patrols on local defence.

No.208 Squadron O.R.B. No.208 Squadron carried out 20 tactical, one strategic (by L/R Hurricane) and one photographic reconnaissance during the period. The detached flight carrying out the reconnaissances over the forward area moved from Msus to Antellat on 27th December, but early in the New Year this flight returned to Msus with H.Q. 13th Corps "as a precautionary measure owing to their being too far forward". The flight at Tmimi was employed on local defence.

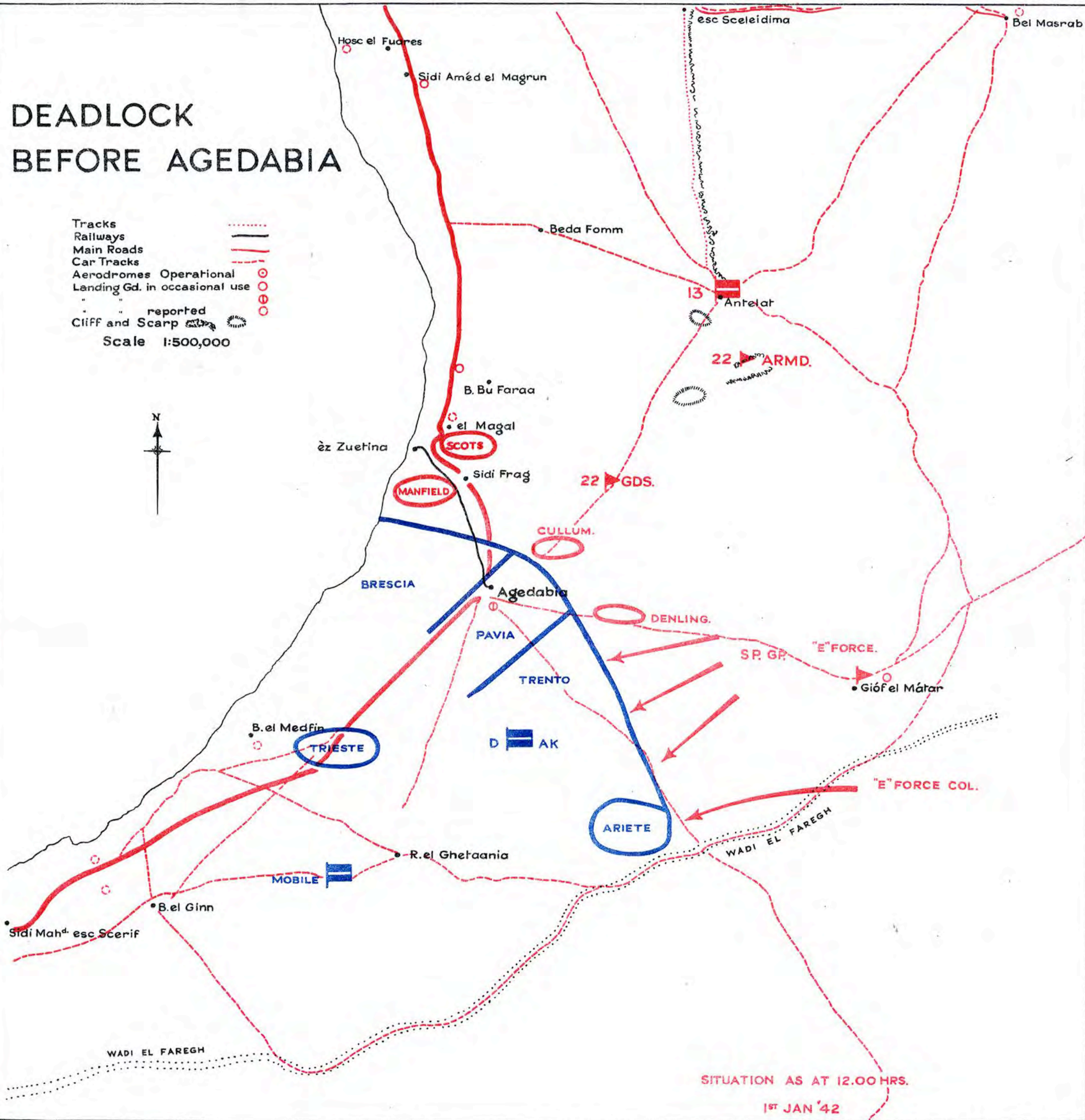
Idem. December App.C. Although, as already stated, the actions fought by the Guards Brigade and 22nd Armoured Brigade were unsuccessful No.208 Squadron's reconnaissances of the Agedabia, Chonfus, Haseiat, and Agheila areas at that time provided valuable information. The Commander of the 13th Corps wrote to the Commanding Officer of the Squadron on 28th December "Please convey to your pilots my congratulations on the way in which reconnaissance work has been carried out in the last three days..... you have obtained the most valuable information which has been the only source of intelligence available".

/Reference

(1) The Brigade had been fitted out with 130 tanks. Of these 60 became unserviceable en route and of the 14 battle casualties 8 were caused by mechanical breakdown.

DEADLOCK BEFORE AGEDABIA

Tracks
Railways
Main Roads
Car Tracks
Aerodromes Operational
Landing Gd. in occasional use
" " reported
Cliff and Scarp
Scale 1:500,000



SITUATION AS AT 12.00 HRS.

1st JAN '42

No.208
Sqn.
O.R.B.

Reference has already been made to the attempt to Co-ordinate Tac/R. with fighter sweeps over the area concerned. This method did not always provide sufficient protection as the few enemy fighters then operating tended to concentrate on the lone reconnaissance aircraft and elude combat with our numerically superior fighters. A request by the C.O., of No.208 Squadron on 30th December that close escort should be provided by fighters was not complied with. After another of No.208 Squadron's aircraft had been shot down on 3rd January, however, close fighter escort was sporadically given. Later in the month enemy air opposition became more formidable and, as the C.O., No.208 Squadron put it in this report:

".....higher policy ruled out the escorting of reconnaissance aircraft. Instead, every effort was made to co-ordinate the fighter operations in the forward area with those of the tactical reconnaissance squadron. This was only partly successful. The fighters were given their offensive role and to all intents and purposes any responsibility for the safety of the tactical reconnaissance aircraft disappeared".

No.3
Sqn.
O.R.B.

Meanwhile, our fighter squadrons (particularly No.3 Squadron, R.A.A.F.) added reconnaissance to their offensive sweeps and escort commitments, probing, in particular, the rear area as far as Marsa Brega and noting movements along Wadi Faregh.

S.A.A.F.
Narrative

The operations of the Survey Flight (No.60 Squadron S.A.A.F.) from Tmimi during the period were greatly impeded by low cloud, but a few successful photographic reconnaissances of the Agheila and Misurata area were carried out.

Unsatisfactory Supply and Administrative Situation in Western Cyrenaica and Delay in Re-opening Benghazi.

C.in C's
Despatch
Idem P.64
and A.H.B.
II J1/12
P.35

As already indicated, our ability to continue the advance depended on improving the supply situation. "There is no denying", the Commander-in-Chief, Middle East, reported, "that the administrative position in Western Cyrenaica at the opening of the New Year was far from satisfactory". Transport resources were hard pressed to meet daily maintenance needs and our requirements were mounting as the attrition of prolonged operations had to be made good. Captured enemy stores were inadequate substantially to supplyment our deficiencies.

The port of Derna was brought into operation on 6th January and from that time the supply of our forces in the eastern part of the Qebel Akhdar was assured. The following day the first convoy arrived at Benghazi, but unloading was greatly slowed down by bad weather and the lack of lighters. Subsequently rough seas prevented lighters sailing round the coast and Benghazi was never brought into full use.

During the whole time that our forces were in Western Cyrenaica, therefore, they had to rely on road transport. So far as our forward air forces were concerned the inadequacy of such transport resulted in particular, in continued fuel shortages.

Continued Low Scale Enemy Air Effort in Libya and Increased Pressure on Malta.

M.E.W.I.S.
No.80
A.M.W.
I.S.
No.123.

During the period of the deadlock at Agedabia the German Air Force's operations over the battle area continued to be on a low

/scale.

scale, (1) although the breathing space had allowed some re-organisation and operations were carried out from Arae Fileni, Nofilia and Merduma and the forward landing grounds at Agedabia. In particular, Stukas resumed their attacks, although on a small scale, on our ground forces in the forward area. Small scale Ju.88 attacks were also made from time to time on our lines of communication, air bases and shipping, without however, achieving any notable results. The operational activity of the I.A.F. was for a time negligible, its main concern being to remove serviceable aircraft to safer areas in Tripolitania.

M.E.F.O.S. No.12. It must be borne in mind, however, that the enemy's (and particularly the G.A.F's) predominant air commitment was then the neutralisation of Malta. During the period 30th/31st December to 4th/5th January, for instance, some 440 aircraft were reported to have operated against the island - concentrating particularly on the landing grounds. The peaks of the enemy's air effort coincided with the passing of convoys to Tripoli. On 3rd and 4th January, in particular, a total of 290 sorties were reported flown against Malta: on the morning of the 5th a special shipping search flown from Malta reported nine escorted merchant vessels entering Tripoli harbour.

A.H.B.
II J1/12
Appendix
A.M.E.F.O.S.
No.12
Appendix
"C"

The general intentions of the enemy were plain - to stem our advance as long as possible by delaying actions at Agedabia, and later Agheila, while his critical supply situation was being improved.

Scale of Fighter Effort (26th - 6th January)

M.E.W.O.S. No.11 During the period that our ground forces were in contact with the enemy at Agedabia (26th December - 6th January) the Western Desert fighter squadrons reported the carrying out of a total of 1,322 operational sorties. The analysis according to employment was as follows:- 519 sorties on offensive sweeps and ground attacks; 382 on shipping protection; 218 on bomber (and reconnaissance) escort; and 203 on local defence.

M.E.F.O.S. No.12

A.H.B. The heavy air commitments involved in the increased use of Tobruk and the gradual employment of the Cyrenaican ports further west is illustrated by the progressive rise in the weekly totals of fighter sorties on shipping protection. Thus in the first week of the campaign (18th - 24th November) sorties on this task totalled only 41; in the week 2nd-8th December they had risen to 98; in the week 24th-30th December they totalled 156; and in the following week,

II J1/12
Appendix
"A".

/ending

(1) Nevertheless the casualties of the G.A.F. operating in North Africa were not inconsiderable. German records showed that during the period 26th December to 6th January, inclusive, one S/R aircraft, one L/R aircraft, 9 day fighters, one night fighter, 10 bombers, 3 dive-bombers and one "other type" were lost and 3 day fighters, 7 bombers and one "other type" were damaged. (ADIK 103/64). Our air losses through enemy action during the period were:- 11 Hurricanes, 8 Wellingtons, 3 Tomahawks, 2 Blenheims, 2 Beauforts and Maryland, one Albacore and one Martlet lost and 5 Hurricanes, seven Blenheims and 4 Tomahawks damaged.

(M.E.W.O.S.No.11 & M.E.F.S.No.12 App. "D")

ending 6th January, they totalled 223.⁽¹⁾

Features of the Fighter Action in Cyrenaica - Including
First Operations by Kittyhawks.

In general during the twelve days halt at Agedabia the Fighter Force, although depleted, could still maintain numerically superior forces over the Agedabia area⁽²⁾ and retained air superiority.

Squadron
O.R.B.'s
S.A.A.F.
Narrative
H.Q., RAF.
M.E. Daily
Operational
Summaries
and AHB.
II J1/12.

The squadrons available for offensive sweeps, operating in Flying Wings as formerly were:- the Tomahawks of Nos. 2 and 4 S.A.A.F. and 112 and 250 Squadrons, Hurricanes of Nos. 94, 229, 238, 260 and 274 Squadrons and, from 28th December, No. 3 Squadron, R.A.A.F. re-armed with Kittyhawks. When the situation at Agedabia became static at the end of December, the opportunity was taken to withdraw No. 112 Squadron for re-arming with Kittyhawks. The squadron resumed operations on 9th January.

This did not mean, however, that these squadrons which then comprised the offensive fighter force were absolved from defence commitments other than the usual protection of their own landing grounds at Msus. In the event, airfields between Benghazi and Derna were generally waterlogged. Thus until the airfields in the Benghazi area could be made serviceable, and sector control with R.D.F. cover established there, standing fighter patrols by Msus-based fighters were necessary for the defence of the port. As already mentioned the German bomber action against the port and our rear communications generally was sporadic and on a low scale. German records show that on most days one or two bombers failed to return from operations, but in general it is not possible to link these losses with our defensive fighter action. In particular the claims of a Ju. 88 shot down and one He. 111 and one Me. 110 damaged by Nos. 33 and 3 R.A.A.F. Squadron in the course of standing patrols over Benghazi on 5th January are not substantiated by enemy records.

ADIK
103/64

/During

- (1) The figures are given in order to indicate the effort required which implied a lessening of the effort associated with the campaign proper. Details of the shipping protection commitments came within the scope of the Air/Sea War narrative, but it may be noted that not a single merchant vessel was lost in these parts of the Mediterranean within range of S/E fighters and only one within range of Beaufighters, as a result of enemy air action during the entire period of the "Crusader offensive."
- The squadrons (under Advanced H.Q. 201 Group, formed at Tobruk 22/12 and at Benghazi 28/12, and No. 234 (ex 269) Wing) concerned with shipping protection at this time was as follows:-
- No. 1 Sqn. (S.A.A.F. (Hurricanes) Benghazi (with Sector Ops. Rm to be set up).
 - No. 272 Sqn. (Beaufighters) Barce area. R.N. (Fighter) Squadron (Hurricanes) El Gubbi.
 - No. 94 Sqn. (Hurricanes) Tobruk (with Sector Ops. Room to be set up).
 - No. 30 Sqn. - 1 Flight (Hurricanes) Sidi Barrani.
 - No. 805 Sqn. F.A.A. (Martlets) Maaten Bagush.
 - R.N. Flight (Fulmars) L.G. 16.
 - No. 252 Sqn. (Beaufighters) Quotafiya. (H.Q. R.A.F. M.E. Air Staff Appendix 1 O.R.B. Dec. 1941 and Nos. 134 and 235 Wing O.R.B.)
- (2) On occasion - for instance on 30th December - all available fighters were ordered to patrol Agedabia area as a result of information from wireless intercepts which indicated that German fighters (operating from Marble Arch L.G. and using Agedabia L.G. as an advanced L.G.) were to be active in the area. (A.O.C./II Part 2 Encl. 59B).

During the last six days of December few enemy aircraft were seen over the forward area, but a perceptible increase of enemy air activity was apparent in the New Year. The few encounters arising from the offensive sweeps (with the exception of the first Kirryhawk operations which are considered in more detail afterwards) can be summarised as follows:-

On 28th December in the course of patrols over our troops in the Agedabia area a Ju.88 was claimed shot down by Hurricanes of Nos.260 and 270 Squadrons: (1) during the afternoon of 31st December S.A.A.F. Tomahawks of Nos.2 and 4 Squadrons were attacked by six Me.109s to the south of Agedabia and claimed one fighter damaged (2); on the following afternoon Hurricanes of Nos.229 and 208 Squadrons engaged some seven Me.109s south-east of Agedabia and claimed two damaged for the loss of one Hurricane (3); on the morning of 2nd January Hurricanes of Nos.94 and 260 Squadrons encountered a formation of Me.109s to the south of Agedabia and claimed four damaged (4) for the loss of one Hurricane; at noon on the following day Hurricanes of Nos.229 and 238 Squadrons claimed two Me.109s damaged out of eleven encountered north of Agedabia (5); on 4th January Tomahawks of Nos.4 S.A.A.F. and 250 Squadrons claimed one Me.109 damaged (6) as a result of three engagements with standing patrols of five Messerschmitts; and on the next day Hurricanes of No.274 Squadron claimed a Me.110 damaged near Antellat (7).

No. 3
Squadron
O.R.B.

The most notable feature of the fighter activity over the forward area at this time was the resumption of operations by No.3 Squadron, R.A.A.F. (8). The Squadron commenced operations with Kittyhawks on 28th December, carrying out two sweeps over the forward area in company with Nos.112 and 250 Squadrons. In the absence of enemy aircraft the sweeps provided valuable reconnaissance information. Reports were made on enemy concentrations seen south-east of Agedabia and west and north of Gtafia and later on a movement by enemy vehicles to the south-east near Wadi Faregh threatening to outflank the 22nd Armoured Division which withdrew. On the 29th the Division moved north-westwards along the track from Haseiat to Agedabia, but, as already mentioned, were again forced to withdraw on the 30th owing to the superior German armour. During these two days No.3 Squadron flew 48 sorties on troop protection, reconnaissance and bomber escort duties. Still no enemy aircraft were seen. On the last day of 1941 No.3 Squadron and No.250 Squadron carried out an offensive sweep of the Agedabia area in the morning and in the later

/afternoon

ADIK/103/64 German records for the days mentioned show:

- (1) 1 Ju.88 lost and 1 damaged.
- (2) 4 Me.109s lost.
- (3) No fighter casualties recorded.
- (4) No fighter casualties recorded.
- (5) 2 fighters lost.
- (6) 1 fighter lost.
- (7) No. Me.110 casualties recorded.
- (8) No.3 Squadron had ceased operations with Tomahawks on 16th December, having handed over its remaining aircraft to Nos.2 and 4 S.A.A.F. and 112 Squadrons preparatory to re-equipment with Kittyhawks. No.3 Squadron's base party, which had been at Sidi Haneish since September, joined the servicing parties at El Adem on 19th December and the entire squadron moved to No.2 L.G. Gazala on 21st and 22nd December. Two days later No.1 Servicing Party left for Msus and was joined on 27th December by No.2 Servicing Party, the Aerodrome Defence section and 14 Kittyhawks. While at Gazala the squadron maintained standing patrols to counter enemy bomber activity but no interceptions were made.

afternoon, accompanied by Nos. 2 and 4 Squadrons, S.A.A.F., patrolled the area Agedabia - Gtafia - Haseiat. South-east of Agedabia the S.A.A.F. Tomahawks had inconclusive combats with a number of Me.109s, but the Kittyhawks, flying above, were not engaged.

The first combat between the Kittyhawk and the Me.109 occurred on New Year's Day 1942. The morning patrol over the Agedabia - Haseiat area passed without incident, but during the afternoon nine Kittyhawks of No.3 Squadron R.A.A.F. encountered 16 Ju.87s, escorted by 6 Me.109s, about to bomb troops some 15 miles east of Agedabia. The Messerschmitts left the bombers, delivered some half-hearted attacks and then climbed above the cloud; the Stukas jettisoned their bombs and fell into a defensive circle at about 200 feet. Three of the Australian pilots each claimed a Ju.87 destroyed and another pilot claimed three damaged. Meanwhile a Sergeant Pilot led his section against the fighters. His combat report is worth quoting at length:

"As most of formation appeared to be about to attack the bombers, I endeavoured to lead blue section into the Messerschmitts. I followed these with several Kittys after me. When I emerged from the cloud they were circling above and as I appeared to be above I decided to break off and jump them from above. I came back through the clouds, warned the Kittys of 109s above, then went away and climbed to 12,000 feet. When I came back, I could see nothing above or below cloud, so went back to Agedabia to intercept them on the way home. Here the cloud base was irregular. At about 3,000 feet, and after I had done a couple of circuits, three Me.109s turned up and prepared to land at Agedabia West. I let them get settled down and then dived on to one, but had to alter my attack and dive on another head-on. I had a long burst at it and saw it flick upside down and it went under me. This was at 1,000 feet. The others by this time, had their wheels down, so I stalked the rear one who was only at about 500 feet. After only a short burst, he dropped his nose and crashed. I then attacked the other from astern, saw him waver when I fired, but immediately had to climb to avoid some Stukas which were now coming in. Icing conditions were severe in the cloud, my ring-sight being thickly crusted and the motor showing signs of ice in the carburettor. I attacked a line of five or six Stukas just about to land. I saw the rear one slide away as I shot at it, then went for the leader. He kept ahead on a straight glide into the desert, while the main body turned left and landed. I flew in and out of cloud for some time, but as two of my guns were stopped and the reflector sight was useless, I thought it unwise to remain longer."

As a result of this effort this pilot claimed one Ju.87 and one Me.109 destroyed, one Me.109 probably destroyed and two damaged. The total squadron's claims amounted to five aircraft destroyed, two probables and three damaged.

The Kittyhawks' first combat with the Me.109 at the time gave great satisfaction. The Kittyhawk was considered a success - although all the pilots found fault with its reflector sight - and the flight of the Messerschmitts from their bombers was regarded as evidence that the Luftwaffe had felt the strain of prolonged operations and had need to conserve its fighter strength even more than the Western Desert Air Force.

In view of the strong claims put forward by No.3 Squadron, R.A.A.F. it is remarkable that the official German records show no casualties - either losses or severe damage - to Ju.87s or Me.109s on the day concerned. As these records are accepted as accurate, it is possible

ADIK
103/64

that the air gunnery of the pilots concerned - and, it will be remembered that this particular branch of Western Desert fighter activity had often been criticised - did not equal the pilots' intrepidity and airmanship.

No.3
Squadron
R.A.A.F.

The five days following the air combat of 1st January passed quietly in patrols over the Agedabia - Haseiat area, in escorting tactical reconnaissance aircraft and in interception duties over Benghazi and patrols over Msus. In all No.3 Squadron flew 68 sorties on these commitments.

AOC/II
Part 2
Encl.64A

M.E.W.O.S.
No.11
Page 11 and
Appendices
B and D.

As the ground situation became static at Agedabia, the low flying fighter attacks on enemy forces which had been a feature of the retreat from Gazala greatly decreased as suitable targets became scarce as enemy dispersal was good. The only operation of note in this category occurred at the beginning of the Agedabia deadlock on the 27th while the 22nd Armoured Brigade were unsuccessfully engaging the German armour to the south-east of Agedabia. Fifteen Tomahawks of No.2s and 4 S.A.A.F. and 112 Squadrons operated against the enemy's road transport between Agedabia and Agheila, claiming three lorries destroyed "and considerable damage and confusion among fifty other vehicles, many being overturned and some set on fire". With the re-organisation of the enemy's anti-aircraft defences such attacks were then extremely hazardous - casualties as a result of the operation mentioned were two Tomahawks lost and four seriously damaged.

Meanwhile on several occasions in early January No.272 Squadron Beaufighters operated against petrol-carrying lighters off Ras El Aali and Ras El Lanuf (west of Agheila) which were off-loading supplies at the jetties constructed there. Few vessels were seen but considerable casualties were inflicted on road transport west of Agheila to Sirte; in particular, on 31st December and 1st January 15 vehicles (including 2 tankers) were claimed destroyed and 36 damaged. Further attacks on the supply points in the enemy's immediate rear by the night bomber force are mentioned later.

Limited Direct Support Bombing
(26th December - 6th January)

(A) Effort by Western Desert Day Bomber Squadrons.

Squadron
O.R.Bs of
No.270 Wing,
No.11 Sqdn.
O.R.B. and
S.A.A.F.
Narrative

- (i) The effort of No.270 Wing Blenheims was directed mainly to aiding operations at the frontier - first against targets at Bardia and later at Halfaya. (Pages 255-258 and 278-279 refer).
- (ii) Two squadrons of the Wing - Nos.45 and 84 Squadrons - were withdrawn for refitting in early January prior to despatch to the Far East.
- (iii) The operations of No.3 (S.A.) Wing, then comprising No.21 Squadron S.A.A.F. (Marylands) and No.11 Squadron (Blenheims), were limited during the last few days of December by the shortage of aircraft and need for re-organising on the part of No.21 Squadron and the move to Bu Amud by No.11 Squadron.
- (iv) Squadrons briefed and standing by at Msus in readiness to give help to the 13th Corps were, as formerly, often not called upon.

/((v)

(v) Bad weather on several days - particularly on 29th December and 2nd and 6th January - hindered or prevented operations.

(vi) Shortage of fuel, as previously mentioned.

Idem

Thus the effective day bomber effort against the enemy forces during their stand at the Agedabia position totalled only 82 Blenheim and 6 Maryland effective sorties. In particular, for one or other of the reasons mentioned above, not a single bomb was dropped on the enemy at Agedabia during day time on 27th and 28th December and from 2nd to 6th December.

Idem and
M.E.W.O.S.
No.11 and
M.E.W.O.S.
No.12.

Apart from an attack by five Blenheims of Nos.11 and 45 Squadrons on the 26th (at the time of the Guards Brigade's ineffective attack) on some 60 to 70 vehicles parked off the road 15 miles south-west of Agedabia, when two petrol tankers and many other vehicles were reported set on fire, the day bombers' direct support for the 13th Corps was compressed within the four days 29th December to 1st January.

Idem and
AOC/II
Part 2
Encl.59B

On 29th December, while the 22nd Armoured Brigade was getting the worst of an encounter with the remnants of the Panzer Divisions to the south and east of Agedabia calls from the 13th Corps for air support were promptly answered by Blenheims of Nos.11, 14, 45, 84 and Lorraine Squadrons. Some of the formations concerned rendez-voused with their fighter escort at Msus and others landed there for briefing and provision of escort. In all, 24 effective sorties were flown; one formation of No.45 Squadron ran into bad weather and returned and helped with the bombing of Bardia. Military objectives, including buildings, to the south-east of Agedabia were hit and concentrations of M.T. straddled with bombs; a few hits were also registered on aircraft on the enemy's advanced landing ground in the area. The following day (30th December) effective support was again given to the 22nd Armoured Brigade, which was engaging the enemy's armour in the Belandah area. Twelve Blenheims of Nos.45 and 84 Squadron were ordered to land at Msus in the early morning to stand by for attacks on targets at the call of the Army. After reconnaissance of the area by No.208 (A.C.) Squadron targets of 30 tanks and about 200 M.T. engaged in attacking the Brigade were selected for attack. Eleven Blenheims, escorted by Hurricanes, carried out some very successful bombing. All bombs burst among the M.T. supporting the tank force causing very heavy damage; in particular, direct hits were scored on troop-carrying vehicles and a tank was reported set on fire. Although accurate anti-aircraft fire was encountered and the attack was delivered from only 3,500 feet, owing to 10/10ths cloud above, there were no Blenheim casualties. An attack by six escorted Blenheim of No.11 Squadron, which had also been standing by at Msus, was less successful. A formation of No.21 Squadron, S.A.A.F., Marylands subsequently despatched direct from Sidi Bu Amud to attack a larger concentration of M.T. was obliged to return owing to lack of cloud cover. The air power which could be directed to the battle area was insufficient to compensate for the inferiority of our armour and, as already mentioned, the 22nd Armoured Brigade was again forced to break off the engagement and await relief by the 7th Support Group.

Idem and
AOC/II
Part 2.
Encl.64A

Although the ground situation at Agedabia had then become static, targets for the day bombers were still reported by No.208 (A.C.) Squadron and fighters returning from their offensive sweeps. Enemy dispersal by that time, however, had improved again, making it difficult to obtain good bombing targets. On 31st December 12 Blenheims of Nos.14 and Lorraine Squadrons, briefed at Msus and escorted by Hurricanes of Nos.229 and 238 Squadrons, attacked a group of some 150 M.T. east-south-east of Agedabia in the morning and six more aircraft of No.14, escorted by the same squadrons, bombed about 15 tanks and 40 M.T. east of Agedabia in the afternoon. A number

of vehicles and two tanks were hit and a fire started. A further attack was made on M.T. concentrations 14 miles east of Agedabia in the afternoon by six Marylands of No.21 Squadron, S.A.A.F., which were also briefed at Msus and provided there with escort by Nos.94 and 260 Squadrons. One thousand five hundred vehicles, including A.F.V.s were seen dispersed over a wide area and bombs dropped on the more concentrated groups caused two fires. The Marylands reported on the success of the previous bombing of the Blenheims. The Blenheims' morning attack on 31st December was noteworthy for the fact that a bombing attack was opposed by enemy fighters for the only time during the hald at Agedabia. Three me.109s and one Me.202 were reported to have engaged the Hurricane escort and shot two of our fighters down; it was thought that the enemy lost one Me.109 in this combat⁽¹⁾.

On the following day (1st January) well dispersed M.T. in the Belandah area was again bombed by 18 Blenheims of Nos.11, 14 and Lorraine squadrons, briefed at Msus and escorted by Nos.94 and 260 Squadrons. An ammunition dump was reported blown up and five fires were started among groups of vehicles. Low cloud forced the Blenheims to bomb from 2,000 feet: intense A.A.fire was encountered and one Blenheim of No.11 Squadron was shot down and seven other aircraft were hit.

Subsequently, until the enemy evacuated the Agedabia position on 6th January, day bombers stood by at Msus: these were either not called on to operate or bad weather, including 10/10ths cloud, caused the few missions attempted to be abortive.

(B) Night Bomber Effort.

No.205 Gp.
C.R.B.

The Wellington squadrons of No.205 Group operated on eight nights during the period 26th December to 6th January, including an effort on six nights (under instructions from Advanced Air Headquarters, Western Desert) against supply targets and road transport in the enemy's immediate rear. Weather conditions were generally adverse and greatly limited the effort: out of a total of 165 aircraft briefed for bombing attacks⁽²⁾ only 78 carried out effective sorties.

In its strategic rôle the Group was given at this time the commitment of neutralising, or helping to neutralise, the enemy's submarine base at Salamis, Greece. Conclusive information from a number of sources indicated that the Germans had established an important submarine base there.⁽³⁾ Attacks at two squadron strength were attempted on the nights 28/29th and 30/31st December and for the next week the Group's effort was divided between that commitment and a tactical employment (under the orders of Advanced Air Headquarters, Western Desert) to aid the 13th Corps' operations. The operations against Salamis were seriously impeded by dense cloud and other adverse weather conditions, and on two occasions the

/missions

- (1) German records show that 4 Me.109s were lost as a result of activity on 31st December.(ADIK 103/64).
- (2) A small constant effort was also made on supply dropping in Greece. This was also hindered by bad weather and, in certain instances, by absence of recognition signals from the ground.
- (3) 300 German technicians were reported to be working at the dockyard as foremen and heads of shops, supervising the work of 3,000 to 4,000 Greek worken. Important repairs were reported to be carried out there. The A.A. defences had been considerably strengthened and some 40 guns manned by Germans were believed to be sited on the hills overlooking the dockyard.

M.E.W.I.S.
No.79
(Summary
of Target
Information
No.28)

AOC/11
Part 2
Encl.57C

missions had to be abandoned altogether. At no time was an intensive attack on Salamis possible, although bomb bursts were observed near the submarine base, munitions factories, torpedo depot, electricity generating stations etc. and small fires were started. The main alternative target was the oil storage facilities at Piraeus with the Crete airfields as third priority. Attacks in the last category (and the A.O.C., Western Desert, had constantly in mind the advisability of directing the Wellington effort against the Crete airfields in order to neutralise the bomber attack on our lines of communications) resulted in bombs being dropped across the runways at Maleme, Kastelli Pediada and Heraklion airfields and a few fires and explosions caused at Selinos Kastelli airfield. The dispersion of effort against a considerable number of Greek and Cretan targets (alternative targets at Suda Bay, Cape Sideron, Laurium, Port Kerakles were also bombed) implied that no serious attack was made on any one particular place.

In their tactical rôle (operating under instructions from Advanced A.H.Q., Western Desert) the night bombers were employed against supply targets and road transport in the rear of the Agedabia position. El Adem was used as the advanced landing ground for these attacks.

Idem
Encl.59B

It became known that the enemy were using improvised off-loading facilities at various points along the coast west of Agheila for the speedy supply of the forward area. In this connection on 29th December a Strategical Reconnaissance Unit Maryland was sent to cover Ras El Aali (north of Marble Arch), where three tugs and three barges had been reported. The Maryland pilot reported the presence of six small vessels a quarter of a mile from the shore and about 100 lorries waiting at the jetty. Operations Western Desert interpreted this as meaning that heavier ships were off-loaded during the night and the lighters and tugs transferred petrol and supplies to the waiting road transport. Accordingly No.826 Squadron Albacores were directed to make attacks as soon after dark as possible: as a result of four effective sorties the jetty was hit, near misses were reported scored on three small vessels alongside it and direct hits on the M.T. nearby. As already mentioned Beaufighters were directed against this and similar supply points by day, but projected S.A.A.F. Maryland attacks were thwarted by lack of cloud cover.

S.A.A.F.
Narrative

No.205 Gp.
O.R.B.

On the night 31st December/1st January part of No.205 Group's effort was directed against Ras El Aali, but bad weather whittled down the effort to only six effective sorties; bombs fell on the base of the jetty and among buildings. The following night Nos.37 and 208 Squadrons were briefed to attack M.T. concentrations reported near Marble Arch: only 5 aircraft delivered attacks, causing fires and explosions among the concentrations and encampments and machine-gunning vehicles, while another aircraft operated against M.T. at Ras el Ihudia (31 miles further to the west). On the night 2nd/3rd January No.70 Squadron was directed to continue the attacks on supplies and road transport in the Marble Arch area. As a result of four effective sorties, barges and M.T. were bombed between Agedabia and Marble Arch - in particular, bursts were observed among M.T. and near the Ras El Aali jetty and road transport was again machine-gunned. For the following two nights aircraft of Nos.37 and 38 and 108 Squadrons were directed against shipping at Buerat El Hsun (half-way between El Agheila and Tripoli). Sightings had previously been made by the Strategic Reconnaissance Unit of vessels off-shore and barges near the jetty, thus indicating that off-loading of supplies for the forward area was taking place, and Malta-based Blenheims had already made a fairly successful shipping sweep there. The Wellingtons carried out 25 effective sorties against Buerat El Hsun, but apart from claiming a near miss on one ship, the only results observed were bomb bursts on the roads, the jetty, buildings and gun positions in the target area generally.

M.E.F.O.S.
No.12
Appendix
"C".

No.205 Gp.
O.R.B.

/The

The night bomber effort against the supply points and road transport in the immediate rear of the battle area, accordingly, only sufficed to achieve a small measure of interference with the enemy's off-loading and road transportation.

AOC/11
Part 2
Encl. 650
& A.H.B.
II J1/12
P.35.

In addition to the adverse weather, delay in signals traffic also at times resulted in the Wellingtons' tactical effort being limited. Operational reports from the Bomber Wing (in early January) were received at Advanced Air Headquarters Western Desert, up to 36 hours late. Thus Operations Western Desert were unable to assess the results of an operation in time to influence the choice of the next night bomber target. On the other hand, there were instances when instructions from Advanced Air Headquarters arrived too late for action to be taken by that Bomber Wing. On the night 30/31st December, for example, orders from the headquarters for Wellingtons to bomb Marble Arch, Merduma and Ras El Aali were received too late for the operations to be carried out.

M.E.F.O.S.
No.12
Appendix
"C"
No.205 Gp.

On the morning of 5th January aircraft operating from Malta on a special shipping search of the Tripoli - Misurata area sighted a convoy of nine merchant vessels and two sloops, escorted by several destroyers, entering Tripoli harbour.⁽¹⁾ Seventeen Wellingtons of Nos.37 and 148 Squadrons were briefed to attack this shipping and the unloading facilities at the harbour during the night. Adverse weather, with 10/10ths cloud at 2,000 to 3,000 feet, and the unserviceability of several aircraft restricted the effective effort to only four sorties. Three aircraft bombed the port and nearby roads with unobserved results and the other dropped its bombs on the road near Buerat El Hsun (the alternative target). A further mission against Tripoli on the following night was cancelled owing to adverse weather conditions.

The safe arrival of this and several smaller convoys - aided in part by bad weather and in part by the air attacks on Malta which reduced the chances of their being detected and attacked from the air - greatly improved the enemy's supply situation. The withdrawal to Agheila and a further delaying action there could then be undertaken by the enemy with confidence.

Malta's Offensive Effort Further Restricted.
(26th December - 6th January)

M.E.F.C.S.
No.12
Parts 2
and 3.

An indication of the extent to which the offensive effort of Malta-based aircraft was restricted at this time and, indeed, for the remainder of the "Crusader" advance period, is given by the figures for effective bomber sorties for the last fortnight of 1941 and the opening fortnight of 1942 - 175 and 67 effective sorties, respectively. This reduction of effort was caused partly by the enemy's air offensive - some 600 aircraft attacked the island, and particularly the landing grounds, during the first half of January - and partly by bad weather. The heaviest enemy raids were made during the period 30th/31st December to 4/5th January, inclusive, when some 440 aircraft were reported to have operated. Particularly heavy attacks were made on 4th January (116 aircraft), followed by

/continuous

(1) Up to that time the convoy had been undetected, its passage having been covered by strong Italian naval forces. The latter were located at various times on 4th and 5th January both by Malta-based and Cyrenaican-based reconnaissance aircraft, but no attacks were made, in spite of an attempt by No.55 Squadron and arrangements made for F.A.A. Swordfish and Albacores to stand by for the purpose at Barce.

continuous operations by some 15 single aircraft during the night. The purpose of this intensive effort was to ground our air force during the movement of the large enemy convoy at Tripoli already mentioned.

Idem

In view of the restricting factors, the wonder is that Malta's effort was not more limited than it was. This was due in great part to the speed with which troops and airmen repaired cratered runways and airfield facilities generally. For instance, following a heavy attack on Luga on 3rd January, they worked throughout the night raids and after another attack the next morning they made the airfield serviceable for the afternoon reconnaissances and for Wellington operations against the enemy's air base at Castel Vetrano the following night.

M.E.W.O.S.
No. 11 and
M.E.F.O.S.
No. 12.

During the hold-up at Agedabia, Malta-based Wellingtons endeavoured to maintain their air offensive against the enemy's main port of off-loading at Tripoli, making attacks on seven nights. The most intensive and successful bombing occurred on the three nights 26/27th to 28/29th December, when 30 effective sorties were flown. On the night of the 26/27th, 15 Wellingtons reported scoring direct hits on two merchant vessels and damage by a near miss to a third; east-bound road transport was also machine-gunned; on the following two nights a total of 15 aircraft hit harbour installations, the military slipway at Castello and the main quay. During the first week of January, however, the enemy's air offensive against the island of Malta limited the Wellington effort and the attacks delivered were further hampered by bad weather and an effective smoke screen which hindered the observation of results of the bombing. On occasion Fleet Air Arm Albacores and Swordfish continued their mine-laying at the approaches to the harbour. In general the restricting factors already mentioned - particularly bad weather - prevented serious disruption by air action at the enemy's most important and vulnerable supply point (Pages 223 and 224 refer) at a stage when he was in greatest need of a breathing space to improve his critical supply situation.

Idem.

Meanwhile, subsidiary off-loading points along the Tripolitanian coast were also sporadically attacked by Malta-based aircraft. In particular, on 26th December two Blenheims attacked two small merchant vessels at Zuara and reported one blown up by a direct hit and Fleet Air Arm on two or three occasions carried out mine laying operations at the harbour's approaches and carried out small-scale diversionary bombing of the town or near-by supply dumps. In the course of a shipping sweep by moonlight in the Gulf of Sirte by four Blenheims on the night 1st/2nd January, also, a coasting vessel was reported hit at Buerat El Hsun and smaller craft were machine-gunned.

Idem.
Appendix
"C"

Although the reconnaissance of enemy shipping was restricted - and, as already mentioned at least one large convoy was undetected until it was entering Tripoli harbour - sightings were made by Malta-based aircraft during the period 26th December to the night 6/7th January, of a total of 34 merchant and smaller vessels plying the North African supply routes (including the nine merchant vessels arriving at Tripoli) as well as considerable escorting naval forces. The sightings were followed up by only three attacks - all by Fleet Air Arm aircraft at night.

On the night 6/7th January, in particular, sightings by an A.S.V. Wellington of two merchant ships of 6,000 and 3,000 tons off Kuriat (Tunisia) were followed up by attacks by four Swordfish and one Albacore which resulted in both ships being claimed as probably sunk. The ships, however, were on a north-easterly course and thus on their return journey.

/Meanwhile

Meanwhile on eight days Blenheims (usually operating in pairs, but on occasions as many as six) which failed to locate any vessels on their coastal shipping sweeps successfully bombed and machine-gunned road transport (including tankers and troop-carrying lorries), M.T. parks and barracks at various points between Zuara and Buerat. On the night 30th/31st December, also, seven Wellingtons successfully attacked the battacks and M.T. sheds at Misurata, causing explosions and large fires, and machine-gunned some forty aircraft and a number of vehicles on the landing ground there. With only two squadrons of Blenheims (Nos. 18 and 107 Squadrons) available in Malta, and these primarily concerned with shipping strikes, serious and constant interference with the enemy's road transport in the rear was out of the question. Considering the small effort, the Blenheims did well; but the Blenheim was not a suitable aircraft for the task, its forward armament being inadequate for the successful straffing of vehicles and troops. It is certain that if Beaufighters could have been made available in Malta a far greater disruption would have resulted. On 23rd December, when it was expected that there would be no pause at Agedabia, Air Vice Marshal Coningham wrote to Air Marshal Tedder: ".....it is for consideration whether the Beaufighters should not immediately go there (to Malta) to compete with the petrol traffic and to help us on the roads from Sirte onwards. There may even be 'accidental' road targets in Tunisia!" It was ruled, however, that no Beaufighters could be made available for Malta, as they were required for more constant commitments on the mainland under A.H.Q. Western Desert or No.201 Group, as dictated by circumstances.

ACC/II
Part 2
Encl.56A

Idem 55A
A.H.Q.
W.D/16/Air
Encl.11A.

M.E.F.O.S.
No.12 M.E.
Operational
Summary
No.577.

In spite of the enemy's intensive air attacks on Malta's landing grounds there was clear evidence that the island's offensive power had not been neutralised. On 4th January a heavy blow was struck at the enemy's air transport system. Blenheims attacking Castel Vetrano airfield (north-west Sicily)⁽¹⁾ on that day found some 75 air transport aircraft lined up wing-tip to wing-tip. Going down to low level our aircraft released 36 bombs on the aircraft, claiming the destruction of at least 30 of them and damage to others. The smoke from the burning aircraft rose to 1,000 feet. Before returning to base the Blenheims machine-gunned personnel and inflicted considerable casualties. The attack achieved complete surprise and no opposition was encountered. Nine Wellingtons renewed the attack during the night, claiming fourteen more aircraft set on fire on the ground and the destruction of a petrol dump. Conflagrations started on the airfield were visible to the Wellingtons for 40 miles on the return journey. Our only loss for the successful action against Castel Vetrano was one Wellington.

Brief Appreciation of the Effect of Air Action During the Halt at Agedabia.

The main results of the air activity which has been dealt with in some detail in the preceding pages may be summed up as follows:-

- (i) The salient fact was that the partial neutralisation of Malta by enemy air action and the spells of bad weather in late December and early January allowed the enemy to achieve a considerable defence of reinforcing and supply at a time when our own supply situation was still critical.
- (ii) Our fighter action over the battle area enabled us to retain local air superiority.

/(iii)

(1) This airfield, in addition to the main Sicilian ports, had been moved by a No.2 P.R.U. Beaufighter on 3rd January (No.2 P.R.U. O.R.B.)

- (iii) Our reduced bomber force in Cyrenaica could not provide (and could not be expected to provide) sufficient direct support to atone for the weakness of our advanced ground forces, particularly in view of the later static ground situation and the deterioration in the weather.
- (iv) Neither side was able to develop a constant and intensive air offensive against the other's lines of communication and air bases.
- (v) The potential menace to our lengthened lines of communication and increased coastal shipping by enemy air action involved a further diversion of air forces from offensive to defensive commitments.
- (vi) The successful passing of convoys to and from Malta illustrated the value of holding the Cyrenaican air bases.

The Reduction of Bardia
(Mid-December to 2nd January)

C.-in-C's
Despatch
P.64

While the 13th Corps was endeavouring to press the pursuit of the main body of the Axis forces and clearing the remainder of Cyrenaica, the 30th Corps (under Lt. General Norrie) began the reduction of the enemy's frontier strongholds which had been by-passed, beginning with the main one at Bardia, which was the source of supply for Sollum and Halfaya.

The G.O.C., Eighth Army, instructed the 30th Corps to restore direct land communication with Tobruk by the main road through Sollum and Bardia as speedily as possible in order to eliminate the additional strain on our hard-pressed road transport imposed by detours. It was laid down, with the concurrence of the C.-in-C. Middle East, that the task should be completed with the minimum of casualties. This was essential owing to the difficulty in providing infantry replacements for the Union Defence Forces which were entrusted to carry out the attack. The ground forces involved were the 2nd South African Division, with a brigade of the 1st South African Division under its command, the 1st Army Tank Brigade and a strong force of field and medium artillery.

A.H.B.
II J6/7/4

By the middle of December, the South Africans had made contact with the enemy's forward defences, and had severed land communication between Halfaya and Bardia as well as the pipe-line which carried water from Bardia to the strongholds at Sollum and Halfaya. The enemy still maintained communication by sea between the two strongholds and sent supplies by launch from Bardia to Halfaya. (1) Bardia itself at times received urgent supplies by submarines: Fleet Air Arm Albacores in early December had attempted at times to locate and attack these but without success.

No.451 Sqn.
O.R.B.

As already mentioned (page 194) in mid-December, No.451 squadron R.A.A.F. was allocated to the 30th Corps as its Army Co-operation Squadron. The squadron left Tobruk⁽²⁾ on 17th December /for

- (1) Some toll was taken of their coastal shipping. On 24th December, for example, a small supply ship was set on fire by shore batteries off Sollum and on the 30th another vessel was sunk in Bardia harbour. On the 24th also an enemy aircraft dropped a Christmas present of six sacks of food, intended for one of the beleaguered garrisons, on our landing ground at Maaten Bagush owing to faulty navigation: (A.H.B. II J/1/12 P.37).
- (2) Except for one flight which continued to operate from Tobruk until 18th December.

for L.G. 131, at El Hamra, in the escarpment some 53 miles south-west of Sidi Barrani. This landing ground, however, was too remote from the scene of operations and on 24th December the squadron moved to Sidi Azeiz.

In its preliminary operations the squadron patrolled the coast of the Gulf of Sollum flying 12 sorties in this activity between 20th and 26th December. A submarine was sighted sheltering in a bay to the north of Bardia on the 20th and five days later a ship was sighted in Bardia harbour. The squadron's main task, however, was tactical reconnaissance and artillery reconnaissance. As there was no air opposition and anti-aircraft fire was negligible, aircraft were able to operate for long periods and from low altitudes. Between 24th December and the fall of Bardia (2nd January) 20 tactical reconnaissance sorties were flown, mostly off Bardia, but occasionally taking in Halfaya and Sollum as well. Artillery co-operation also produced satisfactory results, although some R/T failures occurred. Gun-pits were regularly and successfully engaged: hits on Bardia pit were registered on 28th December, and on 30th December a ship in Bardia harbour and a supply dump were destroyed by artillery fire. In all 19 sorties on artillery reconnaissance were flown up to the fall of Bardia. The prolonged artillery bombardment to which the fortress was subjected was rendered strongly effective by the high percentage of successful air shoots.

A.H.B.
II J6/7/4

No.270
Wing ORB
Dec.41
Appendix
46

On 25th December Air Vice Marshal Coningham had informed the Commanding Officer of No.270 Wing (Group Captain Kellet)⁽¹⁾ that the Blenheim squadrons under his command would be required to "provide preparatory bombing and support for our ground forces" engaged in reducing Bardia. He was instructed to visit the Commander of 30th Corps immediately in order to prepare the plans for operations and was placed in charge of the air operations. This implied a decentralisation from the Direct Support Section at Eighth Army Battle Headquarters, the conduct of the air support being determined by the Commander of 30th Corps and the C.O. No.270 Wing who co-operated in personal contact at Sidi Azeiz. The Blenheim squadrons of the Wing continued to operate from Gambut.

A.O.C's
Correspondence with
C.A.S.
Part 3
Encls.291A

Air support was necessary in view of the need to keep casualties to the minimum, and the choice of No.270 Wing Blenheims for the task was influenced by the fact that they seemed unlikely to be needed for the projected advance into Tripolitania (Operation "Acrobat").⁽²⁾ In any case, as already indicated, the unsatisfactory supply situation in the forward area ruled out the full employment of the day bomber force there, apart from the fact that insufficient direct support targets were forthcoming.

No.270
Wing
O.R.B.

At a conference attended by senior officers of the 30th Corps and the Commanding Officer and A.I.L.O. of No.270 Wing, on 26th December it was laid down that the Blenheims should assist the ground forces by the preliminary bombardment of fortified positions and gun emplacements within the perimeter prior to the attack, and

/later

- (1) Gp.Capt. R. Kellet replaced Gp.Capt.G.R.Beamish as C.O., No.270 Wing, when the latter was posted to Adv.Air Headquarters, Western Desert as Group Captain Fighters and Senior Plans Staff Officer.
- (2) No.270 Wing was disbanded w.e.f. 15.1.42 consequent on the formation of No.235 Wing (HOME ORB Admin.and Org. Appendix 'R' January, 1942)

Idem
Appendices
47 - 80

later by direct bombing support during the attack, if required.⁽¹⁾
The target areas selected by the 30th Corps for the preliminary bombardment were divided in five separate areas and squadrons could be directed against any of these areas by request. The bomb line was to be within the area bounded by the wire perimeter surrounding Bardia. A reconnaissance was to be made of the harbour on each sortie before bombing and any shipping seen was to be reported by P.L. at once and attacked in preference to the target briefed. Squadrons were to operate separately, each sortie consisting of six aircraft. The intention for the early attacks was for squadrons to take off at half-hour intervals, the order of the squadrons for operations being detailed daily. The first sortie of the day was to be over the target by 0800 hours and the last was to be clear of the target by 1700 hours. The bombing was to be carried out from 5,000 to 7,000 feet: in the event of negligible opposition from the ground these heights were to be decreased to ensure maximum bombing accuracy. The bomb loads were to be 4 x 250 lbs. G.P. bombs without rod adaptors. Photographs were to be taken on each sortie to aid the assessment of damage.

No.270
Wing
O.R.B.

Between 27th and 30th December, Nos.14, 45, 84 and Lorraine squadrons carried out a total of 259 effective sorties against the Bardia defences. Bad weather over the target area limited opposition on the 27th and of 75 sorties carried out only 60 were effective. On the following day 120 aircraft operated, and as there was no hold-up of bombs a total of 480 x 250 lbs. were dropped. On the 29th and 30th No.270 Wing's effort was divided between giving direct support in the Agedabia area, already mentioned, and continuing the air offensive on Bardia: on the former day, also, the number of bombs which could be dropped in Bardia was limited by the shortage of suitable types.

Idem
A.H.B.
II J6/12
and
C.-in-C's
Despatch
P.3.

On 31st December, No.270 Wing effort was again divided between targets at Agedabia and Bardia: operations against the latter were carried out by 79 aircraft of Nos.45, 84 and Lorraine squadrons. Targets were limited at certain times owing to the assault by the 30th Corps which had then begun. A pre-attack bombardment was also carried out by our naval forces. The ground attack was delivered from the south, the 3rd S.A. Infantry Brigade and a regiment of the 18th Army Tank Brigade breaking through the enemy's defences to the east of the main road from Sollum and penetrating deep into the fortress. The enemy counter-attacked, but most of the ground taken was retained. The following night the assault was resumed. The enemy resisted and inflicted some casualties on our tanks which headed the attack, but it was soon clear that further resistance was futile. Early on 2nd January General Schmitt, the Commander

/of

- (1) The defences of Bardia were much as they had been when General Wavell took the place from the Italian in December, 1940. They consisted of a number of self-contained and mutually supporting defensive localities, covered by machine-gun and anti-tank posts, which in their turn were protected by barbed wire entanglements, anti-tank minefields and an efficient concrete anti-tank ditch. There were other defended localities and machine gun posts in the interior of the fortress to give depth to the defence. The garrison was believed to number about 4,500 of whom 1,500 might be Germans, with a few tanks and some twenty field guns. Actually at its fall Bardia yielded 8,000 prisoners, including 2,000 Germans and about thirty-five guns. Owing to the length of the perimeter to be defended, the garrison could not provide any appreciable reserve."
(C.-in-C's Despatch. P.65)

of the Garrison, surrendered unconditionally.

Our casualties in this successful operation did not exceed 450 - due in part to the intensive ground, air and naval bombardment which reduced the enemy's powers to resist. In addition to the 8,000 prisoners and material captured (including considerable stocks of ammunition) the fall of Bardia released over 1,000 of our own men⁽¹⁾ who had been kept in the fortress as prisoners of war in conditions of great privation.

A.H.B.
II J6/7/4

In view of the exceptional circumstances - there was no air opposition and negligible A.A. fire - no lessons could be learnt which could conceivably apply to the usual circumstances of the land battle. In general, it provided training in bombing and artillery directing under virtually peace-time conditions. It is extremely doubtful, however, if the intensive bombing effort, in view of the need to conserve our aircraft strength and our future operational commitments, was warranted. In a list of "operational points for A.O.C.-in-C's visit to Western Desert" submitted on 16th January by the S.A.S.O. at H.Q., R.A.F., M.E., (A.V.M., Wigglesworth), it was stated: "Although our own troops recaptured from Bardia were apparently impressed by the fact that our bombing made the enemy rush to dut-outs, the views of General Schmitt and other German and Italian P.O.W's state the unprofitable effects from all points of view of our bombing of Bardia."

AOC/11
Part 2
Encls.77B

The considerable effective effort put up by No.270 Wing Blenheims indicated, at any rate, the intensive air effort which was possible when direct support targets were readily available.

AOC/in-C's
Correspondence with
C.A.S, Part 3
Encl. 290A

Idem
Encls.291A

No.270 Wing's big effort on 28th December brought a protest from the Chief of Air Staff. On 30th December, he signalled Air Marshal Tedder: "120 Blenheim sorties on Bardia is surely a great waste of effort. Surely any bombardment of a target now 250 miles behind our forward troops should be carried out by artillery." The A.O.C.-in-C., Middle East, replied: "Quite agree. This misdirected enthusiasm was checked immediately it was observed. Due largely to poor communications between Advanced A.H.Q. and Bomber Wing H.Q.⁽²⁾ Operation (of) bombers in forward area drastically limited by supply difficulties. Hope this situation will improve next few days but supply will inevitably limit effort for some time. Bardia has been useful target for training new crews, moreover consider some assistance to artillery justified in view their own supply limitations regarding ammunition".

After the fall of Bardia preparations were put in hand for the reduction of Sollum and Halfaya. (See Pages 278 and 279).

/SECTION

- (1) Including most of the A.L.G. party of No.451 squadron, R.A.A.F., captured at Sidi Azeiz on 27th November (page 160 refers). The C.O. of the party and the two A.I.L. officers had, however, been evacuated by submarine previously.
- (2) Although the C.O. of No.270 Wing was responsible for the conduct of the air operations, plans, intentions, operational reports and copies of photographs had to be sent to the A.O.C., Western Desert. (No.270 Wing ORB)

SECTION 3

OPERATIONS AT AGHEILA

The Enemy Retires to El Agheila
(Ground Situation 7th - 11th January)

C.-in-C's
Despatch
P.65.

Mention has already been made of our acute supply difficulties in Western Cyrenaica in early January: The 13th Corps had carefully husbanded its resources⁽¹⁾ in order to allow reserves to be accumulated for the projected assault on the enemy holding the Agedabia position, which was to be launched when the 1st Armoured Division arrived. The move of this division has been delayed owing to the lack of transport to bring forward petrol, but it reached Antellat at last on 6th January.

The enemy did not wait for our assault, but made a further withdrawal in circumstances of his own choice,⁽²⁾ Weather prevented air activity over the forward area on 6th January: in particular, a tactical reconnaissance was attempted by No.208 (A.C.) Squadron in the morning, but it had to be abandoned owing to a sand-storm. Screened by the weather, the enemy began his withdrawal towards El Agheila, and on the morning of the 7th our patrols reported that Agedabia had been evacuated.

Columns of the 22nd Guards Brigade formed up, but were delayed by the minefields and booby traps around Agedabia and by bad going and sandstorms. By the evening of 8th December, however, the Brigade made contact with the enemy rearguards holding strong positions some 16 miles further south. The enemy withdrew from their positions on the 10th and the following day the Guards Brigade was in touch with the enemy's line running southwards from Marsa Brega.

No.208
Squadron
O.R.B.

From the 7th to 11th December No.208 (A.C.) Squadron carried out a total of 24 tactical reconnaissance for the 13th Corps. The detached flight concerned moved up from Msus to Antellat on 9th January. On the 7th a search was made for any possible enemy raiding columns which might prove a menace to our pursuing forces, and the line of the enemy's retreat from Agedabia to El Agheila was reconnoitred three times - 1,200 vehicles were observed at various points and some 400 which had arrived at Agheila. Reconnaissances on the following four days confirmed that the enemy's front line ran from Marsa Brega - Suera-B.el Cleibat-Giofer, strongpoints having been observed at all those places.

On the 11th, in particular, tactical reconnaissances was used for the first time to make sure of the length and strength of the enemy's right flank and to search for possible enemy columns carrying out out-flanking movements. Marada oasis and the surrounding country was covered: contrary to the Army expectation only a very small force of M.T. was observed at the oasis and no movement in the rest of the area. Only two good bombing targets were reported during the five days under review - one of them, on the 11th, being subsequently attacked by Blenheims (Page 264).

AOC/11
Part 2
Encls.67B

The Army was inclined to employ the S.R.U. Marylands on tactical reconnaissances in the areas just beyond No.208 squadron's range. The

/A.O.C.

- (1) The expenditure of artillery ammunition, for example, except by troops actually attacked by the enemy, was limited to 25 rounds a gun per day.
- (2) As already mentioned, the arrival of the Corps convoy at Tripoli on 5th January was probably the deciding factor. By shortening his line of communication to the forward area the difficulties of the onward transmission of supplies were lessened.

A.O.C. Western Desert was not happy about this employment and proposed the use of a few long-range Hurricanes of No.33 Squadron attached to No.208 Squadron.

S.A.A.F.
Narrative

Photographic reconnaissance by No.60 Squadron S.A.A.F. detachment (the Survey Flight) was greatly hindered by bad weather, but on the 10th a successful P/R of areas Barbar to Marada and Marada to Ain El Gabi was carried out.

Chiefs of Staff again Warned of Possible Consequences of Further Diversion of Forces to the Far East.
(Early January)

AOC/11
Part 2
Encls.66D
A.H.B.
J1/85/1

On 8th January the Chiefs of Staff requested confirmation of the point made in the Middle East Defence Committee's appreciations forwarded on 27th December and 4th January, with regard to the effect of diversion of forces to the Far East, that: "if we fail to get forward to Agheila - Marada the alternative will be to withdraw to the frontier area". The C.O.S. pointed out that such a withdrawal involved the loss of the Tobruk - El Adem air bases. It appeared doubtful if enemy sea communications to North Africa could then be effectively controlled by air or naval forces, and Malta, moreover, would be jeopardised due to difficulties of sea supply and the scale of enemy air attack. It was confirmed by Middle East that diversions eastwards of ground forces "should not be allowed to affect our ability (to) occupy Agheila - Marada area since should we not get there and (the) enemy staged (a) major come-back we could hope finally to hold him only in Sollum - Halfaya - Siva area⁽¹⁾... with consequences you mention... to which we should ... add (the) probability of increased air attacks in Egypt".

Idem &
Encls.66C.

It was made clear, therefore, that the diversion of ground forces without speedy and adequate replacements was likely to have an adverse effect on "Crusader" and the projected "Acrobat" operation as well as the risks involved in respect of the Northern Front.⁽²⁾ The effect of the air diversions which were not expected to jeopardise the current offensive operations, but would prevent meeting the probable commitments in the Northern Front, have already been mentioned on page 235. The paucity of light naval craft was not thought likely to prevent the exploitation of "Crusader", but implied taking great risks elsewhere. In particular, they would be entirely inadequate, if the sea maintenance of an army on the Northern Front became an added commitment.

After pointing out these various risks involved in the diversion of forces eastwards the Defence Committee (on 4th January) again agreed that "Far East must have prior consideration at the present time".

Increase in Enemy Air Activity - Including the Use of CR42's as Fighter-bombers.
(First Half of January)

AOC/11
Part 2
Encls.670

During the period of the enemy's withdrawal from Agedabia to the El Agheila area there was a slightly increased effort on the part of the Tripolitanian based Axis air forces. This was mainly due to /the

- (1) In the event the enemy was stopped on the intermediate Gazala - Bir Hakim line.
- (2) Three factors were also stressed which accentuated the urgency of early replacements:- (1) The effect upon Turkey when she learnt of the diversion, as her attitude was already luke-warm. (2) The increased importance of the Persian and Iraq oil fields. (3) The supreme importance of keeping open the Persian supply route to Russia. (II J1/85/1).

A.H.B.
II J1/63
(A13b)
Reports)

the re-appearance of Italian aircraft. These and a lesser number German aircraft operated from landing grounds west of Agheila. Apart from the fact that units withdrawn from Cyrenaica had had over two weeks to settle down and re-organise the serious fuel situation at the beginning of January - G.A.F. fuel stocks, for example, in the whole of North Africa, including Tripoli, were estimated not to have exceeded 350 tons - was radically changed by the delivery of 2,000 tons of aviation fuel in the convoy which reached Tripoli on 5th January. The difficulty still remained of moving adequate supplies to the forward area, but this was overcome to some extent by the use of land, sea and air transport. Operations on both sides, however, were curtailed by spells of bad weather.

The German dive-bomber force with fighter escort was consistently employed in attempts to delay our advance past Agedabia and harassing our troop concentrations, dumps and transport columns in the forward area. The effort was never on a large scale, however, and fluctuated according to weather conditions.⁽¹⁾ The bombing effort was restricted, moreover, by the supply of bombs. Stocks had to be abandoned in Cyrenaica and there were practically none at the airfields subsequently used; the shortage of transport was thought to have added to the difficulties of forwarding bombs from Tripoli. By 13th January bomb stocks were still considered very small and later the situation was regarded as serious.

The enemy's fighter force was employed on free lance patrols, dive-bomber escort and airfield defence duties.⁽²⁾ Italian fighters were used to strengthen the escort for German dive-bombers, and to a lesser extent for offensive operations. The most notable feature of the enemy's fighter operations was the introduction of CR 42's as fighter-bombers, carrying bombs up to 100 Kgs. They were used in dive-bombing operations, with fighter escorts against troops and M.T. columns.

The limited number of German reconnaissance aircraft available in Africa was mainly employed on our forward area south of Benghazi. Until the consolidation of the German line in the El Agheila area a close watch was kept on any movement by our forces on the enemy's south and south-east flanks. Both fighters (ME 110's and ME 109's) and JU 87's were on occasion engaged on these duties and assistance was given by Italian long-range bombers, which since their transference to the Tripoli area confined their few operations almost entirely to reconnaissance. Reconnaissance of our supply routes through Cyrenaica was maintained by German aircraft operating from Greece, which kept watch on shipping and naval movement at sea and on Port Said and Alexandria. A small but consistent, although never really successful, bomber effort⁽³⁾ was continued against our lines of communication and airfields from Benghazi to Tobruk by Greek-based long-ranged bombers. At no time from the capture of Benghazi to the end of the "CRUSADER" offensive was any serious interference with our supply system or damage to airfields effected. The Torpedo-carrying aircraft in Greece were still being used on the transport of supplies from Greece to the Gulf of Sirte.⁽⁴⁾

/The

- (1) For the second month of the campaign (19th December - 18th January) it may be noted, the average number of sorties was 17 per day. This average effort represented a decrease of over 50% as compared with the previous months operations.
- (2) The scale of effort during the second month of the campaign, a period of reduced activity on either side, it may be noted, averaged 40 sorties per day, approximately equal to the effort maintained during the first month.
- (3) This effort during the second month of the campaign did not exceed an average of 10 sorties per night.
- (4) Out of range of JU52's which could not be refuelled for the return journey.

The Italian air forces in the Aegeans continued to remain largely inactive, although at this particular stage a few aircraft regularly reconnoitred the coastal area north of the Nile Delta.

Thw G.A.F. units based in Sicily continued to be entirely occupied in attempting to neutralise Malta.

Unsatisfactory State of Aircraft Serviceability of Western Desert Air Force.

A.C.C./11
Part 2
Encls. 67B

Owing to prolonged and continuous operations under the difficult conditions of the advance and lack of requisite spares, the general state of aircraft serviceability of the squadrons under A.H.Q., Western Desert, again gave rise to anxiety. Figures of serviceable aircraft submitted to the Operations Liaison Officer by Advanced A.H.Q., Western Desert, in respect of 11th January were as follows:-

	<u>Total</u>		<u>Average per Squadron</u>	
	<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>
Fighters	107	19	9	2
Bombers	26	42	6	11

A - Serviceable. B - Serviceable within 48 hours.

An effort was made to build up serviceability in the following week, but was not successful (pages 269 and 275 refer).

Scale of our Fighter Activity
(7th - 11th January)

M.E.F.C.S.
No. 12.

During the period of the advance of our ground forces from Agedabia to the enemy's line east of El Agheila (7th - 11th January) the Middle East fighter squadrons reported carrying out the following sorties.

Shipping Protection	180 sorties
Offensive sweeps (and a negligible effort on ground attack)	73 sorties
Bomber escort	73 sorties
Reconnaissance escort	73 sorties
Local Defence	96 sorties
Total	495

Features of the Fighter Activity

It will be noted from the above that 36% of the fighter effort was devoted to shipping protection. Defensive patrols were maintained over Benghazi and Tobruk and continuous daylight protection was afforded to convoys: in particular, as previously mentioned, the first convoy to reach Benghazi arrived on 7th January and a two-way convoy movement between Malta and Alexandria was completed on 10th January, without any air or sea interference from the enemy. Local defence of lines of communication and landing grounds accounted for a further 19% of the total fighter effort. Few interceptions and conclusive combats resulted. As already mentioned no serious interference with supplies or damage to airfields or aircraft resulted from the enemy's air attacks in Cyrenaica. It is responsible to assume that the considerable defensive fighter operations had a hampering effect on the enemy's effort.

A.C.C./11
Part 2
Encls. 67C

As it was imperative to conserve fuel and build up reserve supplies, fighters on offensive sweeps reverted to one squadron strength. The decision to increase to two-squadron strength at

/need

need was left to the discretion of the Fighter Wing Commander (Group Captain Cross). The Army was now indicating the specific area over which they desired fighter sweeps to be carried out, as opposed to the normal general fighter sweeps.

Idem. and
S.A.A.F.
Narrative

There was a recurrence of the surprise "jumping" tactics of the ME 109, which, as formerly, were successful when the fighter formations were not alert and continually weaving as instructed. A case in point occurred on 7th January when Nos.2 and 4 Squadrons, S.A.A.F. were escorting two long-range and Tac/R aircraft of No.33 squadron over the Agedabia-Agheila area. On the outward journey No.4, the top squadron, fell back too far and was "jumped" by six ME 109s at Agedabia, losing two aircraft⁽¹⁾ (one pilot later rejoined the squadron) and claiming two ME 109s probably destroyed.⁽²⁾ On the return journey No.4 Squadron had inconclusive combats with a number of ME 109s and ME 110s except that one of the latter was believed to be damaged. In the meantime No.2 Squadron, having seen two ME 109Fs take off from Agheila landing ground failed (apparently owing to poor R/T) to detach a flight to deal with them while they were still at a low level. These two ME 109s (and apparently joined by two more) climbed above the S.A.A.F. aircraft and "jumped" them, shooting down four Tomahawks. One enemy fighter was claimed damaged.⁽³⁾ In the opinion of the A.O.C., Western Desert, the S.A.A.F. losses in these encounters were due to bad tactics.

M.E.F.O.S.
No.10 and
Squadron
O.R.B's.

On the 9th the small German ME 109 force scored another success, this time against Hurricanes. Four Hurricanes of Nos.229 and 238 squadrons, engaged in escorting No.14 Squadron Blenheims attacking M.T. east of Marsa Brega, failed to return after combats with four ME 109's. On the same day No.112 Squadron (which had been withdrawn on 30th December and re-equipped with Kittyhawks) returned to operations. Eight Kittyhawks, with six Tomahawks of No.250 Squadron, acted as close escort to seven Blenheims bombing targets west of Agheila; one Kittyhawk was jumped by a ME 109F and forced-landed, but the pilot was saved. Further combats between Kittyhawks and ME 109s occurred on 11th January. Ten Kittyhawks of No.3 Squadron and eight of No.112 Squadron escorted in the morning Blenheims bombing M.T. east of El Agheila. The bombing had just completed when six aircraft of No.3 Squadron, flying as extra top cover were attacked by a number of ME 109s and G 50s. Three of the Kittyhawks were shot down (but one pilot made his way back to his unit). No.3 Squadron's claims were 2 ME 109s and one G 50 destroyed and one other enemy fighter probably destroyed.⁽⁴⁾

In general, it may be said that the Fighter Force maintained some degree of air superiority, but the "jumping" tactics of the enemy's small ME 109F force again proved a menace and illustrated once more how the superiority of a small number of aircraft could be successfully exploited.

No.3 Sqn.
ORB AND
M.E.Daily
Operational
Summary
No.579

The only outstanding success of our fighters over the forward area was achieved on 8th January, when the activity of the Italian CR 42 fighter-bombers (page 262 .refers) was reported to have been

/seriously

- (1) Current operations Summaries and the Operations Liaison Officer to Adv.A.H.Q.W.D. reported 3 S.A.A.F. Tomahawks lost in this encounter, but S.A.A.F. records show only 2.
- (2) German records show that 1 ME 109 and 1 ME 110 were lost on 7th January (ADIK 103/64).
- (3) German records show that 2 ME 109s were lost on 9th January, but there is insufficient evidence to show in which combats these losses occurred. (ADIK 103/64).
- (4) German records show that 2 ME 109s were destroyed on 11th January. (ADIK 103/64).

seriously checked. Ten Kittyhawks of No.3 Squadron, R.A.A.F., escorted in the morning a Tac/R Hurricane of No.208 (A.C.) Squadron over the coast road from Agedbia to El Agheila. The Kittyhawks ran into 24 CR 42s escorted by about 20 MC 200s and G 50s and 8 ME 109s dive-bombing our ground troops. In the ensuing combat No.3 Squadron claimed seven enemy aircraft shot down, four probably destroyed and four more damaged, for the loss of one Kittyhawk.

Limited Bomber Effort
(7th - night 11/12th January)

As already indicated, four day bomber squadrons only now remained in the first line - Nos. 11, 14 and Lorraine Squadrons (Blenheims) and No.21 Squadron, S.A.A.F. (Marylands) - the four other squadrons having been withdrawn for refitting, including two earmarked for the Far East. The bad serviceability of the squadrons has been mentioned on page 262. The Maryland strength of No.21 Squadron, S.A.A.F., was further reduced by the necessity of detaching seven aircraft to Malta. Moreover, two squadrons only, Nos.11 and 21 S.A.A.F. under No.3 (S.A.) wing were primarily concerned with operations over the forward area; Nos.14 and Lorraine Squadrons, under No.270 Wing, continued to support the 30th Corps in their frontier operations, concentrating now on the Halfaya defences, although a few aircraft of No.14 Squadron stood by at Msus to provide air support for the 13th Corps. Accordingly day bomber operations over the forward area could only be on a very restricted scale and these were further limited by adverse weather conditions on 7th and 10th January.

ACC/11 Part 2 Encls.67B
Nos.11 & 14 Sqdn. CREBs. S.A.A.F.
Narrative & M.E.F.O.S. No.12

The aim was to have two boxes of six Blenheims standing by at Msus for briefing and provision of fighter escort. The limiting factor mentioned above, linked with the continued difficulty of identifying targets, restricted the effective Blenheim effort to three operations comprising 16 effective sorties. Marylands of No.21 Squadron, S.A.A.F. also helped with direct support bombing on one occasion, operating from Msus. On the 9th groups of enemy M.T. to the east of Agheila were attacked by 10 Blenheims and 7 Marylands; bombs straddled the target, but the vehicles were dispersed and few direct hits were reported. Two days later a somewhat more successful attack was made by 5 Blenheims of Nos.11 and 14 Squadrons on an M.T. concentration in the rear of the enemy's El Agheila position, which had been reported by No.208 (A.C.) Squadron. Bombs straddled the target and one or two petrol or oil fires were started, the black smoke from one rising to 3,000 feet and being visible to our aircraft for 30 miles.

Details of the combats between our fighter escorts and enemy aircraft have already been given: although our fighter losses were considerable no escorted bomber was lost on these missions.

Marylands of No.21 Squadron at this stage had been allotted targets with the following priority:-

- (1) Shipping and dumps at Buerat (or further east) and
- (2) Landing grounds between Buerat and Agheila.

On the 8th a small coastal ship and stores at an off-loading point 15 miles east of Ras El Aali were attacked and some bombs straddled the stores. A projected attack against Marble Arch landing ground on the 11th had to be abandoned owing to bad weather.

It was clearly necessary for the more substantial night bomber strength to atone for the weakness of the day bomber force. In the event, shortage of petrol at the advanced landing ground at El Adem and insufficient warning of targets or change of targets, which involved adjustment of bomb loads and fuel arrangements (these

No.205
Group
C.R.B.

difficulties came to a head a day or two after the period under review and are considered on page 275 combined with bad weather on two nights, reduced the Wellington effort against North African targets during the nights 7/8th to 11/12th January, to 36 sorties of which 22 were effective. In particular, M.T. concentrations and other military targets in the El Agheila area and transport further in the rear near Ras El Aali were attacked on two nights and a slight effort was continued against the enemy's supply ports and bases at Buerat, El Hsun and Tripoli. Bomb bursts on the jetty and stores at Buerat, followed by fires, were reported, but results of the small scale bombing of Tripoli were obscured by a smoke screen.

In sum, the small-scale, sporadic effort of the Middle East bomber force during the period that our advanced troops were making contact with the enemy west of El Agheila was insufficient to effect materially the ground operations or the enemy's build-up.

Army Agree in Principle to Need for Identifying Vehicles

AOC/11
Part 2.
Encls. 67B
Appendix
"A".

At this stage H.Q.13 Corps had come to the conclusion at long last that the "Undisout" recognition signals were "not entirely satisfactory". It was agreed that the only satisfactory arrangement was to have a permanent sign painted on all vehicles, a practice which the enemy had already adopted. "By doing this," the Commander of the 13th Corps wrote, "we accept the fact that in order to obtain the maximum assistance from the R.A.F. we are prepared to identify our vehicles to the enemy. Provided that the R.A.F. have no reason to suppose that they will be unable to maintain a reasonable measure of air superiority⁽¹⁾ it is recommended that a permanently painted identification sign be adopted for the forthcoming operations. A white St. Andrew's Cross on a black background was first suggested. In the event, owing to the enemy's attack on 20th January and our resultant retreat arrangements for the painting of the identification signs on each vehicle could not be implemented until the lull in the land battle following the consolidation of our Gazala line in February.

First Operational Sortie by a Liberator in the Middle East (night of 11/12th January)

No.108 Sqn.
O.R.B.

Mention was made on page 28 to the decision that Liberators (B.24's) should be adopted as the most suitable heavy bomber type for Middle East operations. The squadron first selected for re-equipping with Liberators was No.108 Squadron (a Wellington Squadron under No.205 Group) located at Fayid in the Canal Zone.

The first Liberator, with an American crew which remained to help with initial training, reached the squadron on 29th November, 1941⁽²⁾ Further American technical experts arrived at the squadron on 4th December. By that time the decision had been made to start a Liberator O.T.U. on the station for the conversion of Wellington crews. By 13th December four Liberators had been received. Great difficulties resulted from the fact that the Liberators arrived without tail turrets or guns and this involved much experiment on the squadron and at No.107 M.U. to improvise suitable armament.⁽³⁾ Moreover, the necessary revised establishment for a Heavy Bomber Squadron was not authorised until 6th January, 1942, and this meant a shortage of technical personnel for some weeks after the Liberators had arrived.

/Meanwhile

- (1) The Army's decision to identify its vehicles thus implied acceptance of the fact that the R.A.F. had maintained general air superiority.
- (2) The first Liberator actually despatched crashed on the Reinforcing Route 200 miles south-west of Khartoum and was a complete write-off. Arrangements were made however, for all serviceable parts to be salvaged and sent to the squadron.
- (3) Such as the fitting of Wellington rear gun turrets.

Meanwhile, training and bombing practice (at Shallufa bombing range) had been carried out and by mid-January the whole of No.108 Squadron "B" Flight had completed training on the Liberators and "A" Flight commenced its training. It was considered that if the Liberators had been delivered complete with armament modifications the whole squadron could have been fully operational on them by 1st January.

Idem and A.M.B. II J/1/12 The first operational flight on the night 11/12th January - an attack on Tripoli - was regarded in the nature of a test flight to gauge petrol consumption and to see if any operational difficulties became apparent on a raid. The Liberator flew to Advanced Base L.G.09. (Bir Koraiyim), where it was refuelled and bombed-up. At 23.40 hours the aircraft left for Tripoli, encountering a head-wind of 35 mph. which slowed up the outward journey. The target was reached at 04.45 hours, no difficulties being encountered. Twelve 500-lb G.P. bombs were dropped on Tripoli Harbour from a height of 14,000 feet, but the usual smoke-screen obscured results of the bombing. Three bombs, which hung up owing to electrical failures were subsequently dropped on Homs, but again results were not seen.

No further Liberator operations were carried out during the "Crusader" advance, the next operation occurring on 29th January during the early stage of the retreat to Gazala.

Bad Weather Limits Operations from Malta. (7th - night 11/12th January)

M.E.F.O.S. No.12. Adverse weather conditions greatly curtailed the offensive air effort from Malta, meanwhile. In particular, strong cross-winds at Luqa prevented Wellington operations during the nights 7/8th to 10/11th January, inclusive and the Blenheim squadrons' operations were also prevented. For the greater part of the period Halfar airfield was unserviceable and so Fleet Air Arm Albacores and Swordfish operations were also brought to a standstill. On the night 11/12th January a few Wellingtons continued the offensive against Tripoli and reported an explosion caused on one of the merchant ships there. Apart from this attack the enemy's reinforcing was unimpeded.

It may be noted that the bad weather spell brought some respite to the island from the enemy's air offensive. After heavy attacks on the 7th and the night 7/8th January (52 aircraft) only 50 enemy aircraft operated against Malta for the next five days and nights. This was fortunate, as the unserviceability of Halfar and Takali airfields grounded the fighter squadrons for several days.

The Lull of Agheila (12th - 20th January)

C.-in-C's Despatch P.66. The story of the final phase of the ground operations during the "Crusader" advance is soon told. By 11th January the Guards Brigade was already in touch with the enemy's line running from Marsa Brega southwards, but it was clear that our forces forward would not be strong enough to force a further withdrawal on the enemy for some weeks. Some of our forces, for instance the 1st Armoured Division Support Group which relieved the 7th Armoured Division, were inexperienced in Desert Operations and provided with vehicles which were not "desert-worthy".

/General

- (1) After sporadic Liberator operations in the following months the No.108 Squadron Liberators which had become a Liberator flight under No.242 Wing were attached to No.159 Squadron, and No.108 Squadron reverted on 22/6/42 to a medium bomber squadron with 20 I.E. Wellingtons. (No.108 Sqn. ORB)

Idem.

General Auchinleck described the nature and strength of the enemy's defensive position in these words: "The country round El Agheila offers one of the most easily defensible positions in Libya. A broad belt of salt pans, sand dunes and innumerable small cliffs stretches southwards for fifty miles, its southern flank resting on the Libyan Sand Sea, a vast expanse of shifting sand. Apart from the main road from Benghazi to Tripoli only a few tracks cross this inhospitable country, so that the thirty-five thousand enemy now left out of the original hundred thousand sufficed to hold it. Accordingly Rommel set his infantry to guard the approaches at Marsa Brega, Bir El Gina, Bir Es Suera, Bir El Cleibat and Marada, and withdrew his armoured forces to re-equip".

Both sides were anxious to control this area. For our part, the invasion of Tripolitania (Operation "Acrobat") necessitated traversing it and even the retention of Cyrenaica called for holding this defensive position. The C.-in-C., Middle East in an Operation Order issued 19th January appreciated, in fact, that our failure to stand at the El Agheila position would involve a retreat to the Egyptian frontier (Sollum-Giarabub), if the enemy at some later date became strong enough to launch an offensive in force.

A.O.C/11
Part 2
Encs.

C.-in-C's
Despatch
P.66

General Auchinleck judged that our forward forces would not be strong enough to drive the enemy from El Agheila before the middle of February, as reserves were required, further training was necessary, and the supply situation had to be greatly improved. It was considered highly improbable that the enemy would be able to launch a strong attack on us before that date, but the Eighth Army and the 13th Corps issued instructions against this contingency. (1) "On 21st January the improbable occurred, and without warning the Axis forces began to advance".

The Importance of Tactical Air Reconnaissance During the Lull at Agheila and its Curtailment through Bad Weather.
(12th-20th January)

No.208 Sqn.
O.R.B.
(including
Report on
Operations
with
13th Corps)

During the static period at El Agheila air information was even more necessary and of more vital importance to the Commander of the 13th Corps than during the period of pursuit from Gazala and the temporary halt at Agedabia. "During the enemy's withdrawal," the C.O. of No.208 (A.C.) Squadron reported, "it was possible to appreciate his intentions with accuracy. During the static period was cast by the absence of direct movement and the ever present alternative". Unfortunately bad weather virtually stopped tactical reconnaissance during the vital days before the enemy's counter-attack.

Idem.

During the first three days of the lull the detached flight at Antelat flew three Tac/Rs and one P/R on each day, covering all the main points of the enemy's position, particularly Bir Suera, Bir El Cleibat and Giofer and defensive diggings to the south, reporting on M.T. concentrations (one west of Agheila on 13th January and another at Giofer on the following day were reported as good bombing targets); and endeavoured on the 12th, unsuccessfully, to locate three vessels previously seen by the Strategic Reconnaissance Unit to be well forward off Marsa Brega. A few long-range Hurricanes were now allotted to the flight to carry our "medium Tac/R" - that is to cover the area between Tac/R and Strat/R.

/Enemy

- (1) So far as the Western Desert Air Force was concerned, the Eighth Army had suggested that back airfields should be kept stocked in case of a possible retreat. (AOC/11 Part 2 Encl.81A).

Enemy fighters over the battle area had now become increasingly active, but fighter escort could rarely be given to reconnaissance aircraft as the depleted fighter strength was needed to maintain some degree of fighter superiority by offensive sweeps. In spite of the enemy's attempt to prevent reconnaissance only one Tac/R. aircraft was lost.

For the last six days of the halt at Agheila No.208 Squadron's reconnaissances were severely curtailed owing to adverse weather conditions and the water-logging of the landing ground at Antelat. On 15th, 16th and 17th January a medium Tac./R was carried out on each day (chiefly over the Marada-Giofer area) and one P/R of the area Marsa Brega-Bir El Cleibat was made on the 15th. On the 18th one tactical reconnaissance was made of the enemy's main defence points before heavy rain made the surface of the landing ground treacherous; the 19th was a blank day; and on the 20th only one medium Tac./R of the area west of Giofer could be carried out. From 17th to 20th January photographic reconnaissances from Antelat were impracticable; even when the landing ground was serviceable P/R aircraft could not take off as camera lenses became splashed with mud.

S.R.U. From 12th to 19th January the Strategic Reconnaissance Unit
O.R.B. (operating from El Gubbi landing ground) carried out a reconnaissance
(No.223 Sqn. on each day and two on the 19th. As long-range Hurricanes had
O.R.B.) been allotted to No.208 (A.C.) Squadron for medium Tac./R, the S.R.U. Marylands could concentrate on covering landing grounds well in the rear of the Agheila position and supply points along the coast to Misurata⁽¹⁾. Of the nine reconnaissances carried out five were described as completely successful, three as partially successful (owing to cloud) and one as a complete failure (owing to dense cloud). An attempt on the 20th to cover Bir El Garra, Es Sultan, Machina El Medina had to be abandoned owing to dust storms.

S.A.A.F. The Survey Flight (No.60 Squadron, S.A.A.F. Detachment) carried
Narrative out successful P/R and visual reconnaissances on four days during the period of the areas El Agheila-Ras El Aali, Marada, and Marble Arch-Ras El Aali. Reports were made on aircraft seen on Agheila airfield and evidence provided of the fact that the enemy was using sea transport on occasions for bringing supplies right up to Marsa Brega. On the 20th it was reported that 1,500 to 2,000 M.T. were dispersed between the main road and the coast westwards from El Agheila to Ras Lanuf. There was no real indication, however, that the enemy was preparing to attack.

No.2 P.R.U. Meanwhile No.2 Photographic Reconnaissance Unit Hurricanes made
O.R.B. a few P/R sorties from Antelat. On the 12th the rear area Sirte-Nofilia was covered; an attempt to cover Agheila on the 17th failed owing to bad weather; P/Rs of Agheila failed owing to dense cloud on the 19th; but successful P/Rs of Agheila and Misurata were carried out on the morning of the 20th. On two occasions, also, Malta-based P/R Beaufighters covered the main ports, airfields and some of the main roads in the rear between Sfax and Buerat.

/Weakness

(1) It was stated in an "Appreciation of the Air Situation, 16th Jan." written for the A.O.C., Western Desert by the S.O.O., Western Desert: "The main weight of enemy supplies emanates from Tripoli. The land L. of C. throws a strain on his M.T. In order to supplement his main supply line.....ships, schooners and barges are off-loaded at jetties at various points along the coast. The chief of these points are:- Misurata (80 tons per day), Buerat El Hsun (200 tons per day), Ras El Aali (60 tons per day). Barges have been observed at Marsa Brega, where it is unlikely that more than 40 tons per day could be landed. The weather has probably increased the difficulties of off-loading supplies on an open coast." (A.A. H.Q. W.D./Air/14).

Weakness of Western Desert Force

AOC-in-C's
Correspondence with
C.A.S.
Part 3.
Encls.297A

During the last week of the lull at Agheila Air Marshal Tedder having "been somewhat concerned at (the) relative weakness of W.D. Force during past few weeks.....investigated on (the) spot". He summarised the "four main factors reducing our effective strength forward" as follows:-

AOC/II
Part 2
Enc.75A

- (i) "Difficulty of getting supplies specially fuel, forward from railhead and Tobruk⁽¹⁾..... drastically limited ability to operate light (formerly medium) bombers forward and.....prevented operation of mediums (formerly heavy bombers) from forward L.G.s⁽²⁾. There have been times when even the reduced fighter force in forward area has been limited in effort by fuel shortage". The opening of Benghazi was beginning to ease the situation⁽³⁾ but it would be some time before a large Wellington force could operate from the Benghazi area.
- (ii) Bogging of airfields by heavy rain, "not only at Derna, Barce and Benghazi but even in the southern area, e.g. Magrun and Antelat".
- (iii) Despatch of reinforcements to the Far East. The A.O.C.-in-C., reported: "Diversion of Hurricanes to Far East and Burma has made it impossible to replace wastage in the line since both new intake and repair output has been fully mortgaged.....Serviceable strength of fighter squadrons had for time being been seriously low"⁽⁴⁾ Serviceability of the Western Desert fighter squadrons had steadily declined in spite of the effort to build it up. Figures for 12th-16th January, inclusive were as follows:-

Date	Total		Per Squadron	
	A	B	A	B
12th January	105	15	9	1
13th "	105	15	9	1
14th "	101	33	8	3
15th "	98	34	8	3
16th "	97	25	8	2

A = Serviceable B = Serviceable within 48 hours.

AOC-in-C.
Correspondence
C.A.S. etc.
Part 3. Enc.297A.

"Light bomber strength has been reduced", the A.O.C.-in-C reported on 23rd January, "not only by withdrawal of four /of

- (1) On 17th January the critical fuel situation in the forward area had improved. One hundred and thirty tons per day had then been allotted to the R.A.F. from Tobruk and were going forward on the desert convoy. The total stock of 100 ctane at Msus and Antelat. was then estimated at 75,000 gallons. (A.A.H.Q.W.D./Air/14/Enc.5A) By 22nd January 100,000 gallons of petrol had to be stored in the Antelat area (A.O.C./11 Part 2 Encl.79A). ^{been}
- (2) Insufficient fuel at El Adem (advanced refuelling L.G.) caused the cancellation of several projected Wellington operations.
- (3) On 17th January it was reported that 800 tons of R.A.F. fuel and ammunition was being off-loaded at Benghazi (Idem).
- (4) When it was proposed that No.94 Squadron should be withdrawn and re-equipped with Kittyhawks so that its twelve Hurricane IIs could be sent with a delivery to the Far East, the A.O.C. W.D.requested its retention as "danger point" had been reached. The A.O.C. put the "effective" fighters on 13th January at a total of 80 (excluding, that is, the Tomahawks of No.2 and No.4 S.A.A.F. as "useless fighting" and the two squadrons of Hurricane Is).

of the six British Blenheim squadrons supporting the land operations,⁽¹⁾ but also by the diversion of aircraft and effort to bring these four squadrons up to full strength of twenty four aircraft". It was reported, however, that the Blenheim situation in the Western Desert was beginning to recover and it was intended to bring up Nos.11 and 14 Squadron up to 24 aircraft as soon as possible.

- (iv) Technical trouble with Bostons and delay in the availability of Baltimores, both of which types were needed to re-equip the former Maryland squadrons, as the supply of Marylands had ceased.⁽²⁾ It was hoped "to get one Boston squadron back into line early February, one Boston and one Baltimore by mid-February and one Baltimore (by) late February".

- Idem (v) It was pointed out by the A.O.C.-in-C., that factors (iii) and (iv) "also affected effort for over-sea reconnaissance and striking".

Air Marshal Tedder concluded his report by saying:-

"Foregoing is neither complaint nor alibi. Necessity for diversions to Far East fully appreciated by all ranks and supreme effort being made to meet both conflicting requirements. Consider it urgent to build up numerical strength in Cyrenaica again quickly as possible, but in the meantime saw no sign of slackening off; morale as high as ever."

Scale and Allocation of Fighter Effort During the Last Nine Days of the "Crusader" Advance.
(12th-20th January).

The scale and allocation of effort of the Middle East Fighter squadrons connected with "Crusader" operations from 12th-20th January was reported as follows:-

M.E.F.O. S.
Nos. 12 and
13,

Shipping Protection:	283 sorties
Offensive Sweeps (and a negligible effort on Ground Attack):	240 sorties
Reconnaissance Escort:	26 sorties
Local Defence:	189 sorties
TOTAL	738 sorties

The effort was greatly reduced 18th to 20th January, inclusive, by bad weather and the waterlogging of forward landing grounds which prevented all offensive fighter operations.

Offensive Fighter Force Established at Antelat.
(Second week in January)

Mention has already been made of the fact that certain fighter squadrons had stood by at Antelat for the carrying out of offensive sweeps and local defence from early January onwards. By 14th January No.258 Wing had been established at Antelat and

/nine

- (1) This left only Nos.11 and 14 at the end of the "Crusader" Advance to support the 13th Corps.
(2) No.21 Squadron, S.A.A.F. had to be withdrawn through lack of aircraft in mid January.

nine fighter squadrons were using the airfield there as an advanced base. The location of units under A.H.Q., Western Desert as at 16th January is given at Appendix V.

Scheme to Introduce System of R.D.F. Warning at Belandeh Prevented by Enemy Advance.

A.A. H.Q.
W.D/Air/14
Encl. 5A. In view of the reduced strength of the Fighter Force it was clearly necessary to introduce a system of R.D.F. warning as far forward as possible, so that our fighters could safely use the advanced L.G.'s immediately behind our forward troops. The economy effected in flying hours would have been considerable and it was considered that the resultant increase in interception of enemy formations would probably be about 50%. It was appreciated, in fact, that "the introduction of R.D.F. in the forward area would probably do more than any other single factor to reduce our administrative difficulties and to increase the effect of our cover for the Army".

Appendix

Shortly after No.258 Wing moved to Antelat the C.R.O., H.Q., R.A.F., M.E., (W.C. Tester) arrived with No.510 A.M.E.S. (C.O.L.). As Antelat was over 100 miles from the enemy's positions at Agheila a forward L.G. was established at Belandeh and the C.O.L. installed there. It was intended to operate formations of up to 18 aircraft on controlled interceptions over the enemy's lines. The scheme could not be put into effect, however, before 21st January and then the enemy's advance caused the C.O.L. to be withdrawn.

Continued Success of ME.109 "Jumping Tactics" in the Forward Area. (12th-20th January).

The fighter squadrons operating from Antelat in particular, Nos.3 R.A.A.F., 94, 112, 238, 260 and 274 - carried out offensive sweeps, in general on the lines mentioned on page . Operations were kept to the minimum in an attempt to increase serviceability. Moreover, from 15th to 20th January weather conditions were adverse, culminating in the water-logging of Antelat landing ground and the prevention of all fighter offensive operations from 18th to 20th January (and, indeed, on the opening day of the enemy's offensive, 21st January, which is outside the scope of the present narrative).

A.A. H.Q.
W.D/Air/14
Encl. 5A. The enemy's landing grounds were far less affected and our forward troops were subjected at times to increased pressure from the enemy's air which our reduced fighter sweeps were unable to prevent.

AOC/11
Part 2
Encl.

No.3 Sqn.
O.R.B.

The main feature of the fighter operations on the forward area was the continued success of small numbers of ME.109s which successfully "nipped off" (as the H.Q., R.A.F., M.E., Operations Liaison Officer expressed it) stragglers of numerically weak fighter formations while continuing to fight shy of the large formations. A typical example occurred on 13th January in the course of a sweep of the Marsa Brega-Agheila area by seven Kittyhawks of No.3 Squadron R.A.A.F. On the return journey one section on going down to investigate an aircraft seen on the ground was "jumped" by four Messerschmitts. One aircraft of No.3 Squadron was holed and landed out of petrol 20 miles south-east of Msus; the pilot brought his aircraft back on the following day.⁽¹⁾ On the same day two or three ME.109s followed a Kittyhawk back to Antelat and shot down Wing Commander Charles, Commanding Officer of No.253 (A.C.) Wing and Head of the Direct Support Section at Advanced A.H.Q., Western Desert.

AOC/11
Part 2
Encl. 73B

/Charles

(1) All the M.E. operational summaries assume that the aircraft was lost.

Idem. Charles was flying around Antelat carrying out R.T. tests in a Hurricane and keeping a straight course near the ground. In view of his experience in Army Co-operation and the control of direct support, Air Vice Marshal Coningham reported to Air Marshal Tedder: "The loss of Charles is a tragedy". On the following day the ME.109 "pirate tactics" brought disaster to No.94 Squadron, which provided top cover to No.260 Squadron in a sweep of the battle area south-west of Agadabia. Our fighters were trying out a new type of formation in which sections of four aircraft were stepped-up instead of the normal two-squadron formation which had proved its worth in defence against the superior ME.109s. Two ME.109s jumped No.94 Squadron and "picked off" six of its eleven aircraft. One pilot was killed outright, two were seen to bail out and three forced-landed in the area occupied by our troops and were later reported to be saved. The Squadron diarist commented: "An altogether disastrous day, leaving a stock of serviceable aircraft now reduced to seven."

Idem. In view of the enemy's successful exploitation of the superior performance of the ME.109 and the difficulty of destroying the enemy aircraft in the air, the A.O.C., Western Desert, had under consideration the employment of fighters in low-flying attacks on Marble Arch Landing Ground and other enemy landing grounds in that area. It was appreciated that "In a properly staged ground strafe, while we must be prepared to suffer losses, damage would be done to enemy aircraft on the ground, and a considerable dividend for our efforts obtained".

The enemy's sudden attack on 21st January prevented this operation from being carried out.

Projected Re-formation of No.211 Group for Defensive Fighter Commitments. (15th January)

No.235 Wing O.R.B. As early as 27th December the A.O.C., Western Desert, had intimated that he should be ~~freed~~ from the responsibility of rear defence in Cyrenaica as soon as the expected advance into Tripolitania was started (Page 224). The provisional arrangements had consisted of the formation of Advanced H.Q. No.201 Group (which incorporated the R.A.F. Liaison Section) at Tobruk on 22nd December and its removal to Benghazi at the end of the month, where a combined operations room was set up and No.520 C.O.L. was installed near No.250 A.M.E.S. to provide R.D.F. facilities. The Advanced H.Q. controlled the fighter protection of shipping and No.201 Group units in the forward area. The rear shipping defence west of Alexandria was placed under the control of No.234 (ex 269) Wing, under A.H.Q., Egypt. The defence of Egypt itself (by formations operating under A.H.Q., Egypt) is referred to in Section Four.

No.211 Gp. O.R.B. and HQ., RAF., ME., ORB., Admin. and Org. App. "S" January 1942. On 15th January No.211 Group (the former Nucleus Group) was reformed at El Adem, under Air Commodore H.B. Russell, with the intention of moving on to Benghazi on 24th January. It was to be placed under the command of A.O.C., Western Desert, with direct communication with H.Q., R.A.F., M.E. for administrative matters. Its function was to assume administrative and operational control of all units in Cyrenaica, except those of A.H.Q., Western Desert and Nos.201 and 205 Groups. The primary operational role of No.211 Group was to be (a) Protection against air attack for coastal shipping between Sollum and Benghazi and (b) Defence against air attack on ports in Cyrenaica. The exact operational boundary for protection of shipping was to be fixed between the

/Group

Group and No.234 Wing⁽¹⁾, which was still responsible for protecting rear shipping west of Alexandria. The Group's secondary role was to provide such measure of defence against air attack of the base installations and other vulnerable points in Cyrenaica, as resources allowed. The following squadrons were provisionally allotted to the Group:- R.N.(Fighter Squadron, No.1 Squadron, S.A.A.F. No.274 Squadron and one additional fighter squadron to be allotted by A.O.C., Western Desert. In addition, No.272 Squadron was to be placed under the Group's control.

On the formation of No.211 Group, No.201 Group's responsibilities were restricted to the operational and administrative control of such No.201 Group units as might be located in Cyrenaica and Western Desert (Egypt) for the fulfilment of its role as a Naval Co-operation Group. It was recognised that an Advanced H.Q. 201 Group in Cyrenaica was necessary to control the General Reconnaissance and Ship Striking forces in Cyrenaica. On 20th January the former Advanced H.Q. No.201 Group, with its wider commitments including fighter protection to shipping and ports, ceased to exist and No.235 Wing (with the help of personnel from the disbanded No.270 (Bomber) Wing) was formed at Benghazi.

No.235
Wing
O.R.B.

AOC/11
Part 2-
Encl.74A

Until such time as No.211 Group had been established, efficient communications existed and fighter resources were adequate in Nos. 211 Group and 234 Wing, the operational control of the squadrons allotted for protection against coastal shipping and ports was to remain vested in A.O.C., No.201 Group, exercised through No.221 Group and No.234 Wing, respectively⁽²⁾.

Passing of Convoy to Malta.
(16th-19th January)

The arrangements for shipping and port protection along the Cyrenaican and Egyptian coast, outlined in the preceding sub-section and the defence of Alexandria and the Suez Canal zone by squadrons operated by Nos.252 and 250 Wings under A.H.Q., Egypt., (Section Four) succeeded in providing adequate fighter protection for our Mediterranean convoys for the first time since the beginning of the war in the Middle East.

/The

- (1) No.234 Wing, under A.H.Q., Egypt, was allocated similar commitments to those of No.211 Group between Alexandria and Sollum.
- (2) Although No.211 Group and No.234 Wing were prevented from taking over full control by the unexpected enemy counter offensive, the proposed arrangements have been considered in some detail as the principle of whether the Navy or the R.A.F. was to be responsible for fighter protection of shipping and ports was involved. The A.O.C., W.D. objected to the first arrangement that the Naval Co-operation Group (No.201) should be responsible for protective fighters in the following words: "The whole trend of present action is to give Navy virtual control of our air defences which at this stage of reduced naval resources and increased reliance on air will prejudice air action and provide dangerous precedent.. It would be better to leave No.201 Group to its restricted Naval co-operation role and to form a new Group... to take over control of the air forces along the Egyptian and Cyrenaican coast... 201 Group would merely provide Liaison Officers at the sectors so as to give position of ships and the control would then be on the Home principle ... The virtual control of the Mediterranean is passing to air forces and the early decisions will probably govern the future. There is a lot at stake." (A.O.C./11 Part 2 Encl.66A)

The small-scale enemy bomber offensive against Benghazi, Derna and Tobruk achieved little more than a nuisance effect. The HQ. R.A.F. fighter defence admittedly scored only few victories against enemy ME. Opsums raiders. No. 4 Squadron, S.A.A.F., had the best record in this activity during the last week of the "Crusader" campaign, claiming a Cant. 1007 destroyed on 15th January off Benghazi and a Ju. 88 reconnaissance aircraft destroyed some 30 miles out to sea from Berca on the following day, but the presence of fighters undoubtedly acted as a deterrent and several instances were reported of raiders or reconnaissance aircraft being driven away. The Cant. 1007 mentioned above was frightened rather than shot down as it crashed before the Tomahawks could get in a burst.

The main shipping movement on our part was the passing of a convoy of four merchant ships (one as mentioned later, turned back) with a naval escort (Operation "Boxer") from Alexandria to Malta between 16th and 19th January. Dawn to dusk fighter protection was provided on the first half of the voyage under the shipping No. 30 Sqn. protection arrangements already outlined. On the 17th a Hurricane O.R.B. of No. 30 Squadron (under No. 234 Wing) on escort duty received warning from the convoy then north east of Tobruk, of two Ju. 88s above preparing to bomb; the Hurricane shot down one of them (confirmed destroyed by H.M.S. "Carlisle") and chased the other away. From No. 252 and 16th to 18th January, also, constant day protection was given to the 272 Wings convoy by Beaufighters of Nos. 252 and 272 Squadrons (under 201 Group): O.R.B. on the 10th the Beaufighters operated from Edku, on the 17th from El Gubbi and on the 18th from Berka. On this day several enemy aircraft were encountered and prevented from harming the convoy. No. 252 Squadron Beaufighters claimed one Ju. 88 destroyed and one Ju. 88 and two unidentified aircraft destroyed for the loss of one aircraft and No. 272 Squadron Beaufighters claimed one Ju. 88 damaged.

A.H.B. Three of the four merchant ships reached Malta safely at 1300 II J/12 hours on 19th January, in spite of the fact that delays caused by the Appendix A engine trouble and steering defects of the fourth ship, which had to and return to Alexandria, necessitated a long daylight approach to Malta. M.E.F.O.S. From dawn on the 19th until the convoy reached port Hurricanes of No. 13. Nos. 126, 249 and 185 Squadrons carried out 93 sorties from Luqa airfield (Halpar and Takali being unserviceable), maintaining a patrol of twelve aircraft over the ships. Between 1027 and 1257 hours 72 raiders operated against the airfield and the convoy. The Hurricanes repeatedly drove off the enemy bombers attacking the convoy and no hits were scored on the ships; the Hurricanes claimed one enemy aircraft destroyed and five damaged. Heavy raids followed on the 20th and 21st while the ships were unloading.

A.H.B. The ship which failed to keep up with the convoy - the Norwegian II J/12 S.S. "Thermophylae" (6,655 tons) - was detached with escort on the Appendix A 18th and ordered back to Alexandria. Beaufighters of Nos. 252 and and Nos. 252 272 Squadrons were instructed to cover the detached vessel and escort, and 272 Sqn. but failed to locate them. On the following day (the 19th) the O.R.B. Beaufighters were again briefed to cover the ships whose course lay outside S/E fighter range. The first aircraft despatched arrived to find the "Thermophylae" gutted as a result of enemy bombing. The Admiralty Beaufighters subsequently covered the naval units on their return to BR. 1337 Alexandria.

Cessation of Day Bomber Effort in Forward Area. (12th-20th January)

During the lull at Agheila no bombs were dropped on the forward area by the Western Desert day bomber force.

A.C.C./11 It was essential to limit operations in order to build up the Part 2 serviceability of the greatly reduced day bomber force - Nos. 11, 14, Encl. 75A and Lorraine Squadrons (Blenheims) and No. 21 Squadron, S.A.A.F.

/(Marylands)

(Marylands). The effort to increase serviceability between 12th and 16th January showed no result. Figures in respect of the four squadrons for 12th and 16th January were as follows:-

Total		Per Squadron	
A	B	A	B
28	38	7	9

A = Serviceable B = Serviceable within 48 hours

No.21 Sqn.
S.A.A.F.
War diary
A.O.C./11
Part 2
Encl. 75A

Of the four squadrons, moreover, the Lorraine Squadron and, to a lesser extent, No. 14 Squadron were occupied with operations against Halfaya (Page 278) and No. 21 Squadron S.A.A.F., was withdrawn from operations after an abortive mission on 13th January. The remaining day bombers were "pulled out" of operations over the forward area for a period of four days on 16th January (in any case, bad weather would probably have prevented the token effort which could have been made in another endeavour to increase serviceability.

No.21 Sqn.
S.A.A.F.
War Diary
and
S.A.A.F.
Narrative

The only day bomber attacks attempted during the Agheila lull were by No. 21 Squadron, S.A.A.F., and these proved ineffective. On 12th January five Marylands were despatched to bomb the enemy's landing ground at Marble Arch. When 20 minutes from the target a Me. 110 was encountered on patrol; by the time the Marylands arrived at Marble Arch a large number of fighters were seen taking off, so the bombers jettisoned their bombs and turned for home. The following day the squadron carried out its 83rd operation and, as it transpired, the last during the "Crusader" campaign. Ten Marylands were sent up to Msus in order to carry out an attack on shipping and stores at Buerat El Hsun. On arrival at Msus five of the Marylands became unserviceable through engine failures and another broke a tail-wheel. Of the four which took off at Msus one was unable to keep up with the formation owing to loss of power and returned. The remaining three aircraft then ran into bad weather and were compelled to return. (1)

Squadron
O.R.B's

It was clear that No. 21 Squadron, S.A.A.F., was no longer fit for operations, and on 17th January the order was given for the squadron to return to Egypt (L.G. 98) for re-arming with Baltimores.

On a few occasions during the lull at Agheila, Nos. 11 and 14 Squadron stood by for direct support attacks, but either no targets were forthcoming or bad weather (including sand-storms) prevented operations. The Lorraine Squadron, it may be noted, was withdrawn to Syria after the conclusion of the frontier operations.

Night Bombing Restricted by Lack of Fuel in Forward Area. (Night 12/13th-20th January)

It was clear that any effective bombing by forces based in Egypt/Cyrenaica at this stage would have to be carried out by No. 205

/Group

- (1) Apart from the fact that the supply of Marylands had ceased, it was evident that the supply of spares was difficult. The Diarist of No. 21 Squadron reported on 13th January: "The reconditioned (so-called) engines we were receiving without doubt were responsible for the ineffectiveness of our raids. Pilots could no longer have the fullest reliance in their craft, for engines which had not been bench-tested prior to delivery to the squadron, while rendering a satisfactory performance in "running-up", revealed unsuspected faults and failures after only a few flying hours." (No. 21 Squadron, S.A.A.F., War Diary).

AOC/11
Part 2
Encl.71A

Group Wellingtons. The Group's effort, however, was greatly hindered by the need to conserve fuel in the forward area. On 9th January the A.O.C., Western Desert had informed the S.A.S.O., H.Q., R.A.F., M.E., that the petrol situation was improving at El Adem and that ten Wellingtons could be refuelled there each night; in general, six aircraft were to bomb Tripoli and the remainder Buerat El Hsun or other military targets. The arrangement was for the A.O.C., Western Desert, to inform No.205 Group each day of the amount of petrol available at El Adem for the Group's aircraft. Confusion was caused, in particular, on 13th January by a signal from Advanced A.H.Q., Western Desert, intimating that there was no petrol available for Wellington operations from El Adem, followed by a signal from the Rear Headquarters that 7,000 gallons were available. The position was further complicated by the fact that the A.O.C., No.205 Group had made arrangements for No.231 Wing⁽¹⁾ and its squadrons Nos. 37 and 70 to move up to L.G.75 (Sidi Barrani) with advanced refuelling parties temporarily at El Adem preparatory to a move to Benina. The A.O.C., No.205 Group sent his S.A.S.O. to confer with Air Vice Marshal Coningham to clarify the position. It was agreed that the Wellingtons should move up to Benina as soon as possible. This decision was made as the Wellingtons required 6,000 gallons in order to top with fuel at Benina; whereas they only required 9,000 gallons for operations with a full load. In the event, operations were carried out from L.G.75 shortly after the enemy counter-attack on 21st January, but his subsequent advance ruled out the establishment of Wellington squadrons at Benina.

275W/57
Encl.98A

AOC/11
Part 2
Encl.75A
No.37 and
70 Sqn.

257W/157
Encl.103A

The Wellington operations were at times also hindered by the change from a distant target (such as Tripoli) to a near target (such as Agheila). On 15th January the C.O., No.37 Squadron, reported to the A.O.C., No.205 Group: "It is a regrettable fact, but a true one, that the amount of engine hours and general effort recently expended by this Squadron is not in proportion to the results achieved. It does not seem to have been realised that a Heavy/Medium Bomber Squadron can only operate efficiently if reasonable warning of targets is given. As an extreme example, a change from a distant to a near target may involve the draining of 400 gallons of petrol from each aircraft, the removal of a long-range tank, the removal of a bomb load and the substitution of another with different fusing, consisting of perhaps 16 bombs to each aircraft. The Chaos produced by a last minute change, when perhaps 17 aircraft are involved, has to be seen to be believed."

No.205 Gp.
37,38 and
148 Sqn.
O.R.B.'s

The foregoing difficulties, plus bad weather on several nights, limited the operations of No.205 Group's Wellingtons (under the operational control of Air Headquarters, Western Desert) during the lull at Agheila to only 21 effective sorties. The squadrons involved were Nos.37, 38 and 148. Fires were caused among M.T. columns in the Agheila area on the nights of the 12/13th and 13/14th, but the results of the bombing of road traffic on the Sirte-Agheila/Maaten Giofer road on the nights of the 15/16th and 17/18th were obscured by ground haze. Bad weather prevented further operations before the enemy's counter-attack. In its strategic rôle the Group again operated against Salamis, Crete, on the night 19/20th, but bad weather rendered the effort of 13 aircraft of Nos.37 and 148 Squadron almost entirely ineffective.

/In

(1) No.231 Wing had been brought up to establishment as a mobile wing (page 40 refers) on 3rd January. (H.Q., R.A.F., M.E., O.R.B., Jan. (Admin.and Organisation Appendices).

In sum, inadequate fuel supplies at the forward landing grounds limited the No.205 Group's night bomber effort to nuisance operations against the enemy's road transport east of Sirte to the battle area, and entirely ruled out air pressure on the enemy's main ports and bases at Tripoli and Buerat El Hsun.

Bad Weather Restricts Offensive Operations by Malta-based Aircraft
(Night 12/13th - 20/21st January)

M.E.F.O.S.
Nos.12 & 13
M.E.Daily
Opsums &
AHB
II J1/12
Appendix
A.

Meanwhile, the enemy's attempt to neutralise Malta by air action continued, the average weekly sorties flown against the island exceeding 300. Particularly heavy raids were carried out on 19th January when the "Bower" convoy arrived and heavy attacks continued on the 20th and 21st, while these ships were unloading. Another major factor restricting Malta's offensive effort at this time was bad weather, which included heavy rain, dense cloud and, at times, electrical storms.

In these circumstances the air attacks on the enemy's main off-loading port at Tripoli never exceeded a nuisance effort. Wellingtons made attacks on six nights during the period, but the number of aircraft employed was never more than three. On several occasions fires were observed as a result of the bombing in the harbour area, near the railway station and near Mellaha airfield, but no serious interference with the enemy's reinforcing could have been effected.

General reconnaissance (including searches by A.S.V. Wellingtons) and shipping sweeps revealed a comparative lull in enemy reinforcing compared with the spate of supply ships sighted in the earlier part of the month. Shipping sweeps of the enemy's reinforcing routes were carried out on four nights by Fleet Air Arm Albacores and/or Swordfish and on four days by Blenheims. On only one occasion - the 14th - was any shipping sighted. The four Blenheims concerned attacked a 5,000 ton merchant vessel escorted by a destroyer 49 miles east of Melita; possible hits were scored on the merchant vessel. Once again the hazards attached to the low-level Blenheim attacks were illustrated - one Blenheim hit the mast and crashed into the sea and another was shot down by intense A.A. fire. On the 20th four Blenheims, failing to sight shipping, turned to land targets, bombing and machine-gunning the port and airfield at Zuara and the barracks and road transport at Homs. Following up sightings by A.S.V. Wellingtons, three F.A.A. Swordfish on the night 15/16th damaged a 1,000 ton merchant vessel 50 miles ENE. of Melita and two nights later four F.A.A. Swordfish damaged a 8,000 ton tanker, escorted by two destroyers, 85 miles south of Lampedusa.

CS.11260

M.E.F.O.S.
No.13.

Towards the end of the period attacks were made on Sicilian airfields, in an attempt to limit enemy air action at the time our convoy from Alexandria was approaching Malta and in Valetta harbour. On the 18/19th January eight Wellingtons bombed Catania airfield causing several explosions and starting fires which were visible for 40 miles on the return journey. The following morning 4 Hurricane bombers attacked the landing ground Comiso, claiming at least two aircraft destroyed on the ground. This was the third attack by Malta-based Hurricane bombers during the "Crusader" offensive. A Blenheim attack intended to aid our convoy's long day-light approach to Malta had to be abandoned owing to lack of cloud cover. During the night, however, eleven Wellingtons made another attack on Catania airfield, claiming 20 aircraft set on fire.

Idem

It is a surprising fact that during the fortnight 13/14th to 27th January 92 effective bomber and torpedo sorties were flown by Malta-based aircraft as compared with only 67 in the preceding fortnight. This effort was highly creditable as not only did the enemy send nearly half as many aircraft again to attack the island

A.H.B.
II J1/12
Appendix
A

as in the previous two weeks, but, as already mentioned, extremely bad weather prevailed throughout the period. Nevertheless, in general there had been a decline in offensive power during the "Crusader" offensive. In the first fortnight, 18th November to 2nd December, Malta-based bombers carried out 222 effective sorties; in the following fortnight 181 effective sorties; the next fortnight 173 effective sorties; and in the final three weeks, from 30th December to 20th January 106 effective sorties. Malta was still in being as an offensive base, but, the combined effect of the enemy's air offensive and bad weather inevitably restricted its power to interfere with the enemy's reinforcing. It may be noted that it was not until March 1942, that Malta's striking power was almost entirely neutralised, and it required a far greater enemy air effort to effect this than had been directed against the island during the "Crusader" campaign - 10,564 sorties were in fact flown against Malta during the period 25th February to 19th May, 1942.

The Capture of Sollum and Halfaya
(11th - 17th January)

Meanwhile, preparations had been put in hand to reduce the enemy's remaining frontier strongholds at Sollum and Halfaya. It was hoped that the fall of Bardia (its former source of supply) would intensify the lack of food and water from which the garrison were suffering. The forces involved were substantially the same as those employed against Bardia (Page 255 refers). For the air participation No.451 Squadron, R.A.A.F. continued as the Army Co-operation squadron allotted to the 30th Corps and No.270 Wing was again responsible for providing air support.

No.451 Sqn. No.451 Squadron made daily reconnaissances of the Sollum and Halfaya areas (the latter alone after 12th January) and resumed artillery reconnaissance on 5th January. Between the fall of Bardia, on 2nd January, and the fall of Halfaya, on the 17th, the squadron carried out 29 tactical reconnaissances, 9 photographic reconnaissance and 30 artillery reconnaissances.⁽¹⁾ As in the case of the Bardia operations, due to the absence of opposition, the directing aircraft could remain in the area for long periods and conduct the shoots from a low altitude.

C.in-C's
Despatch
P.65. No bombing operations were required for the reduction of Sollum. After preparatory artillery action, aided by No.451 Squadron's operations, the Transvaal Scottish attacked Sollum on 11th January and completed its capture early the next day, taking nearly 350 prisoners.

A.H.B.
II J1/12
P.39 Arrangements for the conduct of bombing operations against Halfaya were jointly made, as in the case of operations against Bardia, by the Commanding Officer No.270 Wing and the Commander of 30 Corps. Blenheim Squadrons then under the Wing were Nos.14 and Lorraine Squadron. The former was required at times also to operate in the Agheila area, so from 9th January until the surrender of the Sollum Garrison on the 17th the Free French Squadron was called upon to undertake most of the bombing. On some days attacks were delivered at half-hour intervals, the entire effort from 4th to 16th January comprised 281 effective sorties. Naval bombardment also supplemented the constant artillery action.

/Meanwhile,

- (1) On the conclusion of the frontier operations, No.451 Squadron was withdrawn from the Western Desert. South African personnel of No.40 Squadron S.A.A.F. attached to this squadron retired to their parent unit and on 21st January five Hurricanes were handed to No.238 Squadron. Three days later the squadron left for Heliopolis, prior to proceeding to Rayak (Syria) for non-operational duties (No.451 Squadron, O.R.B.)

Idem and
A.H.B.
II J6/7/4

Meanwhile, the enemy attempted to supply Halfaya by air, pairs of JU.52s operating at night from Crete. No.30 Squadron Hurricanes during moon period patrolled the approaches to Halfaya in an endeavour to intercept them. The only interception - before dawn on 12th January - resulted in the loss of a Hurricane and the two JU.52s escaped. The failure of the night fighters was largely due to the lack of R.D.F. and, at times, insufficient moonlight. Blenheims of No.14 Squadron co-operated at times by bombing the flare-paths.

C.in C's
Despatch
P.65

On 13th January the South Africans finally denied the enemy at Halfaya access to his last source of water supply and the surrender of the Garrison became inevitable. Plans were made for the final assault - in which the 1st Free French Brigade Group was to take the main part - but early on 17th January General de Giorgis, the Commander of the Garrison, surrendered unconditionally.⁽¹⁾ Approximately 5,500 prisoners were taken, including 2,000 Germans; all were exhausted from lack of food and drink. Few serviceable weapons fell into our hands and no stores of any value.

AOC/11
Part 2
Encl.77B

In retrospect it would appear that, as in the case of the Bardia operations, the bombing of Halfaya was largely a wasteful effort. Even from the point of view of training the operations were wasteful as it was then under consideration that the Squadron chiefly concerned, the Lorraine Squadron, should be re-equipped with fighter-Blenheims. Actually the squadron was withdrawn to Syria on the completion of the frontier operations with the intention of re-forming at a later date.

HQ. R.A.F.
ME. O.R.B.
Jan. 1942.
Admin. &
Org. App. U.
No. 14 Sqn.
O.R.B.

Shortly before the fall of Halfaya, No.270 Wing Headquarters was instructed to move up to the Tobruk area for the purpose of being disbanded and its personnel posted to No.235 Wing (Page 273 refers). No.14 Squadron was placed under the command of No.3 (S.A.) Wing for operations in the forward area with effect from 16th January.

Strikes Against Enemy Merchant Shipping (During January 1942)

A. As Currently Reported and Assessed.

(1) By R.A.F. Middle East, and R.N. Mediterranean.

A.H.B.
II J1/29.

Apart from several attacks on enemy submarines the only effective sorties made during the month by aircraft based in Egypt and Cyrenaica were against an Italian convoy sailing from Taranto to Tripoli on the 23rd/24th January. Seventeen effective and twenty four non-effective attacks were made and some direct hits were claimed.

Idem.

Malta-based aircraft completed 50 effective sorties against enemy merchant shipping at sea including the Italian convoy mentioned above - 23 by Swordfish and 7 by Albacores of the Fleet Air Arm, 4 by Blenheims of 18 or 107 Squadron and 16 by Wellingtons of 156

/Squadron.

- (1) An attempt had been made to induce the Halfaya Garrison to surrender at the end of December by dropping a false message. A message was proposed by "G" Staff, G.H.Q., M.E.F., purporting to come from General Rommel, authorising the Commander of the Garrison to surrender. On the night 29/30th December a Wellington of No.37 Squadron approached Halfaya from the sea to simulate the arrival of a German bomber from Crete. Three copies of the message were dropped in a container. The ruse did not deceive the Commander. (I.Q., R.A.F., M.E., O.R.B., January 1941 Air Staff Appendix 2).

Squadron. As a result of these attacks Headquarters, Royal Air Force, Middle East made the following assessments - 1 M.V. of 13,098 tons sunk, (the troopship "Victoria" which was South-bound in the Italian convoy) 1 M.V. of 6,000 tons and 1 M.V. of 3,000 tons probably sunk, and merchant vessels totalling 23,000 tons damaged. "Result unknown" was given in respect of one 2,000 M.V. and one 5,000 ton M.V. with escort.⁽¹⁾

Idem. The Chief of Intelligence Staff, Mediterranean, reported the following casualties inflicted by naval action during the month of January - 1 Tanker⁽²⁾ of 7,000 tons (North-bound off Cape Spartivento) and 4 merchant vessels ranging between two thousand five hundred and six thousand tons sunk, two merchant vessels of 3,000 and 1,200 tons respectively probably sunk, and 2 M.V.'s totalling 10,200 tons damaged⁽³⁾

A.H.B.
II J1/29

In their "analysis of Mediterranean Axis Merchant Ships Sinkings for January 1942" Headquarters, Royal Air Force Middle East give the total sinkings of ships plying between Italy, Greece, Crete and Italian North Africa as 18,800 tons. South-bound sinkings (including ships sunk in N.African ports) totalled 13,100 tons, of the total estimated sailings for Italian North Africa of 127,500 tons. It should be noted that no south-bound shipping was sunk either by air or sea action during the last 20 days of the Crusader offensive. Southbound sinkings are estimated at 10% of total sailings, and total sinkings as 15% of total sailings. Other Mediterranean sinkings including the Aegean and Ionian Seas are estimated at 20,900 tons and total sinkings for the entire Mediterranean as 39,700 tons. Of this grand total 53% was assessed as sunk by H.M. Submarines and 47% by the R.A.F. and F.A.A.

CS.11260

(2) Enemy Shipping Losses Assessment Committee's Estimates

Part I.

Encl.47A and
67A

The Enemy Shipping Losses Assessment Committee's Estimates for January in respect of enemy merchant shipping casualties in the Mediterranean were:- 6 ships totalling 29,899 tons sunk or constructive loss, 6 ships totalling 24,474 tons seriously damaged, and 8 ships totalling 27,100 tons damaged. Of these 18,598 tons of merchant shipping including one Italian troopship, the "Victoria" (13,098 tons) were assessed as sunk by the R.A.F. and F.A.A. and 16,000 tons seriously damaged. Six merchant vessels totalling 20,100 tons were assessed as damaged by air action.⁽⁴⁾

B. Confirmed Losses of Enemy Merchant Shipping

Confirmed losses of identified enemy merchant vessels as
/recorded

- (1) From 1st - 20th January Malta-based aircraft completed 18 effective sorties - 11 by Swordfish and 3 by Albacores of F.A.A., and 4 by Blenheims. As a result assessments were as follows - 2 M.V.'s probably sunk (6,000 and 3,000 tons), 2 M.V.'s damaged, totalling 6,000 tons, and a tanker damaged. "Result unknown" in respect of 1 M.V. and its escort.
- (2) This sinking is not confirmed in enemy records or ESIAC's List of identified vessels.
- (3) From 1st - 20th January, the assessments were:- 1 tanker (unconfirmed) (7,000 tons), 2 M.V.'s. (6,000 and 2,500 tons) 1 laden troop transport 6,000 tons sunk. 1 M.V. 1,200 tons probably sunk, 1 M.V. 5,200 tons damaged by Naval action.
- (4) From 1st - 20th January 16,801 tons of shipping was assessed sunk (5,500 tons by air action), 9,222 tons seriously damaged (4,000 tons by air action) and 12,100 tons damaged (10,100 tons by air action).

P1/4203
and
Appendix
P

recorded in enemy sources have been compared with the Enemy Shipping Losses Assessment Committee's final reports, and results show that 41,528 tons of merchant shipping were sunk in the Mediterranean in January, compared with the current assessment of 29,899 tons. Of the 41,528 tons total 22,022 tons were sunk by the Royal Navy and Allied Navies and 19,506 by air attack.⁽¹⁾ Included in these totals are 23,059 tons of shipping considered to be sunk while plying the North African Convoy route - 3,553 tons by the Royal and Allied Navies and 19,506 tons by the R.A.F. and F.A.A.

P1/4203 &
E.S.L.A.C.
List of
confirmed
sinkings,

The totals of 31,281 tons of identified enemy merchant shipping confirmed as sunk by air action on (adjudged) African convoy routes during the months of December 1941 and January 1942, compared with the total of 64,959 tons during the previous September and October, indicate the degree to which Malta was neutralised by the Luftwaffe's offensive and its effort reduced by bad weather. It may be noted that the downward trend continued in the Spring of 1942 until, in April and May, not a single enemy merchant ship was sunk in the Mediterranean by air action.

A.H.B.
1/S.10.

C. Comments by Vice-Admiral Weichold.

In his essay on "The War at Sea in the Mediterranean" Vice-Admiral Weichold stated that as a result of the German Air Force operating from Sicily instead of Greece from December 1941 mastery was regained in this area, and the safety of transports to Africa secured. The Allied Navies could not carry out their....."large operation in the Mediterranean by breaking through the Straits of Sicily...." and could only bring small reinforcements through to Malta. As a result of this he claimed that during January "... not a single ship and not one ton of material on its way to the Armoured Corps in Africa were lost.⁽²⁾ Furthermore, in spite of bad weather,⁽³⁾ extraordinarily large quantities of stores were moved from Tripoli to....harbours near the front; this could only have been because of the weakness of the enemy counter defences."

SECTION FOUR

Air Defence of Egypt and the Levant
(14th December 1941 - 20th January 1942)

During the period of the air operations in connection with the "Crusader" offensive, No.202 Group, which became Air Headquarters, Egypt, on 1st December, retained responsibility for the air defence of Egypt.

(a) The Suez Canal Zone

No.250
Wing

As formerly No.250 Wing continued as the subordinate formation directly responsible for the air defence of the Suez Canal Zone.

/When

Idem

- (1) Sinkings for the last 20 days of the "Crusader" campaign (1st - 20th January) were 19,308 tons of which 12,900 tons were sunk by naval action and 6,408 tons by air action.
- (2) The troopship "Victoria" (13,098 tons) was assessed as sunk by Malta-based Swordfish on 23rd/24th January. This vessel was sailing in a Southbound convoy from Taranto to Tripoli, and was continuously attacked by aircraft from Malta and the mainland. It is classified as sunk in the enemy list of confirmed sinkings.
- (3) As already indicated in the text, as far as air reconnaissance and air strikes were concerned the bad weather favoured enemy reinforcing.

Nos.73 &
213 Sqns.
O.R.Bs.

When No.94 Squadron moved up to the Western Desert for "Crusader" operations in late October, fighter squadrons controlled by the Wing were No.73 Squadron (Hurricanes) at Port Said (less "A" Flight operating at L.G. Kilo 8, El Khanka under No.250 Wing) and a detachment of No.213 Squadron ("A" Flight - Hurricanes) at Ismailia.⁽¹⁾ In early December No.89 Squadron (Beaufighters) equipped with A.I., arrived from the United Kingdom, and was established at Abu Sueir. In the middle of the same month "A" Flight of No.73 Squadron relieved "A" Flight No.212 Squadron and was located at Shandur for the air defence of the Southern Canal Zone; "A" Flight, No.213 Squadron then took over 73 Squadron detachment's commitment at El Khanka under No.252 Wing. A token force of the Royal Egyptian Air Force (Gladiators) continued to operate under No.250 Wing throughout the period.

No.250
Wing
O.R.B.

SD.225
(Location
of Units)

In December a subsidiary Sector Operations Room was established at Abu Zenina, in addition to those already existing at Port Said and Fayid. By January there were ten A.M.E.Ss. under the Wing (Nos. 204, 219, 252, 259, 261, 262, 509, 523, 826 and 832) and two W.O.U.s. (Nos.13 and 15 (No.2 Section only) - No.17 having left the Wing's area for the Western Desert). Balloon squadrons in the Canal Zone were:- No.973 at El Kantara, 974 at Shallufa, 975 at Port Said and 976 at Kasfareet. On 21st October, it may be noted No.260 Wing arrived in Egypt (Ismailia) and took command of all balloon squadrons; operational control of all balloons in the Canal Zone, however, remained vested in No.250 Wing.

No.250
Wing
O.R.B.

During the period of the preparatory air operations (14th October - 17th November), No.250 Wing reported six enemy attacks on shipping, all of which were unsuccessful. Apart from an attack on shipping off Damietta by three S.79s on the morning of 22nd October, the raids were carried out at night by a few HE.IIIs operating from Greece, bombs being dropped on Suez when searches for shipping in the Gulf of Suez were unsuccessful. Hurricanes of Nos.73 and 213 Squadrons sent up on patrol against the raiders on two occasions made no interceptions. On several other occasions unidentified aircraft were plotted, but in these cases also the patrolling Hurricanes made no contacts. During the period of our offensive (18th November - 20th January) there was virtually no enemy action against the Canal Zone. Single enemy aircraft (in one or two instances identified as JU.88s) were plotted over No.250 Wing's area on five days and four nights; very few bombs were dropped and no damage was reported. Patrols by the Wing's fighters - including the initial No.89 Squadron Beaufighter operations on the night 5/6th January and 14th January - resulted in no interceptions.

Advantage was taken of the lull in operations to carry out continuous training, including interception practice.

(b) Lower Egypt

No.252
Wing
O.R.B.

As previously, No.252 Wing, under A.H.Q. Egypt, retained responsibility for the air defence of Alexandria (including shipping in its vicinity) and Lower Egypt generally. In the third week of October "B" Flight of No.213 Squadron (ex Cyprus) was located at Edku to relieve Nos.30 and 274 Squadrons, which left for "Crusader"

/operations

(1) In the third week of October "A" and "B" Flights of No.213 Squadron left Cyprus for Ismailia and Edku, respectively, leaving its depleted "C" Flight at Nicosia.

operations under A.H.Q. Western Desert. One flight of No.73 Squadron ("A" Flight), meanwhile, had been transferred from Port Said to L.G. Kilo 8 (El Khanka, near Heliopolis), under No.252 Wing, for the defence, primarily of the Cairo area. In mid-December, as already mentioned, this flight was relieved by "A" Flight of No.213 Squadron, previously at Ismailia. In early December, in anticipation of enemy bomber attacks on our communications leading into the Western Desert, arrangements were made for four Hurricanes of No.213 Squadron to leave Edku each evening before dark for Amirya, in order to carry out layer-patrols at night on the line Burg El Arab - El Imayid. Arrangements were also made later in the month for lateral reinforcement by day between Smouha Sector and Heliopolis Sector in case of heavy and sustained air attacks. The scheme (which never required implementing) allowed for reinforcing between the sectors by formations up to one squadron to operate under the control of the reinforced sector.

No.252 Wing units associated with the warning system, balloon barrage and P.A.C. batteries remained substantially the same as those indicated on Page 80.

Idem &
HQ.R.A.F.
M.E.Weekly
Intelli-
gence
Summaries

During the period of the preparatory "Crusader" air operations (14th October - 17th November) there was virtually no air action against No.252 Wing's area apart from sporadic reconnaissances by enemy aircraft based in the Eastern Mediterranean, including several reconnaissances of Alexandria. On only four occasions were bombs dropped in the Wing's area. On the morning of 22nd October two enemy aircraft made an attack on shipping east of Alexandria. Two sections of No.274 Squadron were ordered to patrol over Mariut, but land-lines and R/T gave trouble and the aircraft did not take off. Subsequent reports stated that S.S. "Bullfinch" had been bombed and machine-gunned, but was able to proceed to Port Said.⁽¹⁾ In the evening of 29th October 12 HE.IIIIs, operating from Greece, were plotted north of the Gulf of Kenayia, flying towards Alexandria; 26 bombs were dropped near a military camp at Amirya, in the Burg El Arab and Lake Mariut areas and in the sea near Daba, but no damage or casualties were reported. Hurricanes sent up failed to make interceptions. On the night 2/3rd November raiders returning from the Canal Zone dropped a few bombs at Helwan and on the evening of the 12th a raid was made on El Fayoum. On several occasions sections of Nos.213 and 73 Squadron were sent up to intercept unidentified aircraft, mainly reconnaissance aircraft, well to the north or west of Alexandria, but only one interception was effected. This occurred in the afternoon of 10th November, when a JU.88 was intercepted 30 miles north-east of Alexandria by two Hurricanes of No.213 Squadron and two Tomahawks of No.73 Squadron. The JU.88 was reported to be severely damaged;⁽²⁾ one of the Hurricanes crashed into the sea, but the pilot was rescued.

Idem:

During the period of the "Crusader" offensive (17th November - 20th January) no enemy bombing effort was directed against the port of Alexandria or our installations further south in the Delta. Such attacks as were carried out within No.252 Wing's sphere of activity were a few small-scale, sporadic attacks on our communications in the Burg El Arab, Daba and El Alamein areas and a few unsuccessful attacks on shipping, mainly off Fuka, by S.79s, JU.88s and torpedo-carrying HE.IIIIs. Meanwhile, both German and Italian reconnaissance aircraft from Greece and the Dodecanese shadowed shipping off the Egyptian/Cyrenaican coast and covered Alexandria on a somewhat increased scale,

/particularly

- (1) The Official Admiralty list of merchant shipping sunk and damaged does not record the incident, so the damage could not have been serious (BR.1337).
- (2) One German bomber was reported lost on that day in enemy records (ADIK 103/64).

particularly during December and January. In spite of a constant endeavour to intercept the enemy aircraft (usually single aircraft) frequently plotted approaching No.252 Wing's area, on only one occasion was an interception made. On the morning of 10th December a JU.88 which had unsuccessfully attacked a merchant vessel off Arabs Gulf was intercepted by two fighters of No.73 Squadron, which delivered four attacks and claimed the aircraft damaged.⁽¹⁾ On many other occasions reports ended: "No enemy aircraft sighted" or "Not close enough for interception".

(c) Eastern Mediterranean

A.H.Q.
P.& T.J.
O.R.B.
No.213
Squadron
O.R.B.

Meanwhile in October the Levant had been drained of its fighter squadrons in order to strengthen the Western Desert Force, and when "A" and "B" Flights of No.213 Squadron left in order to supplement the air defence of Egypt later in the month this left only the newly formed "C" Flight of the squadron located on Cyprus, under Air Headquarters Palestine and Transjordan (re-named Air Headquarters Levant on 1st December). In the event, there was no enemy air activity over Cyprus or the mainland during the "Crusader" period, although there was a sporadic reconnaissance of our Eastern Mediterranean shipping.

For a week at the beginning of November a flight of No.261 Squadron, stationed at Haifa, was attached to "C" Flight, No.213 Squadron, to assist in protecting troop movements to and from Cyprus. On 21st December No.213 Squadron Headquarters and "C" Flight were posted to Edku and the defence of Cyprus was taken over by No.261 Squadron detachment.

Our Base Virtually Immune from Air Attack

II J1/63

In sum, our base ports and installations were virtually immune from attack throughout the entire "Crusader" offensive period. Such bombing as was carried out, as already noted in the text was directed against our Cyrenaican lines of communication immediately behind the battle area. An A.I.3(b) report on the campaign remarked: "It is surprising that Italian long-range bombers in common with the German units from the Aegean have not attempted to attack our communications and other objectives in Egypt behind our front line; in general the Italian Air Force outside Libya could easily have made its pressure felt to a far greater extent than it actually has done".

The Air Defence Mission (Egypt)

Reports and Recommendations

Report by
the Evill
Mission
A.D.M.
3/42

Terms of Reference

On the recommendation of the C.A.S. as has been mentioned on page 81, an inter-service mission was sent in December 1941 to enquire into the air defence of Egypt.

The terms of reference of this mission, which was led by Air Vice-Marshal D.C.S. Evill, were as follows:-

"To examine the problem of the air defence of the Delta, and to make recommendations thereon to the Commanders in Chief, Middle East and to report to the Chiefs of Staff on their return".

/General

(1) Enemy records do not confirm this (ADIK 103/64)

General Recommendations

The first meeting of this mission was held in Cairo on December 27th, 1941 and from the beginning it was decided that the defence area should extend well to the east and west of the Delta itself, Sollum and Rafa being recommended as convenient limits. The necessity for unified control was also recognised as essential for the efficiency of the various forms of fighter defence, and recommendations were made that the Air Defence Commander should hold the rank of Air Vice-Marshal, and the A/A Defence Commander should be at least a Brigadier, and should be in the fullest sense Commander of the A/A Units allotted to the defence of Egypt.

A.D.M.
12/42

The possible future scale of enemy attack was carefully considered and minimum basic requirements for defence drawn up. So far as the Air Forces were concerned, these were assessed as 2 twin-engine and 10 single-engine British Fighter Squadrons plus 2 Egyptian single-engine Squadrons. In addition one or two Coastal Beaufighter Squadrons were considered necessary to assist in the protection of shipping on the Mediterranean coast, ⁽¹⁾

Recommendations for the defence of the particular areas were made by the mission. Their proposals were based on the assumption that the Suez Canal, including its terminal ports, and the naval base at Alexandria, were to be given first priority. They therefore recommended the deployment of G.C.I.'s and night fighter squadrons, the establishment of searchlight zones ⁽²⁾ so as to cover as

/effectively

(1) The suggested disposition of the basic fighter force was given as follows:-

		Day Squadron	Night Squadrons	Egyptian Squadrons
Alexandria Area	x	2 S.E.	(1 T.E. 1 S.E.)	-
Matruh Area	x	2 S.E.	-	-
Port Said Area	x	1 S.E.	1 T.E.	-
Iraq/Ismailia Area		1 S.E.	2 S.E.	1 S.E.
Cairo Area		1 S.E.	-	1 S.E.
TOTAL		7 S.E.	3 S.E. 2 T.E.	2 S.E.

x With additional Coastal Beaufighters.
GRAND TOTAL 12 British Squadrons
2 Egyptian Squadrons.

(2) Proposed allocations of searchlights were as follows:-

	Present (January 1942)	On Arrival of first 5 Batteries	Ultimate Requirements
Alexandria	55	70	70
Aboukir	3	6	6
Port Said	22	24	24
Suez	23	24	24
Kasfareet	24	-	-
A.F.Z.	26	149	408
Cairo	38	38	72
L.A.A. on canal (Northern reach)	-	-	(72)
Aerodromes and Anchorages	-	-	(36)
	191	311	604 (25 Btys)

effectively as possible the approaches to these vulnerable areas, and the strengthening of gun defended areas covering the principle objectives. (1)

Five of the proposed day squadrons were to be stationed on the coast for the protection of shipping, the defence of Alexandria and Port Said, and the interception of raids attempting to penetrate the Delta. The use of Beaufighters was limited by the absence of airfields large enough to accommodate them nearer than Abu Sueir - 80 miles from their patrols, so the construction of suitable bases nearer the scene of operations was recommended.

Adequate shipping protection was recognised as a difficult problem owing to the inadequacy of sufficient warning of low flying aircraft from the R.D.F. system. It was therefore recommended that fighter escorts should be used within 40 miles of the coast, and outside this range the mission considered protection became a matter for naval co-operation aircraft.

Fighter Organisation

The organisation of the fighter defence recommended was to be the normal Group Headquarters with Fighter Wings and Sectors under it initiating the operation of fighter aircraft. At the Wings filter rooms should receive all available information from R.D.F. and other warning systems and pass on the appropriate information to the various centres of air defence control and other interested units. R.D.F. and G.C.I. stations should function operationally under the control of the Fighter Wing or Sector Commander. Balloon Squadrons were to operate under a separate organisation comprising a Balloon Wing Headquarters in co-operation with the Fighter Wing.

The Mission emphasised the importance of planning the defence of Egypt as a whole, and of maintaining the greatest possible flexibility. Arrangements for reinforcement and mutual support between Sectors should be perfected and regularly practised.

/Extent

(1) The proposals for the final A/A defences of Egypt were as follows:-

	Present Defences		Recommended Scale	
	H.A.A.	L.A.A.	H.A.A.	L.A.A.
Alexandria	44	20	56	36
Port Said	16	14	24	18
Suez	24	20	40	36
Canal	-	-	-	36
Cairo	16	-	56	24
<u>PORTS</u>				
Mersa Matruh	8	6	16	12
Abu Zenina	-	8	-	8
Safaga	-	-	24	24
Installations and Depots.	36	30	120	156
Aerodromes	-	-	48	48
	144	98	384	398

Extent of Progress made by March 1942 following
Recommendations made by the Evill Mission

By the end of March, 1942, it may be noted, few of the recommendations of the Evill Mission had been carried out. The principle of unified control had been adopted, and the Air Defence Commander and A/A Defence Commander assumed their duties on 15th March. It had not been possible, however, to increase the number of fighter squadrons in the Delta; no additional searchlights had been provided; extra regiments of Heavy and Light A/A, though allotted, had not arrived and only one additional balloon squadron had been deployed for the protection of the Suez Canal.

Improvements had, however, been effected in the technical performance of some of the high flying R.D.F. stations, though low cover was still poor. To overcome this a C.O.L. had been installed at Daba and three more were in process of being installed, at Alexandria, Aboukir and Port Said. G.C.I. stations had been installed only one of which was operational and Beaufighters operating with these had had some success.

On the whole, the shortages of equipment, trained personnel, vehicles, aircraft and spares made the execution of the Mission's recommendations a difficult task, and by the end of March there was still much to do.

CHRONOLOGY OF "CRUSADER" OFFENSIVE PERIOD
(INCLUDING PERIOD OF PREPARATORY AIR ACTION).

III

Mid-October, 1941 - 21st January, 1942.

Date	Events in Middle East Command	Events in Other Theatres
<u>1941</u>		
13th November	"Ark Royal" aircraft carrier sunk in Mediterranean.	
18th November	British "Crusader" offensive opened in Western Desert.	
21st November	70 Division made sortie from Tobruk.	
21st-25th November	Enemy gained the advantage at Sidi Rezegh.	
27th November	New Zealand forces made contact with forces from Tobruk. Enemy counter-stroke by marauding columns failed. Liberation of Abyssinia completed by Italina surrender at Gondar.	
30th November	Enemy recaptured Sidi Rezegh.	
5th December	Enemy fell back to El Adem - El Gubbi line.	
7th December		Japan carried out surprise air attacks on Pearl Harbour, Phillippines, Malaya and Hong Kong.
8th December	Enemy withdrew to Gazala line.	Great Britain and U.S.A. declared war on Japan.
10th December		H.M.S. "Prince of Wales" and "Repulse" sunk by Japanese aircraft.
11th December		Germany and Italy declared war on U.S.A.
15th December	Enemy began withdrawal to Agedabia area.	
24th December	British forces captured Benghazi.	
25th December		Japanese captured Hong Kong
<u>1942</u>		
2nd January	Surrender of enemy's garrison at Bardia.	United Nations Anti-Axis Pact signed in Washington by 26 nations.
7th January	Enemy retreated to El Agheila area.	
11th January	Surrender of enemy's garrison at Halfaya.	
12th January		Russians recaptured Mozhaish
17th January	Surrender of enemy's garrison at Sollum.	
21st January	Enemy began counter-attack from El Agheila area.	

PART VIIICONCLUSIONGeneral.

It is considered that four main facts clearly emerged from the Libyan operations 18th November, 1941, to 20th January, 1942:-

(1) To ensure complete victory in Libya it was essential to win the battle for supplies. The Prime Minister's exhortation to General Auchinleck in July "to fight a hard and decisive battle in the Western Desert before the situation changed to our detriment" and "to run those major risks without which victory has rarely been gained" (Page 15 refers) begged the question. Without a supply system adequate to maintain forward forces continuously the ebb and flow of Desert warfare was certain to continue. The events immediately following the period which has been reviewed (and those of the following summer and autumn) proved the truth of the maxim: "The Western Desert is the tactician's paradise and the quartermaster's hell".

Arising from the above fact - although it is always impossible to determine the might-have-beens of History - it is believed that the Middle East Commanders' decision not to be hurried into launching the "Crusader" offensive before November was a wise one. As "the organisation and modernisation of the rearward service of supply, movements and repair" (Pages 15 and 36 refer) did not, in the event, prove adequate by January, 1942, it is inconceivable that the supply system - could have stood the strain several months earlier.

It was increasingly clear that air power had become a decisive factor in the battle for supplies. For our part the occupation of the Cyrenaican landing grounds rendered our coastal convoys virtually immune from attack and enabled sorely-needed supplies to be despatched to Malta.

For the enemy's part the Luftwaffe's offensive against Malta (together with the prevailing bad weather) at the end of 1941 and beginning of 1942, progressively limited the island's offensive air power, which had played so great a part in reducing the enemy's supplies, and allowed a renewed reinforcement of Tripolitania in January, which weighted the scales in the enemy's favour (Page 281 refers)

(2) There seems no doubt that our tank tactics and training, as well as the tanks and armament themselves, were inferior to the Germans' at this stage. These factors prevented our numerically superior armour achieving quick and decisive tactical successes, as expected, and resulted in prolonged operations in Cyrenaica with a consequent strain on our resources.

(3) Our air forces based in Egypt/Cyrenaica maintained air superiority⁽¹⁾ throughout the offensive.

/ (4)

(1) A good definition of this term was given by Air Marshal R.M. Drummond in an article on "Air Superiority" in No. 13 of "Royal Air Force Journal" (M.E. Edition):- "When an Air Force Commander claims he has achieved air superiority over the enemy he means: 'The strength of my Air Force is such that the enemy Air Force is unable to interfere effectively with the operations of our own forces, land, sea and air, within the area covered by the effective operational range of my aircraft and we can do so to his'".

C.-in-C.'s
Despatch
Page.13.

(4) The diversions of ground and air forces to the Far East, while inevitably weakening the strength of the Middle East as a whole, did not materially affect the course of events in Western Cyrenaica(1).

The immediate effect of the diversions was our inability fully to meet the expected commitments on the Northern Front (the defence of Syria, Iraq and Persia).

Positive Gains as a Result of "Crusader".

Although the "Crusader" offensive failed to realise the high hopes entertained at its outset of clearing the enemy from Cyrenaica and preparing the way for the invasion of Tripolitania, several definite advantages resulted from it;

The relief of Tobruk was achieved. This involved a relaxation of the previous strain on our sea and air resources in supplying the garrison.

Although the enemy's counter-attack caused our forces to fall back, the ground position was stabilised in February at the Gazala-Bir Hakin line: thus the area Sollum-Gazala remained in our hands. This territory provided a defensive zone for the protection of Egypt and our retention of the Eastern Cyrenaican air base, including that at Gambut, El Adem and Gazala. The wresting of this series of landing grounds from the enemy implied a restriction of the air action against Egypt and, on our side, an increased control of the Eastern Mediterranean, as compared with the pre-"Crusader" situation.

The influence on morale and prestige, although of the utmost importance, are inevitably difficult to assess. It should be noted, however, that for the first time British and Dominion Forces had defeated a German army in the field (although not decisively as it turned out) and the German Air Force had been over-run. The disasters in Greece and Crete had to some extent been avenged and the myth of German infallibility disproved.

AIR ASPECT

General

The R.A.F. participation in the campaign was in general undoubtedly successful. In a personal telegram to the Prime Minister on 23rd January, 1942, from the Commanders-in-Chief summing up the situation prior to the enemy's counter-attack, the following were the first four "Special Points" mentioned:-

- "(a) As result of continuous pressure prior to land operations we started attack with marked degree of air superiority which was maintained and increased.
- (b) Surprise of date and direction of attack due largely to R.A.F. gaining before the battle air superiority which was never lost

/ (c)

(1) The diversions enforced a postponement of the projected invasion of Tripolitania, but the enemy's advance on 21st January ruled out this operation in any case. The Western Desert Air Force was weakened by the diversions, but not to the extent of causing air superiority to be lost.

A.O.C./11
Part 2
Encls.

- (c) Enemy shortage of supply due primarily to our continuous Naval and Air Operations against his lines of communications prior to and during land operations."(1) (Tables showing the tonnages of identified merchant shipping sunk by naval and air action from June, 1941, to January, 1942, inclusive are given at Appendix P)
- (d) "Co-operation of all three Services which was largely the outcome of Army and Air H.Q. living and working together and to presence at H.Q. of Naval Liaison Officer. Result was that Army and R.A.F. worked as one team"(2)

For the first time a R.A.F. force in the Middle East was really mobile and the arrangements for moving up to advanced landing grounds and constructing new ones where necessary (Pages 119 and 122 refer) proved successful. The Western Desert squadrons kept well up with the Army advance. The limitations at times imposed on air action in the forward area by supply difficulties were caused by factors generally outside R.A.F. control.

IIJI/63
A.I.3(b)
Reports.

For the enemy's part the most outstanding factor was probably the success with which critical shortages of fuel were overcome. At the outset of the campaign it was known that the German Air Force had sufficient fuel in the forward area for two weeks intensive operations at the most and the Italian situation was little if any better. Had not air transport carried enough fuel to meet daily consumption, the G.A.F. units would probably have been grounded within a fortnight. As it turned out, the German effort - including the transport of considerable quantities by submarine - resulted in maintaining stocks and even increasing them until our advance to Benghazi enforced the withdrawal of enemy aircraft from Cyrenaica. The improvement in the enemy's supply situation in January, 1942 has already been stressed.

At the end of 1941, it became clear that the Luftwaffes' principal commitment in the Mediterranean for some months was to be the neutralisation of Malta (Pages and following pages refers).

Scales of Effort ("Crusader" Offensive Period)

Appendix
H(i)

During the period of the land offensive (18th November, 1941, to 20th January, 1942) the Middle East fighter squadrons based in Egypt/Cyrenaica reported carrying out a total of 9,178 operational sorties. Seventy per cent of this effort was devoted to operations over the battle area (offensive swoops, ground attack and bomber and Tac/R escort duties) and 30% to defensive commitments (shipping protection and local defence). During the second half of the

/ campaign

- (1) As already stressed in the Conclusion and at various points in the text the enemy's supply situation was greatly improved in January, due largely to the restriction of Malta's offensive air power by enemy air action and bad weather and the inability of our bombers on the mainland to launch an offensive on the enemy's ports of off-landing, owing to fuel shortages at the advanced landing grounds and bad weather.
- (2) It would be truer to say that the Army and R.A.F. endeavoured to work as one team, but there were several difficulties (See "Air Support" later) which prevented perfect co-operation. The siting of Advanced Air Headquarters, Western Desert at Battle Headquarters, Eighth Army, was a great step towards ensuring co-operation, which was much better than in the previous campaigns.

campaign sorties on offensive sweeps decreased and those devoted to shipping protection increased: thus 65% of the total sorties in the former category were flown during the first four weeks of the offensive as compared with under 24% of the sorties on shipping protection.

Bomber squadrons based in Egypt/Cyrenaica reported flying a total of 2,878 effective operational sorties in the course of the "Crusader" offensive. In particular, nearly 75% of this total was flown in attacks on enemy positions, concentrations and forward lines of communications.

Of the 721 effective sorties reported flown by Malta-based bombers, 71% were flown in attacks on enemy ports, bases and shipping.

IIJI/63

Enemy records of sorties flown are not available, but A.I.3(b) reports give the following information. During the first month of the campaign, "owing to shortage of fuel, vagaries of weather and the need to retire from forward aerodromes," the German scale of effort was uneven. The G.A.F. in Cyrenaica was believed to have arranged about 100 sorties per day (including a daily average of 45-50 dive-bomber and 25 fighter sorties). The G.A.F. night bombing effort never exceeded 25 sorties and on an average worked out at less than 10 sorties per night. The average Italian daily fighter effort in Cyrenaica was put at 100 sorties. The Italian long-range bombing force, like the German, was relatively little employed. During the second half of the campaign "continued bad weather combined with a shortage of fuel and bombs and the time required for the establishment of new operational bases..... contributed to a reduction in the scale of effort". The average daily number of sorties of the G.A.F. in Cyrenaica was estimated at 60% of the previous months' total (in particular, the dive-bombing effort was less than half of that in the previous month). The Italian fighter force flew 40-50 sorties per day. German long-range bombers, operating from Greece, maintained a nightly average of 10 sorties. The Italian long-range bomber effort was almost entirely confined to reconnaissance.

Comparative Losses.

Appendix
I(i)

The Middle East Intelligence current estimates of casualties inflicted on enemy aircraft, classified according to nationality and types and divided into fortnightly periods are given at Appendix I(i). During the period of the offensive (18th November, 1941 to 20th January, 1942) the estimates were:- German aircraft: 202 bombers, 194 fighters and 106 miscellaneous aircraft (reconnaissance, transport and unidentified aircraft) destroyed; 17 bombers, 37 fighters and 2 miscellaneous aircraft probably destroyed; and 151 aircraft damaged. Italian aircraft: 96 bombers, 204 fighters and 180 miscellaneous aircraft destroyed; one bomber, 26 fighters and nil miscellaneous aircraft probably destroyed; and 109 aircraft damaged. Grand Total:- 982 aircraft destroyed, 83 aircraft probably destroyed, and 260 aircraft damaged. (1)

The above figures are quoted as indicating the assessment compiled on the basis of claims. The more considered statement of enemy operational losses issued by A.I.3(b) at the end of January, 1942, assessed German Air Force aircraft destroyed 18th November, 1941, to 18th January, 1942, as 241 (76 bombers, 93 fighters, 32 Army Co-operation and Bomber Reconnaissance aircraft and 40 transport aircraft) and Italian Air Force aircraft destroyed as 204.

/ (66

(1) For the Libya offensive only the Intelligence statistic was:-
913 aircraft destroyed, 63 probably destroyed and 270
damaged (Appendix I(2))

(66 bombers, 135 fighters and 3 Army Co-operation and Bomber reconnaissance aircraft). Grand Total:- 445 aircraft destroyed.

Figures of Italian Air Force operational losses available are not considered reliable, but two sets of relevant German Air Force records officially accepted as reliable have been examined. Detailed records of G.A.F. operational losses in connection with the Libyan Campaign (18th November, 1941 to 20th January, 1942) show that 259 aircraft were destroyed (17 reconnaissance, 90 fighters, 86 bombers and 66 other types, mainly transport aircraft) and 40 aircraft damaged. It is necessary to point out that "operational losses" in this connection include all causes of casualties to aircraft operationally employed - i.e. Losses on take-off and on landing and destroyed by German action on the ground prior to withdrawal etc. Losses due to our known action exclusively, as shown in the unit returns kept by the 6th Abteilung at the German Air Ministry, were:- 162 aircraft destroyed and 23 damaged.

Thus accepting the figure of 259 German aircraft destroyed on operational flights and on the ground and the conservative estimate by A.I.3(b) of 204 Italian aircraft destroyed, we can accept 463 enemy aircraft destroyed in battle as the best approximate figure.

Complete official figures of R.A.F. (and Dominion Air Forces) in the M.E. Command (including Malta) during the exact period of the "Crusader" offensive (18th November, 1941 - 20th January, 1942) are not available. Figures supplied by the Central Statistical Branch for the three months November 1941 - January 1942 show that 128 bomber type, 296 fighter type and 29 miscellaneous aircraft were destroyed on operational flights and 157 aircraft of all types on the ground (Most of the latter being destroyed in Malta in January). Grand Total 539 aircraft.

Appendix
J(i)

AHB.IIJ1/12
Appendix
F
and
M.E.W.O.S.
&
M.E.F.O.S.

Taking the C.S.B. figure of 539 aircraft and subtracting estimated figures for 1st-18th November, 1941 and 21st-31st January, 1942, on the basis of a report by H.Q. R.A.F. M.E. (Operation Results) and current Middle East operational summaries, an approximate figure of 440 aircraft may be given for aircraft (excluding Fleet Air Arm) lost as a result of enemy action during the "Crusader" offensive.

Fighter Operations.

The scale of fighter effort and its allocation according to task has been considered generally on page 291 and in more detail, in fortnightly periods, at Appendix H(i).

Appendices
G(i)
and F(i)

In the first stages of the campaign radar information transmitted from Tobruk could not be exploited owing to the fact that the enemy's base at Gazala was nearer to the scene of operations at Sidi Rezegh than our fighter landing grounds at Maddalena. This fact, together with the lack of R/T range and the menace of the small force of ME109 Fs, necessitated Wing Sweeps of two-squadron strength. This was an uneconomical scheme and clearly called attention to the need for improved radar facilities and the introduction of Spitfires which could stop the "pirate" tactics of the Messerschmitts.

The success of the fighter escorts to bombers operating over the battle area was a feature of the campaign, only three escorted bombers being lost as a result of enemy fighter-action from 18th November, 1941 to the end of January, 1942.

/ Mention

A.A./W.D./11
Air Part I
Encl. 24C.

Mention has been made at various points in the text to the lack of training in air fighting in the Middle East O.T.Us. It was very evident, also, that the inadequacy of incendiary and, in the heavier calibre guns, explosive ammunition prevented the maximum possible damage being inflicted on the enemy either in the air or on the ground. Air Vice Marshal Coningham reported: "Really vigorous action to obtain larger supplies of the more destructive ammunition is essential.....Pilots note the contrast between themselves and the enemy in this respect and the effect is bad".

Radio telephony was reported to have proved unreliable throughout squadrons throughout the campaign and had a very detrimental effect on operations as a whole.

Appendix
G(i)

Group Captain Cross, Commander of the Senior Fighter Wing (No.258) arrived at the following conclusions:-

- (1) Fighters should not be diverted from the main task of gaining air superiority by their allocation to other tasks, such as ground attack and escort duties, until a degree of superiority has been obtained.
- (2) The difference in the performance of our own and the enemy's fighters was more apparent after the front was stabilised and air battles developed.
- (3) Fighter-bombers were considered ideally suited for the support of ground forces during a battle, but heavier bombs than the 40 lb types used were necessary.
- (4) The ground strafing of defended targets was obviously likely to be very expensive.
- (5) Although escorts to bombers as carried out are effective, owing to the losses likely to be incurred by the fighters it was necessary that the amount of damage against specific targets should be balanced against the likely fighter losses when operations are ordered.

Reports on the fighter operations and tactics and the use of radar are given at Appendices G(i) and F(i), respectively.

Reconnaissance.

During the campaign six units operated in connection with the land operations - the three Army Co-operation squadrons, the Strategic Reconnaissance Unit, the Survey Flight and, at times, a Photographic Reconnaissance unit detachment. Some duplication of effort was inevitable with all these units operating independently. There existed no adequate intermediate filter where demands could be sifted and judged in relation to the up-to-the-minute situation. Moreover, photographic information could not be distributed to the subordinate Army formations in time for operational use. In general the information extracted by reconnaissance, whether visual or photographic, was limited in both scope and distribution.

No.285 Wing
O.R.B. July
1942 and
Account of
the forma-
tion of No.
285 Wing
RAF Middle
East Review
No.2.

It became increasingly clear that information would not be fully exploited unless a governing body, such as a Wing was established. In the event, No.285 Wing, which acted as a clearing house for the reconnaissance demands of the R.A.F. and the Eighth Army was not formed until July, 1942.

Regarding the tactical reconnaissance squadrons attached to Corps, it was clear that the Hurricane I was not really fit for the task. It was not until the summer of 1942, that the establishment of this squadron was fixed at - 24 Hurricanes IIs,

/ fitted

fitted with short-range oblique photographic and special long-range vertical photographic cameras. No. 208 Squadron, in contrast to No. 451 Squadron, R.A.A.F., did not employ "weavers" on reconnaissance sorties; in the early summer of 1942 it was laid down that "weavers" should be used for all tactical reconnaissance sorties, including photographic work.

During "Crusader" insufficient use was made of broadcasting Tac/R information to Army formations; this was especially important during the periods of mobile warfare. Information rarely got beyond the divisions and even then usually too late to be of value. The scheme for broadcasting Tac/R information from the A.L.G. to corps, divisions, brigades and smaller Army formations, as well as to fighter and bomber groups and wings, was not perfected in fact, until the lull before our Alamein offensive, when it was developed and supervised by No. 285 Wing.

Air Support.

There was still much to be learnt about the theory and, more particularly, the practice of Air Support. The scope of the air support and its limitations have been indicated at appropriate places in the text and a detailed summary of the main points up to the end of the Gazala battle (16th December) is given in pages 213 and 214. It is sufficient here to recapitulate the chief features.

Throughout the campaign there was delay and at times an inability to determine suitable targets, due mainly to lack of definite information from the Army and the inadequate arrangements for the identification of our troops and vehicles. These two factors which limited the use of the available day bomber force were outside the R.A.F.'s control. Air Marshal Tedder summed this matter up thus:- "Army fully realise problem but solution depends on better control of land force which depends on better communications plus training and better recognition methods." It was not until the lull in the Desert preceding our offensive in May 1942 that the majority of our vehicles were marked with a white St. Andrews cross on a black background⁽¹⁾ and, more particularly, better arrangements for determining a satisfactory bomb-line were made.⁽²⁾ On the air side, the

A.O.C.-in-C's
Correspondence
with C.A.S.
etc. Part 3.
Encls. 270A.
A.H.B. IIJ/12
Page 53.

/ extent

(1) At an Army R.A.F. Meeting on Direct Air Support held at H.Q. R.A.F., M.E. on 5th March, 1942, an R.A.F. representative proposed that the R.A.F. roundel should be adopted as the permanent marking on all vehicles, as being the sign most readily noted by aircraft approaching vehicles at low altitudes. (A.A. H.Q. W.D./II/Part I. Encls. 35A). The roundel was not generally adopted until 1943.

(2) During the period before our offensive in May, 1942, an arrangement was made by which, during movements in the forward area, a forecast of positions was made two days ahead and sent hourly through Air Support Control. This helped considerably to define the bomb-line (A.H.B. IIJ/12 P. 53). Fully adequate arrangements, however, were not evolved, until the preparatory period before the Alamein offensive in the following November.

extent of direct support during the latter stages of the "Crusader" offensive was further limited by the fuel shortages at the advanced landing grounds.

For the greater part of the campaign there was an average time-lag of two-and-a-half to three hours between the initiation of a call and the dropping of bombs; this was greatly reduced when bombers were able to operate from the advanced fighter landing grounds. The main causes of the time-lag are mentioned on page 213. In this connection it should be borne in mind that a very considerable part of the time-lag was unavoidable, including the long distances from the bomber landing grounds to the targets, the delay involved in the picking-up of fighter escorts,⁽¹⁾ and the difficulties of navigation in the desert and the identification of M.T. targets which had moved from their original position.

A.A. H.Q.
W.D/11 Air
Part I
Encl. 24C.

Before the campaign began, it was realised that as large a proportion as possible of all supplies should be of general utility value, or a shortage of specific items would occur. It was decided therefore, that the standard bomb should be the 250 lb G.P., which with its wide range of detonators could be used effectively against all targets likely to be encountered and that the forward fighter squadrons should be supplied only with the standard air fighting ammunition in belts. Small quantities of loose tracer ammunition were made available for use in ground strafing attacks.⁽²⁾

It was found that the fastest possible fuzing was necessary for 250lb G.P. bombs to be effective against field targets: accordingly nose fuzing with the No.43 detonator was used almost exclusively by the day bombers. Craters produced by bombs fitted with nose pistol extension rods were much shallower than those caused by bombs not so fitted, thus indicating their value in attacks on concentrations of vehicles. It was considered that expanding rods with an extended length of two to three feet would be a great improvement. Results obtained on typical desert terrain of about six inches sand surface and limestone sub-soil indicated that M.T. vehicles were set on fire at distances up to 40 yards from the nearest bomb and that adequate fragmentation was produced at 60 yards to render vehicles temporarily immobile. Consequently, when desert convoys in leaguer were attacked, bomber units were instructed to attempt a spacing both in line and range, of 100 yards. It was confirmed that it was preferable to attack supporting M.T. columns rather than tanks as the probability of obtaining direct hits with bombs on tanks in open formation was negligible.⁽³⁾

In respect of ground strafing attacks by fighter aircraft, No.272 Squadron (Beaufighters) reported a noticeable improvement in results when tracer ammunition was used. It was recommended, therefore, that where a unit can be allotted the semi-permanent task of ground strafing a proportion of one tracer in ten in two guns,

/ preferably

(1) Events showed that more time should have been given to Bomber-Fighter exercises before the campaign started in order to have eliminated the lack of liaison, both air and ground, between bomber and fighter operations. (A.H.Q. ILJ/6/7/3 page 1)

(2) The Western Desert bomber squadrons were also supplied with small quantities of S.A.P. bombs in case attacks on naval forces were required.

(3) Prior to our offensive in May, 1942, No.6 Squadron was re-armed with 20 Hurricanes, equipped with 40 m.m. cannon for "tank-busting".

preferably the inward guns, should be used. It was found that ground strafing and fighter-bomber attacks were most successful when the target was moving. In particular, the A.A. defences of moving targets were inferior to those of a stationary one.

A.A. H.Q.
W.D/11 Air
Part I
Encl. 20A.

In general the effect of our direct support bombing was greatest in the early stages of the campaign before the enemy learnt the lesson of full dispersal. In addition to the material effect of the bombing, the moral effect on our troops seeing the enemy bombed or seeing our fighter or escorted bomber formations en route to targets was again confirmed as being a most important factor.

Idem. 3C

For our part, better dispersal in the field was needed. Moreover, the A.A. defence of the Eighth Army was still inadequate compared with the enemy's. As pointed out in the Prime Minister's directive (page 13), ground troops could not "expect, as a matter of course, to be protected against the air by aircraft," although our fighter sweeps did, in the event, achieve considerable success in intercepting Stuka attacks.

M.E. Training Pamphlet (Army & R.A.F.) No. 3A.

In the light of experience gained during the "Crusader" operations, "Middle East (Army and R.A.F.) Training Pamphlet No. 3 - Direct Air Support" was amended and No. 3A issued in March, 1942.

A.A. H.Q.
W.D/11 Air
Part II
Encl. 44B.

The main amendment was the official acceptance of the improvisation made just prior to the "Crusader" offensive, whereby the allotment of air support was vested in the A.O.C. at the combined Battle Headquarters (Eighth Army Headquarters and Advanced Air Headquarters, Western Desert). The new statement read: "Air Support to be effective required the employment of concentrations of aircraft. It also required a careful assessment of the general air situation and of the degree of fighter support that will be required for any bomber task. It is therefore necessary that the allotment of air support should normally be concentrated at the Combined Army Air H.Q. which is fighting the battle under the A.O.C. He alone can allot the correct proportion of fighters and bombers for the attack of each target. The combined H.Q. will be at Army or Corps H.Q.".

Unlike the "Crusader" arrangements, however, under which the Air Support Control link at Corps passed on all requests from reconnaissance aircraft and ground tentacles direct to the Army-Air H.Q. without sifting, the initial selection of requests was made at Corps before passing them onto Army-Air H.Q. for the final decisions. The Air Support Control H.Q. at Corps informed the R.A.F. formations responsible for direct support, as previously, of the requests in order that they should be prepared for operations, pending the confirmation by the A.O.C.

Provision was also made for cases where support aircraft are sub-allotted to a Corps H.Q. not established as a Combined H.Q. (as happened in "Crusader" when No. 270 Wing was temporarily allotted to No. 30 Corps). In such a case a senior R.A.F. officer with two operations officers were to join Corps H.Q. and act in a similar manner vis a vis the Corps Commander as the A.O.C. acted at Army H.Q., and instructions were to be issued through the A.S.C. H.Q. to support formations direct.

The organisation of an Air Support Control under M.E. Training Pamphlet No. 3 is given on Page 75. The revised organisation under No. 3A comprised:-

/ Army

Army

One Staff Officer plus a small staff. A wireless organisation consisting of:-

- (a) Nine forward links known as tentacles for communication to the Control H.Q. The allocation of tentacles to lower formations being made, as formerly by the higher commander.
- (b) Nine sets for listening to Tac/R for allotment with tentacles.
- (c) Three wireless sets at the Control H.Q. for communication with the tentacles.

R.A.F.

Two R.A.F. Liaison Officers (Wing Commanders) attached to Division H.Q. A wireless organisation consisting of:-

- (a) Two Forward Air Support Links (F.A.S.L's) by which the R.A.F. L.O. can re-direct support aircraft in the air.
- (b) One set for controlling Tac/R at Air S.C. H.Q.
- (c) Two sets for communication from Air S.C.H.Q. to Army-Air H.Q. and to support formations.
- (d) Eight sets at Army-Air H.Q. and support formations for communication with Air S.C.H.Q.

Tentacles for listening purposes were to be allotted to Division H.Q. and tentacles allotted to Armoured Divisions and both F.A.S.L's were to be in armoured vehicles.

In respect of recognition methods, ground indicators were to be increased in size and both these and ground strips were to be issued on a more extensive scale. Permanent vehicle markings (afterwards adopted) were then under investigation. All H.Q's down to Companies and equivalent sub-units were to have Air Sentries on permanent duty during operations.

Miscellaneous

Numerous other difficulties and defects were inevitably revealed during the campaign. Details of these come within the scope of the technical monographs rather than the present narrative. It may be useful here, however, to indicate a few of the more outstanding ones.

CS.14280
P.40

- (1) The low standard of training in the Middle East O.T.U's inevitably resulted in considerable losses in aircraft due to bad airmanship and carelessness. The lack of adequate night flying training also meant the inability of Blenheim and Maryland bombers to engage many excellent targets at night. (1) The enemy fired parachute flares and Verey lights all night from his "close leaguers" which might have given us many opportunities to harass him while he was re-organising and recovering equipment after a battle.

/ (2)

- (1) No.3(S.A.) Wing trained Bostons for night operations during the lulls in the Desert war in 1942 (No.3(SA) and No.24 Squadron War Diaries).

II J6/7/3
P.7

- (2) There was at times much delay in dealing with category 1 and 2 aircraft on desert landing grounds. It appeared that one of the difficulties was insufficient mobility in the R.S.U's.

- (3) The looting of aircraft left behind on desert L.G.'s. or force-landed gave rise to anxiety. Neither squadrons nor wings had personnel available for guard duties and Army Units could not be permanently allocated for the task. The problem was bound up with the whole question of adequate protection for landing grounds. (1)

Idem) 12.
&
CS.14280
P.41.

- (4) The transport of the mobile squadrons and wings still left much to be desired. The enemy appeared to have made more use of specially designed transport, whereas we made use of standard types of vehicles, slightly modifying them where possible. The tyre situation was also unsatisfactory. "Firestone" sand tyres had been issued, but they blew out very easily on stony ground. The whole of Egypt was secured for "Trakgrip", types, but these were not sufficient to meet the demand. Arrangements for the salvaging of M.T. vehicles. needed completely overhauling.

R.A.F. M.E.
Review
No.4.

- (5) In view of the different types of squadrons using the same airfield better airfield control measures were necessary. A mobile Flying Control Unit visited squadrons in the desert and advised on better local airfield control. It carried out trials for a modified ZZ controlled approach procedure for landing aircraft during sandstorms, using a mobile T.R.9 R/T station for the purpose. The trials were successful and over 10 squadrons were trained in the procedure during the first half of 1942.

II J 6/7/3
P.7

- (6) There was insufficient attention paid to the clearing up and the inventory-taking of abandoned L.G.'s. In particular, a source of information concerning fuel supplies was clearly necessary for the Fighter and Bomber Wings. For instance, 15,000 gallons were reported "discovered" at L.Gs.109 and 110 after the fighter squadrons had left and further supplies were again found after the day bombers had left their L.Gs.

- (7) A brief report on communications in the Western Desert is attached at Appendix D(i). The limitations of R/T communications mentioned are of particular interest. Points which were mentioned by officers actively engaged in the campaign, but not stressed by the C.S.O. A.H.Q., Western Desert, in his report included the following:-

- (a) Air Formation Signals to Wing were reported to have been extremely efficient.
- (b) Long communications by land line (i.e. Sidi Barrani to rear, El Adem to Bu Amud etc.) involved difficulties. Heavy transport cracked lines and desert dews caused frequent earthing and constant land parties had to be employed. Relayed messages on land-lines were unreliable except when well-trained operators were employed.

/ (c)

- (1) The R.A.F. Regiment in the Middle East was organised and put on a more proper footing prior to our offensive in October, 1942.

(c) There was at times a great overloading of W/T channels, particularly when the whole advanced air striking force moved forward away from its land-lines. Priorities were abused, cypher traffic delayed and important situation reports etc. were sometimes delayed so long that they were of no immediate value. Steps were taken to remedy this, including the use of plain language where possible. There was obviously a need for more communication aircraft so that administrative traffic could normally go by the postagram service.

(8) Before the beginning of the campaign, the Fighter Wing was in direct contact with the "Y" Service. Valuable information was passed to Wing Operations on which action could be taken. During the offensive there was no contact except by messages from Advanced Air Headquarters. A closer contact between the executive Fighter Wing and the "Y" Service was generally thought to be most desirable.

(9) During the offensive Wings and A.A. were inadequately and irregularly supplied with meteorological reports. Difficulties began when units became mobile, land-lines limited and W/T channels congested. An improvement depended on (a) An increase in Meteorological personnel and (b) Adequate signal facilities. Notes on the subject by Group Captain Batty, Chief Meteorological Officer, Middle East, are appended at Appendix K(i)

(10) Food and water supplies were reported to be maintained well, considering the difficulties. In spite of the fact that the water ration precluded the washing of clothes, personnel did not become verminous to any great extent except when they slept in disused enemy-dugouts. The unscientifically balanced diet in the desert, however, - consisting mainly of tea, corned-beef, biscuits, tinned margarine and Australian jams and a lack of vegetables - tended to lower morale and caused "desert sores". The N.A.A.F.I. (E.F.I.) was reported to have been very slow in moving forward. Along the line of communication the institutes were well organised and generally well-stocked, but they kept to regular opening and closing hours; thus convoys often missed the chance of stocking up with the personal necessities that made so much difference to life in the forward area. A few mobile vans served forward, but these were inadequate.

(11) In general health was good in spite of the fact that hygiene in many of the desert camps still left much to be desired, particularly in the matter of latrines. An extreme instance was cited by the R.A.F. Liaison Officer with H.Q. 13 Corps where one landing ground with three squadrons on it had, for more than a fortnight, only one latrine.

(12) In the initial stages of the campaign R.A.F. convoys were not sufficiently disciplined in ensuring adequate dispersal when so ordered or when stationary. Convoy regulations and drill received more attention, however, as the campaign proceeded.

(13) Arrangements for the distribution of private mail were still unsatisfactory. Units were frequently without mail for six weeks at a time and letters and cables were sometimes three to six months old by the time they were delivered.

/ The

Idem
Encl. 3A

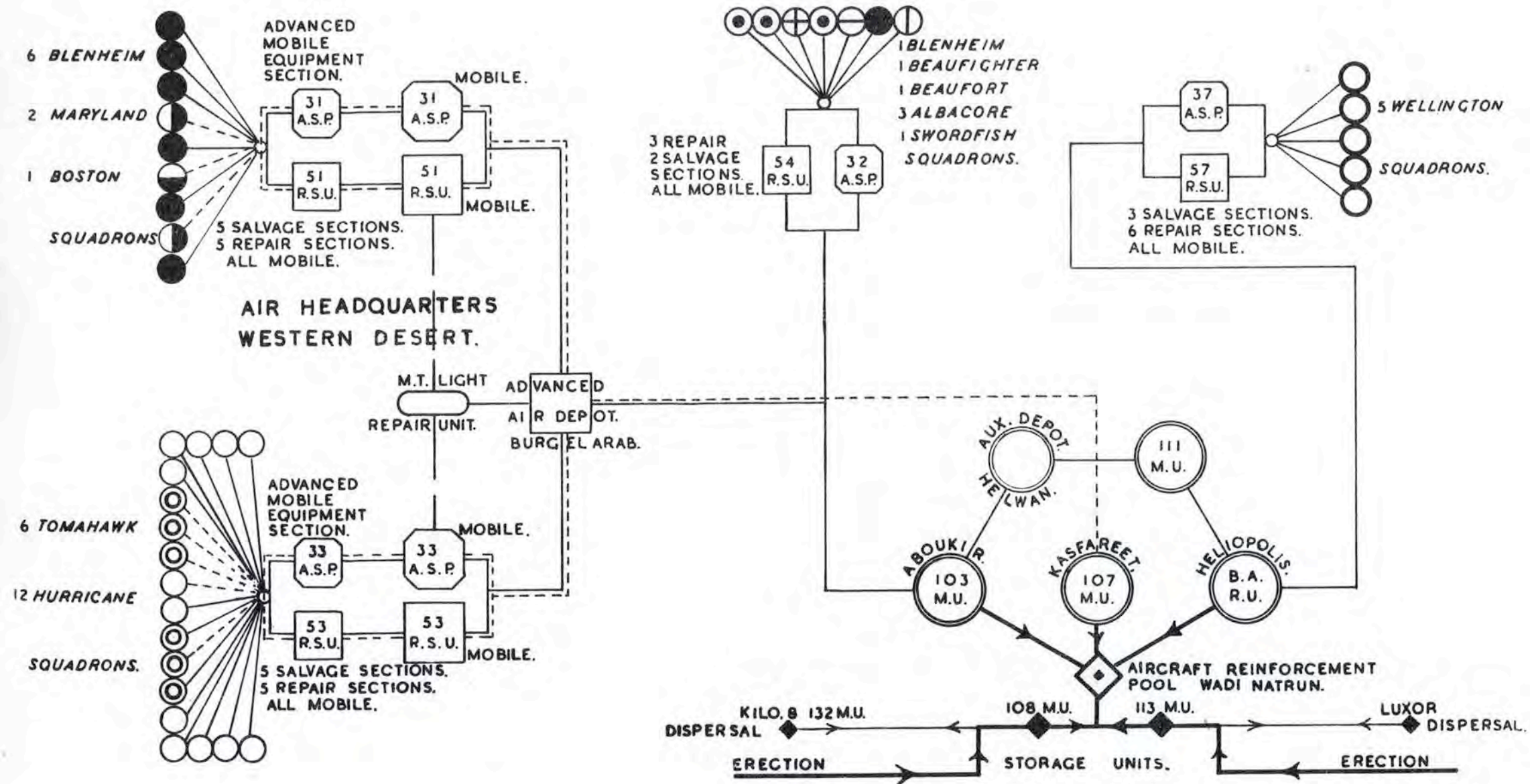
Idem P.7

C.S. 14280
P.42.

The R.A.F. Liaison Officer with H.Q. 13 Corps, who was seconded from Army Co-operation Command, reported that for the whole of the four and a half months away from England he did not receive a single communication, although many letters were sent to him and he checked his location card at the principal mail centres. Outward mail arrived in England regularly. Delays in the receipt of mail inevitably had an adverse effect on morale and the whole matter needed urgent consideration. Apart from the difficulties of transport and the long routes necessarily used an organisation was required able to cater for personnel in mobile units. The reforms carried out in early 1942 included the Army Postal Service assuming responsibility for the collection, despatch and delivery of R.A.F. units, aided by an Air Formation Postal Unit, a Mails Information Office as part of the Organisation Branch at H.Q. R.A.F.M.E., and the establishment of Air Mail Centres at suitable points in the Western Desert. An authoritative account of the development of the R.A.F. Postal Service is given in No.7 of the "R.A.F. Mediterranean Review".

CRUSADER MAINTENANCE ORGANISATION

APPENDIX L.
CHART 4.



APPENDICES

APPENDIX A

Brief Note on Entry of the Germans into the Mediterranean Theatre

- (1) The move of G.A.F. units to Sicily towards the end of 1940 resulted in intensified attacks on our shipping and on Malta.
- (2) In February, 1941, shortly after our occupation of Benghazi (6th Feb.) JUs 87s and JU 88s began to operate from landing grounds near Tripoli. A little later German fighters (first ME 110s and ME 109s) began to operate from advanced landing grounds. Before the end of February the G.A.F. had assumed the leading role in the enemy's air effort in Cyrenaica.
- (3) On 31st March, 1941, the Afrika Korps (which had begun to land in North Africa in February) began a counter-attack which led to our withdrawal to Sollum in the following month.
- (4) On 6th April German ground and air forces invaded Yugoslavia and Greece.
- (5) On 13th April Germans captured Belgrade.
- (6) On 27th April Germans occupied Athens.
- (7) By 2nd May the British evacuation of Greece was completed.
- (8) On 13th May German aircraft operated from Mosul to help Iraqi rebellion.
- (9) On 20th May German air-borne invasion of Crete began.
- (10) By 1st June British evacuation of Crete completed.
- (11) In June the Germans withdrew their few aircraft in Syria at an early stage in the campaign and left the Vichy-French to carry on alone.

APPENDIX B

Summary of JF(41)467, 20/6/41

Joint Planning Staff's Appreciation of the Situation in the Middle East. (Prepared in conjunction with Joint Intelligence Staff).

German Strategy

Germany's concentration against Russia makes a major move in the Middle East unlikely except with forces then in Cyrenaica.

- (2) Evidence indicates strength not sufficient for advance far into Egypt.
- (3) Evidence that enemy attack on Tobruk possible in near future.

German Action after Dealing with Russia

(4) Whether Russia accepts any terms or not it is unlikely that the Germans will transfer bulk of their forces from the Russian theatre until satisfied Russia constitutes a serious threat no longer.

Then the Germans may:-

- (a) Attack Middle East.
- (b) Invade Great Britain.
- (c) Thrust through the Iberian Peninsula to North-west Africa and possibly West Africa.

Attack in the Middle East

(5) Germany can concentrate forces for a Middle East campaign more quickly than we can transfer forces to that theatre to meet their attack. The threat to Egypt is more likely from the west, but there is the possibility of an attack being staged from Syria as long as any part of that country remains under Vichy-French authority.

(6) There is the chance that the Germans may attack the Middle East in the Caucasus, or since Turkey would be in no position to resist German pressure, through Anatolia.

Invasion of Great Britain

(7) A quick settlement of the Russian situation may allow a German invasion to be attempted in the autumn, but our fighter force is a strong deterrent.

Thrust through the Iberian Peninsula

(8) No reason why this cannot be done simultaneously with other major operations.

Air Attack on Malta

(9) This is possible either in connection with operations for closing the Straits of Gibraltar or in order to reduce our threat to the Axis's sea communications to North Africa. She may hope by operations against Malta to draw our fleet into an area where it could be subjected to heavy air attacks.

Deductions

(10) Evidence as to German intentions is vague, as it is impossible to estimate how long the Germans will be occupied in Russia. As winter is a suitable time for a Middle East campaign the chances are slightly in favour of next German offensive being directed against us in that theatre.

/Our

Our Own Position in the M.E.

(11) Western Front: The failure of our offensive in the Western Desert, which involved heavy losses of A.F.Vs. precluded our renewal of the offensive until substantial tank reinforcements are received. Our policy should be to stabilise our front and take advantage of the Germans' pre-occupation with Russia to build up our forces.

(12) We should make every effort to attack the enemy's l. of c, both sea and land. "Our rapidly growing air forces in the Middle East should enable such a policy to be effectively pursued."

Malta

(13) Is needed for base against enemy lines of communication to Tripoli and as an air staging post. To avoid being a naval liability, Malta must be made self-supporting for as long as possible. The passing through of convoys is not practicable from the east owing to enemy air power.

(14) Temporary absence of the Luftwaffe from Sicily (transferred to Eastern Mediterranean) gives a chance to us to provision the island from the west.

Tobruk

(15) (a) Advantages attached to holding it.

- (i) Of value for our future offensive.
- (ii) Limits enemy build-up to the East.
- (iii) Evacuation would be a blow to our prestige.

(b) Disadvantages

- (i) Outside range of fighter cover from Egypt and fighter units cannot be maintained there.
- (ii) Germans likely at future date to develop scale of air attack to cause serious difficulties in supplying the garrison and perhaps present an attempted evacuation. (It is possible to evacuate now fairly easily).
- (iii) Maintenance of garrison may involve naval losses.

(16) If we were certain the Germans could maintain heavy air attacks before we could undertake our new offensive, we ought to evacuate Tobruk in time. But the Germans' ability to do so is uncertain. Until we see how far the Germans are committed in Russia we recommend no decision in the evacuation of Tobruk should be taken.

Northern Flank

(17) As soon as our defensive position in the Western Desert is well stabilised, all forces which can be spared should be employed to bring the Syrian campaign to an end.

Cyprus

(18) The security of Cyprus is complementary to our holding of Syria as a defensive position to cover our northern flank. By denying it to the enemy we aid the defence of Syria against sea-borne attack, and also prevent the extension of the enemy air threat to the Fleet. The strategic importance of Cyprus warrants the strengthening of the garrison, provided we can do so without detracting from our ability to undertake operations in Libya.

/Proposed

Proposed Policy

(19) "As we see it in London":-

- (a) Establish a secure defensive position in the Western Desert.
- (b) Complete the occupation of Syria.
- (c) Attack by all possible means the enemy's lines of communication with and in Libya.
- (d) Reinforce Malta as soon as possible from the west, as soon as our position in Syria is cleared up.
- (e) Strengthen the garrison in Cyprus, subject to requirements in the Western Desert.
- (f) Resume offensive in the Western Desert as soon as adequate forces are available.
- (g) Decision on the holding of Tobruk should be deferred.

APPENDIX C

Arrangements in the Middle East for Inter-Service

Liaison on High Level in 1941

- (1) On the highest level there was the M.E. War Council with the Minister of State in the chair mainly concerned with political problems.
- (2) Secondly came the M.E. Defence Committee, which began its meetings on 25th August, 1941. Members were the Minister of State, who presided, and the three Cs.-in-C. The committee dealt with major operations and plans.
- (3) Next in priority was the Cs.-in-C's Committee which was also attended by senior staff officers. It dealt with important operational and administrative matters.

The above normally met once a week.

- (4) Daily liaison was maintained in G.H.Q. by an Inter-Service Intelligence Staff Conference and by individual officers as required.
- (5) The Inter-Service Air Defence Committee made recommendations for the disposal of available anti-aircraft units etc.
- (6) The three Cs.-in-C. maintained personal contact.

COPY

SECRET CYPHER MESSAGE

AIR MINISTRY WHITEHALL REPEATED MALTA

HQ RAF ME

A 255

20/6

MOST SECRET

IMMEDIATE

PERSONAL FOR C.A.S. FROM TEDDER

1. My views on changed situation in Eastern Mediterranean from point of view of interruption of enemy sea communications and securing our own are as follows. Aspect of neutralisation enemy air forces purposely omitted. Land situation in North Africa as affecting this problem unlikely to improve until the autumn.

2. Naval operations and fighter cover

Our ships cannot operate without risk heavy losses within range enemy dive bomber aircraft unless cover fighter escort is maintained during daylight hours. Owing to vulnerability of aircraft carrier such cover must be maintained by shore-based aircraft. A.A. defence of H.M. ships is sufficiently effective against level bomber and torpedo carrier to render acceptable risk of loss due to such attacks.

3. Two types of enemy dive bomber (a) JU 87 with radius of action of 200 miles provides most dangerous threat but is ineffective against fighter defence unless heavily escorted by fighters, (b) JU 88 with radius of action of 800 miles. Not such an effective dive bomber but still a serious threat if no fighter defence.

4. Whole Eastern Mediterranean except that East of approx line Daba to west end of Cyprus is within effective striking range of JU 87s from bases now in enemy hands. The whole Eastern Mediterranean without exception is within range of the JU 88.

5. Fighter cover can be given by:-

(a) short range fighter, e.g. Hurricane, Tomahawk, Martlett can deal with both dive bomber and enemy fighter escort. At range of 100 miles they can only maintain standing patrol for an average of one hour. To maintain a standing patrol of 6 Hurricanes for 6 hours at an average range of 100 miles will involve 36 sorties. This is maximum daily effort for three squadrons. At present most western base from which fighter can operate is now somewhat insecure refuelling ground at Sidi Barrani.

(b) long range fighter, e.g. Beaufighter. At average range of 300 miles the Beaufighter can maintain standing patrol for 1 hour. It can deal effectively with enemy bombers of any type and enemy long range fighters Me 110, but being large and without rear defence cannot operate in face enemy interceptor fighters.

6. Enemy interceptor fighters (ME 109, G50) can operate for interception purposes at a maximum range of 150 miles from their bases in Libya, Sicily Greece, Crete and the Dodecanese.

7. E. Mediterranean areas in which short-based fighter cover can reasonably be provided (a) by short range fighters (b) by Beaufighters readily illustrated on map. In remainder of E. Mediterranean effective fighter cover cannot be provided and if surface ships operate in this area in daylight they will do so under grave risk serious losses. Therefore, unless and until we can secure

/use

use air bases Cyrenaica it is not reasonably practicable for our surface ships to exercise control of sea communications except in the extreme Eastern end of Mediterranean indicated para. 4.

8. Provision of fighter cover for continuous daylight operations by surface craft in this area would involve fighter force far beyond any likely to be available, nor are in fact operations by the Fleet ever likely to be continuous. Conservation of our fighter forces will, however, have to be an important factor in determining duration of any particular naval operation. The fighter commitment involved in a possible naval operation amounts to a maximum daily effort by 1½ short range fighter and 3 long range fighter squadrons.

9. Air Action. Interruption of enemy sea communications in remainder E. Mediterranean will therefore have to be done by submarine and air forces. Submarine action outside scope this paper. For air action there are two requirements:-

- (a) reconnaissance, and
- (b) air striking force.

Air action may be directed at the ports of departure, shipping in transit, and at ports of arrival.

10. Reconnaissance. Excessive estimates of reconnaissance requirements due to demand for information for sake of information will lead to uneconomical use of air forces and facilities available. Except for special purposes (e.g. strategical reconnaissance of enemy naval land and air forces) reconnaissance should be limited to that which can be followed up by air action. Routine reccos should therefore be limited to ports and routes against which air action can be effectively taken. Such recco will normally be based on MALTA, W. DESERT, AND DELTA, AND CYPRUS.

estimated requirements are:-

- (a) Malta 1 squadron Marylands half of which should be long range type.
- (b) W.DESERT and DELTA and CYPRUS 2 squadrons long range Marylands, 1 F.B. Squadron.

11. Striking force. Against ports of departure and arrival normal weapon will be night bomber using heavy bombs and occasionally mines. Operation of force of heavy bombers periodically from Malta is essential, remainder operating from Egypt and W. Desert. Against ships in passage torpedo bombers of maximum range required. It is now possible for enemy to route shipping direct to Benghazi outside daylight range of Blenheim and Maryland Bomber. A proportion of bomber force in Middle East should be specially trained for this type of work and be based in Egypt and Malta.

12. Summary of requirements

- (A) Fighters 5 squadrons of which 3 must be long range.
- (B) Overseas recco 3 land squadrons, 1 F.B. squadron.
- (C) Torpedo bomber 3 squadrons.

E.C. HUDLESTON for
Air Marshal,
Air Officer Commanding-in-Chief.

APPENDIX E

Summary of COS (41) 154 (O) 31st July, 1941.

"Strategic Situation in the Middle East"

Review by the M.E. Joint Planning Staff, July, 1941.

Terms of reference:- To review our position in the Middle East with particular reference to the resources available and with the object of resuming the offensive at the earliest moment.

Part I. The Security of Our Base

- (1) "Paramount and fundamental requirements must be the security of our M.E. base, without which offensive action is not possible."
- (2) The nearer the enemy can establish air forces to our base the more dangerous our position. Conversely, the further forward we can operate our own air forces the more we can interfere with his communications and lessen the likelihood of land offensive against us.
- (3) The present proximity of enemy short-based aircraft to north and west of our base has greatly restricted the sphere of operations of the Navy, with the resultant loss of offensive power and ability to assist land operations.
- (4) According to previously agreed J.P.S. papers, the minimum requirements for the security of our base were to hold Eastern Cyrenaica, Crete, the Dodecanese and Cyprus, in addition to Syria and Iraq being unoccupied by the enemy. Another essential is to hold Malta. Present position forces far short of this. We survive because the enemy has not taken advantage of the situation and concentrated his forces against us. We must therefore press forward and consolidate our strategic perimeter as soon as possible. This will involve:-
 - (a) Holding Iraq and Syria strongly enough to resist probable enemy threats.
 - (b) Locating an adequate garrison in Cyprus.
 - (c) Driving the enemy out of North Africa. The removal of the enemy from Cyrenaica will go a long way towards securing our base in Egypt.
 - (d) Holding Malta, an offensive base.
- (5) Providing we achieve our objects in the defence of Egypt, Greece and the Aegean islands could no doubt be neutralised sufficiently by air action, without the use of bases in Turkey.
- (6) The progress and outcome of the Russo-German campaign will have a direct and marked bearing on Middle East problems. The longer Russia maintains an active front against Germany, the less will be the enemy threat to our positions and the better our chance of offensive action.
- (7) In any case no matter what progress is made by either side, the land operations in East Europe will presumably be brought to a virtual standstill in late Autumn. Winter and Spring, on the other hand, offer the best conditions for warfare in North Africa.
- (8) We must therefore be prepared for the enemy to switch forces, which may be principally air forces, to the Middle East in the winter, even if the Russians are still resisting.
- (9) Naval Situation. Naval operations are normally restricted to that part of the Eastern Mediterranean where protection can be provided by our shore-based fighters.

- (10) The reserves on Malta should maintain it until January, 1942, but further stocks of fuel will be required to allow unrestricted sea and air operations to be continued.
- (11) Redress of the unsatisfactory situation would be best achieved by forcing the enemy back in North Africa. In the meantime interference with the enemy's sea communications must be left to submarine and aircraft.
- (12) Air Situation. The Germans now have 280 aircraft in the Mediterranean area. They would be able to concentrate:-
- (a) For an offensive against Egypt from the west 700 German and 530 Italian aircraft per week after the conclusion of the Russian campaign.
 - (b) For an offensive via Turkey or the Caucasus, 650 German and 100 Italian aircraft seven to eight weeks after conclusion of the Russian campaign.
 - (c) 450 transport aircraft for all purposes.

(13) R.A.F. Requirements

Total Estimated Requirements

<u>Type</u>	<u>Squadrons</u>	<u>Aircraft</u>	<u>Squadrons Available 15/8/41</u>	<u>Debit Balance</u>
Short-ranged fighters	31	496	22	9
M/Bs.	20	400	12	8
T/Bs.	3	36	-	3
H/Bs.	16	320	5	11
G/R a/c	4	70	2 $\frac{1}{2}$	1 $\frac{1}{2}$
Long-range fighters	5	80	1	4
Army Co-op.	6	72	4	2
Transport	5	80	2	3
	<u>90</u>	<u>1,554</u>	<u>48$\frac{1}{2}$</u>	<u>41$\frac{1}{2}$</u>

(14) Naval Balance Sheet

<u>Class</u>	<u>Required</u>	<u>Available 15/8/41</u>	<u>Debit Balance</u>
Battleships	4	2	2
Aircraft Carriers	1	-	1
Cruisers	7	6	1
A.A. Cruisers	3	2	1
Destroyers	24	14	10
Submarines	28	23	5
Monitors	1	-	1
F.A.A. Squadrons	8	6	2

The C.-in-C. Med. considers that the aircraft allotted by the R.A.F. for co-operation with the Navy is wholly inadequate in numbers and training. Considers drastic reorganisation necessary.

(15) Army Balance Sheet

Area	Armd. Div.	Inf. Div.	Inf. Btns.	Available Oct. (including Iraq)	Debit Balance
<u>Northern Front</u>					
Syria } Iraq }	2	5 5	- -	1 Armed. Div.	3 Armd. Divs.
<u>Western Front</u>				13 Inf. Divs.	2 Inf. Divs.
(to retake Cyrenaica)	2	3		8 Inf. Batns.	
Cyprus		1			
Egypt (Interior security etc.)		1	8		

Notes: (a) Second Armd. Div. should be available early 1942.

(b) Figures for Iraq subject to confirmation by G.H.Q., India.

(c) Understood one armoured division from India available early 1942.

(16) A.A. (Including Iraq)

	<u>Required (a)</u>	<u>Available Oct. 1st (G)</u>	<u>Debit Balance</u>
Heavy guns	600	294	306
Light guns	1,272	364	908

(a) Includes 24 heavy batteries and 18 light batteries for Corps and Army troops.

(b) Excludes Egyptian Army guns.

(17) Conclusion

The Army and R.A.F. are deficient of resources required to meet the commitments involved for the security of our base in Egypt and Palestine, which includes a major offensive in North Africa at earliest possible date. The naval forces are adequate for purely defensive duties, but are inadequate for an offensive policy in the Central Mediterranean.

"It is of paramount importance to strain every nerve to build up our resources to a point which will allow us to strike at first possible date."

If the enemy concentrates against us and unless the deficiencies can be remedied, we cannot guarantee the security of our base, and recourse will have to be made to the unsatisfactory and hazardous alternative of attempting to defend it from rearward positions on the frontier of Egypt in the west and Palestine in the north. This course will entail, also, the abandonment of north Iraq, and probably also Baghdad, to the enemy, as these can hardly be held if we evacuate Syria.

(18) Recommendations

(a) To drive back the enemy in Cyrenaica at the first possible moment.

(b) Consolidate our position in north Syria, Iraq and Cyprus.

(c) Take all possible steps to obtain an understanding with Turkey regarding the holding of the Malatia-Taurus line.

/(d)

- (d) Prepare plans for operations against Crete and the Dodecanese in the event of Turkey actively co-operating, as well as any possible action without Turkish co-operation.
- (e) Improve communications between Iraq and Syria as a matter of urgency.
- (f) Push on with A.R.P. measures in Egypt.

APPENDIX E
(Annex)

Estimate of Aircraft Required to Meet Potential Enemy Thrusts.

(Note: The following estimate was attached to the second draft of the M.E. J.F.S.'s "Strategic Situation in the Middle East". As Appendix B the requirements in this draft totalled 87 squadrons instead of 90 as finally agreed on. (File A.O.C./14 "Appreciations and Notes. Situation Reviews. Enclos. 30A).

MOST SECRET

APPENDIX "B"

ESTIMATE OF AIRCRAFT REQUIRED TO MEET POTENTIAL
ENEMY THREATS

Basis of calculations

1. The suggested allocation of squadrons must be regarded as fluid, and would clearly be changed to meet situations as they arose. If the enemy threat has been correctly assessed, however, the forces shown below are considered to be the minimum needed to meet it.

2. Calculations have been based on the following establishments of initial equipment aircraft in squadrons:-

Heavy Bomber Squadron	.....	20
Medium " "	.....	20
Fighter Squadron	.....	16
Army Co-op "	.....	12
General Recce. (land based)	.....	16
General Recce. (Flying Boat) Sqdn.	.....	6
Torpedo bomber squadron	.....	12
Transport squadron	.....	16

Number of Squadrons

Short Range Fighters

3. (i) Libyan and Syrian/Iraq theatres including Cyprus. 22
Defence of shipping 22
- (ii) Malta 3
- (iii) Base area (See also para.2 (ii)) 6

TOTAL 31 Squadrons
496 aircraft.

Long Range Fighters

4. (i) Protection of shipping 3
- (ii) Special night fighting squadrons (see also para.1 (iii) above) 2

TOTAL 5 Squadrons
80 aircraft.

Medium Bombers

5. (i) Libyan and Syrian/Iraq theatres 15
- (ii) Caucasus oil 2

TOTAL 17 Squadrons
340 aircraft.

/Torpedo

Number of Squadrons

Torpedo Bombers

6. Attack of enemy shipping
(1 squadron at Malta and detachment at
Cyprus) 3

TOTAL 3 Squadrons
36 aircraft.

Heavy Bombers

7. (i) Attack of enemy air organization, ports and lines
of communication in all theatres (includes
detachments at Malta and Cyprus) 8

(ii) Caucasus oil 8

TOTAL 16 Squadrons
320 aircraft.

General Reconnaissance

8. Reconnaissance of shipping and ports
(includes 1 squadron at Malta and detachment
at Cyprus) 3 land-based
1 F.B.

TOTAL 4 Squadrons
70 aircraft.

Army Co-operation

9. Tactical reconnaissance in Libyan and Syrian/
Iraq theatres 6

TOTAL 6 Squadrons
72 aircraft.

Transport

10. 5

TOTAL 5 Squadrons
80 aircraft.

TOTALS: 87 Squadrons.
1494 aircraft.

APPENDIX F STRENGTHS OF OUR OWN AND ENEMY'S GROUND AND AIR FORCES
AS REQUESTED BY THE PRIME MINISTER
Summary of COS (41) 176 (0)

The Prime Minister's personal minute Serial No. D225/1, 22/8/41, in connection with the C.-in-C's. tele. 1549 21/8 Susan to P.M., instructed General Ismay to obtain information from the A.M. and W.O. on the strengths of our own and the enemy's ground and air forces. The following estimates were obtained:-

The Middle East Ground Forces

- (1) State of Armoured Formations (Omitting tanks in Tobruk). The following figures assume 25% of the Middle East armour will be in experimental or instructional establishments or repair shops. The remaining 75% is shown in units and as immediate reserve.

Formations fit for operations

(A) <u>1st September, 1941</u>	<u>Tanks in Units</u>	<u>Tanks in Immediate Reserve</u>
One Brigade cruisers	166	9
" " infantry tanks	141*	-
	<u>307</u>	<u>9</u>

* 37 short of establishment.

(B) 1st October, 1941

One Brigade cruisers	166	36
" " infantry tanks	178	10
" " Americans	166	-
(lacking training)		
	<u>510</u>	<u>46</u>

(C) 1st November, 1941

One Brigade cruisers	166	
7th { H.Q. cruisers	8	
Armd. { One Brigade cruisers	166	68
Div. { " " Americans	166	5
" " Infantry tanks	178	10
	<u>684</u>	<u>83</u>

(II) Other Formations

(A) On 1st October, 1941, 11½ divisions

<u>Egypt</u>	4th Indian Division	
	New Zealand "	
	1st S.A. "	
<u>Tobruk</u>	9th Australian Division	
	Polish Brigade Group	
<u>Palestine</u>	6th Australian Division	
	7th " "	
	6th British "	
<u>Cyprus</u>	50th British Division	
<u>Iraq</u>	5th Indian "	
	8th " "	
	10th " "	

(B) On 1st November, 1941

As for (A) above with the addition of the 2nd S.A. Division.

- Notes: (a) The Armoured Division is at present split up, with one brigade in Iraq (for Persia). It will not be available for operation as an Armoured Division by 1st November.
- (b) 31st Army Tank Brigade and remnants 72nd Armoured Division will not be effective by 1st November.

(III) Artillery Situation

- (A) Field Artillery. There are in Middle East (excluding 8th and 10th Indian Division in Iraq and Persia) 39 Field Regiments. At 24 guns per regiment 936 guns are required.

- (a) Guns now in M.E.

25/18 pdrs.	24
4.5 How.	10
25 pdr.	814
	<u>848</u>

- (b) En route and arriving in September.

25 pdr.	180
75 m.m. (from U.S.)	78

Total available 1st Oct. 1106

That is, 39 Field Regiment will be completely equipped and there should be some 170 guns to replace wastage.

- (B) Anti-Tank Artillery

Requirements of regiments and battalions concerned:- 472 guns
 Total number available 1st October :- 510 guns
 In addition, 50 2-pdrs. due to be shipped from Canada and there are 104 captured Italian 37 m.m. and 47 m.m. guns.

- (C) Anti-Aircraft Artillery

Guns now in M.E.	<u>3.7"</u> 250	<u>Bofors</u> 338
To arrive by 1st October	<u>40</u> 290	<u>226</u> 564

In addition there are 43 7" and 38 3" in the hands of the Egyptian Army.

(IV) Note by D.M.I. on German and Italian Strengths

- (a) German Tank Strength

The C.-in-C's figure of 224 tanks in the Tobruk and frontier areas accepted. It is estimated that the total number of tanks after reinforcement could be 370 (C.-in-C. estimated 301). But there is no reliable information that German tanks have arrived since "Battle-axe", although some may have slipped in.

- (b) Italian Strength

In addition to the C.-in-C's estimate the following should be added:- One battalion of tanks (42) uncertain whether medium or super-light, and one motorised division in eastern Cyrenaica.

Total :- One infantry division (Homs)
 One armoured " (Barce)
 One motorised division (E. Cyrenaica).

/Note

Note.

"It is unlikely that enemy forces in eastern Cyrenaica would be appreciably reinforced during October, as the supply situation in this area is at present unsatisfactory and would have to be considerably improved before reinforcements could be brought up. It is considered reinforcements would not start to leave Italy until 15th October. During last fortnight in October, therefore, a part of these reinforcements would have reached Tripoli, but would not be brought forward sufficiently soon to be employed in an operation in E. Cyrenaica in early November. As far as our armoured division is concerned, the date of reinforcements might be even later. It would have to be withdrawn from the Eastern Front and refitted in Germany before despatch".

(V) First Line Air Strengths of Modern Types

(A) Present Day (23rd August, 1941)

Serviceability can be reckoned at 75% for British and 65% for German and Italian Aircraft

<u>Type</u>	<u>Italian</u>	<u>German</u>	<u>Total</u>	<u>British</u>
H. Bomber	80	36	116	80
L/B or Dive B.	30	60	90	156
Fighter	225	57	282	304
Army Co-op.	70	18	88	24
Coastal (including G/R)	20	-	20	44
Totals	425*	171	596	608

* Plus 225 Italian aircraft in Sicily and Pantelleria.

(B) By 1st October, 1941 (Planned)

<u>Type</u>	<u>Totals</u>
H. Bomber	160
M. "	196
Fighter	328
Army Co-op.	36
Coastal (including G/R)	56
	<u>716</u>

(C) By 1st November (Planned)

<u>Type</u>	<u>Totals</u>
H. Bomber	100
M. "	256
Fighter	384
Army Co-op.	36
Coastal (including G/R)	68
	<u>844</u>

/(c)

(C)

Middle East Order of Battle

Type of Squadron	23/8/41	(Actual	30/9/41	(Estimated)	31/10/41	(Est.)
	Sqdns.	I.E.	Sqdns.	I.E.	Sqdns.	I.E.
Operational or Modern types						
<u>Fighter</u>						
Hurricanes	15	240	15	240	15	240
Tomahawks	3	48	4	64	7	112
Beaufighters	1	16	1½	24	2	32
<u>M/B</u>						
Marylands	2	40	3	60	3	60
Blenheim IVs	6	116	7	136	10	196
<u>H/B</u>						
Wellingtons	4	80	5	100	5	100
<u>Army Co-op.</u>						
Hurricanes	2	24	3	36	3	36
<u>T/B</u>						
Beauforts	-	-	1	12	2	24
<u>G/R</u>						
Blenheims	1	16	1	16	1	16
Marylands	1½	24	1½	24	1½	24
Sunderlands	1	4	1	4	1	4
Total	36½	608	43	716	50½	844
Operational on Obsolescent Types	11	148	5	72	5	72
TOTAL	47½	756	48	788	55½	916

In addition, as at 23rd August, 1941:- F.A.A. squadrons:-

Malta 1 squadron of Swordfish.

Egypt 2 fighter squadrons (but probably only one operational)

2 T/B squadrons (One Swordfish and one Albacore)

/(D)

(D)

R.A.F. M.E. DISTRIBUTION ON 23RD AUGUST, 1941

Type of Sqdn.	Western Desert	Delta	Palestine and Cyprus	Iraq	Sudan	E. Africa	Aden	Malta	Total
<u>Fighter</u>									
Hurricanes	4	4	3	1	-	-	-	3	15
Tomahawks	2	-	1	-	-	-	-	-	3
Beaufighters	-	1	-	-	-	-	-	-	1
<u>M/B</u>									
Marylands	2	-	-	-	-	-	-	-	2
Blenheims IV	1	-	-	4	-	-	2	-	5
<u>H/B</u>									
Wellingtons	-	4	-	-	-	-	-	(20 Wellingtons until further notice).	4
<u>Army Co-op.</u>									
Hurricanes	1	-	1	-	-	-	-	-	2
<u>G/R</u>									
Blenheims	-	1	-	-	-	-	-	-	1
Marylands	1	-	-	-	-	-	-	$\frac{1}{2}$	$1\frac{1}{2}$
Sunderlands	-	1	-	-	-	-	-	-	1
Total	11	11	5	5	-	-	-	$3\frac{1}{2}$	$35\frac{1}{2}$
<u>Obsolescent Types</u>									
Blen./Vincent	-	-	-	-	-	-	1	-	1
Vincent (A/C.)	-	-	-	1	-	-	-	-	1
Wellesley	-	-	-	-	1	-	-	-	1
Lysander/Gladiator (A.C.)	-	-	-	-	1	-	-	-	1
Hartebees	-	-	-	-	-	2	-	-	2
Various	-	-	-	1	-	4	-	-	5
GRAND TOTAL	11	11	5	7	2	6	1	$3\frac{1}{2}$	$46\frac{1}{2}$

/(E)

(E)

Estimated Arrivals of Aircraft in Middle East

1941

Type	August	September	October	November	Total
Hurricanes	83	120	100	150	453
Tomahawks	163	107	-	-	270
Kittyhawks	-	-	-	14	14
Beaufighters	8	8	8	8	32
Wellingtons	30	30	30	30	120
Marylands	10	-	-	-	10
Blenheims	86	96	96	96	374
Bostons IIIs	-	-	50	50	100
Beauforts	12	12	12	12	48
Total	392	373	296	360	1,421

APPENDIX G

Summary of "Appreciation of the German Air Force in the Mediterranean at the end of October 1941"

Reply by A.C.A.S.(I) (A.V.M. Medhurst) 12/10/41 in answer to C.A.S.'s minute of 10/10/41 to D. of L(O), copy to A.C.A.S.(I), D. of Plans, D.O.O.(C.A.S. "Crusader" Folder).

1. Establishment Strength of G.A.F.

- (a) At the end of October we estimate the establishment of the G.A.F. in the Mediterranean area (Greece, Crete, Rhodes, Sicily and North Africa) to be:-

L/R bombers	140
Dive "	90
S/E fighters	100
T/E "	40
Bomber Recce.	30
Army Co-op.	20
	<u>420</u>

- (b) Of the above the following will be in Cyrenaica and Crete:-

Cyrenaica

L/B bombers	30
Dive "	60 - 90
S/E fighters	100
T/E "	10 - 20
Bomber Recce.	6
Army Co-op.	20
	<u>226 - 266</u>

Crete

Dive bombers	Nil - 30
T/E fighters	15
	<u>15 - 45</u>

The balance of the force will be mainly in Greece, with possibly 10 - 15 T/E fighters operating in Sicily or Tripoli.

2. Serviceability of Aircraft

Assuming conditions at the end of October to be similar to the average over the past two months, the percentage of serviceable aircraft is likely to be in the neighbourhood of:-

L/R bombers	50%
Dive "	75%
S/E fighters	50%
T/E "	50%
Bomber Recce.	50%
Army Co-op.	50%

Thus the serviceable strength of aircraft in the Mediterranean area at any given date, will be approximately:-

L/R bombers	70
Dive "	67
S/E fighters	70
T/E fighters	20
Bomber Recce.	15
Army Co-op.	10
	<u>252</u>

3. Equipment

There is unlikely to be any change in the types of aircraft in units, except perhaps that M.E.109 F's will replace M.E.109 E's. It is estimated that about 30% of the 100 M.E.109's will be M.E.109 F's at the end of October. Army co-operation units will include about 10 M.E.110's.

4. Reinforcements

The total establishment of 420 aircraft shown in para.(1) includes 20 R.T.U. L/R bombers now in Greece, which are known to have operational experience, and 30 S/E fighters which constitute a reinforcement already projected, but not yet known to be on the way.

It is thought the Mediterranean area could be reinforced within one week to ten days by:-

L/R bombers	60
T/E fighters	30
S/E fighters	30

from other units in the Balkans or Europe. Reinforcements will depend on the situation on the Eastern Front and also on the supply situation in North Africa.

5. Fuel

(a) The fuel situation in North Africa is complicated in that the G.A.F. and I.A.F. appear to have separate supply arrangements and no agreement for pooling resources. Whereas the G.A.F. position in Cyrenaica has improved lately in the operational area, the I.A.F. position 12th October in Tripolitania appears to be precarious. Efforts are being made to improve fuel stocks both in Cyrenaica and Tripolitania, but the extent to which this can be achieved will depend upon our counter action.

(b) Stocks of fuel in North Africa are at present as follows:-

	<u>High Octane</u>	<u>Ordinary</u>
Operational area	110 tons	935 tons
Benghazi	260 tons	1,325 tons
Tripolitania	160 tons	830 tons

About 160 tons of serviceable tank lorries are available for transport to the operational area.

7. Consumption

Operational and air transport activity in North Africa had recently shown signs of being on the increase. This is reflected in the rate of consumption which has risen during the past month to an average of 65 tons per day. If activity continues to increase, by the end of October we can assume that consumption will have risen to at least 70 tons per day. Stocks will be available for about 15 days' supplies at normal rate in operation area and about six weeks in Cyrenaica as a whole. The extent to which these supplies can be reinforced is again dependent on our action against sea-borne routes to Benghazi and against the depots in the forward and back areas.

8. Operations by the G.A.F.

Owing to our attacks against Axis shipping, more and more effort of the T/E aircraft is being directed to shipping protection. Provided that we can maintain our present scale of attack by submarine and aircraft, the enemy will be left with the choice of leaving shipping without an escort or diverting their aircraft to land objectives. If we can maintain the

/present

present scale of attack from Malta the Italian Force will be forced to retain a large percentage of its force for the protection of Tripoli and the L. of C. along the Coastal road.

9. The I.A.F.

It is estimated that the I.A.F. in North Africa at the end of October will comprise the following:-

L/R Bombers	100
Dive "	25
S/E Fighters	200
Army Co-op.	50
Coastal	20
	<hr/>
	295

The daily average serviceable strength is likely not to exceed 60% of the above figures.

10. Italian fuel stocks

It is known the Italian authorities regard their fuel stocks in Tripolitania as inadequate: in fact, the situation is so serious that operational activity may shortly cease unless further supplies are received in North Africa.

If, however, the situation in North Africa demands full employment of the I.A.F. alongside that of the G.A.F. there seems to be every probability that the petrol resources in North Africa would be pooled.

APPENDIX H

Appreciation of the Axis Air Forces in the Mediterranean as at 1st November, 1941

The following is a summary of two notes submitted by A.C.A.S.(I) (A.V.M. Medhurst) on 13th and 15th October, 1941, in reply to C.A.S.'s minutes (C.A.S. 'Crusader' folder).

I. Axis Air Forces in the Mediterranean and Western Desert as at 1st November, 1941. (Estimated).

TYPE	Total Estab. Med. area	Total Estab. Med. area	Estab. W. Desert E. of Benghazi		Estimated Serviceability of		Reinforce- ments to W. Desert
	G.A.F.	(excluding Sardinia and Italy)			Col. C	Col. D	by 7.11.41.
		I.A.F.	G.A.F.	I.A.F.			G.A.F. I.A.F.
	(a)	(b)	(c)	(d)	(e)	(f)	(g) (h)
L/R Bombers	140 (including 20 R.T.U.)	205	30	75	12	45	see notes 3 below
Bomber Recce.	36	-	12	-	6	-	
Dive Bombers	90	35	69	25	60	12	
S/E Fighters	70	450	45	200	30	150	
T/E Fighters	39	-	18	-	10	-	
Army Co-op	18	105	18	50	10	25	
Coastal	27	75	-	10	-	5	
	320	870	192	360	128	237	

Notes:

- (1) Re col. (a). It is thought the G.A.F. could reinforce Mediterranean area within one week to ten days by 60 L/R bombers, 30 T/E fighters and 30 S/E fighters from units in the Balkans or Europe. Reinforcements will depend on the situation on the Eastern Front and supply situation in North Africa (see Note 3).
- (2) The percentage of serviceability of aircraft in col. (a) is put at 50% except for dive bombers which is estimated at 75%.
- (3) The fuel situation in North Africa is complicated in that the G.A.F. and I.A.F. appear to have separate supply arrangements. The German fuel situation in Cyrenaica has improved lately, but the Italian position in Tripolitania appears to be precarious.

It is estimated that stocks likely to be available in the forward operational area on 1st November and those that can be brought up after that date would enable the forces shown in cols. (e) and (f) to operate intensely for a period of three weeks.

Due to the supply situation, reinforcements to the forward area could not exceed those required to maintain the intensive effort by the forces in

/cols. (e)

cols. (e) and (f). If, however, reinforcements were sent the period of intensive effort would be correspondingly reduced.

- (4) The long-range forces based in Greece and Crete would provide supporting effort over the battle area: those on Rhodes could be used against shipping in E. Mediterranean.
- (5) There is unlikely to be any change in types of aircraft of col. (a), except perhaps that Me.109 F's will replace 109 E's in the fighter units. It is estimated that about 50% of the S/E fighters will be Me.109 F's by end of October.

APPENDIX I

ARRIVALS OF AIRCRAFT IN M.E. FROM U.K. AND U.S.A.
(AND DETAILS OF AIRCRAFT DESPATCHED FROM ASSEMBLY UNITS
AT TAKORADI, LAGOS AND PORT SUDAN)

JUNE 1941 - JANUARY 1942

I. DETAILS OF ARRIVALS OF AIRCRAFT IN M.E. FROM U.K.

JUNE 1941 - JANUARY 1942

A.	1941							1942
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
<u>M.E. All-sea route</u>								
Albacore	10	15	8	21	4	5	11	-
Fulmar	36	6	5	16	12	9	8	5
Gladiator	2	4	10	6	-	-	-	-
Harvard	-	-	4	1	5	-	-	-
Hurricane	100	79	30	(59+)	-	(34+)	-	-
Magister	-	-	1	-	-	-	-	-
Roc	2	-	-	-	-	-	-	1
Sea Gladiator	2	1	-	3	-	1	2	1
Swordfish	16	9	3	-	5	2	7	1
Tomahawk	-	-	-	22	-	-	-	4
Walrus	2	3	-	1	-	-	1	-
Caudron Simoun	-	-	-	-	-	-	-	1
	170	117	61	70	26	17	29	13
			+ for Malta Direct					
B.								
<u>M.E. Takoradi and Lagos</u>								
Blenheim	79	34	34	45	50	51	79	52
Hurricane	83	11	121	95	43	116	143	132
Glenn Martin	-	-	-	-	-	2	-	-
Lysander	-	-	-	-	2	-	-	-
Master	2	-	-	-	-	-	-	-
Moth	-	-	-	-	1	-	1	-
	164	45	155	140	96	169	223	184
C.								
<u>Ferry Flights</u>								
<u>M.E. arrivals</u>								
Beaufort	-	-	3	-	3	-	3	-
Beaufighter	3	8	-	14	-	15	14	-
Blenheim	50	62	19	33	15	7	27	3
Bombay	-	3	2	2	-	1	2	-
Maryland	2	-	-	-	2	-	-	-
Mosquito	-	-	-	-	-	-	-	1
Wellington	33	28	23	26	43	6	21	13
Whitley	-	-	-	-	-	2	3	-
Boeing B.17	-	-	-	-	4	-	-	-
	88	101	47	75	67	31	70	17
TOTALS	422	263	263	344	189	251	322	214

C.S.B.1.

31.10.46.

G.169218/EFE/5/48

In addition:- Arrivals at Gibraltar - Destination Middle East (Ferrying Flights)

(No information as to date of arrival in Middle East)

Type	1941							1942
	June	July	August	September	October	November	December	January
D. Beaufighter	-	-	-	2	-	-	22	3
Beaufort	-	-	-	-	1	1	3	3
Blenheim	-	-	8	3	13	20	35	22
Catalina	4	4	-	-	-	-	-	-
Hudson	-	-	-	3	-	1	-	2
Maryland	-	-	1	-	-	1	1	-
Wellington	-	-	-	2	16	7	29	37
Whitley	-	-	-	-	-	-	1	-
TOTAL	4	4	9	10	30	30	91	67
<u>Arrivals at Gibraltar - Final destination unknown (Shipments)</u>								
E. Albacore	-	-	-	-	-	-	4	4
Fulmar	-	8	4	7	4	4	-	5
Sea Hurricane	-	-	-	-	2	-	6	2
Skua	-	-	-	-	4	-	-	-
Swordfish	-	10	-	6	6	-	3	3
Walrus	-	-	-	-	-	-	-	1
TOTAL	-	18	4	13	16	4	13	15

Authority:- C.S.B.1. 5th April, 1946.
C.S.B.1. 31st October, 1946.

ARRIVALS OF AIRCRAFT IN MIDDLE EAST
FROM U.K.

Type	1941							1942
	June	July	August	September	October	November	December	January
Albacore	10	15	8	21	4	5	11	-
Beaufighter	3	8	-	14	-	15	14	-
Beaufort	-	-	3	-	3	-	3	-
Blenheim	145	80	53	78	65	58	106	52
Boeing B.17.C.	-	-	-	-	4	-	-	-
Bombay	1	2	2	2	-	1	2	-
Caudron Simone	-	-	-	-	-	-	-	1
Fulmar	36	6	5	16	12	9	8	5
Gladiator	2	4	10	6	-	-	-	-
Glenn Martin	-	-	-	-	-	2	-	-
Harvard	-	-	4	1	5	-	-	-
Hurricane	183	90	151	154	43	150	143	132
Lysander	-	-	-	-	2	-	-	3
Magister	-	-	1	-	-	-	-	-
Maryland	2	-	-	-	2	-	-	-
Master	2	-	-	-	-	-	-	-
Mosquito P.R.U.	-	-	-	-	-	-	-	1
Moth	-	-	-	-	1	-	1	-
Roc	2	-	-	-	-	-	-	1
Sea Gladiator	2	1	-	3	-	1	2	1
Swordfish	16	9	3	-	5	2	7	1
Tomahawk	-	-	-	22	-	-	-	4
Walrus	2	3	-	1	-	-	1	-
Wellington	36	25	23	26	43	6	21	13
Whitley	-	-	-	-	-	2	3	-
T O T A L	422	263	263	344	189	251	322	214

C.S.B.1.

5.4.46 and 31.10.46

G.169218/IF/5/48

II

Arrivals of Aircraft from U.S.A.

June 1941 - January 1942

Type	1941							1942
	June	July	August	September	October	November	December	January
Baltimore	-	-	-	-	-	3	14	15
Boston	-	-	-	24	32	14	41	5
Douglas D.C. 2.	-	-	3	3	-	-	-	-
Harvard	-	-	-	-	-	-	19	18
Kittyhawk	-	-	-	-	-	25	172	116
Liberator	-	-	-	-	-	-	-	4
Lodestar	-	10	4	-	-	-	-	-
Martlet	-	27	-	-	3	-	-	-
Maryland	5	5	-	-	-	1	-	-
Tomahawk	5	96	100	55	-	-	-	-
TOTAL	10	138	107	82	35	43	246	158

Authority:-

C.S.B. 1.

5th April, 1946

and 31st October, 1946.

G. 169218/IF/5/48.

APPENDIX I

III

DETAILS OF AIRCRAFT ERECTION AND DELIVERY OF AIRCRAFT (JUNE 1941 - JANUARY 1942)

WEST AFRICAN REINFORCEMENT ROUTE. TAKORADI AND LAGOS

Aircraft arrivals and dispatches to Middle East

Month	Arrived at port	DELIVERED TO MIDDLE EAST											Average Unit strength Takoradi
		Hurricane	Blenheim	Maryland	Tomahawk	Kittyhawk	Spitfire	Beaufighter	Boston	Beaufort	Miscellaneous	Total	
1941													
Jan.	108	60	31	2								93	
Feb.	180	15	42	2								59	
March	155	53	30	6	8							97	
April	191	39	33	9	31							112	
May	164	44	31	6	43							124	
June	130	55	29	13	53							150	
July	63	52	92	11	27							182	
Aug.	180	51	39	10	42							142	
Sept.	115	89	35		6							130	
Oct.	103	96	42		1							144	
Nov.	243	91	55	2							5	155	
Dec.	154	91	50								7	141	
1942													
Jan.	266	81	60								2	143	1,350

All Bostons were erected at Lagos - too large for harbour facilities at Takoradi - M.E. File S.53379 refers.

General References: Operations Record Book: R.A.F. Station, Takoradi.

Port Sudan Assembly Unit

AIRCRAFT OUTPUT DURING PERIOD											
Period Ending	Aircraft arrivals during period	Stock at end of period	Boston	Tomahawk	Kityhawk	Baltimore	Anson	Spitfire	Hurricane	Other Types	Total
26 Sept. 1941	137	112	5	20							25
31 Oct. 1941	35	117	8	22							30
28 Nov. 1941	30	117	11	14	5						30
26 Dec. 1941	119	93	38	32	73						143
31. Jan. 1942	165	106	45	24	83						152
	486	545	107	112	161						380

General Reference: Operations Records Book No. 117 M.U.
Admiralty Records

G.169218/IF/5/48.

APPENDIX J

AIRCRAFT SERVICEABILITY (MIDDLE EAST, INCLUDING MALTA)
as at 20.6.41, 15.8.41 and 10.10.41.

EGYPT (including Sudan)

Type of Aircraft	Total No. of Sqns. formed	I.E. per Sqn.	Total I.E.	Aircraft in Command		Aircraft arrivals during week	Aircraft in O.T.U's		Remarks
				Cat.A.	Cat.B.		Cat.A.	Cat.B.	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)
Hurricane	6	16	96	206	49	50	9	1	* Excludes Hart, Hind Magister & Gauntlet.
Hurricane (A.C.)	1	16	16	Included above					
Blenheim I.	-	-	-	16	14	-	14	2	
Maryland	2	20	64	55	17	-	-	-	
	1 $\frac{1}{2}$	16							
Blenheim IV.	6	20	120	118	44	3	-	-	Beaufighters are detachment of 252 and 272 Coastal Cmd. Squadrons. + Figures, from O.T.U's are dated 13.6.41.
Wellington	5	20	100	58	21	6	3	1	
Wellesley	1	16	16	27	8	-	2	1	
Hardy	-	-	-	5	1	-	-	-	
Sunderland	1	6	6	7	-	-	-	-	
Tomahawk	3	16	48	64	49	1	2	1	
Gadiator	1	(4	4	19	2	-	-	-	
Lysander		(8	8						
Lysander	-	-	-	50	21	-	5	1	
Beaufighter	-	-	-	16	3	-	-	-	
Harvards	-	-	-	-	-	-	2	1	
TOTALS	27 $\frac{1}{2}$	-	478	641	229	60	37+	8+	
<u>ADEN</u>									
Blenheim I	-	12	12	10	1		2 Vincents serviceable less operational equipment.		
Vincent	1	8	8	9	1				
Blenheim IV	-	-	-	-	1				
Wellesley	-	-	-	-	1				
TOTALS	1	-	20	19	4				
<u>PALESTINE</u>									
Hurricane (A.C.)	1	12	12	-	-	-	Aircraft are included in figures for Egypt.		
Gladiator	-	4	4	-	-	-			
Tomahawk	1	16	16	-	-	-			
Blenheim IV.	1	20	20	-	-	-			
Hurricane	1	16	16	-	-	-			
TOTALS	4	-	68	-	-	-			
<u>MALTA</u>									
Beaufighters	-	-	-	-	-	-			
Hurricanes	2	16	32	45	6	45			
Maryland	1 $\frac{1}{2}$	7	7	8	1	1			
Wellington	-	-	-	1	1	5			
Sunderland	-	-	-	-	-	-			
Blenheim IV	-	-	-	11	1	26			
TOTALS	2 $\frac{1}{2}$	-	39	65	9	77			

Notes (1) The figures on the reverse do not include R.E.A.F., S.A.A.F. (except 1 Maryland Sqn. and 1 Hurricane Sqn. S.A.A.F.) in Egypt, or non-operational aircraft.

- (2) Aircraft in Command (Col. (e) and (f) Cat. A. = Serviceable and those that can be made serviceable within 14 days. Cat. B = Unserviceable and will take up to 3 months to make serviceable.

Several of the squadrons mentioned on the reverse are non-operational whilst re-arming.

The following aircraft "State" as at 20.6.41, has been received from Iraq:

	<u>Type of Aircraft</u>	<u>Cat. A.</u>	<u>Cat. B.</u>
	Hurricane	3	-
	Gladiator	10	-
(No. 84 Squadron)	Blenheim IV (B)	7	1
	Blenheim IV (F)	1	2
	Blenheim I	-	-
	Valentia	4	1
(No. 244 Squadron)	Vincent	- ø	- ø
	TOTALS	25	4

ø No serviceability state received.

(Sgd.) R.P. Musgrave Whitham.

D.W.O.

W.O.7.
26.6.41.

SERVICEABILITY STATE (MIDDLE EAST)
as at 15.8.41.

Distribution:- C.A.S. (3), S. of S., A.M.S.O., D.G.E., D.W.O., D.O.O.,
D.S.M., D.D.O.P. State Room, C.S.U. Librarian (2),
S.6. (2), File.

EGYPT (Including Palestine, Syria, Cyprus, and Sudan

Type of Aircraft (a)	Total No. of Sqn. formed, forming, and to form. (b)	I.E. per Sqn. (c)	Total I.E. (d)	Aircraft in Command		Arrivals during week (g)	Remarks (h)
				Cat. A. (e)	Cat. B. (f)		
<u>FIGHTERS</u>							
Hurricane	13	16	208	255	70	6	(b) Includes 203 Sqn. crews of which are trained in G.R.
Tomahawk	4	16	64	121	44	25	
Beaufighter	4	16	64	16	4	-	
Gladiator	-	-	-	17	8	-	
Gauntlet	-	-	-	8	7	-	
<u>LIGHT BOMBERS</u>							* 78 Blenheim IV transferred to Iraq.
Blenheim IV	11(b)			100*	57	28	
Maryland		20	220	91	23	3	
Beaufort		12	24	5	1	-	
Wellesley		-	-	22	6	-	
Bombay		-	-	19	2	1	
Vincent		-	-	2	5	-	
Valentia		-	-	9	3	-	
<u>MEDIUM BOMBERS</u>							
Wellington	5	20	100	101	10	-	
<u>ARMY CO-OP.</u>							
Hurricane (A.C)	4	12	48	Included with Fighters		-	
Lysander	-	-	-	44	21	-	
Harvard	-	-	-	3	3	-	
<u>G.R. (F.B.)</u>							
Sunderland	1	4	4	4	-	-	
<u>G.R. (L.P.)</u>	-	-	-	Included with L.B.		-	
TOTALS	44	-	732	817	264	63	

In addition M.E. hold 22 Cat.A. and 16 Cat.B. Blenheim I.

MALTA

<u>FIGHTERS</u>							
Hurricane	3	16	48	69	7	-	
Beaufighter	-	-	-	2	-	-	
<u>G.R. (L.P.)</u>							
Maryland	$\frac{1}{2}$	7	7	7	3	-	
<u>LIGHT BOMBERS</u>							
Blenheim IV	-	-	-	18	6	2	
<u>MEDIUM BOMBERS</u>							
Wellington	-	-	-	17	1	11	
TOTALS	$3\frac{1}{2}$	-	55	113	17	13	

ADEN

Type of Aircraft	Total no. of Sqns. formed forming and to form	I.E. per Sqn.	Total I.E.	Aircraft in Command		Arrivals during week	Remarks
				Cat.A.	Cat.B.		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
<u>LIGHT BOMBERS</u>							
Blenheim IV	1	20	20	-	1	-	1 Blenheim I (additional) serviceable, less equipment
Blenheim I	-	-	-	8	1	-	
Vincent	-	-	-	7	3	-	
Wellesley	-	-	-	1	-	-	
TOTALS	1	-	20	16	5	-	

IRAQ

<u>FIGHTER</u>							
Hurricane	1	16	16	13	1	-	Lodger Units not included
Gladiator	1	-	-	5	-	-	
<u>LIGHT BOMBERS</u>							
Blenheim IV	3	20	60	13	2	-	
Vincent	-	-	-	9	-	-	
Valentia	-	-	-	8	-	-	
Audax	-	-	-	18	-	-	
TOTALS	4	-	76	66	3	-	

Notes:- (i) Aircraft in Command (Col. (e) and (f) Cat.A. = Serviceable and those that can be made serviceable within 14 days.
Cat.B. = Unserviceable and will take up to 3 months to make serviceable.

(ii) Squadrons are shown under the type to which they will eventually re-arm except some in East Africa, where decisions are still awaited. Some Squadrons are non-operational whilst re-arming.

(Sgd.) A. D. DAVIES.

D.W.O.

23.8.41.

G.169218/IF/6/48

TOP SECRET

AIRCRAFT SERVICEABILITY (MIDDLE EAST)
as at 10.10.41

EGYPT (Including Palestine, Syria, Cyprus and Sudan)

Type of Aircraft	Total No. of Sqns. formed, forming and to form	I.E. per Sqns.	Total I.E.	Aircraft in Command		Arrivals during week	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
<u>FIGHTERS</u>							
Hurricane	14	16	224	417	67	17	In addition there are approx. 10 Cased Tomahawk and 13 Cased Bostons to Port Sudan
Tomahawk	5	16	80	219	88	2	
Beaufighter	4	16	64	18	5	1	
Gladiator	-	-	-	27	16	-	
<u>LIGHT BOMBERS</u>							
Blenheim IV	9	20	180	224	35	16	
Maryland				76	30	-	
Beaufort				8	1	-	
Wellesley				18	5	-	
Boston III	-	-	-	-	-	-	
<u>MEDIUM BOMBERS</u>							
Wellington	5	20	100	105	13	6	
<u>ARMY CO-OP.</u>							
Hurricane(A.C.)	5	12	60	Included with Fighters		-	
Lysander	-	-	-	44	15	-	
<u>G.R. (F.B.)</u>							
Sunderland	1	4	4	5	-	-	
<u>G.R. (L.P.)</u>							
Blenheim IV	1	16	16	Included with L.B.		-	
TOTAL (Operational)	46	-	752	1161	275	42	
<u>TRANSPORT</u>							
Bombay	-	-	-	21	2	-	In addition 10 Lodestars have been loaned to B.O.A.C.
Valentia	-	-	-	8	2	-	
Lockheed 14	-	-	-	-	1	-	
Lodestar	-	-	-	3	1	-	
Lockheed	-	-	-	3	-	-	
Electra	-	-	-	-	-	-	
Douglas	-	-	-	1	-	-	
Hudson	-	-	-	1	1	-	
D.H.86	-	-	-	1	1	-	
TOTAL (Transport)	-	-	-	38	7	-	
GRAND TOTAL	-	-	-	1199	282	42	

Type of Aircraft	Total No. of Sqdns. formed, forming, and to form.	I.E. per Sqn.	Total I.E.	Aircraft in Command		Arrivals during week.	Remarks
				Cat.A.	Cat.B.		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
<u>FIGHTERS</u>							
Hurricane	3	16	48	94	7	-	
Beaufighter	-	-	-	1	-	1	
G.R. (L.P.)							
Maryland	$\frac{1}{2}$	14	7	14	1	-	
<u>LIGHT BOMBERS</u>							
Blenheim IV	2	16	32	16	-	3	
Beaufort	-	-	-	-	-	-	
<u>MEDIUM BOMBERS</u>							
Wellington	-	-	-	18	-	-	
TOTAL	5 $\frac{1}{2}$	-	87	143	8	4	
<u>LIGHT BOMBERS</u>							
Blenheim IV	1	20	20	12	2	-	1 Vincent
Blenheim I	-	-	-	4	-	-	(additional
Vincent	-	-	-	9	1	-	serviceable
Wellesley	-	-	-	1	-	-	less equipment)
TOTAL	1	-	20	26	3	-	

IRAQ

<u>FIGHTER</u>							
Hurricane	1	16	16	10	-	-	
Gladiator	-	-	-	-	-	-	
<u>LIGHT BOMBERS</u>							
Blenheim IV	4	20	80	28	-	-	
Vincent	-	-	-	6	-	-	
Valentia	-	-	-	4	1	-	
Audax	-	-	-	17	-	-	
TOTAL	5	-	96	65	1	-	

Notes:- (i) Aircraft in Command (Col.(e) and (f) Cat.A. = Serviceable and those that can be made serviceable within 14 days.
Cat.B. = Unserviceable and will take up to 3 months to make serviceable.

(ii) Squadrons are shown under the type to which they will eventually re-arm except some in East Africa, where decisions are still awaited. Some Squadrons are non-operational whilst re-arming.

(Sgd.) R.P. MUSGRAVE WHITHAM.

W.O.7.
18.10.41.

D.W.O.

APPENDIX K

MIDDLE EAST (INCLUDING MALTA)

AIRCRAFT POSITION IN SQUADRONS AS

AT 15/6/41, 15/8/41 and 15/10/41.

Aircraft Position

15th June, 1941

Command	Class	Type	Sqdn No.	Etab.		Strength	Remarks
				I.E.	I.R.		
MIDDLE EAST	Fighter	Beaufighter	252 ✓	20	-	19	* See also Mediterranean.
			272 ✓	20	-		
		Gladiator II	112 ✓	16	-	- 2 Tomahawk	
		Gauntlet	6 ✓	4	2	-	
		Hurricane	33 ✓	16	-	10	
			73 ✓	16	-	21 + Lysander II	
			80 ✓	16	-	19 + 2 Gauntlet	
			94 ✓	16	-	10	
			274 ✓	16	-	23	
			1 ✓ (S.A.A.F.)	-	-	12	
		Tomahawk	250 ✓	16	-	25	
			3 ✓ (R.A.A.F.)	-	-	21 + 1 Gauntlet	
	Bomber	Blenheim IV	11 ✓	16	8	20	
			30 ✓	16	8	- 14 Hurricane	
			39 ✓	16	8	17 Maryland	
			45 ✓	16	8	9	
			55 ✓	16	8	-	
			84 ✓	16	8	17	
			113 ✓	16	8	17 + 1 Lysander II	
			211 ✓	16	8	6 Blenheim I	
			293 ✓	-	-	14	
		Maryland	12 ✓ (S.A.A.F.)	-	-	18	
			24 ✓ (S.A.A.F.)	-	-	17	
		Wellesley	14 ✓	15	8	14 Blenheim IV	
			47 ✓	15	8	24	
			223 ✓	15	8	1 Blenheim I	

Command Class	Type	Sqdn No.	Etab.		Strength	Remarks	
			I.E.	I.R.			
MIDDLE EAST (Contd.)	Bomber	Wellington I	No.1 G.R.U.	3	2	3	* See also Mediter- reanean.
		Wellington IC	37 ✓	16	8	17 + 1 Lysander I	
			38 ✓	16	8	17	
			70 ✓	16	8	17 + 1 Lysander I	
			148x	16	-	18 + 1 Lysander I	
			216 ✓	16	8	11 Bombay + 8 Valentia	
	Bomber Transport	Bombay	117 ✓	6	3	5 + 2 Wellesley	
	Army Co-operation	Lysander I	208 ✓	12	-	3 + 1 Lysander II + 10 Hurricane	
			237 ✓ (Rhod.)	12	-	4 + 1 Gladiator II + 5 Lysander II + 5 Gladiator I + 4 Lysander I	
		Lysander II	6	12	-	4 + 11 Hurricane + 2 Lysander I	
	Flying Boat	Sunderland	228 ✓	6	2	2	
			230 ✓	6	2	5	
IRAQ	Bomber	Vincent	244 ✓	13	4	11	
ADEN	Bomber	Blenheim IV	8 ✓	16	8	12 Blenheim I	* In pro- cess of transfer to the Middle East.
			203x ✓	14	7	-	
		Vincent	8	6	3	13	
MEDITER- RANEAN	Fighter	Beaufighter	252x	-	-	1	* See also Middle East.
		Hurricane II	185	16	-	18	
			249	16	-	5 + 16 Hurricane I	
			261	16	8	-	
	Bomber	Wellington IC	148x	-	-	3	
	General Recon.	Maryland	69	7	5	8 + 2 Hurricane I	

E. I. C. (ZA)

30th June, 1941.

G.169218/II/6.48

Aircraft Position

15th August, 1941

Command Class	Type	Sqn No.	Estab.		Strength	Remarks
			I.E.	I.R.		
MIDDLE Fighter EAST	Beaufighter	252	16	-	4	
		272	16	-	14	
	Hurricane I	1	-	-	21 + 1 Lysander II	S.A.A.F.
		33	16	-	29	
		73	16	-	27 + 1 Lysander II	
		80	16	-	28	
		94	16	-	20 + 1 Gladiator I	
		274	16	-	17 + 1 Lysander II	
		450	-	-	21 + 3 Blenheim IV	R.A.A.F.
		451	-	-	15 + 3 Lysander II	"
	Tomahawk	250	16	-	21	
		2	-	-	19	S.A.A.F.
		3	-	-	20	R.A.A.F.
	Bomber	112	-	-	23	
		11	16	8	-	
		14	16	8	-	
		30	16	8	17 Hurricane I	
		45	16	8	-	
		55	16	8	6	
		84	16	8	-	
		113	16	8	18 + 1 Lysander II	
		203	14	7	16	
		211	16	8	19 Blenheim I	
	Maryland	12	-	-	18	S.A.A.F.
		21	16	-	16	"
		24	16	-	11	"
	Wellesley	39	16	-	20	
		223	16	-	18 + 1 Blenheim I	
		47	15	8	18	

Command	Class	Type	Sqdn. No.	Etab.		Strength	Remarks
				I.E.	I.R.		
MIDDLE EAST (Contd.)	Bomber (Contd.)	Wellington I	No.1 G.R.U.	3	2	6	Rhodesian
		Wellington IC	37	16	8	20 + 1 Lysander	
			38	16	8	24	
			70	16	8	25 + 1 Lysander I	
			148	16	-	25 + 1 Lysander I	
			216	16	8	12 Bombay + 6 Valentia.	
	Bomber Transport	Bombay	117	6	3	9 + 2 Wellesley	
	Army Co- operation.	Lysander I	208	12	-	2 + 2 Mk.II + 11 Hurricane I	
			237	12	-	5 + 2 Mk.II + 2 Gladiator II + 7 Gladiator I	
		Lysander II	6	12	-	-	
	Flying Boat	Sunderland	228	-	-	2	
			230	4	1	4	
IRAQ	Fighter	Gladiator	261	-	-	10 + 14 Hurricane	
	Bomber	Vincent	244	13	4	11	
	Army Co- operation	Audax	52	-	-	21	
			84	-	-	3	
ADEN	Bomber	Blenheim IV	8	16	8	12 Blenheim I	
		Vincent	8	6	3	12	
MEDITER- RANEAN	Fighter	Beaufighter	272	-	-	5	
		Hurricane IIA	185	16	8	17 + 4 Mk.IIC	
			249	16	8	33 + 10 Mk.I + 10 Mk.IIC	
			126	16	8		
	Bomber	Wellington IC	148	-	-	11	
		Blenheim IV	105	-	-	24	
	General Reconn.	Maryland	69	7	4	10 + 2 Hurricane I + 1 Hurricane IIA	

Aircraft Position

15th October, 1941

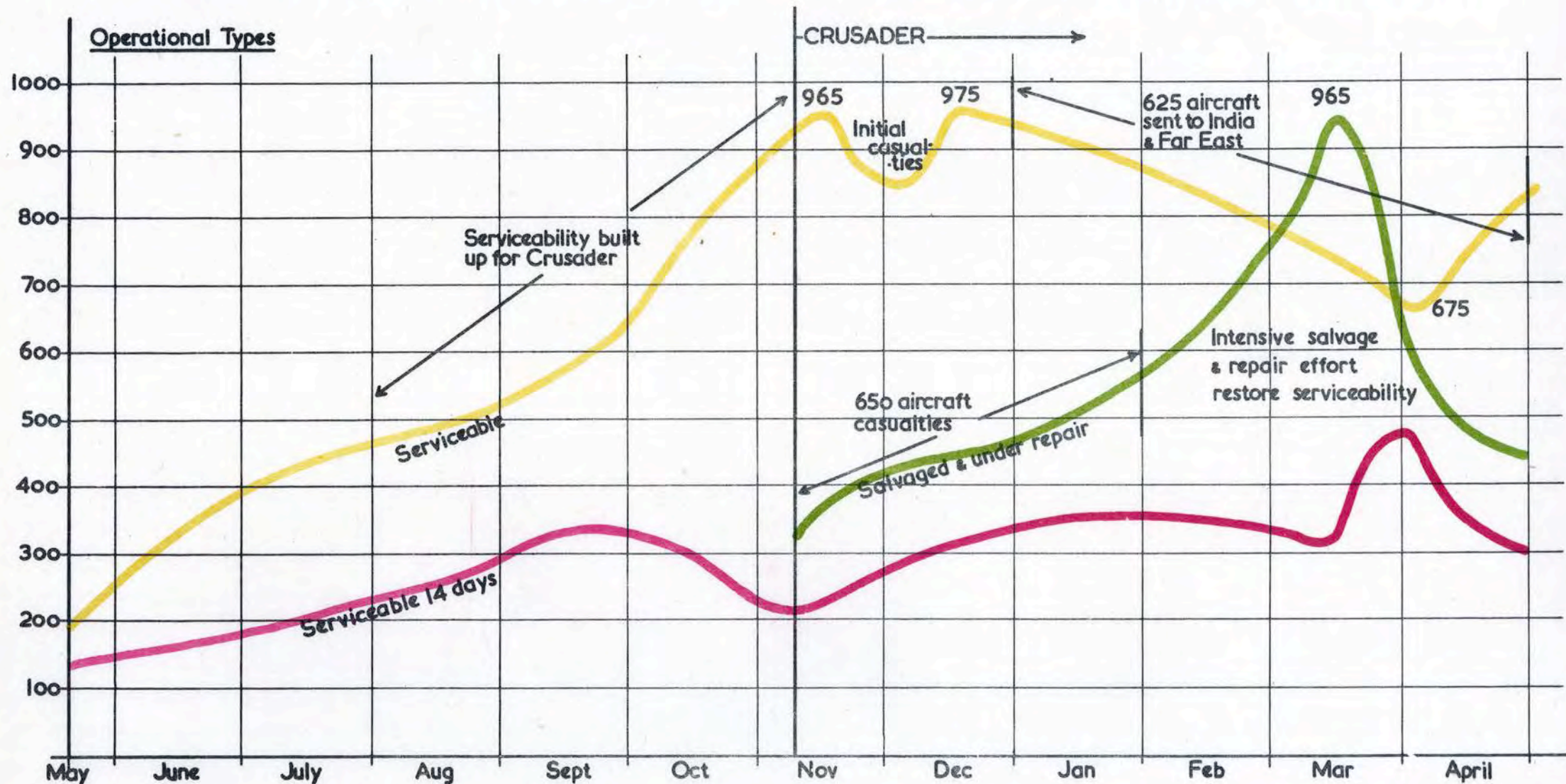
Command	Class	Type	Sqn No.	Etab.		Strength	Remarks
				I.E.	I.R.		
MIDDLE EAST	Fighter	Beaufighter	252✓	16	0	3	S.A.A.F.
			272✓	16	0	17	
		Hurricane I	1✓	-	-	24	
			6✓	-	-	2	
			30✓	16	0	16 + 4 Mk.II	
			33✓	16	0	22	
			73✓	16	0	18 + 2 Tomahawk II	
			80✓	16	0	19	
			94✓	16	0	20	
			208✓	-	-	18	
			213✓	16	0	20	
			237✓	-	-	15	
			260✓	16	0	17	
			274✓	16	0	21	
			450✓	16	0	12	
			451✓	16	0	19	
			R.N. Ftr.	16	0	20	
		Hurricane II	229✓	16	0	21 + 3 Mk.I	
			238✓	16	0	26	
		Tomahawk II	2✓	-	-	19	
			3✓	-	-	19	
			4✓	-	-	6	
			112✓	-	-	21	
			250✓	16	0	20	
	Bomber	Blenheim IV	11✓	16	0	21	S.A.A.F.
			14✓	16	0		
			45✓	16	0	21	
			55✓	16	0	20	

Command	Class	Type	Sqdn No.	Estab.		Strength	Remarks
				I.E.	I.R.		
MIDDLE EAST (Contd.)	Bomber (Contd.)	Blenheim IV	113 ^X	16	0	25 <i>Molt</i>	
			203 [✓]	14	7	19	
			211 [✓]	16	0	-	
		Maryland	12 [✓]	16	0	20	S.A.A.F.
			21 [✓]	16	0	22	S.A.A.F.
			24 [✓]	16	0	1	S.A.A.F.
			60 [✓]	-	-	7	S.A.A.F.
			223 [✓]	16	0	15	
		Wellesley	47 [✓]	15	8	19	
	Fighter	Wellington I	No. 1 G.R. U.	3	2	6 + 1 Wellington IC.	
		Wellington IC.	37 [✓]	16	0	18	
			38 ^X	16	0	21 X <i>Molt</i>	X State unknown
			70 [✓]	16	0	18	
			108 [✓]	-	-	19	
			148 [✓]	16	0	8 + 23 Mk.II	
	Torpedo Bomber	Beaufort	39 [✓]	12	0	9 + 8 Maryland	
	Bomber Transport	Bombay	117 [✓]	6	3	8 + 1 Wellesley	
			216 [✓]	16	0	15	
	Flying Boat	Sunderland	228 [✓]	-	-	2	
			230 [✓]	4	1	5	
IRAQ	Fighter	Gladiator	261 [✓]	-	-	2 + 12 Hurricane + 4 Audax	
		Blenheim IV	84 [✓]	16	0	20 + 1 Audax	
	Bomber	Vincent	244 [✓]	-	-	9	
	Army Co- operation	Audax	52 [✓]	-	-	19	
ADEN	Bomber	Blenheim IV	8 [✓]	8	6	15 + 1 Mk.I.	
		Vincent	8	14	12	11	

Command · Class	Type	Sqdn No.	Estab.		Strength	Remarks
			I.E.	I.R.		
MEDITER- Fighter RANEAN	Beaufighter	272	-	-	5	
	Hurricane IIA	185	16	8	16 + 1 Mk. I. + 4 Mk. IIB. + 1 Mk. IIC.	
		126	16	8	9 + 7 Mk. IIB.	
		249	16	8	19 + 18 Mk. IIB.	
	Bomber	Blenheim IV	18	-	10	
			105	-	8	
			107	-	11	
			113	-	4	
		Wellington IC.	38	-	22 + 7 Mk. II + 1 Hurricane Mk. I	
		Wellington VIII	221	-	3	
	General Reconn.	Maryland	69	7	5	14 + 1 Hurricane Mk. I + 8 " " IIA + 1 " " IIB

E.1.C.(Z.A.)
31st October, 1941

AIRCRAFT SERVICEABILITY IN MIDDLE EAST BEFORE & DURING CRUSADER OFFENSIVE.



APPENDIX N.

AIR MINISTRY'S PROPOSED AIRCRAFT ESTABLISHMENT
AND OUTPUT OF MIDDLE EAST OPERATIONAL
TRAINING UNITS (OCTOBER 1941)

O.T.U.		AIRCRAFT			Total	Duration of Course (weeks)	Flying Hours per Pilot U/T	No. of Pilots or Crews U/T	Wastage per Course	Out- put per Course	Monthly rate of out- put
No.	Type	Type	I.E.	I.R.							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
70	Light Bomber	Maryland or Blenheim	48	24	103	6	60	72	7	65	43
		T.E. Tr.	15	7							
		Target Towers	6	3							
72	Light Bomber	Maryland or Blenheim	48	24	103	6	60	72	7	65	43
		T.E. Tr.	15	7							
		Target Towers	6	3							
71	S.E.	Hurricane	21	10	106	4	40	60	5	55	55
		Tomahawk	20	10							
		S.E. Tr.	13	6							
	A.C.	Hurricane	9	4		6	40	21	2	19	13
		S.E. Tr.	3	1							
		Target Towers	6	3							
73 (NEW)	S.E.	Hurricane	20	10	104	4	40	72	6	66	66
		Tomahawk	30	15							
		S.E. Tr.	14	6							
		Target Towers	6	3							

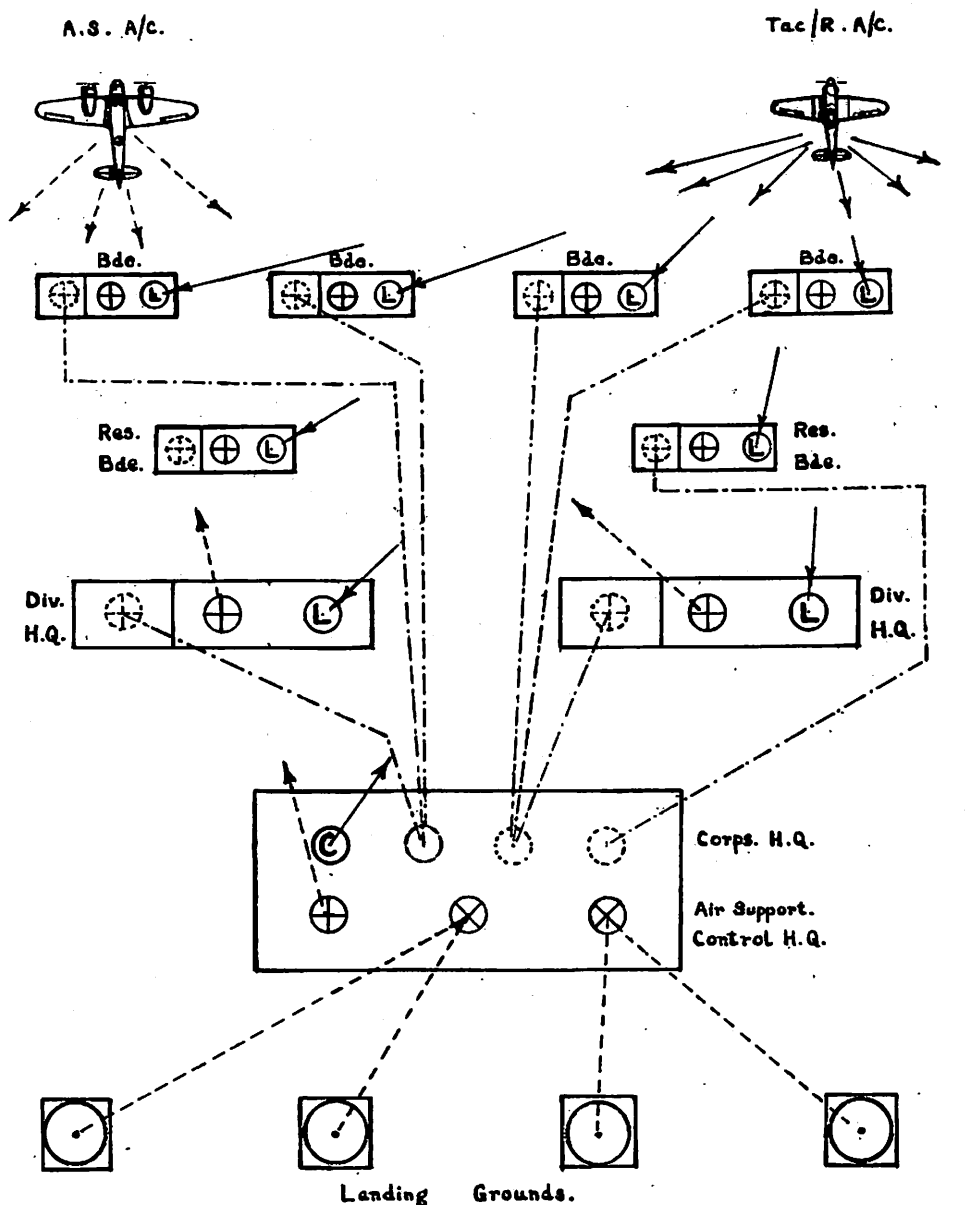
Note:- Calculations have been based on following assumptions:-

- (i) 75% of all I.E. aircraft will be serviceable daily.
- (ii) Each serviceable aircraft will be flown for 3 hours per day (Sunday excluded).

APPENDIX.

**MIDDLE EAST (ARMY AND R.A.F.).
DIRECTIVE ON DIRECT SUPPORT.
APPENDIX "D".**

Communications for Air Support Control.

**LEGEND.**

- | | | | |
|--|---------------|--|--|
| | Tentacles. | | L.G. Set. |
| | A.S.C. Sets. | | 2-Way R.T. to Support A/c. |
| | F.A.S. Links. | | 2-Way R.T. to Tac/R. A/c. (C - Control). |
| | R.A.S. Links. | | 1-Way R.T. from Tac/R. A/c. (L - Listening). |

APPENDIX P

MONTHLY TOTAL TONNAGES OF ENEMY MERCHANT SHIPPING LOSSES (IDENTIFIED VESSELS) IN THE MEDITERRANEAN

1st JUNE, 1941 - 31st JANUARY, 1942.

DATE	(A) ON AFRICAN CONVOY ROUTES				(B) IN ENTIRE MEDITERRANEAN (INCLUDING A)			
	BY ROYAL AND ALLIED NAVIES	BY AIR ATTACK (R.A.F. & F.A.A.)	OTHER CAUSES	TOTAL	BY ROYAL AND ALLIED NAVIES	BY AIR ATTACK (R.A.F. & F.A.A.)	OTHER CAUSES	TOTAL
<u>1941</u> JUNE	26,145	13,006	4,917	44,068	31,809	13,006	4,917	49,732
JULY	10,956	15,235	NIL	26,191	20,136	15,235	137	35,508
AUGUST	16,337	22,158	NIL	38,495	17,255	22,158	NIL	39,413
SEPTEMBER	39,956	30,355	389	70,700	57,521	36,685	1,842	96,048
OCTOBER	401	34,604	120	35,125	10,326	34,604	120	45,050
NOVEMBER	31,955	6,525	216	38,696	36,097	8,618	216	44,931
DECEMBER	25,319	11,775	NIL	37,094	32,097	12,021	NIL	44,939
<u>1942</u> JANUARY	3,553	19,506	NIL	23,059	22,022	19,506	NIL	41,528
TOTALS	155,622	153,164	5,642	313,428	228,084	161,833	7,232	397,149

Notes:- i) Sinkings on the African Convoy Routes have been determined on the basis of position where sinkings occurred. In some instances, where vessels were sunk on routes known at the time to have been used for the supply of Africa, they may possibly have been sailing to or returning from other areas - e.g. Greece.

ii) "Other Causes" include:- Sabotage, fire, mines, captured, explosion, collision, scuttled, cause unknown etc.

iii) Hospital ships sunk have been omitted.

Authority:- E.S.L.A.C. List of Identified Enemy Merchant Ships at the Disposal of Italy.
Enemy Records P.1/4203.

APPENDIX Q

Aircraft state of squadrons (excluding the Fleet Air Arm) concerned directly or indirectly with the "Crusader" operations as at 15th November, 1941.

Command	Class	Type	Sqdn. No.	Establishment		Total Strength	Serviceable (or serviceable in 3 days)	Remarks
				I.E.	I.R.			
MIDDLE EAST	Fighter	Beaufighter	252	16	-	4	4	
			272	16	-	17	17	
		Hurricane I	1	-	-	26 Mk.II	24	S.A.A.F.
			30	16	-	30	26	
			33	16	-	27	22	
			73	16	-	22 + 4 Mk.II + 4 Tomahawk II	21 + 3 Mk.II + 4 Tom.II	
			80	16	-	25	25	
			94	16	-	27	24	
			208	-	-	17	17	
			213	16	-	19	?	
			237	-	-	15	13	Rhodesian
			260	16	-	26	26	
			274	16	-	23 Mk.II	16	
			451	16	-	14	11	R.A.A.F.
			R.N. Ftr.	16	-	25	25	
		Hurricane II	229	16	-	26 + 9 Mk.I	20 + 5 Mk.I	
			238	16	-	26 + 7 Hurricane I	25 + 7 Mk.I	
		Tomahawk II	2	-	-	20	19	S.A.A.F.
			3	-	-	27	21	R.A.A.F.
			4	-	-	22	21	S.A.A.R.
			112	-	-	25	20	
			250	16	-	29	21	

Command	Class	Type	Sqn. No.	Establishment		Strength	Serviceable (or serviceable in 3 days)	Remarks
				I.E.	I.R.			
MIDDLE EAST (Contd.)	Bomber	Blenheim IV	11	16	0	18	16	
			14	16	0	1	1	
			45	16	0	24	21	
			55	16	0	28	25	
			84	-	-	23	21	
			113	16	0	20	16	
			203	14	7	26	19	
		Fortress	90	-	-	4	3	
		Maryland	12	16	0	21	14	S.A.A.F.
			21	16	0	21	16	S.A.A.F.
			24	16	0	1+16 Boston III	1 + 14 Boston III	S.A.A.F.
			60	-	-	6	5	S.A.A.F.
		Wellington I No.1 C.R.U.	223	16	0	14 + 1 Boston III	10 + 1 Boston III	
				3	2	6 + 1 Well: IC	4 + 1 Well: IC	
			37	16	0	17	14	
			38	16	0	22	15	
	Torpedo Bomber	Beaufort	70	16	0	17	14	
			108	-	-	22	17	
			148	16	0	2 + 19 Mk.II	18 Mk.II	
			39	12	0	16 + 6 Maryland	12 + 3 Maryland	
	Bomber Transport	Bombay	117	6	3	-	-	
			216	16	0	20	?	
	Flying Boat	Sunderland	230	4	1	5	4	

All the above squadrons under administrative and operational control of A.H.Q.W.D. except:-

Fighters

No.252 Squadron - not operating
No.272 (No.201 Group) Detachments under A.H.Q.W.D.

No.73 Squadron (No.202 Group , later A.H.Q., Egypt)
No.213 Squadron(- " - " - " - " -)

Bombers

Nos. 37, 38, 70, 90, 108 and 148 (No. 205 Group) but operationally controlled by A.H.Q.W.D. in their tactical role.
No. 39 Squadron (No. 201 Group) Detachment under A.H.Q.W.D.
No. 203 " " " " " "
No. 1 G.R.U. (Canal Zone)
No. 223 Squadron (No. 202 Group)

Transport

No.216 Squadron (No.202 Group) placed at disposal of A.H.Q.W.D.

Flying Boats

No. 230 Squadron (No. 201 Group)

Command	Class	Type	Sqn. No.	Establishment		Total Strength	Serviceable (or serviceable in 3 days)	Remarks
				I.E.	I.R.			
MEDITERRANEAN (Malta)	Fighter	Beau-fighter	272	-	-		2	
		Hurricane IIA	185	16	8	15 + 2 Mk. IIB	15 + 1 Mk. IIB	
			126	16	8	13 + 7 Mk. IIB	8 + 7 Mk. IIB	
			249	16	8	12 + 7 Mk. IIB	9 + 7 Mk. IIB	
	Bomber	Blenheim IV	18	-	-	18	16	
			107	-	-	18	16	
		Wellington IC	38	-	-	3	2	
			40	-	-	15	13	
		Wellington VIII	221	-	-	3	3	
		Wellington II	104	24	3	17	16	
General Recon.	Maryland	69	7	5	13 + 2 Hurricane Mk. I + 2 Hurricane Mk. IIA	10 + 1 Hurricane Mk. I + 2 Mk. IIA		

The Blenheim and Wellington squadrons based on Malta aided "Crusader" project by attacks on lines of communications, airfields and shipping. F.A.A. bombers also available.

Based on:-

E.1.C. (Z.A.) Overseas Aircraft Position (8/12/41) at States of Aircraft,
Middle East and Mediterranean (26/1/42) Issued
mg/6/18

G. 169218/TC/6/48

Appendix "R"

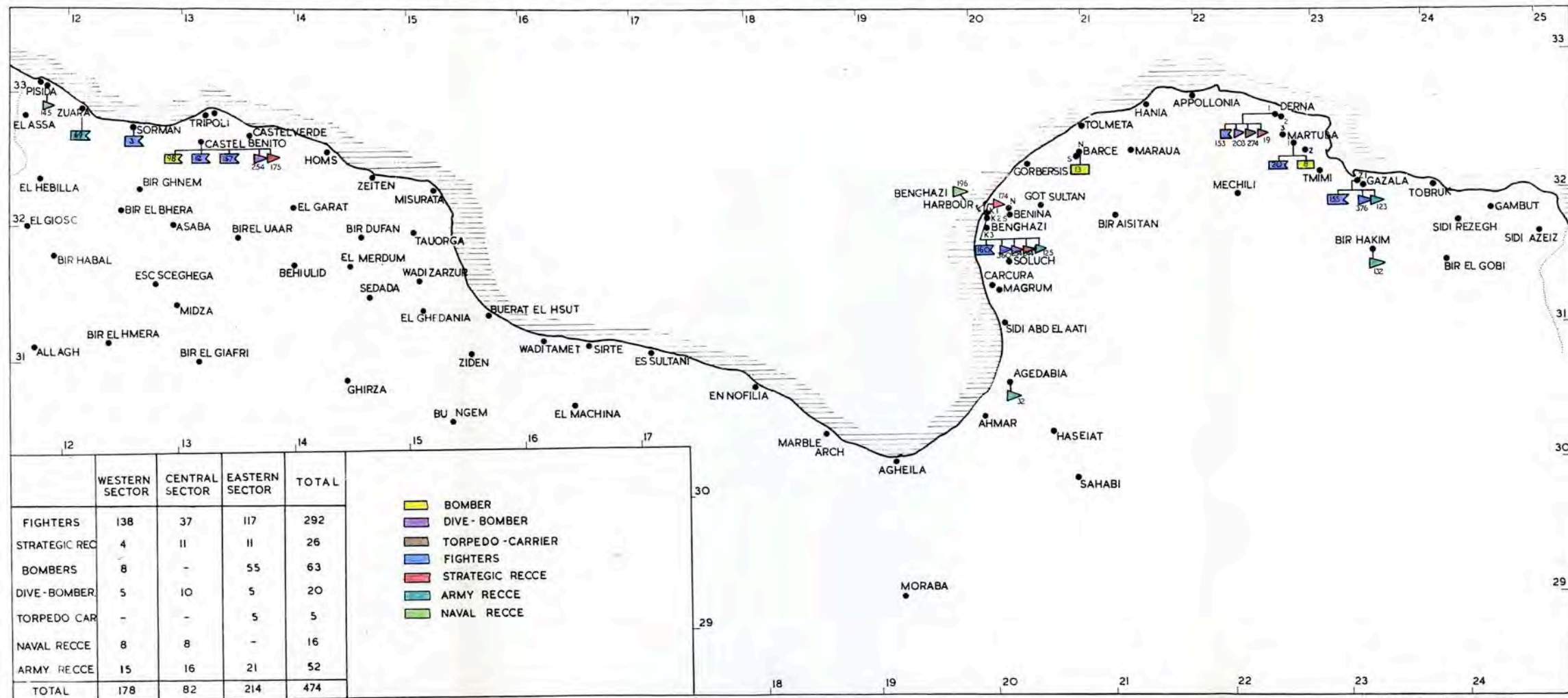
G.A.F. Orders of Battle in the Mediterranean.

As at 15.11.41 and 13.12.41.

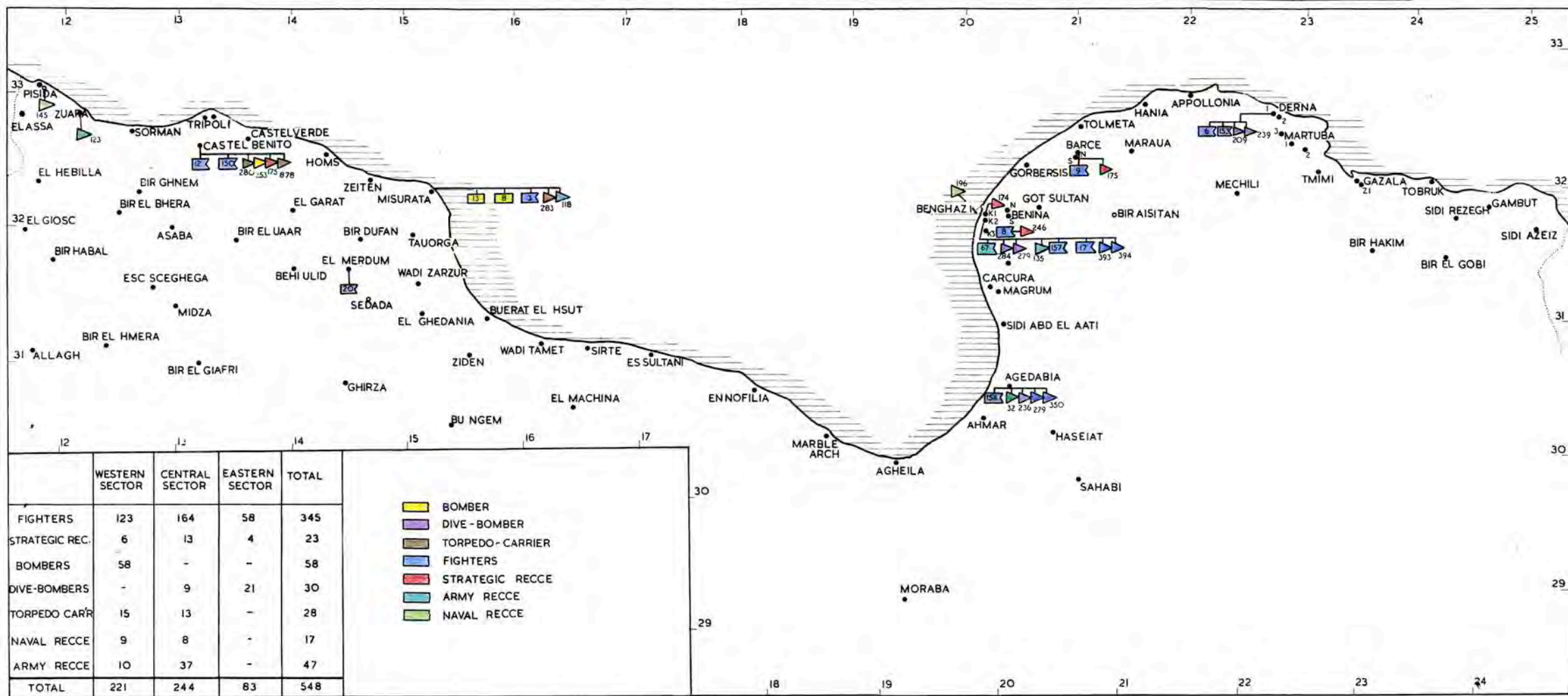
	<u>Establishment</u>	<u>Strength</u>	<u>Immediately Available</u>
<u>I.A 15th November 1941.</u>			
S.E. Fighters. (Stab, I, II, III/J.G.27)	124	108	22
Night Fighters.	-	-	-
Dive Bombers (I/St.G.1, II/St.G.2, Stab, I/St.G.3.)	129	107	86
T.E. Fighters. (III/Z.G.26)	39	39	28
Bombers. (Stab, I, II, III/L.G.1, II/K.G.26)	151	139	61
Recce. (1/(F)121, 2/(F)123)	21	17	9
TOTALS	<u>464</u>	<u>400</u>	<u>206</u>
<u>II. 13th December 1941.</u>			
S.E. Fighters. (Stab, I, II, III/J.G.27 Stab, I, II, III/J.G.53)	248	217	180
Night Fighters. (I, II/N.J.G.2)	82	58	14
Dive Bombers ¹ ₂ (I/St.G.1, II/St.G.2 Stab, I/St.G.3)	129	85	43
T.E. Fighters. (III/Z.G.26)	39	26	18
Bombers. (I, II, III/L.G.1, II/K.G.26 1/K.G.28, K.Gr.606, K.Gr.806)	276	232	79
Recce. (1/(F)121, 2/(F)123)	24	19	5
TOTALS	<u>798</u>	<u>637</u>	<u>339</u>

Compiled by A.H.B.6
from Enemy Records.

DISPOSITION OF ITALIAN AIR FORCE UNITS IN LIBYA 18.NOV.1941.



DISPOSITION OF ITALIAN AIR FORCE UNITS IN LIBYA 18. DEC. 1941.



APPENDIX "U"

ORDER OF BATTLE.

MIDDLE EAST COMMAND (EXCLUDING A.H.Q. EAST AFRICA)

AS AT 11.11.41.

<u>Headquarters R.A.F., MIDDLE EAST</u>	<u>CAIRO</u>	<u>AIRCRAFT</u>
	Location	
No. 267 (Transport) Squadron	Helopolis	Miscellaneous
No. 2 Photographic Reconnaissance Unit	Heliopolis	L/R Hurricanes) Beaufighters)
<u>Headquarters WESTERN DESERT</u>	<u>MAATEN BAGUSH</u>	
No. 33 Squadron	Giarabub	L/R Hurricanes)
No. 113 Squadron	Giarabub	Blenheim - fighters
Communication Flight	Maaten Bagush	Various
No. 272 Squadron, Detachment	Gherawla	Beaufighters
Strategic Reconnaissance Flight	Fuka	Marylands
No. 39 Squadron, Detachment	Fuka	Marylands
No. 60 Squadron, S.A.A.F., Survey Flight	Fuka	Marylands
No. 203 Squadron, Detachment	Fuka	Beauforts
No. 826 Squadron, Fleet Air Arm	Maaten Bagush	Albacores) Swordfish)
No. 1 R.A.A.F. Ambulance Unit	Fuka	D.H. 86's
No. 216 (Transport) Squadron, Detachment	Maaten Bagush	Bombays
No. 117/31 (Transport) Squadron (two flights)	Maaten Bagush	D.C. 2's
Assistance from B.O.A.C.		
<u>No. 253 (Army Co-operation Wing)</u>	<u>GHOT WAHAS</u>	
No. 208 Squadron	Sidi Barrani	Hurricanes
No. 451 Squadron, R.A.A.F.	Sidi Barrani	"
No. 237 (Rhodesion) Squadron	Gherawla	"
<u>*No. 258 Wing</u>	<u>BIR KHAMSA</u>	
No. 1 Squadron, S.A.A.F.	Bagush Waterloo	Hurricanes
No. 2 Squadron, S.A.A.F.	Sidi Heneish East	Tomahawks
No. 3 Squadron, R.A.A.F.	Sidi Heneish	Tomahawks
No. 94 Squadron	S. Maaten Bagush	Hurricanes
No. 238 Squadron	Sidi Heneish	Hurricanes
No. 274 Squadron	Fuka	Hurricanes
<u>*No. 262 Wing.</u>	<u>SIDI HENEISH</u>	
No. 4 Squadron, S.A.A.F.	Sidi Heneish	Tomahawks
No. 80 Squadron	Fuka	Hurricane-Bombers
No. 112 Squadron	S. Sidi Heneish	Tomahawks
No. 229 Squadron	Sidi Heneish	Hurricanes
No. 250 Squadron	Sidi Heneish	Tomahawks
No. 260 Squadron	W.S.W. Maaten Bagush	Hurricanes
<u>No. 269 Wing</u>	<u>SIDI HENEISH</u>	
No. 30 Squadron	Sidi Heneish	Hurricanes
R.N. (F) Squadron	Sidi Heneish	Hurricanes

* Shortly before the opening of the ground battle the fighter squadrons were redistributed so that the six Tomahawks Squadrons were controlled by No. 258 Wing and six Hurricane Squadrons (including R.N.(F) Squadron) by No. 262 Wing.

<u>No. 270 Wing.</u>	<u>FUKA</u>	
No. 14 Squadron	Maaten Bagush	Blenheims IV
No. 45 Squadron	Fuka	"
No. 55 Squadron	Fuka	"
No. 84 Squadron	S.W. Maaten Bagush	"
No. 8 Squadron Detachment	Fuka	"
Lorraine Squadron	Abu Sueir	"
<u>No. 3 (S.A.) Wing.</u>	<u>MAATEN BAGUSH</u>	
No. 12 Squadron S.A.A.F.	Daba	Marylands
No. 21 Squadron S.A.A.F.	Quotafiya	Marylands
No. 11 Squadron	S.W. Maaten Bagush	Blenheims IV
<u>No. 202 Group</u>	<u>CAIRO</u>	
No. 117 (Transport) Squadron (detachment under A.H.Q. W.D.)	Bilbeis	Miscellaneous
No. 216 (Transport Squadron (detachment under A.H.Q. W.D.)	Khanka	Bombays
No. 223 Squadron (acting as O.T.U.)	Shandur	Marylands
<u>No. 250 Wing</u>	<u>ISMAILIA</u>	
No. 73 Squadron	Port Said	Hurricanes
No. 1 G.R.U.	Ismailia	Wellingtons
<u>No. 252 Wing</u>	<u>ALEXANDRIA</u>	
No. 73 Squadron Detachment	Amiriya	Hurricanes
No. 213 Squadron Detachment	Kilo 8	Hurricanes
<u>NO. 205 GROUP</u>	<u>SHALLUFA</u>	
No. 37 Squadron	"	) Using Wellingtons O.L.G.'s in W.D.
No. 38 "	"	
No. 70 "	Kabrit	
No. 108 "	Fayid	
No. 148 "	Kabrit	
<u>NO. 201 GROUP</u>	<u>ALEXANDRIA (Adv. G.R. Base Fuka)</u>	
No. 2 Yugo-Slav Squadron	Aboukir	(D.O. 22's Sim. 14's Ansons Wellingtons Fulmars
No. 13 Hellenic Squadron Sea Rescue Flight R.N. Fulmar Flight	Dekheila L.G. 152 Dekheila	
<u>No. 234 Wing.</u>		
No. 39 Squadron (Detachment under A.H.Q. W.D.)	Mariut	Bostons and Marylands
No. 203 Squadron (Detachment under A.H.Q. W.D.)	Burg El Arab	Blenheims and Beauforts
No. 230 Squadron	Kasfareet	Sunderlands
<u>H.Q. 203 GROUP</u>	<u>KHARTOUM</u>	
No. 6 Squadron	Wadi Halfa	Hurricanes
No. 6 Squadron Detachment	Kufra	Lysanders
No. 47 Squadron	Asmara	Wellesleys
No. 211 Squadron	Garthago (Bomber O.T.U.)	Blenheims

H.Q. R.A.F. PALESTINE & TRANSJORDAN

JERUSALEM

Adv. Hqtrs.
BEIRUT

No. 263 (F) Wing.
No. 335 (Hellenic) Squadron
Free French Comm. Flight
" " (F) Squadron
Free French Flight

Aqir
Beirut
Rayak
Damascus

Hurricanes
Various
Moranes
Blenheims

H.Q. R.A.F. CYPRUS

NICOSIA

No. 259 Wing
No. 213 Squadron (Detachment under
No. 202 Group)
No. 815 Squadron (Fleet Air Arm)

Cyprus
"
Latakia

Hurricanes
Albacores and
Swordfish

A.H.Q. IRAQ

HABBANIYA

No. 52 Squadron
No. 244 Squadron
No. 261 Squadron

"
Shaibar
Mosul

Audaxes
Vincents
Hurricanes

H.Q. R.A.F. MALTA

VALETTA

No. 18 Squadron
No. 40 Squadron Detachment
No. 69 Squadron
No. 104 Squadron
No. 107 Squadron
No. 126 Squadron
No. 185 Squadron
No. 249 Squadron
No. 828 Squadron (Fleet Air Arm)
No. 830 Squadron (Fleet Air Arm)

Luqa
Luqa
Luqa
Luqa
Luqa
Takali
Hal Far
Takali
Hal Far
Hal Far

Blenheims
Wellingtons
Marylands
Blenheims
Blenheims
Hurricanes
Hurricanes
Hurricanes
Swordfish and
Albacores
Swordfish and
Albacores

(Compiled from Operation Records Books, S.D. 225's etc)

APPENDIX V

LOCATION OF UNITS ADMINISTRATIVELY AND/OR OPERATIONALLY CONTROLLED BY AIR HEADQUARTERS, WESTERN DESERT (ISSUED BY A.H.Q./A.A.H.Q., W.D.)

I As at 27/10/41. II P.M. 17/11/41. III 22/11/41. IV 11/12/41. V 25/12/41.
VI 7/1/42. VII 16/1/42.

I LOCATION OF A.H.Q. W.D. UNITS AS AT 27.10.41.

(A)

Formation or Unit	Location	Remarks
Air Headquarters, W. Desert	Maaten Bagush	
Headquarters, 261 Wing	Maaten Bagush	Medium Bomber
Headquarters, "B" Wing	L.G. 16	Medium Bomber
Headquarters, 262 Wing	L.G. 12	Fighter Wing
Adv.H.Q., 257 Wing	L.G. 20	Heavy Bombers
Headquarters, 258 Wing	L.G. 110	Fighter Wing
Headquarters, 253 Wing	L.G. 75	Army Co-op.Wing
Headquarters, "F" Wing	L.G. 12	Fighter Wing - allotment of number is awaited.

Squadrons

No. 1 Squadron, S.A.A.F.	L.G. 68	Adv. Party on L.G. 110
No. 2 " S.A.A.F.	L.G. 101	" " " " "
No. 3 " R.A.A.F.	L.G. 102	" " " " "
No. 11 " "	L.G. 104	Fighter Bomber
No. 12 " S.A.A.F.	L.G. 24	
No. 21 " S.A.A.F.	L.G. 21	
No. 24 " S.A.A.F. (Detachment)	L.G. 17	To proceed to Shandur and re-arm with Boston A/C.
No. 33 " "	L.G. 10	
No. 37 " "	L.G. 104-5-6	Fuelling Hy. Bomber
No. 38 " "	L.G. 104-5-6	" " "
No. 45 " "	L.G. 16	
No. 55 " "	L.G. 17	
No. 60 " (Detachment)	L.G. 16	P.S.U.
No. 70 " "	L.G. 104-5-6	Fuelling Hy. Bomber
No. 108 " "	L.G. 104-5-6	" " "
No. 112 " "	L.G. 102	Adv. Party on L.G. 110
No. 113 " "	L.G. 15	Fighter Bomber
No. 148 " "	L.G. 104-5-6	Fuelling Hy. Bomber
No. 208 " "	L.G. 10	
No. 229 " "	L.G. 12	
No. 238 " "	L.G. 12	
No. 250 " "	L.G. 13	
No. 451 " R.A.A.F.	L.G. 11	Part of Squadron located at L.G. 75.
R.N. Fighter Squadron	L.G. 13	

Under Administrative Control of Air Headquarters, W. Desert

No. 826 Squadron	L.G. 15	Night Bombers
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Miscellaneous Flying Units

Strategical Recce Unit	L.G. 17
No. 1 Air Ambulance Unit (3 D.H. 86's)	L.G. 17

/Operational

Operational Ground Units

No. 2 Armoured Car Coy.	Maaten Bagush	2 Sects att. 258 Wing at L.G. 110 - 2 Sects at M. Bagush to be att. 29th Ind. Inf. Brigade Group.
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Maintenance Units, etc.

No. 124 M.U. (A.A.P.) Dumps at Burg-El-Arab, Fuka, Dhaba &	Fuka Maaten Bagush	
No. 121 M.U. (A.A.P.) Dumps at No. 1 Forward Base, No. 2 Forward Base & F.S.D. 29	Charing Cross	
No. 51 R.S.U.	Quasaba (L.G. 11)	
No. 31 A.S.P.	Quasaba (L.G. 11)	
No. 53 R.S.U.	L.G. 18	
No. 33 A.S.P.	L.G. 17	
No. 5 S & T. Col. (1, 2, 3 & 4 Sections)	Abu Haggag	
No. 6 S & T. Col. (1, 2, 3 & 4 Sections)	Kilo 37, West of Maaten Bagush	
No. 235 A.M.E.S.	Tobruk	
No. 216 A.M.E.S.	Mersa Matruh	
No. 257 A.M.E.S.	Dhaba	
No. 263 A.M.E.S.	Sidi Barrani	
P C.	Sidi Barrani	
No. 21 M.R.S.	Fuka	
R.A.F. Detachment	Mersa Matruh	
R.A.F. Detachment	Tobruk	
No. 17 W.O.U. (No. 1 Section) (No. 2 Section)	Sidi Barrani Attached 258 Wing	
No. 14 W.O.U. (One Section)	Attached 17 W.O.U.	
No. 1 Field Sect. W.I.U.	Sidi Barrani Area, Communications through 258 Wing.	
High Speed Launch 110	Mersa Matruh	Will be replaced by H.S.L. 121 within 14 days.
No. 2 C.R.E. (Aerodromes)	Maaten Bagush	All Major Services.
D.C.R.E. (Major Tolhurst) G.E. (Capt. Wood)	L.G. 05) L.G. 05)	Minor Services in Barrani area.
D.C.R.E. (Major Kassell)	Maaten Bagush	Minor Services in Area Matruh to Fuka.
G.E. (Lieut. Routley)	c/o C.R.E. No. 61 Dhaba	Minor Services in Dhaba Area.

/G.E.

G.E. (Capt. Hutchinson) Burg-El-Arab Minor Services in Rear Area.

Re-fuelling Parties L.G. 05, 07, & L.G. 109

H.Q., No.4 Air Formation Signals Maaten Bagush.

(B) GROUPING OF UNITS

It is notified that Units at present in the Western Command and those expected to join in the near future will be grouped as follows:-

258 Wing (Fighters) - Officer Commanding, Group Capt. Cross

Nos. 1,2,3,94, 238 and 274 Squadrons.

262 Wing (Fighters) - Officer Commanding, Wing Cdr. Rosier

Nos. 4, 80, 112, 229, 250 and 260 Squadrons.

"F" Wing (Fighters) - Officer Commanding, Wing Cdr. Fenton

Nos.30, 33, R.N.(Hurricanes & Martlets) and R.N.(Fulmar) Squadrons. (Last doubtful).

261 Wing (Medium Bombers) - Officer Commanding, Col. Wilmot, S.A.A.F.

Nos. 11^x, 12, 21 and 113^x Squadrons, (Also Strategical Reconnaissance Unit, 60 Squadron detachment, and 24 Squadron for administration only).

^x These Units 'are cannon fighter Units'.

"B" Wing (Medium Bombers) - Officer Commanding, Group Capt. Beamish

Nos.14, 45, 84 and Free French Squadrons.

Units under direct Operational Control of A.H.Q. W.D.

826 Squadron, 272 Squadron, Strategical Reconnaissance Unit, 60 Squadron detachment, 24 Squadron, Bomber Transport Squadron.

No.253 Wing - Officer Commanding, Wing Comdr. Charles

Army Co-operation Squadrons allotted to Army Formations

451 Squadron allotted to 13th Corps.

208 Squadron allotted to Armoured Corps.

237 Squadron in reserve.

Formation Units operating Western Desert Area

Advanced 201 Group - 39 Squadron detachment, 203 Squadron detachment.

Advanced 257 Wing - (Heavy Bombers) - 70 Squadron detachment.

/ Units

Units as stated below are earmarked for Landing Grounds and Sites as stated. Where the approximate date of arrival is known it is stated in the third column.

	<u>L. G.</u>	<u>E. T. D. Arrival</u>
<u>Fighter Squadrons</u>		
No. 4 Squadron, S.A.A.F.	L. G. 101	No date.
No. 80 "	L. G. 103	21.10.41.
No. 272 "	L. G. 115	No information.
No. 274 "	L. G. 103	24.10.41.
No. 30 "	L. G. 102	26.10.41.
No. 94 "	L. G. 103	26.10.41.
No. 260 "	L. G. 115	No date.
<u>Medium Bombers</u>		
No. 11 Squadron	L. G. 116	From L. G. 104 no date.
No. 14 "	L. G. 116	Grd. Party 22.10.41.
Free French Squadron	L. G. 117 (09)	No date. Using 09 pending completion of 117.
No. 84 Squadron	L. G. 116	No information.
<u>Adv. H.Q. 201 Group</u>	L. G. 16	No date.
<u>Adv. 257 Wing</u>	L. G. 20	From L. G. 16 no date.
<u>Army Co-operation</u>		
No. 237 Squadron	L. G. 10	27.10.41.
<u>Communication Transport</u>	L. G. 115	No information
<u>Formation Units from 201 Group</u>		
No. 39 Squadron (Detachment)	L. G. 16	No date.
No. 203 " "	L. G. 16	No date.
<u>Ground Units</u>		
No. 32 A.S.P.	Burg-El-Arab	20.10.41.
No. 54 R.S.U.	Burg-El-Arab	20.10.41.
No. 17 W.O.U. (No. 2 Section)	L. G. 110	No date.
No. 22 M.R.S.	Birkhamsa	No date.
No. 4 M.H.M. W/T Unit	Maaten Bagush	22.10.41.

APPENDIX V contd.

II LOCATION OF SQUADRONS UNDER A.H.Q. W.D'S CONTROL

AT P.M. 17/11/41

	<u>Aircraft</u>	<u>Advanced L.G. at</u>	<u>Rear</u>	<u>Base</u>
No.258 Wing (Fighter Wing)		Bir Khamisa	-	-
No.262 Wing "		L.G. 111	L.G. 111	-
No.269 Wing "		-	-	L.G. 12
No.3 S.A. Wing (M.B.Wing)		L.G. 76	Bagush	-
No.270 Wing "		L.G. 75	"	-
No.253 Wing with Ad.A.H.Q.W.D. (Bir Khamisa)				
No.1 S.A.A.F. Sqdns.	Hurricanes	L.G. at Bir Khamisa	L.G. 130	L.G. 101
No.2 "	Tomahawks	"	L.G. 110	"
No.3 <i>R.A.F.</i>	Tomahawks	"	"	L.G. 102
No.4 <i>S.A.F.</i>	Tomahawks	"	"	L.G. 101
No.8 R.A.F. Sqdns.	Blenheims	L.G. 17	L.G. 17	L.G. 17
No.11 "	Blenheims	L.G. 76	L.G. 116	L.G. 116
No.12 S.A.A.F. Sqdn.	Marylands	"	L.G. 24	L.G. 24
No.14 R.A.F. "	Blenheims	L.G. 75	L.G. 15	L.G. 15
No.21 S.A.A.F.	Marylands	L.G. 76	L.G. 21	L.G. 21
No.24 "	Bostons	L.G. 112	L.G. 17	L.G. 17
No.30 R.A.F.	Hurricanes	L.G. 05	L.G. 102	L.G. 102
No.33 "	Hurricanes	L.G. 108	L.G. 108	L.G. 108
No.37 "	Wellingtons			Shallufa
No.38 "	"			"
No.39 " (detach)	Marylands/ Beauforts G.R.	L.G. 16	-	-
No.45 "	Blenheims	L.G. 75	L.G. 16	L.G. 16
No.55 "	Blenheims	L.G. 65	L.G. 17	L.G. 17
No.60 S.A.A.F. (detach)	Marylands	L.G. 16	L.G. 16	L.G. 16
No.70 R.A.F.	Wellingtons	L.G. 60	"	Kabrit
No.80 "	Hurricane- bombers	L.G. at Bir Khamisa	L.G. 111	L.G. 103
No.84 "	Blenheims	Amirya		

	<u>Aircraft</u>	<u>Advanced</u>	<u>Rear</u>	<u>Base</u>
No. 94 S.A.A.F.	Hurricanes	L. G. at Bir Khamsa	L. G. 109	L. G. 103
No. 108 R.A.F. Sqdn	Wellingtons	L. G. 104		
No. 112 "	Tomahawks	L. G. at Bir Khamsa	L. G. 110	L. G. 102
Free French Sqdn	Blenheims		L. G. 16	Abu Sueir
No. 113 R.A.F. Sqdn	Blenheim fighters	L. G. 108	L. G. 108	L. G. 15
No. 148 R.A.F. Sqdn	Wellingtons			Kabrit
No. 203 "	Blenheims (G. R.)	L. G. 16	-	-
No. 272 "	Beaufighters	L. G. 10	L. G. 10	L. G. 10
No. 208 "	Hurricanes	L. G. 112	L. G. 112	L. G. 10
No. 229 "	Hurricanes	L. G. at Bir Khamsa	L. G. 111	L. G. 12
No. 237(R) Sqdn	Hurricanes	L. G. 75	L. G. 75	L. G. 10
No. 238 R.A.F. Sqdn	Hurricanes	L. G. at Bir Khamsa	L. G. 111	L. G. 12
No. 250 "	Tomahawks	"	L. G. 109	L. G. 13
No. 260 "	Hurricanes	"	"	L. G. 115
No. 274 "	Hurricanes	"	L. G. 111	L. G. 103
No. 451 R.A.A.F. Sqdn	Hurricanes	L. G. 75	L. G. 75	L. G. 11
No. 826 F.A.A. Sqdn	Albacores	L. G. 15	L. G. 15	L. G. 15
R.N. (F) Sqdn	Tomahawks	L. G. 109	L. G. 109	L. G. 13
Air Ambulance Unit	Various	-	-	L. G. 10
No. 31 A.S.P.		-	-	L. G. 11
No. 32 A.S.P.		-	-	L. G. 28
No. 33 A.S.P.		Alum el Malla	-	L. G. 17
No. 51 R.S.U.		-	-	L. G. 11
No. 53 R.S.U.		-	-	L. G. 18
No. 54 R.S.U.		-	-	L. G. 28
Adv. R.S.U.		Kilo 22 Sidi Barrani	-	Matruh Road

APPENDIX V contd.

III LOCATION OF A.H.Q. W.D. W.D. UNITS AS AT 22.11.1941

	<u>Advance</u>	<u>Rear</u>	<u>Base</u>
No. 1 Squadron	L. G. 124	L. G. 124	L. G. 101
No. 2 Squadron	L. G. 122	L. G. 122	L. G. 101
No. 3 Squadron	L. G. 122	L. G. 122	L. G. 102
No. 4 Squadron	L. G. 122	L. G. 122	L. G. 101
No. 8 Squadron (detachment)	L. G. 75	-	-
No. 11 Squadron	L. G. 76	L. G. 76	L. G. 116
No. 12 Squadron	L. G. 76	L. G. 76	L. G. 21
No. 14 Squadron	L. G. 75	L. G. 75	L. G. 15
No. 21 Squadron	L. G. 76	L. G. 76	L. G. 21
No. 24 Squadron	L. G. 122	L. G. 122	L. G. 21
No. 30 Squadron	L. G. 05	L. G. 102	L. G. 102
No. 33 Squadron	L. G. 125	L. G. 125	L. G. 12
No. 37 Squadron	Medium Bomber (Re-fuelling)		
No. 38 Squadron	Medium Bomber (Re-fuelling)		
No. 39 Squadron (detachment)	L. G. 16	-	-
No. 45 Squadron	L. G. 75	L. G. 75	L. G. 103
No. 55 Squadron	L. G. 05	L. G. 17	L. G. 17
No. 60 Squadron	L. G. 16	L. G. 16	L. G. 16
No. 70 Squadron	Medium Bomber (Re-fuelling)		
No. 73 Squadron (detachment)	L. G. 102 (moving to 122-125)		
No. 80 Squadron	L. G. 128	L. G. 128	L. G. 103
No. 84 Squadron	L. G. 116	L. G. 116	L. G. 116
No. 94 Squadron	L. G. 124	L. G. 124	L. G. 103
No. 108 Squadron	Medium Bomber (Re-fuelling)		
No. 112 Squadron	L. G. 122	L. G. 122	L. G. 102
Free French Squadron	L. G. 75	L. G. 103	L. G. 103
No. 113 Squadron	L. G. 125	L. G. 125	L. G. 108
No. 148 Squadron	Medium Bomber (Re-fuelling)		
No. 203 Squadron (detachment)	L. G. 16	-	-
No. 272 Squadron	L. G. 10	L. G. 10	L. G. 10
No. 203 Squadron	L. G. 137	L. G. 137	L. G. 12
No. 229 Squadron	L. G. 123	L. G. 123	L. G. 12
No. 237 Squadron	L. G. 128	L. G. 128	L. G. 11
No. 238 Squadron	L. G. 123	L. G. 123	L. G. 12
No. 250 Squadron	L. G. 123	L. G. 123	L. G. 13
No. 260 Squadron	L. G. 124	L. G. 124	L. G. 115
No. 274 Squadron	L. G. 124	L. G. 124	L. G. 103
No. 451 Squadron	L. G. 132	L. G. 132	L. G. 11
No. 826 Squadron	L. G. 75	L. G. 75	L. G. 15
R.N.F. Squadron	L. G. 123	L. G. 123	L. G. 13
Strategical Recco. Unit	L. G. 17	-	-
No. 258 Wing	L. G. 122	-	-
No. 3 (S.A.) Wing	L. G. 76	-	-
No. 262 Wing	L. G. 122	-	-
No. 269 Wing	L. G. 12	-	-
No. 270 Wing	L. G. 75	-	-
No. 1 Air Ambulance Unit	L. G. 10	-	-
No. 46 F.S.D.	Maddalena	-	-
Adv. R.S.U.	L. G. 75	-	-
Adv. 31 A.S.P.	Maddalena	-	-

IV LOCATION OF A.H.Q. W.D. UNITS AS AT 11.12.1941

	<u>Advance</u>	<u>Rear</u>	<u>Base</u>
No. 1 Squadron	Sidi Rezegh	L.G. 134	L.G. 101
No. 2 Squadron	El Adem	L.G. 122	L.G. 101
No. 3 Squadron	El Adem	L.G. 122	L.G. 102
No. 4 Squadron	El Adem	L.G. 122	L.G. 101
No. 8 Squadron (detachment)	L.G. 75	-	-
No. 11 Squadron	L.G. 76	L.G. 76	L.G. 116 (1 Flight det. 201 Group)
No. 12 Squadron	L.G. 76	L.G. 76	L.G. 21
No. 14 Squadron	L.G. 75	L.G. 75	L.G. 15
No. 21 Squadron	L.G. 76	L.G. 76	L.G. 21
No. 24 Squadron	L.G. 130	L.G. 122	L.G. 21
No. 30 Squadron	L.G. 05	L.G. 05	L.G. 102
No. 33 Squadron	L.G. 125	L.G. 125	L.G. 107
No. 37 Squadron	Medium Bomber (Re-fuelling on	L.G. 09)	L.G. 09)
No. 38 Squadron	Medium Bomber (Re-fuelling on	L.G. 09)	L.G. 09)
No. 39 Squadron (detachment)	L.G. 16	-	-
No. 45 Squadron	L.G. 75	L.G. 75	L.G. 103
No. 55 Squadron	L.G. 05	L.G. 17	L.G. 17
No. 60 Squadron	L.G. 16	L.G. 16	L.G. 16
No. 70 Squadron	Medium Bomber (Re-fuelling on	L.G. 60)	L.G. 60)
No. 73 Squadron (detachment)	L.G. 122	-	-
No. 80 Squadron	Tobruk Sat.	L.G. 133	L.G. 103
No. 84 Squadron	L.G. 75	L.G. 75	L.G. 116
No. 94 Squadron	Sidi Rezegh	L.G. 124	L.G. 103
No. 112 Squadron	El Adem	L.G. 122	L.G. 102
Free French Squadron	L.G. 75	L.G. 103	L.G. 103
No. 113 Squadron	L.G. 76	L.G. 76	L.G. 116
No. 148 Squadron	Medium Bomber (Re-fuelling)	-	-
No. 203 Squadron (detachment)	L.G. 16	-	-
No. 272 Squadron (detachment)	L.G. 10	L.G. 10	L.G. 10
No. 208 Squadron	El Gubbi	L.G. 134	L.G. 134
No. 229 Squadron	Bu Amed	L.G. 123	L.G. 12
No. 237 Squadron	L.G. 128	L.G. 128	L.G. 122
No. 238 Squadron	Bu Amed	L.G. 123	L.G. 12
No. 250 Squadron	Tobruk Main	L.G. 123	L.G. 13
No. 260 Squadron	Sidi Rezegh	L.G. 124	L.G. 115
No. 274 Squadron	Sidi Rezegh	L.G. 124	L.G. 103
No. 451 Squadron	L.G. 128	L.G. 128	L.G. 128 (5 Aircraft at Tobruk)
No. 826 Squadron	L.G. 75	L.G. 75	L.G. 15
R.N. Squadron	Tobruk Main	L.G. 123	L.G. 13 (Martlets at Base)
Strategical Recce Unit	L.G. 17	-	-
Adv. A.H.Q. W.D.	Bu Amud	-	-
No. 258 Wing	L.G. 122	-	-
No. 3 (S.A.) Wing	L.G. 76	-	-
No. 262 Wing	El Adem	-	-
No. 269 Wing	L.G. 12	-	-
No. 270 Wing	L.G. 75	-	-
No. 46 F.S.D.	Maddalena	-	-
Adv. R.S.U.	Maddalena	-	-
Adv. 31 A.S.P.	Alam el Malla	-	-
Adv. 33 A.S.P.	Maddalena	-	-
21 M.R.S.	3 miles west of A.A.H.Q.W.D.	-	-
No. 1 F.L.G. Party	L.G. 110	-	-
No. 121 M.U.	Maddalena	-	-
F.S.D. 29	Alam el Malla	-	-

APPENDIX V contd.

V LOCATION OF A.H.Q. W.D. UNITS AS AT 25.12.41.

	Advance	Rear	Base
No. 1 Squadron	Derna	Derna	Derna
No. 2 Squadron	Msus	Msus	Msus
No. 3 Squadron	Msus	Msus	Msus
No. 4 Squadron	Msus	Msus	Msus
No. 8 Squadron (detachment)	L.G. 17	-	-
No. 11 Squadron (returning to Delta)	El Adem	L.G. 76	L.G. 116
No. 12 Squadron (S.A.)	(1 Flight detached Bu Amud	201 Group) L.G. 76	L.G. 21
No. 14 Squadron	Gambut	Gambut	Gambut
No. 21 Squadron (S.A.)	Bu Amud	L.G. 76	L.G. 21
No. 24 Squadron (S.A.)	Bu Amud	L.G. 122	L.G. 21
No. 33 Squadron	L.G. 125	L.G. 125	L.G. 107
No. 39 Squadron (detachment)	L.G. 16	-	-
No. 45 Squadron	Gambut	Gambut	Gambut
No. 55 Squadron	Tobruk	L.G. 17	L.G. 17
No. 60 Squadron (S.A.)	L.G. 16	L.G. 16	L.G. 16
No. 73 Squadron (detachment)	L.G. 134	-	-
No. 80 Squadron	Mechili	Mechili	Gazala 3
No. 84 Squadron	Gambut	Gambut	Gambut
No. 94 Squadron	Msus	Msus	Gazala 2
No. 112 Squadron	Msus	Msus	El Adem
Free French Squadron	Gambut	Gambut	Gambut
272 Squadron Detachment	L.G. 10	L.G. 10	L.G. 10
No. 208 Squadron	Trimi	Trimi	Trimi
No. 229 Squadron	Msus	Msus	Msus
No. 237 Squadron	Gambut	Gambut	Gambut
No. 238 Squadron	Msus	Msus	Gazala
No. 250 Squadron	Tobruk Main	Tobruk Main	El Adem
No. 260 Squadron	Msus	Msus	Gazala 2
No. 274 Squadron	Msus	Msus	Gazala 2
No. 451 Squadron (returning to Delta)			
No. 826 Squadron	Bu Amud	Bu Amud	Bu Amud
R.N. Sqdn	Tobruk Main	Tobruk Main	Tobruk Main
Strategical Recce. Unit	L.G. 17	-	(Martletts at Base)
No. 1 Air Ambulance Unit	L.G. 10		
No. 258 Wing	Mechili		
No. 3 S.A. Wing	Bu Amud		
No. 262 Wing	Msus		
No. 270 Wing	Gambut		
No. 121 M.U.	Tobruk		
Adv. R.S.U.	L.G. 122		
Adv. 33 A.S.P.	Tobruk		
3 F.S.D.	Tobruk		
No. 21 M.R.S.	El Duda		
510 A.M.E.S.	Bu Amud		
No. 33 A.S.P.	El Adem E.		
53 R.S.U.	El Adem E.		
M.T. L.R.U.	Gambut		
Air Transport Wing	Bu Amud		
No. 22 I.L.R.S.	Trimi		
No. 31 A.S.P.	Gambut		
No. 6 S & T Column	Tobruk		
No. 5 S & T Column	Tobruk		
Adv. A.H.Q., W.D.	Trimi		
Rear A.H.Q., W.D.	El Adem		

VI LOCATION OF A.H.Q. W.D. UNITS AS AT
7.1.1942

	<u>Advance</u>	<u>Rear</u>	<u>Base</u>
No. 1 Squadron	Derna	Derna	Derna
No. 2 Squadron	Msus	Msus	El Adem
No. 3 Squadron (moving to Msus)	Gazala 2	Gazala 2	Gazala 2
No. 4 Squadron	Msus	Msus	El Adem
No. 8 Squadron	Bu Amud	Bu Amud	Bu Amud
No. 11 Squadron	Bu Amud	Bu Amud	Bu Amud
	(1 Flight detached 201 Group)		
No. 12 Squadron (S.A.)	L.G. 21	L.G. 21	L.G. 21
No. 14 Squadron	Gambut	Gambut	Gambut
No. 21 Squadron (returning to Delta)	Bu Amud	Bu Amud	L.G. 21
No. 24 Squadron (returning to Delta)	Sidi Rezegh	Bu Amud	L.G. 21
No. 33 Squadron	Msus	Msus	Gazala 2
No. 55 Squadron	Bu Amud	Bu Amud	Bu Amud
No. 60 Squadron (S.A.)	Bu Amud	Bu Amud	L.G. 16
No. 73 Squadron (detachment)	Msus	-	-
No. 80 Squadron	El Adem	El Adem	El Adem
No. 94 Squadron	Mechili	Mechili	Gazala 2
No. 112 Squadron	Msus	Msus	El Adem
Free French Squadron	Gambut	Gambut	Gambut
No. 272 Squadron detachment	L.G. 10	-	-
No. 208 Squadron (1 Flight at Msus)	Tmini Sat	Tmini Sat	Tmini Sat
No. 229 Squadron	Msus	Msus	Gazala 3
No. 237 Squadron (moving to Delta)	Tmini	Tmini	Tmini
No. 238 Squadron	Msus	Msus	Gazala 3
No. 250 (Sudan) Squadron	Msus	Msus	El Adem
No. 260 Squadron	Msus	Msus	Gazala 2
No. 274 Squadron	Msus	Msus	Gazala 2
No. 451 (Aust.) Squadron	Sidi Azeiz	Sidi Azeiz	Sidi Azeiz
No. 826 Squadron	Bu Amud	Bu Amud	Bu Amud
R.N. Squadron	Tobruk Main	Tobruk Main	Tobruk Main
	(Martlots at base L.G. 10)		
Strategical Recce. Unit	Tmini	-	-
No. 1 Air Ambulance Unit	El Adem	-	-
No. 253 Wing	Tmini	-	-
No. 258 Wing	Msus	-	-
No. 3 (S.A.) Wing	Bu Amud	-	-
No. 262 Wing	Antelat	-	-
No. 270 Wing	Gambut	-	-
Adv. R.S.U.	Bu Amud	-	-
Adv. 33 A.S.P.	Msus	-	-
21 M.R.S. (moving to Delta)	El Duda	-	-
121 M.U.	Tobruk	-	-
Adv. A.H.Q. W.D.	Tmini	-	-
Rear A.H.Q. W.D.	El Adem	-	-
3 F.S.D.	Tobruk	-	-
510 A.M.E.S.	Mechili	-	-
520 A.M.E.S.	Tobruk	-	-
522 A.M.E.S.	Derna	-	-
220 A.M.E.S.	Benghazi	-	-
235 A.M.E.S.	Tobruk	-	-
263 A.M.E.S.	Derna	-	-
No. 33 A.S.P.	El Adem E	-	-
No. 31 A.S.P.	Gambut	-	-
No. 53 R.S.U.	El Adem E	-	-
No. 51 R.S.U.	Gambut	-	-
No. 22 M.R.S.	Main road mid-way between Benghazi and)	-	-
No. 5 S & T Column	Tobruk	-	-
No. 6 S & T Column	Benghazi (three sections at Msus).	-	-
Air Transport Wing	El Adem	-	-
M.T.L.R. U.	Gambut	-	-

APPENDIX V contd.

	Advance	Rear	Base
L.R.I.	Bu Amud		
No.4 Med.Hvy Mobile W/T Unit	El Adem		
No.216 Squadron	El Adem		
Sea Rescue Flight	El Adem		
No.1 & 2 Armd Car Coy.	Msus.		

VII LOCATION OF UNITS A.H.Q., W.D. AS AT 16.1.42.

	<u>Advance</u>	<u>Rear</u>	<u>Base</u>
No. 1 Squadron	Derna	Derna	Derna
No. 2 Squadron	Antelat.	Msus	El Adem
No. 3 Squadron	Antelat	Gazala 2.	Gazala
No. 4 Squadron	Benina	Benina	El Adem.
No. 11 Squadron	Bu Amud	Bu Amud	Bu Amud
	1 Flight Detached 201 Group.		
No. 12 Squadron S.A.A.F.	L.G. 21	L.G. 21	L.G. 21
No. 14 Squadron	Gambut	Gambut	Gambut
No. 21 Squadron	Bu Amud	Bu Amud	L.G. 21
No. 33 Squadron	Antelat	Antelat	Antelat
No. 60 Squadron S.A.A.F.	Tmimi	Tmimi	Tmimi
No. 80 Squadron	El Adem	El Adem	El Adem
No. 94 Squadron	Antelat	Antelat	Gazala 2
No. 112 Squadron	Msus	Msus	El Adem
No. 272 Squadron	L.G. 10	-	Edku
Free French Squadron	Gambut	Gambut	Gambut
No. 208 Squadron	Tmimi Sat.	Tmimi Sat.	Tmimi Sat.
No. 229 Squadron	Antelat	Antelat	Gazala 3
No. 237 Squadron	Tmimi	Tmimi	Tmimi
No. 238 Squadron	Antelat	Antelat	Gazala 3
No. 250 Squadron	Antelat	Antelat	El Adem
No. 260 Squadron	Antelat	Antelat	Gazala 2
No. 274 Squadron	Antelat	Antelat	Gazala 2
No. 451 Squadron	Sidi Azeiz	Sidi Azeiz	Sidi Azeiz
No. 826 Squadron	Bu Amud	Bu Amud	Bu Amud
R.N.F. Squadron	Tobruk M.	Tobruk M.	Tobruk M.
R.N.F. Squadron	Tobruk M.	Tobruk M.	Tobruk M.
	Martletts at Base - L.G. 10		
Strat/R. Unit	Tmimi	Tmimi	Tmimi
No. 1 Air Ambulance Unit	El Adem	-	-
No. 253 Wing	Tmimi	-	-
No. 258 Wing	Antelat	-	-
No. 3 (SA) Wing	Bu Amud	-	-
No. 262 Wing	Antelat	-	-
No. 270 Wing	Gambut	-	-
Advanced R.S.U.	Bu Amud	-	-
Advanced 31 A.S.P.	Antelat	-	El Adem
No. 21 M.R.S.	El Duda	-	-
No. 121 M.U.	(Benghazi	-	-
	(Msus	-	Tobruk
Advanced Air H.Q. W.D.	Tmimi	-	-
Rear A.H.Q. W.D.	El Adem	-	-
No. 3 F.S.D.	Tobruk	-	-
No. 510 A.M.E.S.	Benghazi	-	-
No. 53 R.S.U.	El Adem E	-	-
M.T. L.R.U.	Gambut	-	-
Air Transport Wing	Tmimi	-	-
No. 22 M.R.S.	Agedabia	-	-
No. 31 A.S.P.	Gambut	-	-
No. 6 S. and T. Column	Benghazi	(3 Section - Msus)	-
No. 5 S. and T. Column	Tobruk	-	-
No. 520 A.M.E.S.	Tobruk	-	-
L.R.I.	Msus	-	-
No. 522 A.M.E.S.	Derna	-	-
No. 220 A.M.E.S.	Benghazi	-	-
No. 51 R.S.U.	Gambut	-	-
No. 235 A.M.E.S.	Tobruk	-	-
No. 4 Heavy Medium Mobile W/T Unit	El Adem	-	-
No. 216 Squadron	El Adem	-	-
No. 208 Squadron Detachment	Antelat	-	-
No. 216 Squadron Detachment	El Adem	-	-

APPENDIX W

EMPLOYMENT OF AIR TRANSPORT DURING THE WESTERN DESERT OPERATIONS NOVEMBER 1941 TO FEBRUARY 1942

COMPOSITION

1. Air Transport Wing Headquarters (Note A)
No. 216 Squadron 16 I.E. Bombay
No. 117/31 Squadrons 12 I.E. DC2 (Note B)
No. 1 Australian Air Ambulance Unit 3 DH 86's
South African Air Ambulance 1 Lodestar
5 DH 86 aircraft fitted to carry stretchers (Note C)
Assistance from British Airways
A.H.Q. W.D. Communication Flight about 12 2-seater
aircraft of various types.

Note A. Owing to a shortage of staff Air Transport Wing H.Q. was formed as a nucleus and therefore had to function as part of Air Headquarters.

Note B. This composite Squadron was made of Squadron H.Q. and one flight of 117 Squadron plus a flight of DC 2's from 31 Squadron India.

Note C. These aircraft were taken over from British Airways and operated by 216 Squadron without any additional crews or maintenance personnel.

OPERATIONS

2. The operations fall into the following main categories:-

- (i) Communication and air despatch letter services.
- (ii) Movements of passengers and stores.
- (iii) Supply dropping
- (iv) Evacuation of casualties.

AIR DESPATCH LETTER SERVICE AND COMMUNICATIONS

3. Operated by Western Desert Communication Flight assisted by British Airways. The Communication Flight worked from Advanced Air Headquarters and carried liaison officers and other passengers to the two Corps Headquarters Detachments, such as Reidforce and Rear Headquarters. British Airways organised a daily air service from CAIRO to Advanced Air Headquarters carrying Army and Air Force liaison officers, official mails, other urgent passengers and a small quantity of really important freight when space was available.

CONVEYANCE OF PASSENGERS AND STORES

4. Was primarily carried out by Nos. 216 and 117/31 Squadrons assisted by British Airways when occasion demanded. The plan was to run on a basis of scheduled services, backed up by a small pool under control of the Air Headquarters, Western Desert. As the DC 2's were more suitable for operations in the back areas, they were employed exclusively on scheduled runs between the DELTA and the rear of the battle area. No. 216 Squadron (Bombay), operated almost wholly behind the Western Desert Force itself. This Unit maintained a detachment at Squadron strength at MA'ATEN BAGUSH.

5. On more than one occasion British Airways were asked to augment the resources of the air transport squadrons and on one such occasion conveyed approximately 10 tons of 35 millimetre ammunition from PORT SUDAN to Advanced 8th Army Headquarters in little more than 48 hours.

/SUPPLY

SUPPLY DROPPING

6. Supply dropping operations were only attempted once and then unsuccessfully. The failure was attributed to extreme darkness and the fact that ground signals were either not exposed or not recognised. In this connection, the vulnerability of Bombay aircraft, the small number of passenger aircraft available and the fact that the enemy fighter force was never completely out of action, made it impossible to carry out supply dropping operations in daylight.

EVACUATION OF CASUALTIES

7. Evacuation of casualties was carried out by Air Ambulances and also by returning air transports. Generally speaking, casualties were sent in motor ambulances to recognised air transport landing grounds under arrangements which were mutually agreed between the Air Transport Wing and the D.M.S. On one occasion air ambulances were able to use an advanced landing ground close to a casualty clearing station. This latter arrangement cut out a motor ambulance journey and greatly eased the evacuation of seriously wounded men, but meant that unprotected and unarmed aircraft had to be flown very close to the actual battle area. (One of them was shot down and two others damaged by enemy fighters).

STATISTICS

8. During the period 18th November to 13th January, the following loads were carried:-

Passengers	2,390
Casualties evacuated	1,130
Freight carried	1,000,000

(Signed) B.H.C. RUSSELL

Group Captain
Director of Movements

12.2.42.

BRIEF NOTES ON THE EMPLOYMENT OF AIR TRANSPORT DURING
WESTERN DESERT OPERATIONS, NOVEMBER 1941 - FEBRUARY, 1942.

(Supplementary to the Interim Report submitted by Group Captain B.H.C. RUSSELL)

FORMATION:- The fact that the unit was not formed until immediately prior to commencement of the 'push' militated against smooth working in the early stages.

PURPOSE. - The main functions of the Wing were:-

- (i) Movements of passengers and stores.
- (ii) Evacuation of casualties.

(On one occasion an unsuccessful attempt was made at supply dropping).

BRIEF OUTLINE OF OPERATIONS - From mid-November to December 24th, the Unit was located at Maaten Bagush and the following regular daily services operated:-

B.O.A.C. and D.C.2 services from the Delta to L.G.122 with intermediate stops (later extended to L.G.138 BU AMUD).

Bombay service from MAATEN BAGUSH to L.G.110 via MERSA MATRUH and L.G. 75.

Bombay service from MAATEN BAGUSH to GIARABUB via MERSA MATRUH (bi-weekly), and extended to L.G. 125 from December 5th.

From November 30th, the D.C2 service was extended in order to release Bombay aircraft for tactical use. Frequent special calls were made on these aircraft for the carriage of urgent operational stores, ferry and fighter pilots, casualties etc. and valuable service was rendered. For example, on one occasion twenty-two tons of tank ammunition and petrol urgently required was carried from MERSA MATRUH to L.G.'s 138 and 134 by 1030 hours though first notification of requirements was received only at 1430 hours the previous day.

When circumstances permitted a night Bombay service operated between L.G.'s 122 and 138 and Tobruk while the latter place was still invested.

From December 25th to February 4th the Wing was based at El Adem and B.O.A.C. Service was extended to Tmimi and D.C.2 service to El Adem.

On January 1st a daily Bombay service operated between Tobruk, Msus and Benina and was later extended to Antelat.

The Mersa Matruh, Giarabub, L.G.125 Service was cancelled on January 19th.

The Wing operated from Mersa Matruh from February 5th to 9th returning to Maaten Bagush on February 10th.

GENERAL:-

- (i) Aircraft - Bombay aircraft proved suitable for work and conditions encountered. By the use of rope fittings they were converted to enable the carriage of full loads of stretchers. D.C.2 Engines were badly affected by sand through operating without air cleaners and as a result their general serviceability was not good. Lack of spare parts also adversely affected the serviceability. D.H.86 engines, too, are commencing to give trouble on account of the lack of air filters. It is desirable that air transport aircraft should be able to use petrol of the same grade as that used by operational aircraft.

/Dimensions

Dimensions of doors are frequently a determining factor in the loading of bulky freight and should be given consideration when aircraft are being selected for transport work.

Ambulance aircraft should take standard stretchers to obviate unnecessary moving of patients and to avoid delays in loading. (Most of these aircraft have now been modified to take standard service stretchers).

(ii) Stores - Destinations should be clearly marked, weight stated and degree of priority indicated. (This is most important). Trouble sometimes occurred through stores being dumped on aerodromes without prior notification and without labels. The importance of proper clearance of stores from aerodromes by consignees is stressed. In this connection Control Tents on each Landing Ground regularly used proved valuable.

(iii) Passengers - The booking of Army personnel only through Army Movements proved most satisfactory.

In the case of non-urgent Air Force personnel it is felt that alternative means of transport could be used more extensively. A Police Checking Post in close proximity to a Transit Camp should offer suitable opportunity to provide road transport for odd non-urgent postings etc.

Where scheduled services were unable to cope with traffic, passages were frequently arranged on Bomber aircraft returning to the Delta and probably more use could be made of these aircraft, if Air Transport Wing were notified of impending departures from the more important centres.

The number of Ferry Pilots East-bound and the number of leave-Pilots West-bound, could be substantially reduced if arrangements were made for pilots to collect aircraft on the termination of their leave in the Delta area.

At El Adem, considerable inconvenience resulted from the fact that there was no provision for the many personnel who had to remain overnight on the Landing Ground, and, if practicable the establishment of a Transit Camp in close proximity to the aerodrome is desirable in centres of this type.

The efficiency of the service would be improved by a Control Centre in the Delta in easy touch with bases of operating Squadrons as well as Control Centres at such points as Advanced Air Headquarters, Rear Army etc.

Rear Air Headquarters proved a suitable location for the Wing itself. The value of scheduled services is emphasised but an Aircraft Pool is essential to meet special calls for carriage of stores and passengers. In this connection the consistently excellent service rendered by 216 Squadron and No. 1 Air Ambulance Unit is acknowledged.

Urgent calls were invariably met with most commendable promptness and adverse weather conditions and other difficulties were overcome in a manner that says much for the ability and keenness of the personnel concerned.

(Signed) FLEMING P. WG.CDR.

Officer Commanding, Air Transport Wing, Royal Air Force, Middle East

(Appendix to Wg.Cdr. Gordon Finlayson's Report on "Crusader")

APPENDIX "X"

NON FLYING UNITS UNDER A.H.Q. W.D. AS LOCATED
PRIOR TO THE OFFENSIVE

H.Q. 124 Maintenance Unit (Fuka)

Dumps at:- Burg el Arab, Daba, Fuka

H.Q. 121 Maintenance Unit (Charing Cross)

Dumps at:- Charing Cross, 29 F.S.D., 30 F.S.D.,

No.2 Forward Base, No.2 Forward Base (detachment only).

51 Repair and Salvage Unit (L.G. 10 Gerawla)

31 Air Stores Park (" ")

53 Repair and Salvage Unit (L.G. 18 Fuka South)

33 Air Stores Park (" ")

54 Repair and Salvage Unit Burg el Arab

32 Air Stores Park " "

Advanced repair and Salvage section (Charing Cross)

No.5 Supply and Transport Column (Abu Haggag)

(Five Sections).

No.6 Supply and Transport Column (Maaten Bagush)

(Four Sections).

No.21 Medical Receiving Station (Fuka)

No.22 " " " (Khasma)

No.216 A.M.E.S. Mersa Matruh

No.235 A.M.E.S. Tobruk

No.257 A.M.E.S. Daba

No.263 A.M.E.S. Sidi Barrani

No.17 W.O.U. Bir Khamsa

No.1 Field Section W.I.S. Bir Khamsa

Parachute and Cable Unit Maaten Bagush

Nos.1. 2. 3. and 4 Armoured W/T Units (Hqs. No.253 (A.C.) Wing)

Detachment of 121 M.U. (Tobruk)

(See, also, Appendix V for later dates).

Authority: A.H.B.
11J6/7/2

APPENDIX Y

DISTRIBUTION OF RESPONSIBILITY OF A.S.P's
AND R.S.U's UNDER A.H.Q., WESTERN DESERT.

- | | | | |
|-----|-------------------------|----------------|--|
| (a) | No. 31 A.S.P. | To hold:- | 50% Hurricane equipment
100% Blenheim "
100% Beaufighter " |
| (b) | No. 32 A.S.P. (ex Iraq) | To hold:- | Equipment for communication
Aircraft. Albacore and Swordfish. Beaufort.
Small percentage of Wellington spares.
L.T. spares. |
| (c) | No. 33 A.S.P. | To hold:- | 50% Hurricane equipment
(including A.C. Hurricanes).
100% American types. |
| (d) | No. 51 R.S.U. | To cater for:- | 50% Hurricanes
100% Blenheims
100% Beaufighters |
| (e) | No. 55 R.S.U. | To cater for:- | 50% Hurricanes
(including A.C. Hurricanes)
100% American types |
| (f) | No. 54 R.S.U. (ex Iraq) | To cater for:- | Communication Aircraft
Albacore and Swordfish
Beauforts
Wellingtons (to a minor
degree)
M.T. repairs. |

Authority: A.H.B. IIJ6/7/2.

APPENDIX Z

The Enemy Supply System in Libya (Diagram attached)

(Extract H.Q. Eighth Army D.I.S. No.46, November 10th, 1941.
Attached as Appendix B to H.Q. R.A.F., M.E., W.I.S. No.74)

General

Information recently received throws new light on the enemy supply situation. It is difficult to distinguish between the German and Italian systems of supply, except in the case of certain dumps that are known to belong exclusively to one or the other. For the rest it must be assumed that, owing to the limited supply routes available, some joint plan is followed on the lines of communication and that the rear supply system is likely to be similar for both armies, although each maintains its individual scale of rations and equipment and replenishes from its own dumps.

Benghazi to Derna

Benghazi corresponds to "railhead" for Cyrenaica, and received supplies either (a) by sea or (b) by road from Tripoli.

(a) Supplies of all kinds are brought by fast convoy from Italy and Tripoli, and in the case of food, ammunition and petrol are trans-shipped on to small steamers for Benghazi. These coastal steamers are reported to be the only shipping that now discharges at Benghazi.

(b) All tanks and M.T. are driven round by road from Tripoli and sent forward from Benghazi. In some cases stores of food, ammunition and petrol are driven in convoy from Tripoli to the forward dumps without re-loading.

In general, however, the chain of supplies for Cyrenaica starts in Benghazi.

From there supplies are taken to the forward dumping areas, using Derna as a staging point, on the following general system:-

Day one	Benghazi to Derna (Southern route)
Day two	Derna - Forward Dumps - Derna
Day three	Rest and Maintenance at Derna
Day four	Derna - Benghazi (Northern route).

Travelling time is from 0600 - 1600 hours daily, and the supply columns use the main coastal road. On the Eastward journey, when loaded, the Southern road between Barce and Giovanni Berta is used, and on the Westward (empty) journey, the Northern. This procedure is dictated largely by the poor condition of the Northern road, along which the bridges over the wadis have in many cases not been repaired.

The following supply units are located in or near Benghazi:-

- (a) Main Petrol Depots.
- (b) Main Ford Depot and Ration Delivery Offices.
- (c) Munition stores.
- (d) M.T. Repair Workshops.
- (e) M.T. Collecting Stations and Spare Parts Stores.

/Derna - Gazala.

Derna - Gazala.

Derna is the staging point on the supply route. It is thought that some supply columns by-pass the town by using the road Giovanni - Berta - Martuba, but most of the regular columns pass through it. Derna is known to be the H.Q. of at least one German Supply Unit, and as will be seen from para.2, three nights out of four are spent in Derna on the normal supply run. There are no large quantities of stores in Derna, but west of the town on the main road is a large M.T. dump and repair centre and there are also several M.T. workshops in the town.

Over and above the supplies brought by road, small quantities of stores, petrol and ammunition are known to be brought to Derna (and on a small scale to Gazala) by wartime vessels from Benghazi.

Delivering Point Area (Gazala - Tobruk).

The forward delivery points for all stores are situated along the road between Gazala and Tobruk. The following locations are taken from captured documents, as amended by air photographs and recent P.W. statements.

Kms. west of Tobruk.

- 43.6 Munitions Delivery Point and Ordnance Store.
- 42.5 Workshop Company.
- 42 Field Post Office.
- 41.6 Expeditionary Force Institute Store.
- 41.6 Field Bakery Company.
- 41 Petrol Delivery Point.
- 38.6 Workshop Company.
- 38 Spare Parts and Tyre Store.
- 35.6 Ration Dump and Delivery Point.
- 31.4 Munitions Delivery Point.
- 28 Munitions Delivery Point and Ordnance Store.

The L. of C. supply system ends here, and Corps and Divisional Supply Units take over the responsibility of onward delivery.

Operational Dumping Area (Bu Amud to Frontier).

Any Dumps forward of Gazala - Tobruk area are probably laid down under formation arrangements, and sometimes shifted according to the needs of the moment.

CHAIN OF ENEMY SUPPLY IN LIBYA.

	Munitions.	Petrol.	Rations.	TRIPOLI.
By Sea	.	.	.	
By Road	.	.	.	
	.	.	.	
	Store.	Dump.	Store.	BENGHAZI.
Supply	.	.	.	
Columns.	.	.	.	
	.	.	.	
		Staging Point.		DERNA.
Supply	.	.	.	
Columns.	.	.	.	
	.	.	.	
	Delivery Point	.	.	43.6 Kms. west of Tobruk.
	.	.	.	
	.	.	.	
	.	Delivery Point.	.	41 Kms. west of Tobruk.
	.	.	.	
Unit	.	.	.	
Supply	.	.	.	
Transport.	.	.	Delivery Point.	35.6 Kms. west of Tobruk.
	.	.	.	
	.	.	.	
	.	.	.	
	.	.	.	

Forward Operational Dumps

(Bu Amud - Frontier Area).

APPENDIX A(i)

PHOTOGRAPHS TAKEN IN LIBYA BETWEEN 5.10.41. and JAN. 1942.

Taken by S.R.U.

- 16.10.41 GAZALA 2 (useless as bad quality).
- 16.10.41. DERNA L.Gs. (part cover), Harbour (oblique).
MECHILI L.G. (part cover), MARTUBA Main and W.,
BIR HACHEIM, EL GOBI.
- 18.10.41. BIR EL GSEIR, BIR EL GOBI, BIR HACHEIM Area.
- 18.10.41. MARTUBA W. and Main (part cover).
- 20.10.41. TMIMI L.G. (part cover), GAZALA inlet (poor).
- 20.10.41. APPOLONIA, DERNA Town and L.G. (part cover), (stained prints).
- 24.10.41. BARCE Hospital, BENINA (bad quality),
- 24.10.41. (poor quality), BIR HACHEIM, EL ADEM, SIDI RESEGH,
GASR EL ARIYD, CAPUZZO.
- 19.10.41. SOLUCH, AGEDABIA (bad quality), Aerodrome (part cover).
EL BREGA and AGHEILA road between.
- 22.10.41. EL ABIAR, EL REGIMA, BENINA Aerodrome part cover,
BENGHASI, BERKA Sat., SOLUCH, AGEDABIA, (L.G. not covered).
- 23.10.41. MARTUBA W. part cover.
- 22.10.41. GIOVANNI, BERTA, SIDI RAFA, LUIGI RAZZA.
- 25.10.41. (Bad quality), DERNA L.G. (part cover), MARTUBA W.
(part cover), BIR HACHEIM (part cover).
- 23.10.41. (Bad quality), GAZALA 1, 2, BIR HACHEIM, BIR EL GOBI,
BIR EL GSIER.
- 24.10.41. BIR EL BAHEIRA, MENASTIR L.G.
- 25.10.41. BENGHASI TOCRA Road, BERKA Sat. AGEDABIA, SIDI AMED EL
MEGRUM, ANTELAT.
- 27.10.41. GAZALA 2, 1 GAZALA TMIMI Road, TMIMI L.G. (small scale)
obliques).
- 27.10.41. BENINA (Cloud) to Grotto of LETE.
- 29.10.41. SIDI REZEGH, GASR EL ARID, SIDI AZEIZ, CAPUZZO N.
- 31.10.41. BIR HACHEIM.
- 3.11.41. LAMLUDA Crossroad, GIOVANNI BERTA, DERNA L.G. (part cover),
area East of TOBRUK.
- 4.11.41. BERKA Sat. BENGHASI.
- 7.11.41. Area near DERNA, MARTUBA W. and Main, TMIMI.
- 7.11.41. BIR EL GOBI, BIR HACHEIM, GAZALA Area.
- 10.11.41. EL GOBI, BIR HACHEIM, MECHILI.
- 12.11.41. APPOLONIA, CIRENE, EL FAIDA, GIOVANNI BERTA, MARAUA, DERNA.

- 12.11.41. BIR HACHEIM.
- 15.11.41 BERKA Sat. BENGHASI, BENINA, BECHILI.
- 16.11.41. AGEDABIA, EL ERGH (poor).
- 19.11.41. BENGHASI (part cover), BERKA Main, Sat., BARCE (part cover), BENINA (part cover), BIR HACHEIM (cloud).
- 24.11.41 MARTUBA W. (part cover), Main (part cover), MECHILI fort.
- 24.11.41. BENGHASI, BERKA (part cover) BERKA Sat. (part cover), BARCE (cloud) BENINA (cloud) MECHILI, MSUS.
- 25.11.41. MECHILI Fort, DERNA L.Gs, MARTUBA W. (part cover).
- 24.11.41. BENINA (part cover) BENGHASI, BARCE (part cover).
- 25.11.41. GAZALA Area, (U) 973884 - 35684412, Libyan grid, purple grid.
- 25.11.41. MSUS, BENINA (part cover), BERKA Sat. (no stereo cover), BENGHASI, MECHILI Fort.
- 25.11.41. BIR HACHEIM, TMIMI (part cover), GAZALA I (part cover).
- 28.11.41. BENINA, BERKA Main, BERKA Sat. (part cover).
- 29.11.41. MARTUBA W. (part cover), Main (poor quality) DERNA (E. of area not fully covered), BIR HACHEIM.
- 30.11.41. GAZALA N. and area around, BIR HACHEIM (part cover) MECHILI Fort, BARCE (part cover).
- 31.11.41. BIR HACHEIM Area.
- 2.12.41. AGEDABIA L.Gs. (part cover only for both), AGHEILA, RAS EL AALI, Marble Arch L.G. (part cover).
- 3.12.41. BENINA, BENGHASI, BARCE (part cover) MECHILI Fort.
- 5.12.41. DERNA HARBOUR and Town, MARTUBA W. (part cover).
- 6.12.41. BIR HACHEIM Area, MARTUBA W. (part cover), GAZALA No.1 (part cover).
- 6.12.41. EL ABIAR ammunition store, BENINA (part cover), BERKA (part cover), BERKA Sat. (part cover), BENGHASI Harbour (part cover).
- 11.12.41. BENGHASI (harbour not covered), DRIANA, GOT BERSIS L.G., TOCRA, BARCE (part cover), TECNIS, MARAUA.
- 10.12.41. MARTUBA, 1, 3 and 4, TMIMI, GAZALA I, GAZALA 2 (part cover), GAZALA 3 (part cover).
- 16.12.41. MECHILI Fort, BENINA (poor quality), BERKA Main (part cover), BERKA Sat, AGEDABIA E. and W. (both part cover only).
- 12.12.41. GIOVANNI BERTA, DERNA Town, Harbour and part of L.Gs., parts of DERNA GAZALA road.
- 15.12.41. MARTUBA W. (part cover), BENINA (part cover), EL GUARSCIA, EL FAIDA.
- 23.1.42. MARSA AUEGIA, NOFILIA, Marble Arch L.G. (part cover).

24.1.42. BUERAL EL HSUN.
 26.1.42. AGEDABIA, W. and E. L.Gs.
 27.1.42. AGEDABIA E. and W. AGHEILA L.G. (part cover), coast road.
 30.1.42. AGEDABIA E. L.G. (poor).

Taken by No.2 P.R.U. from LIBYA

M.E.55 6.10.41. W. of TOBRUK to S. of GAZALA, 100 prints (2 camera strip only).
 M.E.56 7.10.41. GAZALA to TOBRUK 2 strips, 300 prints.
 M.E.57 9.10.41. E. TOBRUK, BARDIA (Cloud cover).
 M.E.58 10.10.41. E. TOBRUK, BARDIA 220 prints.
 M.E. 59 18.10.41. RUN, EL ADEM-SIDI RESEGH, - W. and S. GAMBUT - 300 prints.
 M.E.60 19.10.41. N.E. of BARCE.
 M.E.61 20.10.41. SCHIGHELIF, BIR EL BEHEIRA - MENASTIR.
 M.E.62 20.10.41. GAZALA, BU AMUD, EL ADEM.
 M.E.63 23.10.41. W. TOBRUK - EL ADEM.
 M.E.64 24.10.41. Coast E. TOBRUK from MARSA BELAFAYIT-MARSA MORESA 180 prints.
 M.E.66 25.10.41. 4 strips S. of TOBRUK (EL ADEM, BU AMUD) 300 prints.
 M.E.67 26.10.41. EL ADEM-CAPPUZZO North 330 prints.
 M.E.69 9.11.41. EL ADEM - SIDI RESEGH - CAMUSET 120 prints.
 M.E.70 10.11.41. GAZALA to 13 miles S.E. 72 prints.
 M.E.71 11.11.41. Two strips EL ADEM - E. of TOBRUK 150 prints.
 M.E.72 11.11.41. BOMBA-TMIMI-E. of GAZALA 340 prints.
 M.E.73 13.11.41. E. of EL ADEM - SIDI RESEGH - GAMBUT - RAS BEDDUD 150 prints.
 M.E.75 15.11.41. BOMBA Area 42 prints (2 camera only).
 M.E.76 15.11.41. GAZALA 45 prints.
 M.E.81 8.12.41. TOBRUK, EL ADEM, SIDI RESEGH back to coast, 240 prints.
 M.E.84 17.12.41. GIOVANNI, BERTA-DERNA, S. of DERNA - W. of MARTUBA, W. of RAS EL TIN - BOMBA.
 M.E.85 12.1.42. SIRTE and NOFILIA, Coastal Areas.
 M.E.86 20.1.42. Coast RAS EL ALI - AGHEILA, Road to (X) B.3570.
 M.E.87 20.1.42. MISURATA - BUERAT EL HSUN Coast.
 M.E.88 21.1.42. Coast Marble Arch - (S) V.2615 and (S) V.22 25 - NOFILIA.

M.E.80 21.1.42. Coast RAS EL AALI - RAS LANUF - (S) V 4005.
M.E.90 21.1.42. Coast Arch - NOFILIA and Strip South of it.

TAKEN FROM MALTA

<u>Date</u>	<u>Squadron</u>	<u>Sortie</u>	<u>Cover</u>
24.12.41.	69	M677	5 miles of Coast at Pisida.
20.12.41.	69	M685	Obliques from N. of Pisida.
16.12.	69	M662	Tripoli Harbour and Castel Benito.
22.12.	69	M670	Tripoli Harbour.
24.12.	69	M677	Tripoli Harbour.
22.12.	69	M672	Tamet L.G.
8.12.	69	M642	Tripoli Harbour - poor quality.
23.11.	69	M620	Castel Benito L.G.
7.12.	69	M640	} Tripoli Harbour. F8" vertical.
8.12.	69	M642	
23.11.	69	M620	Tripoli Harbour (small scale).
10.11.	69	M600	Tripoli Harbour (small scale).
13.11.	69	612	Tripoli Harbour (oblique)
19.11.	69	614	Tripoli Harbour (small scale).
16.10.	69	520	Tripoli Harbour (fair v. small scale).
21.10.	No. 1 P.R.U.	543	Tripoli Harbour (v. good).
24.10.	69	549	Tripoli Harbour (fair)
7.10.	69	507	Tripoli Harbour.
10.10.	69	513	Tripoli Harbour and Defences.
22.12.	69	672	Homs L.G. and Defences.
14.12.	69	656	Gavas, Suanin, - Ben Adem.
22.12.	69	671	} Bir Dufan, Beni Ulid, El Gheddahia.
26.12.	69	679	

<u>Date</u>	<u>Squadron</u>	<u>Sortie</u>	<u>Cover</u>
29.12.	69	693	Buerat el Hsun, Zarzur, Taourga, Sirte.
31.12.	69	686	Misurata W.L.G. (part cover).
22.12.	69	670	} Zuara (vertical 8")
30.12.	69	685	
22.12.41.	69	M670	Misurata W.L.G. {20" oblique 8" vertical}
14.1.42.	69	M697	Sirte and Misurata (8" vertical 14" oblique)
19.1.42.	No. 2 P.R.U.	M701	Zuara, Sabrattya (v. good). Ez Zaaia, Castel Benito.
22.1.42.	2 P.R.U.	M702	Misurata W., Zliten, Tripoli, Sorman, Castel Verde.
7.1.42.	2 P.R.U.	M692	Tripoli Harbour (poor), (first full cover since 8.12.41.).
9.1.42.	2 P.R.U.	M695	Tripoli Harbour and Town and Castel Benito.
22.12.41.	69	M670	Castel Benito
5.2.42	2 P.R.U.	M720	Sirte

Photos taken by other Squadrons

Date	Squadron	Place	Scale	No. of Exposures	Remarks
<u>Oct.</u>					
5	39 attached 12 Squadron	Derna town and Harbour. Derna-Tobruk Road. El Gubba-Mechili Road. Mechili, Gadd Ahman Mansur	Small	51	Some Cloud
5	12	Mechili, El Chairuba, Benghasi, Berka, Ghemines	1/18,000 approx.	45	
6	39 attached 12 Squadron	El Hania, Zauiet Fort, Mechili, Gad-el-Ahmar	1/17,000 approx.	57	
5	12	Azeiz, Gasr el Arid, Bir Chleta	1/31,000	55	
7	12	Benghasi Berka	1/20,000	4	Indistinct
5	451	Bardia to 7km. N. of Omar	1/14,000	285	Some cloud over Bardia
5	451	Bardia, Solum, Halfaya, Sidi Omar	1/13,000	540	
6	451	El Adem area	1/13,000	42	
9	12 S.A.A.F.	Believed to be Bir Hacheim area	1/15,000	?	
10	12	Gabr Saleh - Fort Maddalena	1/16,000	?	
9	113	El Hasiat L.G.	1/1,300	3	
10	39	Mechili Ghemines Agedabia Road Agedabia.	1/17,000 approx.	32	Haze little detail.
13	12	El Adem, Sidi Resegh to Sciafociuf	1/15,000	75	
12	12	Gambut Rugbat el Srati, Derna L.G.	1/2,000	15	
13	12	Gazala, Marbuba	1/17,000	26	
13	12	Barce	1/21,000	3	Indistinct
14	-	Benghasi, Berca, Gade el Ahmar	V1 oblique	53	Hazy
14	451	Halfaza Sidi Omar	1/14,000	117	
16	451	Bir Shefferzen Sidi Omar	1/14,000	102	
16	21	Derna	1/24,000	15	5 series taken during raid much cloud.
19	451	Bir Shefferzen, Gabr Saleh	1/22,500	279	

Date	Squadron	Place	Scale	No. of Exposures	Remarks
<u>Oct.</u>					
19	11	Bir Hacheim	1/5,500 approx.	5	Raid
19	45	Gabr Saleh	1/15,000		Raid
18	12	Gazala 1 and 2	1/30,000 and 1/17,000	32	
20	451	Gambut-Bardia	1/15400	238	
20	451	Sidi Omar area	1/13,000	148	
22	12	Benghasi-Berka a/d.	-)	51	
21	21	Benghasi-Berka a/d.	1/27,500 }	16	
22	45	Gasr el Arid		10	Oblique 2 series taken during raid.
22	451	Trigh el Abd	1/13,000	311	Poor cover
24	451	Solum - Sidi Omar	1/13,000	451	
24	21	Gazala	1/25,000	52	
25	451	Halfaya area, Wadi el Shaba Alam Battuma Hakiyet Bu Amud	1/13,000	135	
23	12	Derna town and L.G.	1/30,000 and 1/17,000	41	Raid
26	12	Benghasi and Berca a/d.	1/28,000 and 1/16,000	44	Raid
10	12	Wadis E. of Tobruk	1/30,000	6	Raid
12	21	Derna L.G.	1/24,000	166	Raid
14	21	Berka Benghasi	1/28,500	14	Raid
28	451	Alam el Kidad, Ghot el Makman	1/13,000	84	
29	451	Sidi Omar to Halfaya	1/13,000	111	
30	21	Sidi Maluns	1/17,000	15	
<u>Nov.</u>					
1	21	Derna Hbr. and a/d. Martuba W. L.G.	1/14,000	65	Raid
<u>Oct.</u>					
30	60	El Gabin-Sidi Omar	1/14,000	No photos.	

Date	Squadron	Place	Scale	No. of Exposures	Remarks
<u>Nov.</u>					
3	451	Halfaya to Alem Bargut	1/15,000	72	
4	21	Gazala 2 and 3 L.G.	1/22,000	35	
4	12	Berka Sat. and Main L.G.	1/15,000	13	Raid
5	21	Benghasi Berka a/d and Sat. Benin a/d.	1/22,000 and 1/36,000	9	Raid
6	21	Benghasi Tocra Rd. Benina Barce.	Various	15	
6	208	Gambut area - Hagiag Hafolloz Hagiag el Frcin	1/18,000	98?	
7	21	Derna Town	Various	15	Raid
6	60	Bir Hacheim	1/36,000	9	
9	21	Fort Palmeto Benghasi	1/45,000	4	
<u>Oct.</u>					
7	69	Tripoli	1/13,000	8	Poor
10	69	Tripoli	1/13,000	3	
21	12	Benghasi-Solluch	1/13,000 and 1/22,000	27	Poor
22	32	Benghasi	1/12,000	-	
21	21	Benghasi	Various small	17	Vertical and oblique
26	12	Benghasi	1/26,00 and 1/14,000	44	Raid
<u>Nov.</u>					
13	-	30 mile N.E. of Derna	-	3	Oblique
<u>Oct.</u>					
18	I.B.S.	Buerat el Hsun	1/12,000	-	Raid
<u>Nov.</u>					
10	69	Tripoli	1/15,000	22	
10	69	Castel Benito	1/15,000	13	

Date	Squadron	Place	Scale	No. of Exposures	Remarks
29-30	70	Benghazi	1/15,000	2	Night
13	69	Misurata	1/12,000	-	
13	69	Tamet	1/13,000	-	
7-8	148	North Acroma	-	3	Night
<u>Dec.</u>					
3	Lorraine	Sidi Rezegh and El Duda area	1/9,000	10	Raid
7	38	Gazala	-	7	Night
<u>Nov.</u>					
23	69	Tripoli	1/27,000	5	
<u>Dec.</u>					
7-8	69	Tripoli	1/27,000	12	Poor
10,13,9	69	Tripoli			
8	148	Benghazi	Various	11	Night
	451	St. Bu Bachel-Wadi el Gedi	1/2,100	44	
<u>Nov.</u>					
13	21	Benghazi Berka L.G. Benghazi Tocra Rd.		24	Distant
15	21	Barce el Abiar, Gazala Area	1/16,000 and 1/29,000	24	No L.Gs.
14	12	Derna L.Gs.	Various	68	Raid
15	12	Tmimi L.G.	-	55	Raid
15	21	Gazala	1/43,000	31	Raid
15	113	Agedabia, El Ergh	-	66	
15	21	Gazala	1/27,000	10	Raid
16	21	Derna Martuba	Various	34	Raid
16	21	Ras el Hilal and area	1/27,000 and 1/43,000	9	
18	113	Agedabia, El Ergh	1/14,000 and 1/3,000	28	
28	609	Derna and Bir Hacheim		5	Oblique

Date	Squadron	Place	Scale	No. of Exposures	Remarks
<u>Oct.</u>					
10	37	Benghazi - Berka	1/13,000	1	Night
14	24	Benghazi	Various	5	Vertical and Oblique. Poor.
18	70 & 73	Derna and Benghazi	1/12,000	4	Night
<u>Dec.</u>					
17/18	70	Benina	-	1	Night
<u>Nov.</u>					
23	69	Castel Benito	1/27,000	7	Oblique
<u>Dec.</u>					
8	69	Tripoli	1/21,000	3 ?	
21	69	Misurata - Sirte Rd.	1/15,000	133	
<u>Jan.</u>					
3	70 & 38	Ras el Aali etc.	-	4	Night
<u>Dec.</u>					
31	69	Misurata	1/4,500 and 1/14,000	11	
11	148	Buerat el Hsun	-	1	Night
24	69	Pisida	Various	7	
30	69	Pisida			
22	69	Tamet	1/18,500	4	
22	69	Zuara	-	7	Oblique and Vertical
22	69	Misurata	-	6	"
22	69	Castel Benito	1/30,000	17	
14	69	Garian, Sauri Ben Adem.	1/20,000	216	
29	69	Buerat el Hsun, Zarsur, Tanorga, Sirte.	1/18,000	35	
16,22,24	69	Tripoli	1/22,000	61	"
22	69	Homs	1/18,000	4	

AIRFIELDS AND LANDING GROUNDS
EGYPT AND WESTERN DESERT (EASTERN AREA)

LANDING GROUNDS EGYPT
(Delta and upper Egypt Zones)

NAME	L.G. NO.	POSITION	LOCAL POSITION	DIMENSIONS
ABOUKIR	(34)	31°18' N. 30°04' E.	15 mls. N.E. of Alexandria between rly. and coast, on E. side of Aboukir Peninsular.	Irregular shape maximum runs 950 x 850 yds.
AIMAZA	(245)	40°05½' N. 31°21' E.	7 mls. E.N.E. of Cairo. Just N. of rd. Cairo-Suez, approx. 2 mls. E. of Heliopolis.	R.E.A.F. Aerodrome Roughly oval, 1400 x 940 yds. Central landing area. Max. dimensions, enclosed by 6' wall 2000 x 1100 yds.
AMRIYA	(29)	30°59' N.	16 mls. S.S.W. of Alexandria just S.W. of rd. Cairo-Alexandria.	1000 yds. square.
ASSIUT	(248)	27°11' N. 31°06' E.	5½ mls. W. of Assiut.	Irregular shape maximum runs 783 x 635 yds.
ASWAN	(249)	24°03' N. 32°54½' E.	2½ mls. N.E. of Aswan Dam, and 2 mls. S.S.E. of Aswan town.	Irregular shape. Maximum runs 840 x 710 yds.
BALLAH	(203)	30°44½' N. 32°16' E.	10½ mls. N. of Ismailia town, on E. side of rd. Moascar-Kantara.	3 runways, plus 1 strip. 1 runway N-S 2000 yds. 1 runway SW-NE 1400 yds. 1 runway NW-SE 1400 yds. 1 strip SW-NE 1500 yds.
BAHARIYA OASIS	-	28°25' N. 28°47' E.	7 mls. N.N.W. of Bawati. On escarpment, near rd. Bawati-Siwa.	Irregular shape maximum runs 650x650 yds. Being extended.
BARR RAS EL	(238)	31°31½' N. 31°49' E.	Between Nile and sea, on W. bank of Damietta. Mouth of River Nile.	Approx. 750 yds. square. Area S of landing ground is safe for landing.
BILBEIS	(208)	30°25' N. 31°35' E.	On edge of Cultivation 1½ mls. E of Bilbeis.	Irregular shape maximum dimension 1400 x 1100 yds.
BURG EL ARAB	(28)	30°53½' N. 29°32' E.	Approx. ½ mls. S. of Burg El Arab rly. stn.	Irregular shape maximum runs 1600 x 1350 yds.
CAP LE	(202)	30°56' N. 32°18' E.	Just W. of Suez Canal rd. and rly, 23 mls. S. of Port Said, 5½ mls. N. of Kantara	4 landing strips SW/NE 1626 yds. E/W 1088 yds. N/S 1088 yds. SE/NW 570 yds.
DAHLIA OASIS	-	25°24' N. 28°59' E.	5 mls. S.S.E. of Mut.	1100 yds. square.

NAME	L.G. NO.	POSITION	LOCAL POSITION	DIMENSIONS
DEKHEILA (ALEXANDRIA)	(32)	31°08' N. 29°48' E.	1½ mls.S.E.of Agami Point. 6 mls.S.W.of Ras El Tin. Lighthouse on sea coast, between Lake Maryut and the sea.	4 tarmac runways each 1000 yds.
DEVERSOIR	(209)	30°25' N. 32°20' E.	On W.side of Suez Canal rd. 1 ml.N.of Northern end of Great Bitter Lake.	4 runways. N/S 1750 yds. E/W 1350 yds. NE/SW 1350 yds. NW/SE 1350 yds.
EDKU	(246)	24°59' N. 32°54' E.	¾ ml.E.N.E.of rly.stn.on E.bank of River Nile.	Irregular shape 415 x 520 yards.
FARAFRA OASIS	-	27°04' N. 27°58' E.	½ ml.N.of Qasr Farafra.	Irregular shape 650 x 550 yards.
FAYID	(211)	30°19' N. 32°17' E.	18 mls.S.of Ismailia just W of treaty rd.Suez- Ismailia, 1½ mls.W.of Great Bitter Lake and 3 mls.N. of Great Shubra Wit.	4 runways. N/S 2000 yds. E/W 2000 yds. NE/SW 1200 yds. NW/SE 1200 yds.
FIRDAN	(210)	30°37½' N. 32°15½' E.	2 mls.N.of Ismailia town, just E.of bend in sweet water Canal.	3 runways. N/S 1050 yds. E/W 1100 yds. NW/SE 1000 yds.
GAMIL (PORT SAID)	(201)	31°17' N. 32°14' E.	4½ mls.W.of Port Said,on strips of land between Lake Manzala and the Mediterranean Sea.	Approx.1250 x 720 yds.
GHARIB RAS	(230)	28°19½' N. 33°06' E.	On coast 2¾ mls.S.of Ras Gharib lighthouse, and 5 mls.S.of oil wells.	4 rolled strips. N/S 890 yds. E/W 650 yds. NW/SE 975 yds. NE/SW 585 yds.
GLIANCLIS	(226)	30°53' N. 30°05' E.	24 mls.S.E.of Dekhaila 17 mls.S.of Kafr et Dauwar rly.stn.at edge of Delta Cultivation, and S.of El Nubariya Canal.	4 rolled sand strips N/S 1260 yds. E/W 1200 yds. NW/SE 1230 yds.
HELIOPOLIS	(218)	30°05' N. 31°19' E.	5 mls.N.E.of Cairo ½ ml S. of Heliopolis.	Approx.L. shaped. 1600 x 1000 yds.
HELWAN	(221)	29°50' N. 31°19' E.	16 mls.S.S.W.of Cairo 1 ml. S.W.of Helwan. On E.bank of R.Nile.	3 runways. Approx N/S 800 yds. Approx.NE/SW 950 yds. Approx.NW/SE 900 yds.
HURGHADA RAF (ABU MINGAR)	(231)	33°49' N. E.	On coast, 3 mls.S.W.of Abu Mingar, and 5 mls.S.of Hurghada tank farm and jetty.	4 rolled sand strips. N/S 1246 yds. E/W 667 yds. NE/SW 1035 yds. NNW/SSE 1096 yds.
HURGHADA R.E.A.F.	-	27°13' N. 33°49' E.	1 ml.S.W.of oil tank farm and jetty.	Irregular shape max- imum runs.1195 x 687 yds.

NAME	L.G. NO.	POSITION	LOCAL POSITION	DIMENSIONS
IDKU	(229)	31°17' N. 30°15' E.	11 mls.E.of Aboukir, between Lake Idku and the Mediterranean sea. 3 mls. S.W.of Idku village.	Irregular shape con- sisting effectively of 3 separate landing areas. Max.runs 2000, 1400 and 1100 yds.
ISMAILIA	(204)	30°36' N. 32°15' E.	1 ml.W.of Ismailia town.N.of rly, and just W.of El Abassiya Canal running N.to Kantara.	4 Tarmac runways. NW/SE 1850 yds(of which 1250 yds.A/W and 600 yds.F/W). N/S 800 yds. E/W 800 yds. NE/SW 1100 yds.
KABRIT	(213)	30°15' N. 32°29' E.	On Kabrit Point,on Southern shore at junction of Great and little Bitter Lakes.	4 Tarmac runways. NW/SE 2000 yds. N/S 1550 yds. E/W 1300 yds. NE/SW 1300 yds.
KASFAREET	(212)	30°15' N. 32°25' E.	Between rly.and sweet water canal,on S.W.shore of Great Bitter Lake, 5 mls.W.of Kabrit Point.	4 runways, N/S 1350 yds. E/W 1000 yds. NE/SW 1000 yds. NW/SE 980 yds.
KHANKA	(220)	30°12' N. 31°23' E.	8 mls.NNE of Heliopolis 4 mls.SSE of Abu Zabal.	Irregular shape 1100 x 1300 yds.
KHARGA OASIS	-	25°27' N. 30°32' E.	1½ mls.NW of Kharga village.	750 x 450 yds.
KILO 8.	(219)	30°08' N. 31°24' E.	Just S.of Rly.Cairo-Suez, 5½ mls.NE of Heliopolis.	4 rolled sand strips. NW/SE 1800 yds. NE/SW 1750 yds. NNW/SSE 1400 yds. E/W 1100 yds.
KILO II	-	30°08½' N. 31°27' E.	Just S.of rly.Cairo-Suez 8 mls.NE of Heliopolis.	Approx 1000 yds. square.
KILO 40	(237)	30°10' N. 30°48' E.	Immediately S.W.of rd. Cairo-Alexandria 24 mls. N.W,of Giza Pyramids,and 14 mls.S.of Khatatba rly. stn.	Large, but still under construction.
LUXOR	(233)	25°41' N. 32°42' E.	4 mls.ESE of Luxor stn.	2 runways. Approx N/S 990 yds. Approx E/W 990 yds.
L.G. "X"	(206)	30°37' N. 32°05' E.	4¾ mls.NW from Abu Sueir.	4 landing strips. N/S 1000 yds. E/W 1000 yds. NE/SW 1000 yds. NW/SE 1000 yds.
L.G. "Y" (Qassassin)	(207)	30°36' N. 32°01' E.	In desert 304° Abu Sueir 6 miles.2½ mls.N. of Mahsama rly.stn.	6 landing strips N/S 870 yds. ENE/WSW 1300 yds. NW/SE 1000 yds.

NAME	L.G. NO.	POSITION	LOCAL POSITION	DIMENSIONS
LG. 222	(222)	29°51' N. 31°04' E.	10 mls.SSW of Giza. Pyramids, on E side of rd. Cairo-Fayoum.	1000 x 3560 yds. Has hitherto been variously known as 108 M.U.Kilo 17 and FAYOUM ROAD. To avoid confusion will now be referred to as L.G. 222.
LG. 224	(224)	30°07' N. 30°55' E.	16 mls.NW of Giza Pyramids, on NE side of rd.Cairo-Alex.	2 runways of 2000 yds.each.
MARYUT	(227)	31°11' N. 29°57' E.	On SE outskirts of Alexandria, on reclaimed land, S. of rly, and N of Lake Maryut. (Seaplane alighting basin (nearing completion) adjoins.	Approx. 1400 yds. square. Runways under construction.
NATRUN.WAD	(100)	30°26' N. 30°21' E.	On NE side of rd.Cairo Alexandria, 2½ mls.NW of Wadi Natrun rest house.	1200 x 1500 yds.
RUS EL (WASTA)	(223)	29°21' N. 31°05' E.	Just N. of rly. Fayoum El Wasta. 1½ mls. NE of El Rus station.	3 landing strips. N/S 1000 yds. NW/SE 1000 yds. E/W 1000 yds.
SAFAGA (NEW)	(239)	26°48' N. 33°56' E.	1 ml. from sea, 5 mls. N of Fort Safaga.	1500 x 300 yds.
SALAMUT	(243)	28°18' N. 30°36' E.	3½ mls. W of Shusha 6½ mls. W of Salamut 8½ mls. W of River Nile.	Two landing strips. N/S 1000 yds. E/W 1000 yds.
SHALLUFA	(215)	30°03½' N. 32°32½' E.	6 mls. N. of Suez, immediately W. of road and railway Suez-Ismailia.	4 runways. N/S 1966 yds. E/W 1250 yds. NW/SE 1300 yds. NE/SW 1350 yds.
SHALLUFA SATELLITE	(251)	30°06½' N. 32°31' E.	9½ mls. N by W. of Suez, just SW of road Suez- Ismailia, 3½ mls. N of Shallufa aerodrome.	Irregular shape 2500 yds. long.
SHANDUR	(214)	30°11' N. 32°32' E.	15 mls. N of Suez, on W shore of little Bitter Lake, just E. of rly. Sweet water Canal and road.	4 runways. N/S 1500 yds. E/W 1300 yds. NE/SW 1200 yds. NW/SE 1300 yds.
SUPER ABU	(205)	30°34' N. 32°06' E.	10 mls. W of Ismailia, N of road and railway Cairo-Ismailia.	4 runways N/S 1300 yds. E/W 1000 yds. NW/SE 1100 yds. NE/SW 900 yds. (being extended?)

NAME	L.G. NO.	POSITION	LOCAL POSITION	DIMENSIONS
SUEZ RD. No.4.	(217)	30°04' N. 32°02' E.	33 mls.W.of Suez.Just S of road Cairo-Suez,7mls SW of Jebel Iweibid.	Irregular shape 1400 x 200 yds.
SUEZ	(216)	29°59' N. 32°33' E.	1 $\frac{3}{4}$ mls.NW of Suez. In fork of rail and road Suez-Cairo and rail and Rd. Suez-Ismailia.	Irregular shape maximum runs. 900 x 650 yds.
SIWA(NORTH)	(66)	29°22' N. 25°31' E.	11 mls.N.of Siwa town, just E of road to Mersa Matruh and Sollum.	Irregular shape 950 x 700 yds.
SIWA TOWN	(67)	29°11' N. 25°31' E.	1 ml.S of Siwa Village	Irregular shape maximum runs 720 x 520. Approaches very poor.
TEIRIYA EL	(225)	30°37' N. 30°42' E.	In desert 5 mls.W of El Tefriya rly.stn.and edge of cultivation, and Rosetta branch of the Nile.	Irregular shape 700 x 600 yds.
ZAFARABA	(241)	29°06' N. 32°39' E.	Near coast,just SW of lighthouse and Frontier Administration Camp.	Irregular shape maximum runs 1560 x 680.

LANDING GROUNDS EGYPT - CONTINUED.

NUMBERED LANDING GROUNDS

(ALEXANDRIA - CAIRO ROAD AREA, EAST OF 29°30' E.)

(ALL LISTED BELOW APPEAR ALSO
IN THE LIST OF LANDING GROUND,
WESTERN DESERT)

L.G. NO.	POSITION	LOCAL POSITION	DIMENSIONS
28	See "BURG EL ARAB"		
29	See "Amriya"		
32	See Dekheila		
34	See Aboukir.		
38	30°48' N. 29°30' E.	8 mls.W.of S of Burg El Arab rly.stn.	Irregular shape 1400 x 1400 yds.
39	30°51½' N. 29°33' E.	3 mls. S of Burg El Arab rly. stn.	Large (2100 x 1400 ?)
40	30°53' N. 29°37' E.	4 mls. SSE of BAHIG rly.stn.	Large (Strips of 1800 yds)
41	30°55' N. 29°40½' E.	3 mls.S of El HAUWARIYA rly.stn.	800 x 500 yds.
45	30°11' N. 30°05' E.	On N. side of track running ESE-WNW approx. 20 mls. SW of Wadi Natrun.	1000 x 1000 yds.
46	30°13' N. 29°58' E.		1000 x 1000 yds.
47	30°15' N. 29°47' E.		1760 x 1760 yds.
48	30°16' N. 29°41' E.		1000 x 1000 yds.
82	30°28' N. 30°16' E.	At Northern end of Wadi Natrun area. ¼ ml.SW of rd. Cairo-Alexandria.	1100 x 1100 yds.
83	30°28½' N. 30°12½' E.	At Northern end of Wadi Natrun, 3 mls. SW of rd. Cairo-Alexandria.	1000 x 1000 yds.
84	30°28½' N. 30°13½' E.	At Northern end of Wadi Natrun area, 2 mls.SW of rd. Cairo-Alexandria.	1100 x 1000 yds.
85	30°47' N. 29°51½' E.	4½ mls.SW of rd.Cairo-Alexandria approx. 15 mls. S of MARKAZ AMRIYA	1100 x 1100 yds.
86	30°51½' N. 29°52' E.	2 mls.SW of rd.Cairo-Alexandria approx. 10 mls.SSE of MARKAZ AMRIYA.	1100 x 1100 yds.
87	30°50' N. 29°52½' E.	2 mls.SW of rd.Cairo-Alexandria approx. 12 mls.SSE of MARKAZ AMRIYA	1100 x 1000 yds

L.G. NO.	POSITION	LOCAL POSITION	DIMENSIONS
88	30°59½' N. 29°51½' E.	3½ mls. SW of rd. Cairo-Alexandria approx. 12½ mls. S by E of MARKAZ AMRIYA.	1100 x 1100 yds.
89	30°49' N. 29°50½' E.	4½ mls. SW of rd. Cairo-Alexandria approx. 19 mls. S of MARKAZ AMRIYA.	1100 x 1100 yds.
90	30°51½' N. 29°54½' E.	¼ ml. NE of rd. Cairo-Alexandria approx. 12 mls. SSE of MARKAZ AMRIYA.	1100 x 1100 yds.
91	30°52' N. 69°54' E.	½ ml. NE of rd. Cairo Alexandria approx. 10½ mls. SSE of MARKAZ AMRIYA	1500 x 1400 yds.
92	30°54' N. 29°51' E.	1½ mls. SW of rd. Cairo-Alexandria approx. 7 mls. SSE of MARKAZ AMRIYA.	1000 x 1000 yds.
93	31°00' N. 29°48' E.	Just SW of rd. Cairo-Alexandria approx. 2 mls. SSE of MARKAZ AMRIYA.	800 x 1000 yds. When last inspected (Nov. 1941) was being used by Army as Car dispersal area.
95	30°59' N. 29°46½' E.	2½ mls. WNW of Amriya Aerodrome	Irregular shape maximum runs 1900 x 850 yds.
97	30°48½' N. 29°57' E.	1 ml. NE of rd. Cairo-Alexandria, 16 mls. SSE of MARKAZ AMRIYA.	1000 x 1000 yds.
98	30°47½' N. 29°55½' E.	1½ mls. SW of rd. Cairo-Alexandria 16½ mls. SSE of MARKAZ AMRIYA.	1000 x 1000 yds.
99	39°48½' N. 29°54½' E.	1 ml. SW of rd. Cairo-Alexandria 15 mls. SSE of MARKAZ AMRIYA.	1000 x 1000 yds.
100	See WADI NATRUN		
222	See L.G. 222		
224	See L.G. 224		

LANDING GROUNDS SINAI

NAME	L.G. NO.	POSITION	LOCAL POSITION	DIMENSIONS
ARISH EL		31°04 $\frac{1}{2}$ ' N. 33°50' E.	4 mls.SSE of El Arish. Just W of rd. El Arish-Abu Aweigila, between road and Wadi El Arish.	Irregular shape maximum runs 1750 x 1000 yds.
AUJA EL (in PALESTINE)		30°53' N. 34°27' E.	1 ml.E of Wadi Hafir, at El Auja S of rd. El Auga Beersheba.	Was 528 x 350 yds. Being extended to a strip of 1000 yds. NNW-SSE.
GATTER BIR (near RAS EN NAGB)		29°36 $\frac{1}{2}$ ' N. 34°50 $\frac{1}{2}$ ' E.	Easterly of two conspicuous mud flats on high ground 9 mls.approx.WNW from head of the Gulf of Apaba.	Approx.L.shape,giving runs of 1100 x 1100 yds.
HAMMA WADI EL		30°38 $\frac{1}{2}$ ' N. 33°40' E.	20 mls.due W of Gebel Halal, just S of rd.Ismailia - Beersheba,	2000 yds.into prevailing wind.
HASSANA BIR		30°31' N. 33°57' E.	5 $\frac{1}{2}$ mls.due S of South Western tip of Gebel Halal. On track Bir Hassana-Abu Aweigila.	No defined landing areas but large open space under preparation.
JEBELLE		30°01' N. 33°15' E.	3 mls.W of Wadi El Agheidara, and $\frac{1}{2}$ ml.S of road Suez-Nekal-Aqaba.	Was 335 x 620 yds. Being extended to give 1100 yds.into prevailing wind.
JIFJAFFA		30°27' N. 33°13' E.	1 ml.ESE of Bir Jifjaffa 2 mls.S of rd. Ismailia-Beersheba.	450 x 200 yds.but landings may be made outside this area.
KOUSSAIMA		30°41' N. 34°23 $\frac{1}{2}$ ' E.	2 mls.NE of Koussaima, just SE of track to Beersheba.	2 Landing tracks 1000 yds.long under construction.
NEKHL		29°53' N. 33°45' E.	1 ml. SSE of Nekhl village just SW of track Nekhl-El Themed.	Existing Site 140 x 520 yds.Strip up to 1200 yds under construction.
RAS UM SID		27°51' N. 34°18 $\frac{1}{2}$ ' E.	On Ras Um Sid near southern tip of SINAI peninsular.	Approx.700 yds.square. This L.G.not maintained but probably in fair order.
SHIHAN UM		30°48' N. 34°12' E.	9 ml.NE of North Eastern edge of Gebel Halal.5 mls. SE of Abu Aweigila.	Serviceable as it is 1000 yds.to 1500 yds. any direction under construction.
TOR		28°13 $\frac{1}{2}$ ' N. 33°38' E.	Just E. of and adjoining quarantine station camp at Tor 600 yds. from sea.	666 x 717 yds.

NAME	LG. NO.	POSITION	LOCAL POSITION	DIMENSIONS
SENEIMA ABU		29°03' N. 33°06½' E.	On Coast, to N of Sinai Mining Coys. buildings at ABU ZENEIMA.	2 landing strips NW/SE 1500 x 200 yds. NNW/SSE 1000 x 200 yds.
ZENEIMA ABU SOUTH		28°58½' N. 33°13' E.	8 mls. SE of Abu Zeneima 2 mls. E of Coast. 1 ml. S of Sinai mining Coy's light rly.	2 landing strips of 1000 yds. each.
ROD SALEM BIR		30°33½' N. 33°22' E.	Recco'd. site only.	Capable of one strip E/W 1000 yds. May be used as it is in an emergency.
GERAAI EL		30°59' N. 33°55' E.	14 mls. SSE of El Arish town. On track El Arish-Abu Aweigila.	Large Salt/mud flat. May be used as it is giving at least 1200 yds. in any direction.
S. GEBEL GEDEIRA		30°28' N. 33°03½' E.	8 mls. S of Gebel Gedeira just N of road Ismailia-Beersheba.	Strip of 1000 yds. into prevailing wind could be prepared. Not recommended in present condition.

AERODROMES AND LANDING GROUNDS IN THE WESTERN DESERT.

OFFICIAL NO.	NAME	LOCAL POSITION	REMARKS
1.	Bug Bug 31°29' N. 25°24' E.	2 M.S. of coastline. N. of coast road 16 M.E.S.E. of Sollum.	Dry salt lake bed U/S in rainy season. Max. runs. 1100 x 1100 yds. Not in use.
2	SIDI BARRANI 31°35½' N. 25°27' E.	Approx. 2M S.E. of Sidi Barrani Village. S of coast road. Irregular shape	Max. runs 1700 NNE/SSW. 1500. NW/SE 1300 E/W. Hard dry ground. Stone cleared. Serviceable all year.
3	SIDI BARRANI SATELLITE 31°34' N. 25°56' E.	1. M. SW of L/G, 2, & approx. 3 M.S. by E. of Sidi Barrani village. Irregular shape.	Fit all types. Extension was carried out March '42, but no details available. Max. runs 1300 E/W. 1500 N/S 1600 NE/SW. 1600 NW/SE.
4	SIDE BARRANI WEST 31°34' N. 25°53' E.	Approx. 5 M. SW. of Sidi Barrani Village.	Site only. Not in use.
5	'X' L/G 31°32½' N. 26°01' E.	4 M.S. of coastline, approx. 7½ M. S.E. of Sidi Barrani Square	Extension Work March 1942. Diagonal runs of 1980 E/W 1400 NW/SE.
6	'Y' L/G. 31°23' N. 26°37' E.	Immediately S. of Main Alex Sollum road, 7 M.S. of coastline. Approx. 36 M.W. of Mersa Matruh	Abandoned in favour of L/G 121. Approx. 1200 yds. square.
7	'Z' L/G.	Immediately N. of main coast road approx. 23 M. W. of Mersa Matruh Square	Flightways marked by barrels. Diagonal runs up to 1600 yds. NW/SE.
8	MERSA MATRUH 31°20' N. 27°12½' E.	2 M. S of Matruh town. Just S. of Matruh-Sidi Barrani road.	Surrounded E.S. and W. by barbed wire palisade U/S after heavy rain. Max. runs E/W 1150 NE/SW 1100 NW/SE 850 N/S 1000.
9	BIR KORAIYIM 30°58' N. 28°12' E.	8 M. of coastline, Irregular area with strip extensions.	Large dusty area. Surface compressed sandy clay. Level and smooth. Access road and NW/SE runway are all weather? Max. runs 2000. 975 N/S. NE/SW. 1700 NW/SE. 1750 E/W
10	GARAWLA 31°11' N. 27°21' E.	At foot of escarpment 5 M. S. of GARAWLA station. Irregular area	Hard sand surface. U/S after rain. Max runs 1500 N/S 1800 NE/SW 1200 E/W. 1100 NW/SE.

OFFICIAL NO.	NAME	LOCAL POSITION	REMARKS
11	QASABA 31°10 $\frac{1}{2}$ ' N. 27°27' E.	S. of coast road 1 M. S.W. of QASABA. Midway between coast line & escarpment 17 $\frac{1}{2}$ M. S of Mersa Matruh	Hard sand surface. U/S after rain. Max runs:- 1350 NW/SE. 1000 E/W 950 N/S.
12	SIDI HANAISH NORTH 31°09' N. 27°32' E.	On escarpment 3 M.S. of coastroad and railway.	Surface fair. Sand, soft in patches U/S after rain. 1500 yd. runs.
13	SIDI HANAISH SOUTH 31°07 $\frac{1}{2}$ ' N. 27°31' E.	3 ml. SW of L/G12. 4 ml. ESE of QASABA ruins.	Roughly rectan- gular. Surface hard and stony. U/S after rains. Max. runs:- 1200 E/W, 1900 N/S.
14	MAATEN BAGUSH 31°09' N. 27°39 $\frac{1}{2}$ ' E.	Immediately N of railway and S of coast road at MAATEN BAGUSH. Due S of MERSA MATRUH	Roughly rectan- gular. Good hard sand. Max. runs NW/SE 1350. E/W 1000 N/S 650.
15	MAATEN BAGUSH SATELLITE 31°06' N. 27°44' E.	On top of escarpment a.m.s.l. 11 $\frac{1}{2}$ mls. SW of RAS EL KENAYIS. 2 mls. S of DABA-MATRUH road and rly.	Surface fair. Suitable for Liberators. Max. runs:- 2500 x 400 E/W, 2500 x 500 NE/SW.
16	FUKA SATELLITE 31°05' N. 27°49' E.	On escarpment edge. Approx. 8 mls. W of FUKA.	Irregular oval. Surface fair. 1400 NW/SE. 1300 E/W. 900 N/S 850 NE/SW.
17	FUKA MAIN 31°03' N. 27°56' E.	Between the DABA MATRUH rly. and road. 1 $\frac{1}{2}$ mls. NE of L/G. 8.	Large irregular area Hard sand surface 1900 NW/SE. 1200 E/W. 1000 N/S. 1000 NE/SW.
18	FUKA SOUTH 31°03' N. 27°56' E.	Immediately S of coast rly. $\frac{1}{2}$ ml. from FUKA rly. Station	Irregular area. Hard sand surface. Slight slope to S. 1500 NW/SE. 1400 E/W 800 N/S.
19	FUKA EAST 31°03' N. 27°56 $\frac{1}{2}$ ' E.	S of Rly. 1 ml. E of LG/8.	Site only. Not in use.
20	QOTAFIYA 31°04' N. 28°18' E.	3 ml. NNE of QOTAFIYA Immediately N of FUKA-DABA road.	Irregular shape. Compressed sandy clay surface. New strip u/c June '42 1300 E/W, 1050 NW/SE. 1150 NE/SW.

OFFICIAL NO.	NAME	LOCAL POSITION	REMARKS
21	QCTAFIYA SATELLITE 30°59' N. 28°17' E.	2 mls.S of coast railway and 3 mls.S of coast road.	Small central area with flightway ex- tensions. Surface hard sandy clay, level and smooth. 1200 NE/SW, 1150 NW/SE. 1350 E/W.
22	DABA SATELLITE 31°05' N. 28°27' E.	NNE of DABA town, midway between coast road and coastline.	Site only. Not in use.
23	DABA 31°02' N. 28°28' E.	E of DABA town	Site only. Not in use.
24	DABA (SOUTH) 30°56' N. 28°12' E.	Approx. 9 mls. SW of DABA town midway between coastline and escarpment.	Irregular oval area, "in direction of pre- vailing wind". Very hard compressed sandy clay, level and smooth. 1250 NW/SE. 1050 E/W 900 NNW/SSE.
25	SIDI ABD EL RAHMAN 30°56' N. 28°43' E.	2½ mls. SW of coast road and rly.	Irregular surface good 1000 WNW/ESE. 800 NNE/SSE. 850 (N/S.)
26	ELIMAYID 30°44' N. 29°16' E.	Approx. 7 mls. S of coastline. 4 mls. S of rly.	Site only. Not in use. Bad site.
27	ELHAMMAN 30°48' N. 29°27' E.	Approx. 5 mls. SE of EL HAMMAN Station on coast rly. 1½ mls. NE of L/G 37.	Smallish. Cannot be made fit.
28	BURG EL ARAB 30°53½' N. 29°32' E.	See EGYPT LIST.	-
29	AMIRIYA 30°58' N. 29°49' E.	See EGYPT LIST.	-
30	AMIRIYA SATELLITE 30°58' or 30°59' N. 29°50' E.	This is an undeveloped recco'd site.	.
31	IKINGI	See EGYPT LIST.	.
32	DEKHAILA 31°08' N. 29°48' E.	See EGYPT LIST.	.
33	ABOUKIR NORTH (COASTAL)	This site is now disrupted and forms part of ABOUKIR dispersal and works area.	.
34	ABOUKIR 31°18' N. 30°04' E.	See EGYPT LIST.	.
35	BIR HOOKER 30°22' N. 30°26' E.	Near prewar WADI NATRUN L/G.	Soft surface. Site not in use.

OFFICIAL NO.	NAME	LOCAL POSITION	REMARKS
36	KHATATBA 30°21' N. 30°47' E.	Was approx. 3 mls. W of R. NILE on edge of cultivation and KHATATBA village.	Abandoned.
37	HAMMAN SOUTH 30°47' N. 29°27' E.	1½ mls. SW of L/G27.5 mls. SSE of EL HAMMAN Station on coast rly.	"Smallish". 800 yds. square.
38	HAMMAN EAST	8 mls. S of BURG EL ARAB Station.	Irregular shape with strip extensions. Hard sand surface 1700 NE/SW. 1200 NNW/SSE. 1000 E/W.
39	BURG EL ARAB (SOUTH) 30°51½' N. 29°33' E.		
40	BAHIG SOUTH 30°53' N. 29°37' E.		
41	BAHIG EAST 30°55' N. 29°40' E.		
42	EL NAHEIDAT (?) 30° N. 30° E.	illegible	
43	BIR KENAYIS 31°01' N. 26°48' E.	On Matruh-Siwa track 35 mls. SW of Matruh	Site only. Not in use.
44	WADI NATRUN illegible.	illegible	
45	30°11' N. 30°05' E.		
46	30°13' N. 29°58' E.	See EGYPT LIST	Sites only - not in use.
47	30°15' N. 29°47' E.		
48	30°16' N. 29°41' E.		
49	30°18' N. 29°35' E.		
50	30°21' N. 29°23' E.		
51	30°26' N. 29°14' E.		
52	30°26' N. 28°59' E.		

OFFICIAL NO.	NAME	LOCAL POSITION	REMARKS
53	30°40' N. 27°55' E.	3 mls.E of MINQAR AMAR	Good surface. U/S after rain 1500 x 1500.
54	30°40' N. 27°51' E.		Sites only - not in use.
55	30°36' N. 27°50' E.		
56	30°41' N. 27°49' E.	3 mls.WNW of MINQAR OMAR	Good surface.U/S after rain.Site only- not in use. 1500 x 800.
57	30°46' N. 27°51' E.	8 mls.N of MINQAR OMAR	Good surface.U/S after rain.Site only -not in use? 1500 x 1500.
58	30°43' N. 27°46' E.	7 mls.NW of MINQAR OMAR	Good surface.U/S after rain.Site only. Not in use 1000 x 900.
59	30°41' N. 27°43' E.	9 mls.W of MINQAR OMAR at foot of escarpment.	Good surface.U/S after rain. Site only.Not in use. 1000 x 1000.
60	30°49' N. 27°33' E.	25 mls.on bearing 195° from MAATEN BAGUSH.5 mls.SW of L/G 62.	Good surface. U/S after rain 2500 x 1000.
61	30°42' N. 27°39' E.	Abandoned site	
62	30°53' N. 27°36' E.	20 mls.S by W of MAATEN BAGUSH.5 mls.E of L/G 60.	L shaped.Dimensions not known. Good surface. U/S after rain.Not in use.
63	30°42' N. 27°27' E.		Mud flats U/S after rain. Not in use 1000 x 1000
64	30°41' N. 27°24' E.		Mud flats.U/S after rain.Not in use 1000 x 1000
65	30°46' N. 27°25' E.	5 mls.N by E.of L/G64. 9 mls.W of BIRDAMPUN	U shaped. Good surface. U/S after rain.Not in use. 1500 x 1000.
66	SIWA NORTH 29°21½' N. 25°31' E.	See EGYPT LIST	
67	SIWA TOWN 29°11' N. 25°31' E.		

OFFICIAL NO.	NAME	LOCAL POSITION	REMARKS
68	BAGUSH WATERLOO 31°07' N. 27°47' E.	On escarpment 2 mls.ENE of L/G15.Approx.midway between FUKA and BAGUSH	Irregular oval area.1100 N/S. 1000 E/W 1000 NE/SW 950 NW/SE. Fair Surface.
69	BIR BASUR 29°54' N. 25°55' E.		
70	31°09' N. 26°32' E.		
71	31°11' N. 26°32' E.	2 runs of 880 yds.each	Sites only - not in use.
72	29°30' N. 26°23' E.	1100 x 1100	
73	30°26' N. 26°28' E.		
74	31°06' N. 26°32' E.		
75	41°12' N. 26°04' E.	Approx.4 mls.N of escarpment 30 mls.SSE of SIDI BARRANI	Hard sand surface with some stone. Max.runs:-1900 N/S 1200 E/W.
76	31°10' N. 26°05' E.	2 mls.S by E of L/G75,midway between L/G75 and foot of escarpment.	Hard sand surface with some stone. 3 runways 1100 each.
77		Blank number	
78	31°07' N. 25°32' E.	2½ mls.S of BIR HABATA. 41 mls.on bearing 215° from SIDI BARRANI.	Used as refueling base early 1941.Since abandoned,and new site constructed. See L/G166.
79	S of BUQ BUQ 30°24' N. 25°31' E.	8 mls.S of coastline 28 mls. S by W of Sidi Barrani	3 strips 200 yds. wide.illegible.
80	31°23' N. 25°22' E.	8 mls.S of coastline 17 mls. SE of Sollun.9 mls.W of L/G79.7 mls.SSW of L/G 01.	880 x 880 Hard sand all weather sur- rounded by 80 ft. sand ridge. Not in use.
81	-	Blank number	
82	30°26' N. 30°16' E.	See EGYPT LIST.	
83-100	inclusive	See EGYPT LIST.	
101	31°06' N. 27°31' E.	7 mls.SE by S of QASABAB (L/G11) 1½ mls.due S of L/G 13).	Main area 1200 square yds. Runway extension to 1500.

OFFICIAL NO.	NAME	LOCAL POSITION	REMARKS
102	31°06' N. 27°33½' E.	3 mls.S of L/G 12 (SIDI HANEISH) 3 mls.E of L/G 101. 8 mls.SW of MAATEN BAGUSH.	Rectangular area 2000 N/S x 1200 E/W.
103	31°03' N. 27°46' E.	10 mls.SE by S of MAATEN BAGUSH. 9 mls.W by S of FUKA.	Triangular area with strip extensions at each corner, giving runs 1500 N/S, NE/SW and NW/SE. Good surface.
104	31°02½' N. 28°16½' E.	10 mls.W of DABA Station. Between coast rd. and rly.	Irregular area. Illegible. Maximum 1500 yds. Compressed sandy clay surface.
105	31°00' N. 28°28' E.	2½ mls.S by E of DABA station 4 strips 200 yds. wide	E/W 1500 NW/SE 1500 NE/SW 1050. N/S 1200.
106	30°58' N. 28°39' E.	Immediately S of coast rly. 13 mls. Easterly of DABA.	Irregular area with strip extensions 200 yds. wide. Max. runs E/W 1600 NW/SE 1700 NE/SW 1400 Profundaries and some bad spots in main area marked with the concrete marks.
107	29°46' N. 24°32' E.	Near Giarabub. See CYRENAICA LIST.	
108	29°35' N. 24°41' E.		
109	BIR KHAMSA area. 31°01' N. 25°51' E.	8 mls. NE of BIRKHAMSA 3 mls. E by N of BIR WASH EL ARNAB.	Max. runs: 1200 to 1400.
110	BIR KHAMSA AREA 30°59½' N. 25°57' E.	11 mls. ENE of BIR KHAMSA 2 mls. E of L/G 110.	2 runways. 1200 yds. 200 yds. 1100 x 1400 yds.
111	BIR KHAMSA AREA 31°00' N. 25°58' E.	3 mls. E of L/G 110.	1100 x 1400 yds.
112	BIR KHAMSA AREA 30°51½' N. 25°56½' E.	8 mls. S of L/G 110 6 mls. NW of BIR DAWUD.	2000 x 2000
113	BIR KHAMSA AREA 30°46½' N. 26°03½' E.	On clay 21 mls. SE of BIR KHAMSA.	Site only - not in use.
114	BIR KHAMSA AREA Not yet available.	Construction work suspended.	
115	31°04' N. 27°38' E.	8 mls. SSE of MAATEN BAGUSH 4 mls. W of L/G 116.	Triangular with strip extensions. N/S 2000 x 500 NE/SW and NW/SE 2000 x 300. Surface good.

OFFICIAL NAME NO.	LOCAL POSITION	REMARKS
116 31°04½' N. 27°41½' E.	6 mls.SSE of BAGUSH MAIN (L/G14) 4½ mls.SW of Bagush satellite (L/G15) 5 mls.S of main coast road. 1 ml.SE of BIRZIMLA.	Triangular with strip extensions 300 yds. wide, giving runs E/W 2300.N/S 200, NE/SW 2500. Surface good. Hard and stony.
117 31°03' N. 27°44' E.	3 mls.ESE of L/G 116.9 mls. SSE of BAGUSH. 12 mls.WSW of FUKA.	Triangular, with strip extensions. 300 yds.wide. giving runs NE/SW 2000.WNW/ESE 2000, NNW/SSE 2000.Good hard surface.
118 EL THALATA 31°08' N. 25°50' E.	1½ mls.E of BIR EL THALATA 34 mls.S of SIDI BARRANI.	Non-existent. 1200 x 150 BIR THALATA. illegible.
119 29°42' N. 24°35' E.	Nr.GIARABUB - See CYRENAICA LIST.	
120 29°16' N. 25°46' E.	S of the escarpment on and across SIWA - QARA track. 15 mls.ENE of SIWA TOWN.	NW/SE 2500(with escarpment to N) W by N/E by S and WNW/ESE each 1500. Very good Surface. Hard gravelled sand.
121 31°31½' N. 26°11' E.	Immediately S of main coast road (tarmac) 2½ mls.S of coastline. 17 mls.E of SIDI BARRANI	3 strips 200 yds. wide N/S 2000. NW/SE 1500. NE/SW 1500.
122 30°55' N. 25°06' E.	9 mls.ENE of Fort MADDALENA	2 strips. 020° 1100 x 45. 320° 1050 x 370.Surrounded by rising ground.
123 30°54½' N. 24°52½' E.	FORT MADDALENA AREA	See CYRENAICA LIST
124 30°53' N. 24°56' E.		
125 30°25' N. 22°54' N. or 29°57' N. 23°02' E.		
	See CYRENAICA LIST. (15 mls north of MAATEN ES SCHEIGHEIGH)	
126 30°43½' N. 25°05' E.	12 mls.SE by S Dummy only.	Fort Maddalena area.

OFFICIAL NO.	NAME	LOCAL POSITION	REMARKS
127	30°58' N. 25°10' E.	Has been quoted as 2000 NW/SE and 1000 all other directions, but is questionable if this L/G does in fact exist.	
128	30°52' N. 25°50' E.	22 mls.due E of Fort MADDALENA at QARET IZEIZA. Alternative to 127.	2 runways 1100 yds and 1075 yds.
129	Blank number	-	-
130	BIR KHAMSA AREA 30°56½' N. 25°55' E.	9 mls.E of BIR KHAMSA 47 mls.S of SIDI BARRANI	Fighter L/G.
131	31°04' N. 25°19½' E.	At EL QARAT EL HAMRA. 53 mls.SW of SIDI BARRANI	?
132	31°06½' N. 24°53½' E.	Immediately E of frontier wire, 19 mls.NNW of FORT MADDALENA?	Unsuitable except for Air Recce.Pilots who know the L/G.
132A	31°07' N. 24°53½' E.	Immediately E of frontier wire 18 mls.NNW of Fort Maddalena?	Alternative to 132 on mixed clay pan.
133	30°55' N. 25°13½' E.	16 mls.E by N of Fort Maddalena.45 mls.S by W of SOLLUM. 3½ mls.WNE of L/G 138.	Two strips 150 yds. wide.N/S 1050 (Approx.E/W 1050).
134	31°06½' N. 24°38½' E.	See CYRENAICA LIST	
135	31°07' N. 24°17½' E.		

Information supplied by
D. of W.(1), Air Ministry.
(Based on H.Q., R.A.F., M.E.,
Aerodrome Library Lists,
June, 1942).

APPENDIX C(i)

A.A. LAYOUT, EIGHTH ARMY

These are shown diagrammatically and the following notes refer.

The layouts show Army A.A. and where A.A. under command Corps or Divisions is shown special reference is made.

DIAGRAM I

The Fighter L.G's absorbed a large proportion of the available Army A.A. It was essential to ensure protection of Fighter L.G's to enable fighters to operate well forward and neutralize enemy air force.

DIAGRAM II

- (a) Fighters moved to Maddalena area with A.A. protection in attendance. Proportion of A.A. left in Mesheifa area to cover Medium Bomber L.G's.
- (b) 4 Light guns remained at Sidi Barrani to protect R.A.F. early warning installation.
- (c) No.2 Forward Base closed.

DIAGRAM III

- (a) Tobruk with its A.A. defences came under Army Command.
- (b) Tobruk A.A. defences heavily reinforced to ensure immunity from damage while being developed as a supply port.
- (c) Fighters moved to El Adem area.
- (d) Giarabub ceased to be an A.A. commitment.

DIAGRAM IV

- (a) Fighters moved forward to Mechili area.
- (b) Medium Bombers moved to El Adem area.

DIAGRAM V

- (a) Derna captured. A.A. protection provided to enable port to be developed.
- (b) Benghazi captured. A.A. delayed "en route" by road demolitions.
- (c) Fighters moved forward to Msus area.

DIAGRAM VI

- (a) Benghazi occupied. Large scale development as a port required, therefore considerable A.A. defences.
- (b) Fighter L.G's established on the coast from Tobruk to Benghazi to protect convoys.
- (c) Consequently A.A. were being "stretched out" and Army had to call on 13 Corps to allot a Divisional Light A.A. Battery from 4 Indian Division to assist in the A.A. defence of Benghazi.

[Report by Brigadier i/c A.A.
Appended to Report on "Crusader" Operations
By Wing Commander Gordon Finlayson,
S.O.O., A.H.Q., Western Desert .]

A. A. D. 1

DIAGRAM I

SIDI BARRANI

4 Heavy Guns
4 Light Guns

MATRUH

8 Heavy Guns
12 Light Guns

CHARING CROSS

6 Light Guns

SEITILLA

3 Light Guns

DABA

3 Light Guns

NO. 2 F.W.B.

8 Heavy Guns

DESERT R.H.

8 Heavy Guns
12 Light Guns

ARMY H. Q.

4 Light Guns

75/76 L.G's

8 Heavy Guns
12 Light Guns

30 CORPS

8 Heavy Guns

109/110/111/L.G's

20 Heavy Guns
40 Light Guns

L. G. 125

4 Heavy Guns
4 Light Guns

E. FORCE

8 Light Guns

DIVISIONAL LT. A.A.

30 CORPS { 7 Armd Div. 36 Light Guns
22 Armd Bde 12 Light Guns
1 S.A.Div. 36 Light Guns

13 CORPS { 4 Ind. Div. 36 Light Guns
1 N.Z. Div. 36 Light Guns

GIARABUB

4 Heavy Guns

A.A. MOVE 1

DIAGRAM II

MATRUH

8 Heavy Guns
12 Light Guns

SIDI BARRANI

4 Light Guns

DESERT R.H.

16 Heavy Guns
12 Light Guns

CHARING CROSS

6 Light Guns

SEMILLA

3 Light Guns

DABA

3 Light Guns

F.S.D. 62

(30 Corps)

8 Heavy Guns

75/76 L.G's (BOMBERS)

12 Heavy Guns
12 Light Guns

123/124 L.G's (FIGHTERS)

12 Heavy Guns
24 Light Guns

122 L.G. (FIGHTERS)

8 Heavy Guns
12 Light Guns

ARMY H.Q.

4 Light Guns

E. FORCE

8 Light Guns
4 Light Guns (CONVOY)

L.G. 125

4 Heavy Guns
4 Light Guns

GIARABUB

4 Heavy Guns

A.A. MOVE 2

DIAGRAM III

TOBRUK
EL GUBBI (FIGHTERS)

20 Heavy Guns 8 Heavy Guns
30 Light Guns 8 Heavy Guns

SIDI REZECH
BU AMUD
EL ADEM

24 Heavy Guns
40 Light Guns

ARMY H. Q.

4 Light Guns

MATRUH

8 Heavy Guns
6 Light Guns

CHARING CROSS

3 Light Guns

POLISH BDE

12 Light Guns

13 CORPS H. Q.

6 Light Guns

DESERT R. H.

16 Heavy Guns
12 Light Guns

To
TOBRUK

75/76 L. G's (BOMBERS)

8 Heavy Guns
12 Light Guns

To
TOBRUK

E. FORCE

12 Light Guns

L. G. 125

4 Light Guns

A.A. MOVE 3

DIAGRAM IV

TOBRUK

36 Heavy Guns
30 Light Guns

POLISH BDE

12 Light Guns

13 CORPS

6 Light Guns

ARMY H. Q.

4 Light Guns

MECHILI
TINI
GAZALA

Fighters

16 Heavy Guns
40 Light Guns

E. FORCE

12 Light Guns

GAMBUT
EL ADEM

Bombers

16 Heavy Guns
12 Light Guns

MATRUH

8 Heavy Guns
6 Light Guns

CHARING CROSS

3 Light Guns

DESERT R. H.

16 Heavy Guns
12 Light Guns

L. G. 125

4 Light Guns

BENGHAZI

8 Light Guns
16 Heavy Guns
12 Light Guns

DERNA

8 Heavy Guns
6 Light Guns

A. A. MOVE 4

TOBRUK

28 Heavy Guns
24 Light Guns

DIAGRAM V

MATRUH

8 Heavy Guns
6 Light Guns

CHARING CROSS

3 Light Guns

GAMBUT
BU AMUD

Bomber L. G's

8 Heavy Guns
12 Light Guns

DESERT R. H.

8 Heavy Guns
12 Light Guns

ARMY H. Q.

4 Light Guns

MECHILI
MSUS

Fighter L. G's

16 Heavy Guns
40 Light Guns

22 GUARDS EDE

12 Light Guns

E. FORCE

L. G. 125

4 Light Guns

A.A. MOVE 5

DIAGRAM VI

BENGHAZI

16 Heavy Guns
24 Light Guns

DERNA L. G.

8 Heavy Guns
6 Light Guns

TOBRUK L. G.

28 Heavy Guns
24 Light Guns

MATRUH

8 Heavy Guns
6 Light Guns

ARMY H. Q.

4 Light Guns

L. G. 125

4 Light Guns

CHARING CROSS

3 Light Guns

FIGHTER L. G.
MSUS

16 Heavy Guns
40 Light Guns

GAMBUT
BU AMUD

Bomber L. G.'s

8 Heavy Guns
12 Light Guns

DESERT R. H.

8 Heavy Guns
12 Light Guns

22 GUARDS BDE

24 Light Guns

BRIEF REPORT ON COMMUNICATIONS IN THE
WESTERN DESERT OPERATIONS . 1941-42

Organisation

1. Unlike static warfare where communications are based on a permanent system of land lines, mobile operations require the use of wireless as the primary means of signalling, backed up initially by temporary land lines, both telephone and telegraph over short distances, and replaced eventually by permanent line for telephone and teleprinter in the back area as soon as it can be constructed.
2. For the Western Desert Operations, the Signal Plan provided two operational and one administrative W/T channel from the Operational Wings to the Advanced and Rear Air Headquarters respectively, with Rear Air Headquarters responsible for communication to units and formations in the back area. Similarly, Advanced Air Headquarters assumed responsibility for all forward independent unit communication such as Advanced A.S.P's and R.S.U's, the S.R.U. Communication Flight and the Army Co-operation Squadrons previously controlled by No. 253 Wing.
3. Air Staff accepted the principle that the Fighter and Bomber Wings would always have their squadrons grouped round them sufficiently close to permit telephone communication using D.8 cable on the ground, and that the Fighter Wings Headquarters would also be within D.8 distance of Advanced Air Headquarters. Unfortunately circumstances did not always permit this, and the alternative channels of communication were W/T with its inherent cyphering delays, or R/T for which the equipment available only permitted satisfactory working within 50 miles range.
4. Wherever possible Fullerphones were installed by Air Formation Signals between the Wings and Advanced Air Headquarters, and between the latter and Rear Air Headquarters, which maintained its rearward line circuits and extended them forward when it moved up.
5. Communication to independent mobile units was by line wherever possible but generally by low power W/T, which was also the standby line between Wings and their squadrons and between the Wings themselves and the Maintenance and Supply Organisation in the Rear and the Delts.

Communications

Ground

6. At the outset of operations W/T conditions were fair to good and difficulties were only experienced owing to frequencies not always being suitable for the distances involved. As these distances depended on the forward moves of units and could not be predicted, it was only possible to allot frequencies which would appear to be satisfactory for estimated distances, and when they proved unreliable in practice, adjustments were made as far as possible.
7. No satisfactory solution was found to the problem presented where distances lay between the direct and indirect way, and even medium frequencies of the order of 350 kcs. were unsatisfactory since only low power sets were available and static level tended to drown signals by night just about the period when the intermediate frequencies begin to fade out. On some occasions, however, it was possible to maintain communication when the fade-out period of medium and intermediate frequencies did not coincide, but the possibility of channels being completely out always existed.

8. When the normal deterioration of W/T conditions arose later in the campaign, the lower frequencies in the intermediate band, in which signal strength tended to be least affected, became unworkable owing to the high static level, but attempts to raise frequencies were equally unsatisfactory owing to the greater effect of fading.

Communication

Air

9. W/T communication with aircraft suffered to begin with owing to the large number of aircraft fitted with the G.P. set. American aircraft fitted with Bendix equipment and later British aircraft with the more modern Marconi Ekco set provided far better communication, but in all cases, the obsolete T1087 ground transmitter with its poor note and low input/output ratio tended to restrict the range at which aircraft picked up signals from the ground.
10. R/T communication to Bomber aircraft was subject to the same limitations particularly with the poor R/T from the G.P. transmitters and the lack of gain and selectivity in the R.1083. The Bendix however was most satisfactory and the Marconi set a distinct improvement.
11. R/T to fighters was most disappointing. R/T transmissions from the T1087 are of low quality and insufficient depth of modulation so that at times greater ranges ground to air could be obtained with the small Collins 18M than with the far more powerful T1087.
12. The obsolete TR9 was quite unsuitable for the distances at which it was required to work and it was unsatisfactory even for air to air working. This latter was due to lack of intensive R/T training by pilots, difficulties in maintaining such low-power equipment under desert conditions where the highest efficiency from both transmitter and receiver is essential, and above all, the great difficulties in obtaining high tension batteries of good quality in sufficient quantity, with the result that they had to be used when their voltage was far below the minimum for efficient working.

Equipment

13. Low-power G.P. Vans were the mainstay of wireless communication, but they were unsatisfactory for the following reasons:-

- (a) Lack of low-pressure sand tyres.
- (b) Bodies of too light a construction and too high off the ground.
- (c) Whilst the G.P. transmitter in the hands of a competent operator is quite satisfactory, the receiver R1083 is far too insensitive and unselective.

A calibrated and gauged one-dial type superheterodyne receiver is required to enable rapid back tuning of the transmitter, and it should have mains type valves for higher gain operated from a twelve volt power pack.

14. The Specialist Pairs have proved their superiority over the experimental vehicles in spite of the unsatisfactory torsion bar suspension of trailers, but it is essential that all wireless vehicles including those for reception and power, should be prime movers. The Trios are slower than Specialist vehicles as the former won't hold the road, and are top heavy. Moreover, they are of too light construction and are not water-proof.

15. The equipment in both is obsolete. The T1087 transmitter was never designed to be mobile and they are at least twice as large and heavy as they should be, and the output should be at least three times as great.

Since power is available in the receiving vehicle the standard receiver should be mains operated with provision to work from a power pack if necessary in order to provide a simpler set than the R1084 but with as high a degree of sensitivity and selectivity.

16. The provision of adequate power both for wireless and charging has been a constant source of worry. Both Meadows and Ford engined power vehicles have continually failed under reasonable operating conditions for the desert and in cool weather. Moreover the standard generator of $7\frac{1}{2}$ KVA is now too small to provide power for the various wireless services and the greatly increased charging requirements especially in squadrons. A deisel or semi-deisel set of about 12-15 KVA is required, with tropical radiators and adequate filters for sand protection.

17. Aircraft radio equipment and its shortcomings have been dealt with above. Briefly, the shortcomings have been due to its obsolete pattern, the use of battery operated sets, and in the case of fighter aircraft, its lack of flexibility due to single crystal control.

Personnel

18. At the outset of Operations there were ample Signals Personnel available, but the majority were wartime trained and with little or no experience. Moreover there was a serious shortage of N.C.O's, especially those with any experience of heavy W/T traffic. The limited number available were sent to the operational units to maintain aircraft equipment, and at ground W/T Stations the first month of operations largely consisted of intensive training and supervision both of the junior N.C.O's, to enable them to deal with traffic and its complications of routeing, and of the operators themselves, the majority of whom had little previous operating experience.

19. Whilst operations are the best training possible, signals efficiency during this period suffered badly and was not helped by the desert conditions and the dispersal, essential for security, between sets, Signals and Cypher Offices. Moreover, during the opening phase, telephone and telegraph facilities were not so plentiful as it was found possible to provide later. Consequently the volume of W/T traffic was high and this threw a further strain on the wings whose strengths of Signals Personnel were of necessity low.

Traffic

20. The volume depended largely on the relative positions of the Operational and Headquarters Units. Where ample line facilities could be provided, the telephone saved a considerable amount of signalling, especially to the Fighter Wings, and in enabling co-ordination between Bombers and their Fighter escorts. Under these circumstances an artificially low traffic level was reached.

21. Whilst operations were in full progress, the average daily total passing "In", "Out", and "Through" the Advanced Air Headquarters amounted to 17,000 groups, of which 10,000 were in Cypher, depending on the availability of land-lines for Fullerphone circuits, and their serviceability. Daily totals varied considerably, peaking to 21,000 groups and dropping as low as 9,000 even before static conditions had been reached.

22. The W/T channels provided in the Signals Plan together with the other channels which could be opened or joined if necessary, proved ample for the traffic to be passed. Only when W/T conditions at night became unfavourable, or when it was impossible to open up a forward W/T Station in a new position before the main party moved forward, were there any delays in signalling. The bottle-neck was always Cyphers, coupled with the necessity for originating many operational signals in the evening just when the W/T conditions were deteriorating or in some cases where it had become impossible to pass traffic.

Land-lines

23. The principle was adopted of Air Formation Signals laying D8 lines after every forward move between Wings and their Squadrons and between Advanced Air Headquarters and the Wings when distances permitted. Furthermore, Fullerphones from the Wings to the Air Headquarters were provided as soon as possible in order to cut down the delays to traffic caused by cyphering.
24. To each Fighter and Bomber Wing, Wing sections of Air Formation Signals augmented by line sectors as necessary, were provided, whilst at the Advanced Air Headquarters there was an Operating Section with Line Maintenance Parties to maintain the lines in the vicinity. Line Construction Sections were mainly engaged on the main routes and were attached to the Advanced Air Headquarters.
25. Wherever possible, temporary lines were replaced by permanent or semi-permanent construction provided that they were likely to form part of the rear network, and through trunk facilities to the back areas, with the maintenance of carrier equipment, were provided in conjunction with Royal Corps of Signals.
26. As the quality of the lines in the back areas was improved, and either new routes built, or existing ones reconstructed, it became possible, using carrier equipment, to provide Teleprinter services to Rear Air Headquarters and eventually to Headquarters, R.A.F. Middle East.

Cyphers

27. Eight Cypher Officers for Book Cyphers and two for Typex were taken into the field by Advanced Air Headquarters at the start of operations, but in view of the increases of traffic, this number had to be increased gradually until there were fourteen Book Cypher Officers and three Typex. When conditions became more stabilised it was possible to reduce this figure to fourteen and two respectively, but the Cypher and Signals Personnel together amount to more than a third of the total Advanced Air Headquarters strength.
28. The saving of time where Typex could be used was most noticeable, but a limited distribution only allowed an average of 2000 groups daily to be handled in this cypher and the messages were usually Operational Reports and Summaries to Headquarters, R.A.F. Middle East, No.201 and 205 Groups.

General

29 It is considered desirable to draw particular attention to the following points which have become apparent during the first phase of this campaign:-

- (i) In order that Fighter Squadrons can be adequately controlled, it is vital for the Wing or Operating Control to have direct telephones to all squadrons, and for the controls to be linked by line to the Air Headquarters. W/T introduces impossible delays, and the use of R/T cannot be tolerated except where air superiority has been attained for security reasons.
- (ii) Owing to the continual need in Mobile Warfare for W/T Stations to move forward in advance of the unit to which they belong, and maintain themselves on their own, it is essential that they be made entirely mobile, self-contained as regards transport and administration, and preferably constituted as a separate Signals Unit attached as required to formations to provide their communications.

/(iii)

- (iii) High Speed Petrol Electric power plants are unsuitable for use in the desert and should be replaced by Diesel Engines driving generators of at least 12 K.V.A.
- (iv) The standard ground station transmitter is not sufficiently powerful to ensure communication at all times, and is unsuitable for the high degree of mobility required, owing to its size and weight.
- (v) The standard ground station receiver should be replaced by a simpler but more modern set designed to work directly off A.C. mains, but provided with a power pack as a stand by.
- (vi) Owing to the long distances over which Fighter Aircraft are called on to operate from their Control in direct warfare, battery operated R/T transmitters are quite unsuitable, and V.H.F. is more urgently required even than under static warfare conditions.
- (vii) Mobile Offices for Telephone Exchanges, Traffic, Cyphers, Type "X" machines and Teleprinters must be provided if equipment is to function satisfactorily, and to achieve efficient signals organisation.
- (viii) Experience has shown that the bottle-neck in communications is due to the delay from the use of cyphers rather than in the actual method of communication.

(SIGNED) H. SOUTHLY

Wing Commander,

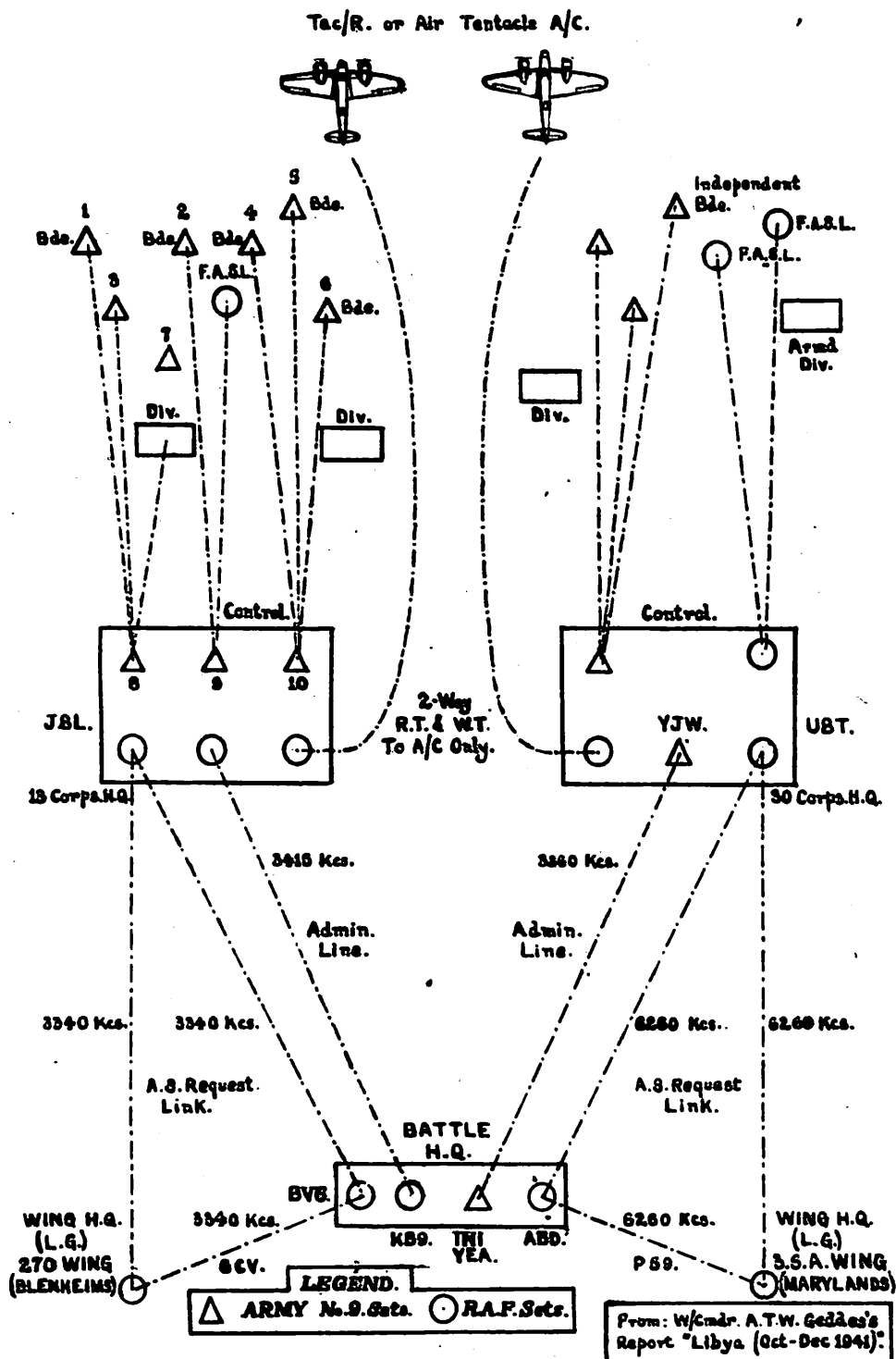
C.S.O.,

Air Headquarters,

Western Desert.

(Appendix to Report by Wing Commander
Gordon Finlayson, S.O.O., Air Headquarters,
Western Desert, on "Crusader" Operations).

**AIR SUPPORT CONTROL.
GENERAL LAYOUT EIGHTH ARMY.
GIVING ACTUAL WINGS AND FREQUENCIES USED.**



APPENDIX F(i)

USE OF R.D.F. DURING OPERATIONS IN WESTERN DESERT AND LIBYA
NOVEMBER 1941 - JANUARY 1942.

At the commencement of the advance against the Germans and the Italians, the Fighter Force was based sixty miles South of Sidi BARRANI on L.G's 110, 109, 111 and 130. There were two sources of R.D.F. information already available, the A.M.E.S. at SIDI BARRANI which was connected by land line to Wing Headquarters at L.G.110, and No.235 A.M.E.S. at TOBRUK which plotted by W/T. Previous D-1,235 A.M.E.S. only gave movements of aircraft passing TOBRUK east and west, in order to conceal from the enemy the fact that the station was installed in TOBRUK. On d-1 tracks of aircraft were passed in code, which changed hourly, of all aircraft movements. The information from BARRANI was useful as a warning for aerodrome defence at L.G.110 and later at L.G.122, MADDALENA area, where plotting was continued by W/T.

2. The information from TOBRUK though accurate was of little use at first, as, owing to distance of the MADDALENA L.G's from the battle area south of TOBRUK compared with the distance from it of the enemy's bases at GAZALA and the time taken to get a Wing airborne, fighters were invariably late even when the enemy's intention and target was quite clear in the Operations Room.
3. Later a skeleton Operations Room was opened at L.G.134 about forty miles behind the main battle area and this intercepted plots from TOBRUK and passed information to fighters in that area by R/T, having been previously warned by 258 Wing Headquarters at MADDALENA of their presence. Similarly two Controllers and an R/T set were flown into TOBRUK to broadcast information of enemy aircraft movements to fighters on patrol. A few interceptions were obtained by this means and later a Wing (Nos.1 and 274 Squadrons) was landed on EL GUBBI aerodrome, refuelled and, taking off on instructions from No.235 A.M.E.S., intercepted and destroyed a large number of enemy aircraft south of EL ADEM.
4. At L.G.134 a Flight of No.73 Squadron intercepted several aircraft which were plotted by No.235 A.M.E.S. TOBRUK, and this was due to a large extent to their forward position and speed off the ground.
5. In addition to these two Stations Radio Branch, H.Q. R.A.F., M.E. had at the request of O.C. No.258 Wing provided two mobile RDF sets mounted in lorries. These were modified A.S.V. sets and were not satisfactory owing to their very limited range and due to hasty improvisation suffered from mechanical failures. It had been intended to push these sets as far forward behind our advancing armour as security permitted, and thus "look" ahead of the armoured divisions, and send fighters to patrol over them when enemy aircraft were detected approaching. As was stated before they were withdrawn as in addition to unreliability mechanically, their range 15-20 miles, was at least 50 miles too little for their intended role.
6. At GAZALA during the advance No.510 A.M.E.S. (C.O.L.) was attached to No.258 Wing and was used principally to give warning of the approach of enemy aircraft to the fighter aerodromes. Though only used for a short spell it was very successful and one enemy bomber was intercepted at least 20 miles out to sea on its run in.
7. From this time until the Wing reached ANTELAT on 14th January, R.D.F. was not used owing to rapidity of our advance, but at this place the C.R.O. H.Q. R.A.F., M.E. (Wg.Cdr. Tester) joined the Wing with No.510 A.M.E.S. As ANTELAT was over 100 miles from the enemies positions at AGHEILA a forward L.G. was established at BELANDEH and the COL was installed there, it being the intention to operate formations of up to eighteen aircraft on controlled interceptions over the enemy's lines. Owing to the enemy's advance this scheme was never put into effect and the C.O.L. was withdrawn. From then until our land forces consolidated a line at GAZALA no opportunity occurred for the use of R.D.F.

(Extract from Report by Wing Commander Tester, C.R.O., H.Q. R.A.F., M.E., appended to a Report by Wing Commander Gordon Finlayson, S.O.O., A.H.Q., W.D., on the "Crusader" operations).

APPENDIX G(i)

FIGHTER OPERATIONS AND TACTICS IN THE LIBYAN CAMPAIGN

NOVEMBER, 1941 - JANUARY, 1942

(Report by Commanding Officer, No. 258 Wing)

Part I

THE AIM

(i) Fighter Forces Available

Part II

PLAN AND OPERATIONS TO ACHIEVE THE AIM

Attacks against enemy Fighter aerodromes.

Tactics in the air.

Part III

OTHER FIGHTER TASKS

Bomber Escorts.

Hurricane Bombing.

Long Range Hurricanes.

Ground Strafing.

Part IV

EQUIPMENT

Aircraft.

Armament.

R/T

Part V

CONCLUSIONS

PART I

THE AIM

The task set the Fighters before the start of the campaign was the prevention of air attack by the enemy on our land forces particularly the Armoured forces.

The A.O.C. gave the Fighter Wings as their primary aim the destruction of the German Fighter Force. It was assumed from past experience, that, if this aim could be attained, little opposition would be experienced from the German bombers and the Italian Air Force.

2. Fighter Forces Available.

4 Squadrons Hurricane II.	(1, 274, 238, 229)
5 Squadrons Tomahawks.	(2, 3, 4, 112, 250)
3 Squadrons Hurricane I.	(94, 260, RNFS)
1 Squadron Hurricane I Bombers	(80.)

LATER

3 Squadrons (Kittyhawks)	(3, 112, 250)
1 Squadron Hurricane I Long Range	(33.)

PART II

PLAN AND OPERATIONS TO ACHIEVE THE AIM

(i) With the fighter forces available it was believed that we had numerical superiority over the German fighters of at least 3-1, but our best fighters, the Hurricane II and Tomahawk, were much inferior in performance to the 109F and the Hurricane I was quite outclassed. The tactics adopted by the Fighters in the Western Desert were in fact governed almost completely by the excess in performance of the 109F over all our fighters.

(ii) It was decided at the outset, therefore, that the best way of overcoming the German fighters was to destroy them on the ground or, if this was not successful, to outnumber them in the air.

2. Attacks Against Enemy Fighter Landing Grounds

(i) In deciding to attack enemy landing grounds it was fully realised that the majority were protected by considerable and very efficient "Flak" and were difficult to locate from low level. To overcome these difficulties a specialised form of aerodrome attack was developed. The forces taking part in these attacks were:-

- 1 "Box" of six to twelve Blenheims.
- 1 Squadron Fighters (close support).
- 1 Squadron Fighters (Top cover).
- 1 Squadron Fighters (Aerodrome attack).

(ii) Three such circuses were formed and trained in the back areas until shortly before the land offensive was due to start.

The plan was practised was for the Blenheims to proceed at between 8 - 10,000 ft. to the target aerodrome, by the route likely to be least observed, with close and top escorts and with the straffing squadron in position slightly below and behind the bombers. When within twenty miles of the target, the bomber leader gave a signal by lateral rocking of his aircraft and the straffing squadron then did a 360 rate 2 turn down to ground level. It was found from practice that this put them about 6 - 8 miles behind the bombers. If enemy aircraft were sighted on the aerodrome by the Blenheim leader he bombed them and the fighters, locating the landing ground by the bomb burst, attacked as the dust was clearing.

(iii) The bombing thus had three purposes

- (a) Damage to A/C.
- (b) Location of Landing Grounds for fighters.
- (c) Disconcerting Ack Ack Crews.

(iv) As a safety precaution, if no enemy aircraft were seen on the ground, the Blenheim leader fired a Red Veray Light and fighters swung away from the Landing Ground.

/(v)

(v) With the object of "laying on" this type of attack, extensive reconnaissance of enemy landing grounds was made prior to the land offensive and during the first part of it. This reconnaissance was carried out by Bostons of No.24 Squadron, one being attached to the Wing for this specific purpose.

(vi) Only one opportunity occurred to use this form of attack, on 17th November, 1941, when a successful attack was carried out on BAHEIRA by RNFS., (straffing), No.3 and 112 Squadrons top and medium cover, and twelve Blenheims bombing. Three enemy aircraft were destroyed for no losses to our forces.

(vii) On 19th November, 1941, a number of fighters were seen on SIDI RESEGH landing ground by a Boston on TAC/R. As the degree of Ack-Ack protection was known to be light there, bombers were dispensed with and Nos. 2 and 4 Squadrons attacked. No.2 Squadron attacked the Landing Ground and No.4 Squadron provided top cover. This attack was most successful, at least two fighters being destroyed and five made unserviceable for no losses. Unfortunately they were afterwards found to be Italian G.50's.

(viii) No further opportunities occurred to exploit this form of attack owing to German fighter bases being out of range of our fighters, though the possibility of refuelling fighters in TOBRUK with the object of attacking GAZALA was examined and refuelling arrangements made. Unfortunately the landing ground at EL GOBBI was under shell fire and when landing grounds in the TOBRUK - EL ADEM area had been secured, GAZALA had been evacuated by the Germans.

3. Tactics in the Air

(i) It had been hoped to exploit the information transmitted by the A.M.E.S. at TOBRUK to effect interceptions over the battle area in sufficient force to ensure success but this was found to be impracticable for three reasons viz:-

(a) The rapid advance of the land forces made SIDI RESEGH the centre of the battle area, and this was considerably further from the Fighter landing grounds in the MADDALENA area than the enemy's base at GAZALA.

(b) Even if we had managed to operate from landing grounds nearer the battle (an impracticability owing to the lack of security against ground attack and lack of landmarks in the desert), the time taken to get squadrons airborne was considerable. This was due to dust, and limited take-off area from strip aerodromes. A Wing of two squadrons averaged 12 - 15 minutes from "Readiness" to be airborne.

(c) Lack of R/T range.

(ii) It was decided therefore to operate in a series of Wing Sweeps of two squadron strength, over the areas considered most vital by Eighth Army Headquarters. Wings were made up as follows.

3 and 112 Squadrons.
2 and 4 Squadrons.
1 and 274 Squadrons.
238 and 229 Squadrons.
94 and 260 Squadrons.
RNFS and 250 Squadrons.

TOMAHAWKS.
"
HURRICANE II's
HURRICANE II's
HURRICANE I's
HURRICANE I's. &
TOMAHAWKS.

(iii) It was realised that these sweeps were uneconomical, but it ensured that with a minimum force of 24 fighters, we should probably outnumber the enemy fighters and thus make up for our inferiority in performance. Wings normally carried out two sorties a day for the

/first

first three weeks though three sorties a day were made by some squadrons. Duration of sweeps was approximately two hours.

(iv) Wings adopted with slight variations the formation of one squadron 1,000 ft. above the other, with squadron in six pairs line abreast and well spaced. Though unmanoeuvrable this was found to be the best formation for searching. In two of the most successful Wings the interval between squadrons was increased up to 4,000 ft. and to overcome the difficulty of retaining visual contact the top squadron led. This scheme worked well against a fighter force employed mostly in support of bombers, but as soon as the land battle stabilised it had to be abandoned, it being found that the top cover often saw a target below which it was unable to attack and the lower formation was often attacked from above without the top cover knowing anything about it.

In addition to Wing Sweeps a very well trained and experienced Flight (No.73 Squadron) was operated from a forward landing ground within 35 miles of the land battle and were very successful in dealing with enemy TAC/R aircraft and small numbers of ground straffers.

(v) This plan and the tactics adopted were on the whole successful. From the start of the battle on 19th November, 1941, until the front stabilised at GAZALA on our withdrawal from EL AGHEILA, our sweeps were never outnumbered by the enemy fighters, and on many occasions the top squadron was able to contain the enemy fighter escort while the lower squadron dealt with dive bombers. The following figures are of interest.

Enemy Aircraft Destroyed in the Air between 19/11/41 and 31/1/42.

	<u>German</u>	<u>Italian</u>
Fighters.	66	61
Other aircraft	99	6
<u>Our Casualties</u>	Fighters 130 - 140 (85 pilots safe).	

PART III

OTHER FIGHTER TASKS

Bomber escorts. Escorts were provided to Bombers operating in or behind the battle area. The escort was normally ordered by Adv. Air Headquarters when they had agreed to a request for support from the Army. Bombers were briefed at their own base and were given a time of rendezvous over the Fighters Landing Ground. At the time of rendezvous, Fighters were brought to "Standby", pilots in the cockpit, aircraft into wind. Bombers arrived and circled the landing ground twice and at the completion of these circuits all fighters were airborne and taking up position.

This method allowed the maximum use to be made of fighters endurance and raids up to 130 miles from Fighter bases could be undertaken.

Formation adopted was - one squadron or flight close escort with a flight medium and a flight top cover. These last formations were sometimes increased to a squadron each.

The success of these bomber escorts has been a feature of the campaign, only three bombers being lost by fighter action in 716 sorties and though fighters occasionally suffered losses they were never heavy. The ineffectiveness of the enemy's escorts compared with our own is remarkable.

/Hurricane

Hurricane Bombing

(i) This was the role of No.80 Squadron and was carried out either at the request of the Army on an urgent Support call against specific targets, generally M.T. concentrations and columns, or, the Squadron was given an area and looked for its own target. The bombing was good but it was found that more damage was done during the subsequent straffing with eight Brownings than was done by eight 40 pound bombs. Later it became necessary for one Flight to remain above during straffing as top cover and sometimes, when operating against a key point where fighter opposition was expected, a top cover squadron was provided.

(ii) This Squadron's great value was the rapidity with which it could answer a support call, a delay of more than half an hour was the exception.

(iii) Identification difficulties were numerous, but were overcome by the initiative and courage of the Squadron Leaders who, despite Ack-Ack fire, came down to ground level to identify targets before attacking. Bombing of tanks with 40 pound bombs had no effect whatever though direct hits were obtained on a number of occasions.

(iv) Losses from Ack-Ack and fighter action were divided in the ratio of 4 to 6, a total of 10 Hurricane bombers being lost.

Long Range Hurricanes

(No. 33 Squadron - Hurricane I). These joined the Wing at MSUS after five weeks of the campaign and operated as much as 200 miles behind the enemy lines, generally attacking transport on the roads. The approach and departure was invariably made from out to sea or from the desert at low altitudes and there is no doubt that these attacks were a constant worry to the enemy. There were few losses until it became necessary to employ them on normal ground straffing in the battle area. Even then losses were not heavy and were mainly due to Ack-Ack.

Ground Strafing

(i) There were two periods during which ground straffing was carried out on a large scale, on 22.11.41, during the early part of the land battle when the enemy was bringing up reinforcements, the ACROMA-EL ADEM ROAD was reported by TAC/R to be congested, and during the withdrawal from EL AGHEILA to GAZALA when, owing to the absence of enemy aircraft, the whole fighter force was diverted to this task.

(ii) In the first period the straffing was done by the lower squadron of a Wing of two, the other providing cover during straffing and on the return trip. Fighters attacked across the road and normally carried out one run only, it having been found from 80 Squadron's experience that the fires caused quickly attracted enemy fighters to the spot, when our fighters were at a disadvantage to deal with them.

<u>Acroma-El-Adem Road</u>	<u>No. of Sorties</u>	<u>M.T. Destroyed</u>	<u>Damaged</u>	<u>Our Casualties</u>
	49	35	66	1

(iii) Between 22.1.42 and 5.2.42. during the withdrawal from AGHEILA to GAZALA straffing was carried out by Squadrons, Flights and even by pairs of aircraft, mostly with no top cover and, if it was provided at all, by very small formations. Pilots had difficulty in locating columns and concentrations of enemy M.T. particularly

/when

when stationary, owing to good camouflage, but when given a definite target, or a track, did extremely well, for instance all movement was stopped on the ANTELAT - MSUS track for some hours on the 26.1.42, when Squadrons were operating from MECHILLI, and again later between DERNA and TMLMI, and on the GARMUSA - DERNA - MARTUBA track when complete convoys of 30 or more lorries were destroyed. Owing to complete absence of enemy fighters it was possible for fighters to carry out repeated attacks until ammunition was exhausted.

<u>Agheila - Gazala</u>	<u>No. of Sorties</u>	<u>M.T. Destroyed</u>	<u>Damaged</u>	<u>Our Casualties</u>
	268	113	469	6

(iv) One lesson was well learnt:- That ground straffing does not pay when a front has been stabilised and the enemy has had time to prepare positions for light Ack-Ack. This was demonstrated on 6.2.42, when the front had stabilised at GAZALA. A flight of six aircraft of No.33, the most experienced ground straffing squadron, straffed a column on the DERNA-TMLMI road, as they had done successfully the day before. No defences were visible from above, but during the attack the aircraft were subjected to intense fire from both sides of the road from well camouflaged positions. Though all aircraft got back, one with his rudder controls shot through, and another with a piece out of his Wing the size of the national marking, all six aircraft were category II.

(v) Though our air superiority was almost complete during this period, the Army did not comply with the request to mark their vehicles distinctly with a Black Cross, until the position had stabilised and ground straffing was no longer a paying proposition.

(vi) It is recommended that the question of identification of Army M.T. and ground forces be studied very carefully before the next advance.

Tactical Reconnaissance escort, this was asked for repeatedly, as a rule with the prefix that the task was "vital". As with escort duty it was carried out where possible, but it invariably led to fighters being attacked instead of themselves attacking. It should be remembered that the fighter's primary role is to gain air superiority and to do this they must not be tied to any duty other than that of seeking the enemy fighters and bombers. Tactical Reconnaissance aircraft in the end generally went out with a sweep in the area it wished to cover, though it was made quite clear that it followed the sweep and not the reverse.

Night Flying

- (i) None carried out during the first part of the campaign as:-
 - (a) No enemy aircraft operated in the fighter area at night.
 - (b) All aircraft were required for day work.

PART IV

EQUIPMENT - AIRCRAFT

Tomahawk

(i) was the most successful fighter until the arrival of the Kittyhawk. Its long endurance made it valuable when fighter bases were a long way behind the front of the battle area and for bomber escorts. Its .5" guns gave it a more destructive punch than the British fighters. Its disadvantage was its poor climb and length of landing ground required for take-off and landing.

/Hurricane

Hurricane II

(ii) suffered very much from its limited endurance, as most of the fighting took place a minimum of seventy miles from base. This was a very real handicap. In other respects it was ideal, easy to fly and land, and very easy to maintain.

Hurricane I

(iii) was outclassed when opposing German Fighters 109E or "F", but it was reliable and serviceability was well maintained.

(iv) Wooden Airscrews are unsuitable for fighters operating from hastily constructed landing grounds, and many aircraft were made unserviceable from cracked blades due to stones hitting them during take-off and landing.

(v) Tyres All aircraft suffered from tyre troubles, a number of aircraft becoming Category II or III through crashes caused by burst tyres. It is considered that special tyre of at least 50 per cent increase in strength over present tyres should be developed to allow for desert landing ground surfaces.

Armament.

(i) The .5" gun as mounted in the Tomahawk and Kittyhawk was very effective, though pilots consider that had incendiary ammunition been available, many probables would have been "confirmed". The synchronisation gear caused a number of stoppages in new Tomahawks and though careful maintenance improved the reliability, the Tomahawks .5" guns were never 100 per cent reliable. The .3" Brownings worked well but in pilots opinion were not worth their weight without incendiary ammunition. .303" Brownings were fitted to two Squadrons of Tomahawks and one of these Squadrons in particular was very successful. Kittyhawk guns have been very satisfactory.

(ii) The eight and twelve Brownings in the Hurricane I and IIB functioned entirely satisfactorily, though there is no doubt that the penetrative power of the .303" is insufficient to deal with armour now fitted to German and Italian Aircraft. The incendiary ammunition made up for this deficiency to a large extent, also the fire power of the Hurricane IIB was very effective during ground strafing attacks.

(i) R/T. This has proved universally unreliable throughout Squadrons throughout the campaign and has had a very detrimental effect on operations as a whole. During the first part due to unreliable inter-com, development and practice of tactics was hindered, and now that controlled interceptions are being attempted its unreliability is a handicap which is impossible to overcome. The R/T is not consistently bad, but even with most careful maintenance and tuning it cannot be guaranteed, the result being that vital orders are not received (though previous orders have been heard perfectly) with disastrous results in many cases. R/T is particularly unreliable in American aircraft.

PART V

CONCLUSIONS

1. That fighters must not be diverted from the main task of gaining air superiority by allotment to other tasks, such as ground strafing and bomber escorts, until a degree of superiority has been obtained.

/2.

2. That when employing fighters in support of land forces engaged in a land battle, the difference in performance of our own and enemy fighters is not so apparent. When a front stabilises and an air battle develops the difference in performance is accentuated.
3. That fighter-bombers are ideally suited for the support of land forces during the battle, but heavier bombs are required to make them really effective.
4. That ground strafing defended targets is likely to be very expensive.
5. That bomber escorts as carried out are effective, but that losses are likely among the escorts. Therefore the amount of damage against specific targets must be balanced against the probable fighter losses when ordering the operation.

Date: 12th March, 1942.

(Signed) K.B.B. Cross

Group Captain, Commanding
Headquarters, No.258 Wing,
Royal Air Force, Middle East.

APPENDIX H (i)

DETAILS OF OPERATIONS BY AIRCRAFT OF THE
MIDDLE EAST COMMAND.
(18th NOV. 1941 - 20th JAN. 1942)

1. EFFECTIVE SORTIES BY BOMBER AIRCRAFT - EGYPT/CYRENAICA (BASE)

TARGETS.	18 Nov. to 1 Dec.	2 Dec. to 15 Dec.	16 Dec. to 30 Dec.	31 Dec. to 13 Jan.	14 Jan. to 20 Jan.
Ports and Bases	119	24	25 (a)	61	6
Aerodromes and Landing Grounds	204	99	156	3	1
Enemy Camps, Positions and Lines of Communication	681	467	472 (b)	476	54
Shipping and Submarines at Sea	3	15	8	3	1
TOTAL	1,007	605	661	543	62

(a) Includes targets in Greece and Crete.

(b) Of these sorties 259 were directed against Bardia 27th - 30th December, 1941.

2. EFFECTIVE SORTIES BY BOMBER AIRCRAFT - MALTA (BASE)

Ports and Bases	121	142	96	29	11
Aerodromes and Landing Grounds	21	28	22	19	24
Enemy Camps, Positions and Lines of Communication	20	11	43	11	4
Shipping and Submarines at Sea	60	4	30	7	18
TOTAL	222	185	191	66	57

3. OPERATIONAL SORTIES BY FIGHTER AIRCRAFT - EGYPT/CYRENAICA (BASE)

Offensive Sweeps - Land	1,667	1,202	668	439	125
Ground Attack	151	83	342	10	7
Bomber Escort	606	276	439	154	-
Reconnaissance Escort	25	33	14	98	25
Local Defence	230	359	315	305	158
Shipping Protection	155	217	400	484	191
TOTAL	2,834	2,170	2,178	1,490	506

Based on A.H.B. II J1/12, Appendices
"D" and "E", amended from Squadron O.R.Bs.

ENEMY AIRCRAFT OPERATIONAL CASUALTIES - MIDDLE EAST/MEDITERRANEAN COMMAND

(18th NOVEMBER 1941 - 27th JANUARY 1942)

I (A) CURRENT ESTIMATES BY INTELLIGENCE BRANCH. H.Q., R.A.F., MIDDLE EAST.

FORTNIGHTLY PERIODS	DESTROYED			PROBABLY DESTROYED			DAMAGED			GRAND TOTALS
	BOMBER	FIGHTER	MISCEL-LANEOUS	BOMBER	FIGHTER	MISCEL-LANEOUS	BOMBER	FIGHTER	MISCEL-LANEOUS	
18th November-2nd December	50 18	40 65	17 22	- 1	9 9	- -	24 9	26 34	- 21	166 179
3rd - 16th December	49 8	34 25	14 15	7 -	12 12	- -	16 2	30 33	13 1	175 96
17th - 31st December	49 55	90 54	68 24	8 -	4 3	2 -	8 -	9 4	2 1	240 141
1st - 13th January	48 12	23 46	7 69	2 -	9 2	- -	11 1	17 3	- -	117 133
14th - 27th January	12 3	10 18	- 51	6 -	4 -	- -	8 -	11 7	- -	51 79
TOTALS	208 96	197 208	106 181	22 1	38 26	2 -	67 12	93 81	15 23	748 628
TOTAL ALL TYPES (TO JANUARY 27th)	511 485			62 27			175 116			748 628
TOTAL ALL TYPES TO JANUARY 20th ONLY	202 96	194 204	106 180	17 1	37 26	2 -	61 12	85 74	15 23	719 616

KEY

GERMAN	/
ITALIAN	/

Authority:- "Report on Operations in the Western Desert". Air Staff (Operations Records). H.Q., R.A.F., M.E. Appendix 'G' A.H.B. II J1(12)

I(B) NOTE. In Late January 1942 Intelligence Branch H.Q., R.A.F. M.E. issued the following revised estimate for "ENEMY AIRCRAFT CASUALTIES LIBYAN OFFENSIVE" 18th November 1941 - 20th January 1942.

	DESTROYED	PROBABLY DESTROYED	DAMAGED
	480 433	43 20	147 123
TOTALS	913	63	270

The above totals included 211 German and 206 Italian aircraft found on captured airfields. The totals did not include aircraft known to have been destroyed on the ground in previous operations.

II

A.I.3(B) ESTIMATE OF ENEMY OPERATIONAL AIRCRAFT LOSSES IN THE MIDDLE EAST

MEDITERRANEAN COMMAND 18TH NOV. 1941 - 18TH JAN. 1942.

TYPE	G.A.F.	I.A.F.	TOTAL
LONG RANGE BOMBERS	26	37	63
DIVE BOMBERS	50	29	79
S.E. FIGHTERS	55	135	190
T.E. FIGHTERS	38	-	38
ARMY CO-OP & BOMBER RECCE	32	3	35
TRANSPORT	40	-	40
TOTALS	241	204	445

AUTHORITY: A.I.3(B) Reports
AHB II J1/63

NOTE: In view of III of this Appendix it appears that the above estimates are conservative but are evidently much nearer the mark than the Middle East Intelligence estimates given in I(A) and I(B) of the Appendix.

STATEMENT OF G.A.F. OPERATIONAL LOSSES IN CONNECTION WITH THE LIBYAN CAMPAIGN (18th NOV. 1941 - 20th JAN. 1942)
EXTRACTED FROM OFFICIAL GERMAN RECORDS

Short Recce		Long Recce		Day Fighters		Night Fighters		M.E.110(ZERSTORER)		Bomber		Dive Bomber		Other Types (Mainly Transport etc.)	
Destroyed	Damaged	Destroyed	Damaged	Destroyed	Damaged	Destroyed	Damaged	Destroyed	Damaged	Destroyed	Damaged	Destroyed	Damaged	Destroyed	Damaged
8	Nil	9	1	59	7	5	3	26	2	47	10	39	12	66	5

TOTALS. 259 aircraft destroyed. 40 aircraft damaged.

The above operational casualties include all causes of casualty to aircraft engaged on operations, including accidents on take-off and landing, destroyed on the ground by the Germans when withdrawing, and unknown causes etc. (Statement by A.H.B.6)
Authority:- "Verluste Afrika" (A.D.1.K. 103/64)

IV

RETURNS OF GERMAN AIRCRAFT OPERATIONAL LOSSES IN THE MIDDLE EAST - MEDITERRANEAN
THEATRE, KEPT BY THE 6TH ABTEILUNG, GERMAN AIR MINISTRY

Types	Losses (over 60%)	Damaged (under 60%)
Bombers (including Dive Bombers)	62	15
Fighters (including T.E. & night fighters)	56	5
Miscellaneous (Recce, Transport etc.)	44	3
TOTAL	162	23

The above casualties were entirely due to known enemy (i.e. British) action only (Statement by A.H.B.6)
Authority: Statement by A.H.B.6

APPENDIX J(i)

R.A.F. AND DOMINION AIR FORCE CASUALTIES
MIDDLE EAST COMMAND (INCLUDING MALTA)

1st November, 1941, - 31st January, 1942

(A) Aircraft Missing from Operational Flights

MONTH	BOMBER TYPE	FIGHTER TYPE	MISCELLANEOUS	TOTALS
<u>1941</u>				
November	61	87	11	159
December	51	140	11	202
<u>1942</u>				
January	16	69	7	92
Totals	128	296	29	453

Notes: (a) Figures for Category 2 (Damaged) not available.

(b) Figures above and following do not include Fleet Air Arm Casualties.

(B) Aircraft Casualties by Enemy Action on the Ground

MONTH	AIRCRAFT (ALL TYPES)	
	Cat. 3 (Destroyed)	Cat. 2 (Damaged)
<u>1941</u>		
November	4	4
December	10	15
<u>1942</u>		
January	72	52
Totals	86	71

Notes: (a) Classification according to types not available.

(b) Heavy casualties in January due mainly to heavy air attacks on Malta (36 attacks on airfields).

(D) Ground Total Aircraft Destroyed by Enemy Action:- 539

(E) Casualties Not Due to Enemy Action

MONTH	OPERATIONAL UNITS		TRANSPORT UNITS		TRAINING UNITS		TOTALS	
	Cat.3 (Destroyed)	Cat.2 (Damaged)	Cat.3 (Destroyed)	Cat.2 (Damaged)	Cat.3 (Destroyed)	Cat.2 (Damaged)	Cat.3 (Destroyed)	Cat.2 (Damaged)
<u>1941</u>								
November	17	35	6	8	6	8	29	51
December	18	33	3	8	3	8	24	49
<u>1942</u>								
January	8	18	1	3	1	3	10	24
	43	86	10	19	10	19	63	124

Notes: (a) Classification according to type not available.

(b) In some cases figures are statistics.

Figures supplied by C.S.B.1.

APPENDIX K(i)

NOTES BY CHIEF METEOROLOGICAL OFFICER. H.Q., R.A.F., M.E.

A/S.A.S.O.

With reference to your instruction dated 3rd March, 1942, for comments on page 11(XI) of Notes on "Crusader" Operations by F/Lt. D. Skilbeck, No. 262 Fighter Wing, the criticism that the supply of Met. reports to both Wing and A.A. was irregular and inadequate during the Battle of Cyrenaica is due to:-

- (a) lack of Meteorological personnel and
- (b) inadequate signals communications.

2. In Appendix A are given extracts from Reports from Met. Units operating in the Western Desert and Cyrenaica. It will be noted that as long as conditions were static and excellent land lines and W/T facilities were available, all units received adequate meteorological facilities. Difficulties began when the units became mobile, when land lines were limited, and when W/T channels became seriously congested. (See Appendix A para (5) - of 66 forecasts sent by Meteor A.H.Q, Libya to the Mobile Met. Unit with 13 Corps 14 only were received).

3. F/Lt. Skilbeck has not appreciated the personnel, equipment etc. essential to a subsidiary forecasting unit. The absolute minimum is 4 Met. Officers, 7 Met. Airmen, 2 W/T Receivers, 1 W/T Transmitter, and 8 W/T Operators. Accordingly one such unit only could be provided for A.H.Q. Libya: and that unit had to supply all R.A.F. Wings, Squadrons, Army Units, etc. with the required forecasts. As soon as conditions become mobile and land-line facilities become unsatisfactory the perfect service can be maintained only by having a Meteorologist at each operational station or squadron, provided with a pack set for W/T receptions and transmissions on definite Met. W/T frequencies. This is vital as all Met. communications by W/T must be in cypher and the employment of Met. cyphers (as compared with plain language recoded in R.A.F. cyphers) reduces the number of groups enormously. (See my memorandum on Establishment of Meteorological Services, Middle East. S.44285/MET. dated 10/10/41 paras. 2(d), 3(f), etc.).

4. I have urged repeatedly the provision of one Met. Corporal at each operational aerodrome or squadron but this has not been approved and the Met. personnel in Middle East are still over 40% below approved establishment. About 35 Officers and Other Ranks are expected here within the next six months. These re-inforcements will ease the situation and enable Meteorologists to be provided at each Wing. If each is provided with its own pack set and W/T operators, and definite W/T frequencies, there should be no difficulty in obtaining adequate Met. facilities from the Subsidiary Forecasting Unit provided in each theatre of operations.

(Sgd.) R.P. BATTY
Group Captain
Chief Meteorological Officer

S.44285/MET.

6th March, 1942.

APPENDIX A to APPENDIX K(i)

- (1) Routine Forecasts issued by Subsidiary F/C Unit, A.H.Q.W.D.
(Report dated 2/11/41).
- (a) Bomber forecasts twice daily to Operations, A.H.Q.W.D.; Nos. 261 and 270 Wing; Nos. 12, 21 and 24 S.A.A.F. Squadrons; Nos. 11, 14, 45, 55, 84 and 113 R.A.F. Squadrons and S.R.U.
Lt. Pefanis distributes the forecasts from Fuka to Nos. 12, 21, 55 Squadrons and S.R.U.
 - (b) Fighter forecasts twice daily to Fighter Wings and Army Co-operation Wing, 253, 258, 262 and 269 Wings. These Wings distribute to Squadrons concerned.
 - (c) Special forecasts to F/O Hastie, Adv. H.Q. 205 Group for heavy bombers as required.
 - (d) Forecasted upper winds and Temps. for A.A. at Tobruk twice daily.
- (2) The C. Met. O. visited A.H.Q.W.D. on 19/11/41 to discuss future Met. organisation in the Desert and subsequently arrangements were made for the Subsidiary F/C Unit at Shallufa to move up to Adv. H.Q. 205 Group and assume responsibility for all Met. facilities in the rear area when the unit with A.H.Q.W.D. moved forward.
- (3) Report from Met. A.H.Q.W.D. dated 1/12/41.
Organisation outlined in (1) has continued with the following additions:-
- (a) Upper air temperatures and winds sent twice daily to Mobile Met. Unit, H.Q. 13 Corps.
 - (b) Forecasts for Operations area sent twice daily in code to Met. Corporal attached to Adv. A.H.Q.W.D.
- (4) Report from Met. A.H.Q.W.D. dated 24/12/41.
Organisation outlined above continued. F/O Packer posted on 7/12/41. to Adv. A.H.Q.W.D. to act as Met. Liaison Officer. Three forecasts and general inference supplied daily to him with EMERGENCY priority. Forecasts were issued by F/O Packer to Operations, Air Support Wing, 8th Army H.Q., and to neighbouring units in telephonic communication with Adv. A.H.Q.W.D. A.A. Meteors also received and passed to Batteries.
Signals communications at time bad. Impossible to obtain reception of routine meteorological broadcasts as these would require additional W/T personnel etc. and Adv. A.H.Q.W.D. personnel had to be reduced drastically.
- (5) Report from Mobile Met. Unit with 13 Corps. 1/2/42.
Meteor Telegrams supplied to 13 Corps and to 12th A.A. Brigade for distribution to Units in the area. Cpl. Turner visited Fighter Wing who wanted local forecasts etc. Upper Winds and Temperatures passed to Squadrons whenever possible.
Of 66 forecasts etc., sent by Meteor A.H.Q. Libya to this Unit in January, 1942, 14 only were received.
- (6) Forecasts issued twice daily to Adv. A.H.Q. Libya by Almaza or Adv. H.Q. 205 Group during the move of the Subsidiary Forecasting Unit A.H.Q. Libya, end of December, 1941 to 4th January, 1942.
- (7) Report from Met. A.H.Q. Libya. 4/2/42.
Full forecasting service commenced at El Adem on 4/1/42. Flying Units Cyrenaica informed by signal.
During the period 8/1/42 to 13/1/42 the S.Met. O. visited Adv. A.H.Q. Libya, Derna, Barce and Benghazi.
Meteor Telegrams supplied to Artillery Units at Benghazi, Derna and Tobruk.

APPENDIX L(i)

MONTHLY TOTALS OF
ALLIED MERCHANT SHIPPING SUNK IN
MEDITERRANEAN AND GULF OF SUEZ
JUNE 1941 - JANUARY 1942.

DATE	HOW SUNK	WHERE SUNK	NATIONALITY	TONNAGE
JUNE 1941	A/C	Suda Bay	Greek	4,352
" "	MINE	E. Aegean Sea	Turkish	3,805
TOTAL FOR JUNE 1941. No. of ships - 2. Total Tonnage				8,157
JULY 1941	MINE	Alexandria	British	5,920
" "	A/C	Port Said	Greek	1,977
TOTAL FOR JULY 1941. No. of ships - 2. Total Tonnage				7,897
AUGUST 1941	A/C	N. of Port Said	British	4,782
" "	A/C	Suez	Belgian	1,087
TOTAL FOR AUGUST 1941 No. of ships - 2 Total Tonnage				5,869
SEPT. 1941	A/C	Between Tunis/Sicily	British	12,427
" "	S/C	Gibraltar	"	2,444
" "	S/M	Haifa	"	691
" "	A/C	Gulf of Suez	U.S.A.	5,718
" "	S/M	Off Tripoli, Syria	Palestinian	389
TOTAL FOR SEPT. 1941. No. of ships - 5. Total Tonnage				21,669

TOTALS for period JUNE - SEPT. 1941:-

No. of Ships:- 11

Total Tonnage:- 43,592 tons.

OCT. 1941 - JAN. 1942.

ALLIED MERCHANT SHIPPING SUNK IN
MEDITERRANEAN AND GULF OF SUEZ.

DATE	HOW SUNK	WHERE SUNK	NATIONALITY	TONNAGE
OCT. 1941	MINE	Suez Canal	British	5,856
" "	A/C	Straits of Jubal	"	4,898
" "	A/C	Suez	"	3,963
" "	S/M	Arabs Gulf	"	758
" "	S/M	Gibraltar	"	3,081
" "	A/C	N.W. of Bizerta	"	5,720
" "	S/M	Arabs Gulf	Greek	1,208
TOTAL FOR OCT. 1941		No. of Ships - 7	Total Tonnage	25,484
NOV. 1941	A/C	Off Bizerta	British	6,463
" "	A/C	Galita Is.	"	5,649
" "	S/M	Off Melilla (Sp. Morocco)	Spanish	6,600
TOTAL FOR NOV. 1941.		No. of Ships - 3	Total Tonnage	18,712
DEC. 1941	S/M	Tobruk	British	3,059
" "	MINE	Haifa	"	5,907
" "	S/M	N.W. Matruh	"	1,587
" "	C.U.	Nr. Tetuan	"	4,274
" "	S/M.	N.N.E. Gibraltar	Norwegian	4,033
" "	S/M	C. Serrat (Tunisia)	"	5,289
" "	S/M	Tobruk	Polish	2,486
" "	S/M	Gulf of Hammamet	Portuguese	4,751
" "	S/M	Off S. Spain	Spanish	4,202
TOTAL FOR DEC. 1941.		No. of Ships - 9.	Total Tonnage	35,588
JAN. 1942	A/C	Cyprus/Tobruk	Norwegian	6,655
TOTAL FOR JAN. 1942		No. of Ships - 1	Total Tonnage	6,655

TOTALS for period Oct. 1941 - Jan. 1942:-

No. of Ships:- 20

Total Tonnage:- 86,439 tons.

Authority:- BR. 1337
Naval Staff (Trade Div)
Admiralty.

G.169218/DP/5/48.

APPENDIX M(i)

a. Classification of Naval Casualties in the Mediterranean
During the Period
1st June to 17th November, 1941 (Inclusive).

- (a) by enemy submarines.
(b) " " aircraft.
(c) " " surface vessels, mines, or N.K.

	Sunk	Damaged		Cause		
		Serious	Slight	(a)	(b)	(c)
Battleships	-	1	1	-	2	-
Aircraft Carriers	1	-	-	1	-	-
Cruisers	2	2	-	-	4	-
Destroyers	3	4	7	-	13	1
Sloops	1	1	-	-	2	-
Escort Vessels	8	2	2	-	7	5
Submarines	5	-	2	-	3	4
Gunboats	-	2	-	1	1	-
Special Service Vessels	10	2	5	3	8	6
Total:-	30	14	17	5	40	16
		61			61	

(ii) b. Comparison of losses during above period caused

- (1) by enemy submarines.
(2) " " aircraft.

	Sunk	Damaged		Tonnage
		Serious	Slight	
By Enemy Submarines	1 aircraft carrier	-	-	22,000
	-	1 gunboat	-	600
	2 special service vessel	1 special service vessel	-	18,000
Total	3	2		40,600
By Enemy Aircraft	2 cruisers	1 battleship	1 battleship	60,000
	3 destroyers	2 cruisers	-	21,500
	1 sloop	3 destroyers	7 destroyers	17,200
	4 escort vessels	1 sloop	-	2,550
	-	2 escort vessels	1 escort vessel	3,500
	1 submarine	-	2 submarines	3,100
	-	1 gunboat	-	600
	2 special service vessels	1 special service vessel	5 special service vessels	
Total	13	11	16	141,650

Total by enemy S/Ms and aircraft 45
" " " other causes 16
61

Most of the losses caused by enemy aircraft were on the Alexandria/Tobruk run.
Information supplied by H.S./T.S.D. Admiralty.

APPENDIX N(i)

STATE OF AIRCRAFT
MIDDLE EAST COMMAND
AS AT 1ST JANUARY, 1942.

I STATE OF AIRCRAFT - MIDDLE EAST COMMAND (EXCLUDING MALTA)

AT 1st JANUARY, 1942

The following details of aircraft in Middle East Command as at 1st January, 1942, are given on pages 2, 3 and 4.

<u>Establishment</u> (those shown marked ^x are provisional establishments	<u>Column No.</u>
I.E.	1A
I.R.	1B
W.R.	1C
Total	1D
<u>Type and Unit</u>	2
Strength	
Serviceable or Serviceable within 3 days.	3
Serviceable within 14 days - under repair or rebuild.	4
In store - new - unerected.	5
Unserviceable, being reconditioned or repaired. Work in progress.	6
Unserviceable for reconditioning or repair. Work not commenced.	7
Recommended for "Write-off" or "Strike-off"	8
Total Strength	9
<u>Aircraft due to arrive</u>	
En route	10
Packed awaiting shipment	11
<u>Aircraft awaiting spares</u>	
Aircraft or airframes included under Cols. 4-7 inclusive that are awaiting spares before they can be made serviceable.	12
<u>Notes</u>	13

E1(SA)
26/1/42.

(Sgd.) R. O. SAMPSON.

for Wing Commander.

(For key to columns please see page 1. ∅ indicates unit holds more than one type)

ESTABLISHMENT				TYPE AND UNIT	STRENGTH							To Arrive		U/S for Spares	Notes
I.E. 1A	I.R. 1B	W.R. 1C	Total 1D		3	4	5	6	7	8	Total 9	10	11	12	13
				<u>FIGHTERS</u>											
				<u>BEAUFIGHTER I</u>											
16			16	89 Squadron	6	4		8	1		19				46 and 227 Squadrons to form.
16			16	252 "	2					2	4				
16			16	272 "	7	2		1	4	2	16	Arrive via Malta			
2			2 ^x ∅	2 P.R.U.	2					2					
				107 M.U.		1					1				
				108 M.U.	16						16				
50			50	Beaufighter Totals	33	7		9	5	4	58				
				<u>HURRICANE</u>											
16			16 ^x	1 S.A.A. Squadron II	11			16			27	Arrive via Takoradi		1	251, 258, & 40 S.A.A.F. Squadrons to form.
			∅	6 Squadron I	1	1					2			2	
16			16	30 " I	24			2		1	27				
16			16	33 " I	23			4	5	1	33			2	
				II	1						1				
16			16	73 " I	3	2					5			1	
				II	19			1			20				
16			16 ^x	80 " I	7	2		2	4		15				
				94 " I	1				2		3				
16			16	II	16	1					17				
16			16 ^x	(A.C.) 208 " I	14	2			3	1	20				
16			16	∅ 213 " I	13	4		5	2		24				
				229 " I	1						1				
16			16	II	15	2		8	6		31			1	
16			16 ^x	(A.C.) 237 Rhod. Sqdn. I	15			2	2		19				
16			16	238 Squadron II	18	1			15		34				
16			16	260 " I	18			4			22				
16			16	261 " I	6	1			1	1	9				
16			16	274 " II	17			1	5		23				
16			16	335 Hellenic Sqdn. I	18	3					21			3	
16			16	(A.C.) 451 R.A.A.F. " I	18				3	2	23				
16			16	R.N. Squadron I	21				6	1	28				
			∅	2 P.R.U. I	2						2				
6	3		9 ^x	II	8						8				
				S.H.Q. Helwan I	2	5		10	1		18				
				II	1			1			2				
				Hurghad I		3					3				
				Ismailia I	2				1		3				
				Khartoum I	2	1		4			7			4	
11	5		16	A.C. O.T.U. I	13	3			3		19			2	
20	10		30	71 O.T.U. I	16	6			1		23				
				1. Delivery Flt. I	1						1				
				102 M.U. I					2		2				
				103 M.U. I	3	8		8	2		21				
				II	2						2				
				107 M.U. I	1			1			2				
				II	2						2				
				108 M.U. I	2	2		1	7		12				
				II	56	1		4	2		63				
				51 R.S.U. I					3		3				
				53 R.S.U. I	13			13			26				
				II	20	3		3	1		27			5	
				54 R.S.U. I	1			2	2		5			1	
				55 R.S.U. I	1	1		3			5			4	
				British Airways Repair I		3		4	5		12				
				II				3			3				
309	18		327	Hurricane Totals	428	55		83	103	7	676			24	
				<u>KITTYHAWK</u>											
16			16 ^x	3 R.A.A.F. Squadron	18			3		1	22				450 (R.A.A.F.) Squadron forming
16			16 ^x	450 R.A.A.F. "	5						5				
				107 Maintenance Unit	37	20		1			58			3	
				108 Maintenance Unit	4						4				
32			32	Kittyhawk Totals	64	20		4		1	89	240 ex U.S.A.3			
				<u>TOMAHAWK</u>											
16			16 ^x	2 S.A.A.F. Squadron	16	4		2		6	28	Arrive via Takoradi			
16			16 ^x	4 S.A.A.F. "	17				3		20				
16			16 ^x	112 Squadron	19	2		4	4		29				

ESTABLISHMENT				TYPE AND UNIT	STRENGTH								To Arrive		U/S for Spares	Notes
I.E. 1A	I.R. 1B	W.R. 1C	Total 1D		3	4	5	6	7	8	Total 9	10	11	12	13	
16			16	TOMAHAWK (Contd.) ø 213 Squadron 250 " S.H.Q. Helwan Ismailia Khartoum	3 21 1					1 2 32 3 4						
30	15		45	71 O.T.U. 107 Maintenance Unit 108 " " 51 R.S.U. 53 R.S.U. 54 R.S.U. British Airways Repair Unit	10 2 1 9 1	2 7 14 2		57 13 4 1	5 3 4 6		17 66 31 6 17 1 3			3		
94	15		109	Tomahawk Totals	100	36		87	54	10	287			3		
485	33		518	TOTAL FIGHTERS	625	118		183	162	22	1110			30		
				BOMBERS												
				FORTRESS 90 Squadron	2	1					3					
16			16	WELLINGTON 37 Squadron Ic	18	2			1	1	22	Arrive		1		
16			16	38 " Ic	17	2		3	3	1	26	via		1		
16			16	70 " Ic	21	1		3			25	Takoradi		1		
16			16	108 " Ic	2			5		2	9					
				148 " Ic					2		2					
16			16	II 1 G.R.U. Ic	18	2		1			21					
3	2		5	Sea Rescue Flight Ic	5			1			6					
				108 M.U. Ic	3	1					4					
				II 57 R.S.U. Ic	6 1						6 1					
				57 R.S.U. Ic	1						1					
				II British Airways Repair Unit Ic	8	2		1	12		23					
									1	1	2					
						2		2	3		7					
83	2		85	Wellington Totals	99	12		16	22	5	154			3		
				BALTIMORE 107 M.U.	2	3		4			9	39 ex. U.S.A.				
12			12	BEAUFORT ø 39 Squadron 108 M.U.	10 1	2			1	4	17 1			1	47 Squadron to re-arm from Wellesley	
				Beaufort Totals	11	2			1	4	18			1		
16			16	BLenheim IV ø 6 Squadron	1	1				1	3				203 Squadron to re-arm Hudson.	
16			16 ^x	11 "	16			2	1	1	20					
16			16	14 "	15				6	1	22					
16			16	45 "	17				6		23					
16			16	55 "	14	8			4		26					
16			16	84 "	14			10			24					
16			16	113 "		7					7					
16			16	203 "	16	4		3		1	24			1		
16			16 ^x	F.F. Lorraine Squadron	12	1			2	1	16					
				2 F.F. Flt.	2	1					3					
				Greek Flt.	2						2					
				S.H.Q. Helwan					2		2					
				Hurghad	2						2					
				Ismailia	1						1					
				Khartoum	24			1	1		26					
				204 Group	3						3					
48	24		72	72 O.T.U.	14	2		3	3	1	23					
				1 Delivery Flt.	3						3					
				103 M.U.	4	5		11	3	1	24					
				108 M.U.	36	8		12	18		74					
				Reserve Pool	50	1		3	3	7	64			10		
				51 R.S.U.	23	7		6	6		42					
				54 R.S.U.	5						5					
				British Airways Repair				3	1		4					
176	24		200	Blenheim Totals	274	45		54	56	14	443			11		

MIDDLE EAST COMMAND
STATE OF AIRCRAFT AT 1ST JANUARY, 1942. (Contd.)

ESTABLISHMENT				TYPE AND UNIT	STRENGTH							To Arrive		U/S for Spares	Notes
I.E. 1A	I.R. 1B	W.R. 1C	Total 1D	2	3	4	5	6	7	8	Total 9	10	11	12	13
20			20 ^x	BOSTON ø 12 S.A.A.F. Sqdn. ø 24 S.A.A.F. Sqdn. ø 223 Squadron 107 M.U. 108 M.U.	8 17 2 7 2	1 15		2		5	8 22 3 24 2			1	
20			20	Boston Totals	36	16		2		5	59	56 ex	U.S.A.	1	
20 20 8 20	4		20 ^x 20 ^x 12 20 ^x	MARYLAND ø 12 S.A.A.F. Squadron 21 S.A.A.F. Squadron ø 24 S.A.A.F. " ø 39 Squadron 60 S.A.A.F. Squadron ø 223 Squadron Strategical R.U. S.H.Q. Helwan 107 M.U. 108 M.U. 53 R.S.U. 55 R.S.U.	12 5 1 5 4 9 6	4		5 1 1	2 1 1	3 16 1 7 6 13 14 1 21 2 1 1	Arrive via Takoradi		4		
68	4		72	Maryland Totals	45	7		12	31	5	100			4	
18			18	WELLESLEY	7	2		1	8	3	21				No details of Units given.
377	30		407	TOTAL BOMBERS	467	88		89	18	36	807			20	
				LYSANDER I II	12 13	6 3		4 2	6 11	1	28 30			1 4	
4	1		5	SUNDERLAND 230 Squadron	2			1		1	4			1	
16 2 16 12	4 4		16 2 20 16	TRANSPORT Bombay D.H. 86 Douglas D.C. 2K Lockheed 14 Lodestar Valentia	7 4 4 1 7	1		8 2 7 1	6 2 3 1 3		22 8 14 1 3 11			1	
46	8		54	Transport Totals	23	2		18	16		59			1	
912	72		984	GRAND TOTAL of Operational types shown above.	1151	217		297	13	60	2038			57	

State of Aircraft at Takoradi at 2nd January, 1942

2	Strength							Total	To arrive	
	3	4	5	6	7	8	9	10	11	
HURRICANE		45	1	22			68	228	71	
TOMAHAWK								4		
MOHAWK		2		3			5	-		
BLLENHEIM	8	22		27			57	71	1	
MARYLAND		1		1			2	-		

II STATE OF AIRCRAFT - MEDITERRANEAN COMMAND

(MALTA)

AS AT 1ST JANUARY, 1942.

The following details of aircraft in Mediterranean Command as at 1st January, 1942.

Establishment. (these shown marked * are provisional establishments)

	<u>Column No.</u>
I.E.	1A
I.R.	1B
W.R.	1C
Total	1D
<u>Type and Unit</u>	2
<u>Strength</u>	
Serviceable or Serviceable within 3 days	3
Serviceable within 14 days - under repair or rebuild	4
In store - new - unerected	5
Unserviceable, being reconditioned or repaired. Work in progress	6
Unserviceable for reconditioning or repair. Work not commenced.	7
Recommended for "Write-off" or "Strike-off".	8
Total Strength	9
<u>Aircraft due to arrive</u>	
En route	10
Packed awaiting shipment	11
<u>Aircraft awaiting spares</u>	
Aircraft and airframes included under Cols. 4-7 inclusive that are awaiting spares before they can be made serviceable.	12
<u>Re-arming</u>	
Note of types to which units are about to re-arm	13

(Sgd.) A. J. HOWELL

Wing Commander

E.1(Z.A.)
21/1/42.

STATE OF AIRCRAFT - MEDITERRANEAN COMMAND
AS AT 1ST JANUARY, 1942.

ESTABLISHMENT				TYPE AND UNIT									To Arrive		U/S for Spares	Squadrons Re-arming
I.E. 1A	I.R. 1B	W.R. 1C	Total 1D	2		3	4	5	6	7	8	9	10	11	12	13
				<u>BEAUFIGHTER</u>												
				272 Squadron			2					2				
				S.H.Q. Luqa					1			1				
				<u>HURRICANE</u>												
				No. 69 Squadron	IIA	1						1				
16	8		24	" 126 "	IIA	6	1					7				
					IIB	6					2	8				
16	8		24	" 185 "	IIA	6	1		3		1	11				
					IIB	4						4				
16			16	" 242 "	IIB	14						14				
					IIC						2	2				
16	8		24	" 249 "	IIA	3	2				1	6				
					IIB	7	1				2	10				
16			16	" 605 "	IIB	13						13				
					IIC		1					1				
9			9	Night Fighter Unit	IIB	1	1			1		3				
					IIC	7	2					9				
				S.H.Q. Hal Far	IIB	1					1	2				
				" Luqa	I	2						2				
				" Takali	I		2					2				
				Kalafrana Workshops	I				1			1			1	
					IIA				14		1	15			7	
					IIB				5			5			4	
					IIC		1		2			3			1	
89	24		113	Fighter Totals		71	14		26	1	10	122			13	
				<u>BLENHEIM</u>												
16	2		18*	No. 18 Squadron		16	1				1	18				
16	2		18*	" 107		16				2	1	19				
				S.H.Q. Luqa		2	2				6	10				
				S.H.Q. Takali					1			1				
				<u>MARYLAND</u>												
7	5		12	No. 69 Squadron		6	1		4			11				
				S.H.Q. Takali						1		1				
				<u>WELLINGTON</u>												
16	2		18	No. 40 Squadron Ic		8	1		2		12	23				
16	2		18	" 104 "	II	11	3				2	16				
				" 221 "	VIII	2					1	3				
				S.H.Q. Luqa Ic			4					4				
					II	1	4					5				
71	13		84	Bomber Totals		62	16		7	3	23	111				
				<u>MAGISTER</u>												
				S.H.Q. Luqa		1						1				
				S.H.Q. Takali			1					1				
				Magister Totals		1	1					2				
160	37		197	GRAND TOTALS		134	31		33	4	33	235	NIL		13	

Ø Unit holds more than one type of aircraft.