



Royal Air Force

AIR POWER REVIEW

Volume 11 Number 1 Spring 2008

*Where are the Air Power
Strategists?*

Gp Capt Ian Shields

*Air Power and
Psychological Warfare
Operations, Malaya
1948-1960*

Wg Cdr Bryan J Hunt

*The Origins of Military
Aviation in India and the
Creation of the Indian
Air Force, 1910-1932
Part Two*

Clive Richards

*RAF Counter-Insurgency
Operations in Oman and
Aden, 1950-1970*

Dr Sebastian Ritchie

*What is Meant by
Harmonisation and What
are the Implications for
the RAF?*

Wg Cdr S A Harper

Historic Book Review

Gp Capt Neville Parton

Centre for Air Power Studies

**SEE THE ROYAL AIR FORCE
AIR POWER REVIEW
ON-LINE
VISIT: www.raf.mod.uk**

Air Power Review
is the professional
flagship publication
of the Royal Air Force

CONTRIBUTIONS TO THE ROYAL AIR FORCE AIR POWER REVIEW

The Royal Air Force Air Power Review is published under the auspices of the Director of Defence Studies (RAF) and has the sponsorship of the Assistant Chief of the Air Staff. It is intended to provide a forum for the publication of high quality and academically credible articles on air and space power. The aim being to educate and stimulate debate within both the military and academic communities and to promote the evolution of air and space power thinking within the broader military environment. This publication is also intended to support the British armed forces in general and the Royal Air Force in particular with respect to the development and application of air power.

Contributions from both Service and civilian authors are sought which will contribute to existing knowledge and understanding of the subject. Any topic will be considered by the Air Power Review Management Board and a payment of £200 will be made for each article published.

Articles should be original and preferably not previously published, although those of sufficient merit will not be precluded. Between 2,000 and 10,000 words in length, articles should list bibliographical references as end notes, and state a word count. Lengthy articles may be published in instalments. Contributions from serving military personnel should be in accordance with DCI GEN 313 dated 26 November 1999.

Material should be submitted in Microsoft word, on floppy disk, Zip disk or CD and should be accompanied by numbered page copy plus any photographs and illustrations. Digital pictures should be saved as TIFFs or JPEGs @ 300dpi.

Final design format for article presentation on the printed page will be at the discretion of the editor.

Send articles to:

Director of Defence Studies (RAF)
Headquarters Defence Academy
Shrivenham
Swindon,
Wiltshire
SN6 8LA
Email: obarnes.dds@da.mod.uk



**ROYAL
AIR FORCE**

Centre for Air Power Studies

*Concordia res parvae crescent
Mores digniores ad accipiendum sunt*



**KING'S
College
LONDON**

University of London

Air Power and Strategy: Challenges for the 21st Century

12-13 June 2008

Conference at the
Joint Services Command and Staff College, Shrivenham

The aim of this conference is to bring together in one forum the leading international Air Power practitioners and academics, and wider Service and governmental parties interested in the utility of Air Power, across the full spectrum of human endeavour, from war fighting to humanitarian relief operations.

Speakers include:

Colonel John Warden USAF (Ret'd) – Keynote speaker
AVM Professor Tony Mason – School of Social Sciences, University of Birmingham
Dr Phil Meilinger – former Dean of the USAF School of Advanced Air Power Studies
Professor Mark Clodfelter – US National War College
Dr Jim Corum – US Army Command and General Staff College

Further information about the conference and registration is available from:

<http://www.kcl.ac.uk/schools/sspp/defence/news/news.html>
<http://www.da.mod.uk/colleges/jscsc/DSD/kcl-csrc-seminar-series-autumn-2006>

Or please contact Julie Russell: Email: jrussell.jscsc@defenceacademy.mod.uk
Telephone: +44 (0)1793 788818

Deadline for applications: 23 May 2008



Conference Convenor: Dr Christina Goulter, King's College London,
in partnership with the Royal Air Force Centre for Air Power Studies

The Royal Air Force has assigned Quick Reaction Alert (QRA) duties to Eurofighter Typhoon with two aircraft of No 3(F) Squadron ready to respond to any aircraft acting suspiciously or intruding illegally into UK airspace. Flying from RAF Coningsby, the aircraft shown is armed with the standard QRA fit of four AMRAAMs and four ASRAAMs, as well as carrying two 1,000 litre droptanks.



Foreword

Regular readers of Air Power Review will no doubt notice the subtle change to the cover design in this first edition for 2008. There are two reasons for this; firstly we are keen to recognise the role the recently formed Royal Air Force Centre for Air Power Study (RAF CAPS) now plays in both sponsorship and production of the journal. Secondly, we wish to continue to encourage the submission of high grade articles from academia, as well as from military sources, by providing potential authors with a formally peer-reviewed publication opportunity. This revision builds on the changes introduced at the beginning of 2007, with the aim of firmly establishing Air Power Review alongside other professional journals.

As ever, within you will find a range of articles and book reviews that tackle both contemporary and historical subjects, beginning with Gp Capt Ian Shields addressing the question 'Where are the air power strategists?' This is a thought provoking piece that begins with the premise that, unlike the maritime and land environments, there have never been any true air power strategists. It discusses the work of air power *theorists* in 3 eras: from the beginning of aviation up to the end of the Second World War, from 1946 until the 1991 Gulf War, and the period from 1992 to the present day. Whether or not you agree, the arguments presented certainly should stir up what Monsieur Poirot used to refer to as the 'little grey cells'. Having included a letters page expressly to allow debate, the Editorial Board would be very pleased to see letters on the subject, or even a follow-up article if you feel strongly enough.

Next is an article by Wg Cdr Bryan Hunt, who examines the use of air power and psychological warfare operations in Malaya between 1948 and 1960.

The article analyses the initial civil and military response to the terrorism campaign launched in 1948 by Communist insurgents aiming to topple British rule in Malaya. Wg Cdr Hunt argues that this response was both disjointed and ineffective until the development of a joint civil and military plan that included psyops and intelligence operations alongside policing and social reforms. In particular the article considers the role of air power in the psychological warfare operations and compares the effectiveness of this with that of the bombing campaign; as ever in this area, history presents us with plenty of food for thought.

Moving west from Malaya Clive Richards then continues his article examining Indian military aviation, but this time looking at the period from 1918 through to 1932, and thus covering the period from the formation of the RAF through to its replacement in India by the Indian Air Force. Meticulously researched, it includes operations on the Northwest Frontier and internal security activity, as well as the political interface that led to the decision to form a separate air force in the early 1930s. The latter also provides some interesting insights into the 'Indianisation' debate, before the article moves to Salmond's report on the state of aviation in India, and the direct effect that this had in terms of advancing the cause of a 'national' air force.

Coming west again we come to Oman and Aden between 1950 and 1970 where Mr Seb Richie from the Air Historical Branch surveys the strategic background against which the Oman and Aden campaigns were mounted. It includes details of the RAF dispositions across the Middle East, their historic COIN role, and their specific part in the two conflicts. Importantly,

given ongoing operations in Iraq and Afghanistan, it then draws together such conclusions and lessons as may be identified from Oman and Aden, with particular reference to modern-day COIN activity. Again, paralleling experiences from Malaya, the importance of a joint civil and military plan is clearly identified as a key enabler, as is the development of a harmonious relationship between the land and air components.

The final article is a contemporary look at today's Royal Air Force by Wg Cdr Simon Harper in which he addresses the strategic priority of harmonising the RAF's Air Power capability, concepts and doctrine with those of the US Forces, and in particular asks the question 'What is meant by harmonisation and what are the implications for the RAF?' The article discusses the long and close relationship between the RAF and the US Army Air Force initially, and then latterly the USAF since the Second World War, before examining how this relationship has been given new momentum by the priority being given to harmonizing the RAF's air power capability with US Forces. Wg Cdr Harper explores what harmonisation means in conceptual terms and theorizes that when combined with political will it allows forces to operate in new 'spaces' at the strategic, operational and tactical levels. This article contains much original research and investigates the implications for both the RAF and the USAF. It concludes that the RAF must maintain a balanced warfighting capability, and that all lines of development must be harmonised if CAS' strategic aim is to be met.

Following on from these articles we have a number of book reviews on a wide range of subjects. The first of these continues the series of reviews of historic books

on air power: J M Spaight's 'Air Power and War Rights' describes the work of a well regarded air power thinker on the interwar years who is much less well known today. The reviewer as well as providing a useful insight into the book itself also provides a compelling argument as to its relevance in today's debate on air power. Gp Capt Ian Shields' review of 'Nuclear Logics' by Etel Solingen describes a contemporary work that examines the reasons why some East Asian and Middle Eastern states either seek membership of the nuclear 'club' whilst others chose a non-nuclear approach. With the nuclear debate flourishing and the intentions of countries such as Iran and North Korea unclear the significance of this book is clear. Finally, William Arkin's book 'Divining Victory: Air power in the 2006 Israel-Hezbollah War' gives some key insights into a short, high intensity, highly asymmetric conflict in which Israel's air power-led doctrine failed to achieve the desired effects. It provides a salutary lesson that air power is not a universal answer and indeed that military power cannot prevail if presented with a desired endstate that is quite simply unachievable by military means.

We are delighted to have received our first letter with regard to an article published previously in Air Power Review – in this case the paper from Major Greenacre on WW2 airborne operations entitled *'There is I'm afraid, no alternative...' The Provision of Air Transport and Support Aircraft to British Airborne Forces in the Second World War*. One of the aims of the Review is to encourage a robust debate, and this letter should very much be taken in that manner – and we will, of course, be encouraging the author to respond. As ever, more letters in this vein would be welcomed.

D Def S

Editor

Jay Myers

Production and Design Editor

Harvey Grainger

Studio

John Griffiths

Pauline Aquilina

General enquires on magazine distribution
may be made to the London address.

RAF MAGAZINES

Floor 1, Zone A

St George's Court

2-12 Bloomsbury Way

London WC1A 2SH

Tel: 0207 305 2166

Tel: Mil: 96305 2166

Fax: 0207 305 4145

E-mail: jay.myers420@mod.uk

Those wishing to be placed on the distribution list
should write direct to the Defence Storage and
Distribution Centre (DSDC) Llangennech with their
UIN stating the number of copies required per
edition together with the address to which material
should be sent.

Recurring Publications Desk

DSDC(L)3a

Mwrwg Road

Llangennech

Llanelli, Wales

SA14 8YP

The views expressed are those of the authors concerned,
not necessarily the MoD.

All rights reserved. No part of this publication may be reproduced,
stored in a retrieval system, or transmitted in any form without prior
permission in writing from the editor. Unless by prior arrangement,
articles and photographs will not normally be returned.

Editorial board:

Gp Capt N Parton, D Def S (RAF), Chairman

Mr S Cox, Head of AHB (RAF)

Dr J Hayward, Dean RAFC

Gp Capt S Harpum, D RAF D JSCSC

Mr C Hobson, Hd Library Services, JSCSC

Dr D Jordan, DSD, JSCSC

Wg Cdr O Barnes, Dep D Def S (RAF)

Mr J Myers, Editor, Head of RAF IMTTP

Royal Air Force

AIR POWER REVIEW

Volume 11 Number 1 Spring 2008

1

Where are the Air Power Strategists

Gp Capt Ian Shields

6

Air Power and Psychological Warfare
Operations, Malaya 1948-1960

Wg Cdr Bryan J Hunt

20

The Origins of Military Aviation in India
and the Creation of the Indian Air Force,
1910-1932, Part Two

Clive Richards

50

RAF Counter-Insurgency Operations in
Oman and Aden, 1950-1970

Dr Sebastian Ritchie

70

What is Meant by Harmonisation and What
are the Implications for the RAF?

Wg Cdr S A Harper

106

Historic Book Review

Gp Capt Neville Parton

111

Book Reviews

115

Letter to the Editor

Dr Sebastian Ritchie



Is there an enemy in the sun?

Where are the Air Power Strategists?

By Gp Capt Ian Shields¹

As in a building, which however fair and beautiful the superstructure, is radically marred and imperfect if the foundation be insecure – so, if the strategy be wrong, the skill of the general on the battlefield, the valour of the soldier, the brilliance of the victory, however otherwise decisive, fail of their effect.

(Alfred Thayer Mahan, 'Naval Administration and Warfare', 1903)

The Concise Oxford English Dictionary defines strategy as: 'the art of war'; what, then is the 'art' of air power? We are very good at expressing the "what": we can articulate the effects of air power, its roles, but can we capture its art? Flexibility may be the key to air power, but this does not capture its uniqueness, that which differentiates it from all other forms of warfighting, the statement that summarises what we, as professional air power practioners, bring that is totally compelling. Is this important? This article will argue that it is, that we need to capture this very essence of our profession of arms in the same way that Corbett and Mahan have done for the maritime environment, and Clausewitz and Jomini for the land – for strategy allows us to address the 'friction' of war and counter its uncertainties.² To address this claim that there has not yet been an air power strategist, this article will consider the history of air power in three eras and examine their theorists, before suggesting four possible reasons why there has not yet been this strategist. In concluding, it will not attempt to answer the question, but seek to trigger a debate on whether we have an air power strategy and if not whether any such lack is relevant.

The Three Eras of Air Power and Their Theorists

Arguably, air power has developed in three distinct eras: up until the end of the Second World War, from 1945 until the 1991 Gulf War, and since then. The first of these two eras have produced air power theorists, while the third is still too young, but nowhere can be seen the over-arching, enduring capture of air power's art – its very essence.

The first era can perhaps be summarised as the belief in strategic effect. By the end of the First World War many of the roles of air power as we would recognise them today had evolved – air/land integration was evident on the Western Front and in other theatres such as the Balkans, defensive counter-air had reached an effective pitch and even something as obscure as aerial re-supply was attempted at Kut in Mesopotamia in 1916. However, technological difficulties limited the effect in several areas and it is likely that some false lessons on the efficacy of air power's ability to have Strategic effect were drawn. This false dawn was further reinforced by the subsequent years of the Empire Policing role where air power's ability to cower and its seeming limited financial and political commitment led to a firm belief in the Strategic effect of air power. With hindsight, clear thinking was perhaps difficult, if not impossible, in the era when the very survival of the independent air arm was being challenged, and every small success was exaggerated in order to bolster the case for the RAF. What followed is well known: air power for strategic effect, particularly its ability to break the will of the people, was fully tested in the Blitz and the Battle of the Ruhr, and found wanting. It might be

argued that the atomic bombs dropped at Hiroshima and Nagasaki did achieve the dream of the pre-war theorists, but has been deemed to lack utility.

What of these theorists? Douhet, Mitchell and Trenchard all based their belief on the experiences of the day – remember that Douhet was swayed by Italian successes in the Horn of Africa against people who had possibly never even seen an aircraft – and the technologies of the era. They were, perhaps, swept along by enthusiasm and the belief that air power did offer an alternative to the attritional and static warfare of the trenches; nevertheless, they did not apply sufficiently rigorous review of their own theories and we have since (Warden notwithstanding) discounted the idea that the bomber will always get through, or that the will of the people will be broken by air power alone. More critically, what they expressed was a theory of the employment of air power, of the use of kinetic effect; they did not address the question of the art of air power and, acknowledging that they are recognised as theorists rather than strategists, did not offer anything that could be identified as an air power strategy. So, if not of this generation, what of the next?

The period from the end of the Second World War to the end of the 1991 Gulf War, the second era of air power, can be described as the era of procedural operations, the so-called ‘lines on maps’ period. While there was no longer any debate over the need for an independent air arm, thinking does not seem to have developed much further. Technology offered new solutions and agility steadily increased. Analysis recognised the limitations of air power and codified



A Buccaneer S2 of No 15 Squadron in formation with an F-111 of the USAF over Germany, May 1983

their roles. In particular, in the period after the Royal Navy assumed the guardianship of the independent nuclear deterrent, air power seems to have concentrated on supporting the other environments and to become almost fixated with deconfliction, and hence lines on maps. Those who remember operating in the Cold War era of the 1980s, for example, will readily recall the plethora of lines defining FSCL, safe corridors, MEZs, squawk switch-on, and so forth. Arguably, that thinking that was undertaken was equally constrained by lines of thought, with the emphasis on supporting the Army and Navy and little consideration given to this elusive art of air power, this defining characteristic.

When thinking of the theorists of this era one is perhaps naturally drawn towards Colonel John A Warden III of the USAF, and his theory of ‘Five Rings’,³ thinking that some have claimed is truly ‘strategic’; but was it? Warden, like Douhet et al before him (and Warden claimed that the 1991 campaign finally vindicated Douhet), applied the technology of the day and the thinking of the time to produce kinetic effect that, ultimately,

supported the ground campaign. It was a very good articulation of how to fight with the weapons of the day, but it did not capture the elusive art of air power. And not everyone fully agreed: Robert Pape argued that air power was too often linked to kinetic effect to produce coercion and was therefore one-dimensional in its application, that there needed to be an approach beyond strategic bombing.⁵ So what since?



UK Hermes 450 UAV

This third age, that of agile air power, has seen further rapid advances in technology, allowing air power to start to address some of its weaknesses. Persistence is now less of an issue with long-endurance UAVs, and increasingly CUAVs, allowing both ISTAR and CAS-type missions to be undertaken around the clock. Likewise, neither night nor bad weather are the hindrance they have been previously, with air power becoming ever more agile. Meanwhile, space (in which the airman has, for reasons of history, the lead status) offers new technological solutions to our problems with its ability to provide surveillance, over-the-horizon communications and networking, allowing the Network-Enabled Capability to be realised.

While there has yet to emerge a new proponent on how this new technology will shape the employment of air power, it is likely that he (or she) will look to the technology and thinking of the day to attempt to address the needs of the land and maritime components; there is little to suggest that they will address this issue of strategy purely by considering technology.

There are things that we as air power professionals express well: the 'how' of air power. Read AP 3000, or examine the Core Air and Space Power Roles (the CASPRs) and you will find plenty of exposure to this question, but nothing about the art. Why might that be?

Why We Might Not Have Produced An Air Power Strategist

This article suggests that there are four reasons why we have yet to capture this art of air power: our age, our military origins, technology, and the uniquely joint nature of air. First air power's age: it is only just over a century since the first powered flight in a heavier than air machine. The great strategists for either maritime or land power have been able to draw on centuries of military actions and thinking: Clausewitz and Jomini both looked back over the turbulence of the Napoleonic era and further, and were able to discern the bedrocks of land strategy, the art of fighting major wars with large armies. Mahan and particularly Corbett, writing in the post-Nelsonian era and at a time of major expansion of trading, concentrated on the art of employing maritime power to support the burgeoning economy. A lack of history may in part explain the inability, so far, for air power thinkers to discern the same enduring themes that together spell out the art of air power.



Powered, manned aircraft were pressed into service almost as soon as it was able to prove even moderate utility.

Pictured here is a BE2c of the RFC

Second, air power's military origins. The powered, manned aircraft was pressed into service almost soon as it was able to prove even moderate utility. But, and arguably the advent of WWI so soon after aviation became a serious military proposition was counter-productive in the long term, air power was viewed from the beginning as an adjunct to the two existing domains – land and maritime – as witnessed by the Royal Naval Air Service and the Royal Flying Corps. Although the practitioners within the third dimension did break away soon afterwards with the foundation of the first independent air force in the Royal Air Force in 1918, were these early aviators already hamstrung in their thinking? Unlike the Royal Navy or the Army, who had grown up separately, each at ease in their own environment, the RAF had been created as an addition to another; from the outset the RAF did not exploit the seams between the environments, nor did it use the third dimension as its own but sought to meet the needs of the others. Furthermore, its early leaders had risen through the ranks of another Service so were perhaps

already conditioned not to see air as the unique environment. It may indeed be, therefore, that an element of the lack of an air power strategy has been hamstrung by this conjunction with the other environments.

Technology too has played a part. To operate in such an alien environment⁶ as the air, man has relied from the outset on technology. To overcome the natural weaknesses inherent in aviation, be that flying through cloud, precision-guided weapons, operating where we need oxygen to survive, technology has provided the key to enable activity. Indeed, it could well be argued that air power proponents are in thrall to technology, that it seems to offer glimpses of some holy grail – such as overcoming our lack of persistence. But this reliance on technology has had another, unintended consequence in that the very science that allows man to fly has become so commonplace that it also blinds its users to the fact that they are undertaking an unnatural act. Critically, the danger of being so subservient to technology, always looking forward to the next break-through, may be that this prevents an articulation of the fundamental nature of air power; certainly an examination of the air power theorists would support this supposition.

Finally, the very Joint nature of the air environment may have contributed to this lack of an air power strategy. The maritime sphere is almost exclusively the bailiwick of the Royal Navy, albeit that the RLC does some of its task via small boats. The Land is, with acknowledgement to the RAF Regiment and the Royal Marines once they come ashore, the preserve of the Army. But the air is used by all. Both our sister Services have an organic air capability,



UK Army Air Corps Lynx

the Royal Navy with the Fleet Air Arm and the Army with the Army Air Corps and, increasingly, the Royal Artillery's UAVs. Kinetic effect is almost always delivered through the medium of Air, be that a Tomahawk cruise missile, a MLRS rocket or even the round from an SA80 – as well as Paveway and other air-dropped ordnance (be that from a manned or unmanned vehicle). Likewise, the growing array of ISTAR assets are more often than not found operating in or through air – and airspace control is developing a complexity unheard of even a decade ago. All of which serve to complicate the air environment; with such complexity it may even be axiomatic that no single, over-arching expression can capture the art of air power?

Conclusion

It is perhaps significant in the argument presented here that the opening quote was from Mahan, one of the great Maritime strategists. This article has not attempted to produce a strategy, but may at least generate a debate. Any strategy must be enduring and be neither limited by the technology of the day, nor constrained to fighting in the present. For if it is not possible to capture the very essence of air power, only its attributes, as air power

proponents we risk becoming mired in tactical effect, wedded to today's battle. Where this might have real impact will be if General Smith's "war among the people" is not the only model for the future, if there were to be a return to inter-state warfare: would the RAF then be in a position to deliver real strategic effect, enabled by a fundamental understanding of not only strategy, but the strategy of air power? For if the third dimension is not to be regarded as merely an adjunct to the efforts of the other Services, where is air power's unique and compelling voice? Mahan and Corbett were able to articulate enduring themes for Seapower with their concentration on trade, sea Control and the earth's natural choke points and thus shape maritime thinking for generations; air power writers have yet to produce a similar, enduring work that articulates air's unique ability to unpick the seams, to observe, influence and effect those areas where the sky meets the sea, the sea the land and the land the sea. To paraphrase Pilot Officer Magee, perhaps it is time we really did slip the surly bonds of earth, put out our hands and touch the face of God.

Notes

- 1 Gp Capt Shields is the Assistant Director Air and Space, Development, Concepts and Doctrine Centre (DCDC). These are Gp Capt Shields's personal views and do not represent DCDC policy.
- 2 See: Colin S Gray: *Strategy for Chaos: Revolutions in Military Affairs and the Evidence of History* (London, Frank Cass: 2002) Chapter 4.
- 3 See: www.airpower.maxwell.af.mil/airchronicles/battle/chp4.html
- 4 For example: http://op-for.com/2006/05/post_3.html
- 5 Robert A Pape: *Bombing to Win: Air Power and Coercion in War* (Cornell, Cornell University Press: 1996); see in particular Chapter 9.
- 6 Man can walk on the earth or swim in the sea, but cannot fly unaided.



**An Avro Lincoln bomber from No1 Sqn
RAAF on a bombing mission over the
Malayan jungle, drops two 500lb bombs**

Air Power and Psychological Warfare Operations Malaya 1948–1960

By Wg Cdr Bryan J Hunt

In 1948 Communist insurgents launched a major terrorism campaign to topple British rule in Malaya and sought to establish a Peoples' Republic. The initial civil and military response was disjointed and largely ineffective until the development of a joint civil and military campaign plan that, *inter alia*, placed considerable importance on psyops and intelligence operations alongside constabulary policing and social reforms. This paper considers the role of air power in support of psychological warfare operations during the campaign and compares its effectiveness alongside the bombing campaign.

After the attack on our cultivation area we fled to another area where we saw many Government propaganda leaflets and safe conduct passes. I picked up some of the leaflets intending to use them when coming to surrender. A few days later we heard voices coming from an aeroplane calling on us all to surrender and offering good treatment. We all agreed to this suggestion.

(Surrendered Enemy Person, quoted in FEAF/MIS Sep 1954, Pt II).

Introduction

The murder in Malaya of three European planters in June 1948 precipitated the declaration of a state of emergency by the British-led colonial government. The insurgency was the culmination of an increasingly brutal campaign sponsored by the Malayan Communist Party (MCP) that had its origins in the expansion of Soviet influence into South East Asia in the 1920s. Although the colonial authorities – most notably Police Special Branch – had penetrated the MCP during the

1930s and was able to curb many of its activities, the Japanese occupation in early 1942 resulted in the MCP cooperating with Britain in a clandestine war against the Japanese, forming the self-styled Malay Peoples' Anti-Japanese Army (MPAJA).¹

After the sudden capitulation of the Japanese in August 1945, Supreme Allied Commander South East Asia, Lord Louis Mountbatten, authorised the MPAJA to maintain order before colonial authority was re-established. Britain remained determined to retain control of post-war Malaya as it was the single largest overseas source of US dollar earnings through the export of rubber and tin and provided a considerable boost to the beleaguered British economy. Although the Secretary-General of the MCP Lai Tek discouraged direct confrontation with the British authorities, there was increasing industrial unrest in Singapore and Malaya, as MCP activists gained prominence amongst the Trades unions. After Lai Tek was unmasked as a long-time British agent in late 1947, the MCP, which was 90 per cent ethnic Chinese,² became galvanised to launch a direct challenge to the Malay Federation and the *de facto* British rule, and sought to establish a Socialist Democratic Republic.^{3 4} The MCP challenge to colonial authority was spurred by a number of recent and concurrent events: the humiliation of European defeat at the hands of the Japanese, the emergence of a Communist China under Mao Zedong, a 'call to arms' at two Moscow-sponsored conferences held in Calcutta in February and March 1948,⁵ and lobbying by an Australian trade unionist and COMINTERN member, Lawrence Sharkey.

Outbreak of Insurgency

Intelligence

At the declaration of the Emergency, the colonial authorities were hampered by lack of actionable intelligence about the insurgents; indeed for several months it was thought that the violence was perpetrated by Chinese nationalists, the Kuo Min Tang (KMT), who were the arch-enemies of the Communists. The small and under-resourced internal security organisation, the Malaya Security Service (MSS), had warned of Communist intentions but these were largely ignored by the High Commissioner Sir Edward Gent and his Commissioner of Police. After the declaration of a State of Emergency, the MSS was disbanded (to be reformed as Police Special Branch), Gent was recalled to London to face questioning about the debacle, and the Commissioner of Police was replaced by the mercurial Colonel W Nichol Gray, fresh from the British mandate in Palestine.⁶ The initial response by the police and military forces was disjointed (and indeed competitive), occasionally brutal and not particularly effective; however it was understood by all that the insurgency could not be defeated by military action alone. The essence of success lay in winning the confidence and the loyalty of the bulk of the Chinese population and to stimulate amongst them a positive reaction against Communism; similarly exploitation of events and intelligence required a depth of knowledge of the landscape, the culture of the target audience and 'human factors' of those involved. Accordingly, Psychological Warfare Operations (Psyops), hitherto unknown in SE Asia, required a specialised form of intelligence not readily available through single military, police or political channels.

Organisation of Psychological Warfare Operations

At the start of the Emergency, information and directives to the public were disseminated through the Emergency Publicity Committee of the Department of Public Relations, however in June 1950 this task, as well as that of propaganda, was taken over by the Emergency Information Services, which were part of the Federal Police HQ in Kuala Lumpur, with representatives at State, Settlement and District levels. In October 1952 the Emergency Information Service was separated from the joint civil/military Director of Operations



Chinese communist terrorists

Staff and placed under the Director-General of Information Services, only for the responsibility for the psychological offensive to pass back to the Psychological Warfare Section of the Operations Directorate some month later.⁷ Although General Sir Gerald Templer (High Commissioner and Director of Operations 1952-54) had regarded intelligence operations and psyops as his 'right and left hand gloves' his Director of Intelligence, Jack Morton, regarded that the outcome of intelligence operations was more predictable, and invested resources in delineating Army and police intelligence

responsibilities and developing Special Branch operations at the expense of the Psychological Warfare Section.⁸

The main aims of the 'war of words' were to induce surrenders amongst the insurgents, by breaking their morale and causing disaffection within their ranks, and to win the battle for the minds and loyalties of the uncommitted population in the face of propaganda offensive that was launched by the MCP. In a 2005 interview with a Chinese former senior Special Branch officer, Leong Che Woh described that the role of the Federal authorities was to convert the insurgents; a death of an insurgent was 'regarded as a failure'.⁹ This view was in stark contrast with the military approach of using kinetic means to defeat the insurgents – patrols, battery shoots and air attacks, - and this would remain source of friction between the colonial police and the military and air authorities. The main problem faced by the information staff was in promulgating the message to an elusive enemy whose primary tactic was to avoid contact with the security forces. The local Chinese were indoctrinated by the Government through the press, radio, films and itinerant information teams (often comprising of surrendered enemy personnel (SEPs)) and the local Masses Organisation or Min Yuen (who supported the communist insurgency) could be relied upon to relay some of the information to those insurgents taking refuge in the jungle.¹⁰ However, as they withdrew deeper into the jungle, messages to the insurgents were spread primarily through leaflet drops and voice broadcasts from aircraft; indeed this was often the only means of making contact with them and without these means of disseminating information much of the effect of the

psychological warfare campaign would have been nullified.¹¹ Once again, Air power demonstrated ubiquity – largely unconstrained by terrain or enemy presence. Communist propaganda was limited to political indoctrination and hectoring, and the promulgation of Marxist publications; indeed the MCP leadership regarded printing presses as their strongest weapon and the colonial authorities went to enormous lengths to stop the production and distribution of communist propaganda newspapers and leaflets.



British troops on patrol in the Malayan jungle

During the first two years of the Emergency – until mid 1950 – access to day-to-day intelligence suitable for exploitation was lacking, as competition for new material was fierce. Firstly, after the disbandment of the MSS in August 1948 the security forces lost what few reliable Chinese sources of human intelligence (Humint), as there had been over-reliance on Lai Tek as a single source of intelligence on communist intentions. Secondly, the newly reconstituted Police Special Branch was grossly under-resourced and contained few officers who could speak Chinese dialects or had experience of

the largely rural Chinese population in Malaya, amongst whom the communist insurgents operated. Military units initially ran their own network of agents and informers, often in competition with Special Branch operations. The police usually gained the first news of exploitable events, such as surrenders or major defections and although such



**Chin Peng,
communist
leader**

events could be exploited by the Psychological Warfare Section to create a 'snowball' effect, Special Branch tended to conceal such events in order not to jeopardise other covert operations. Such was the parochialism that the Psywar Section took the view that secrecy and security were often imposed for no better reason than to gain credit for the police, and Special Branch in particular, leading to bitter arguments resulting in the Psywar Section deliberately exploiting intelligence material that Special Branch had embargoed.¹² Interestingly, the Psywar section ensured that the material in sponsored publications (leaflets, newspapers and magazines) and films was factually accurate; there

is little evidence of the use of 'Black' propaganda during the campaign.

The emergency Information staff had few guidelines; Psychological Warfare was a new art and experience was largely limited to the European theatre of World War II and the policies – such as the adoption of the rewards scheme – was largely the work of a future Director-General of the BBC, Hugh Greene, who was appointed as Director of the Emergency Information Service in 1950¹³. Furthermore, the pysops campaign had to act within the civil penal code and could not urge, for example, that insurgents kill their leaders, even though this happened on an increasingly frequent basis as the financial rewards grew. It also took several years for the Government to realise that two thirds of the Min Yuen and a significant percentage of the insurgents were illiterate; accordingly leaflets and newspapers had to be understood by all. The psyops campaign gained greater momentum and traction by the later appointment of an influential Chinese businessman, 'Harry' CC Too, with his encyclopaedic knowledge of Chinese society and intimate understanding of senior MCP figures. Conflated with an overall improvement of intelligence from the Police, in part due to the concerted recruitment of Chinese detectives into Special Branch, by late 1951 the initiative had passed to the Security forces, a point that the MCP acknowledged in an evaluation that was soon to fall into Government hands.¹⁴ This was in spite of 1951 being regarded as the darkest year of the Emergency by British settlers in Malaya, with spectacular successes scored by the insurgents such as the assassination of the High



An RAF Valetta drops propaganda leaflets over the Malayan jungle

Commissioner, Sir Henry Gurney, in October 1951.

Psychological Warfare Operations – Techniques and Dissemination

Leaflets and broadcasts were prepared in simple vernacular languages for distribution to the scattered villages and estates where the majority of the sympathetic Chinese and Min Yuen lived. Leaflets were usually dispatched from a supply-dropping aircraft and occasionally by bombers of the offensive support force at the conclusion of an air strike. Valettas, Dakotas, offensive aircraft – such as Royal Australian Air Force (RAAF) Lincoln bombers at the completion of bombing missions - and in later years of the Emergency, from the fearsome Bristol Freighter of the Royal New Zealand Air Force (RNZAF), carried loads of up to 800,000 leaflets at a time. Experience showed that a good distribution was achieved in an area of 1,000 yards square by dispatching 50,000 leaflets at a time at the end of a static line.¹⁵ If accurate drops of a limited quantity of leaflets into small pinpoint targets were required, usually when the need to exploit rapidly a success achieved by the security forces, Austers of 656 Squadron RAF (later, Army Air Corps (AAC)) and

occasionally Harvards of the Malayan Auxiliary Air Force (MAAF) were employed. Throughout the campaign leaflets remained the chief medium for disseminating information and propaganda to the insurgents in the jungle and to the Min Yuen. Although the maximum number of leaflet sorties was in 1951, the peak of leaflet delivery was achieved in 1955, when the psychological warfare operations were achieving greater successes than direct military operations. Initially leaflets were of a strategic nature, advising populations of emergency regulations and extolling the virtues of surrender, although there is little evidence of this being a successful method. As the campaign progressed, tactical leaflet dropping was used to exploit successes of police and military operations and to publicise the rewards scheme, whereby



Titled: Now is the time to save yourself – it was reported that 207 terrorists surrendered with this leaflet, No 256

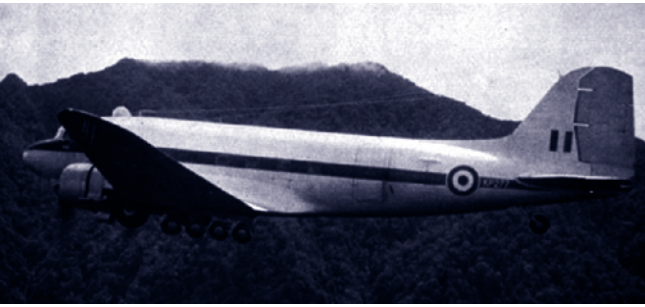
the authorities would pay substantial bounties for insurgents to surrender or to 'bring in' weapons and MCP leaders.¹⁶

The air power commitment in 1955 – the peak of psychological operations – saw 141 million leaflets dropped on 365 leaflet dropping sorties and 906 hours of voice broadcast over 922 sorties. In September 1955, the Federal Government announced an amnesty prior to the peace talks in Baling, when 21 million leaflets were dropped in seven days.

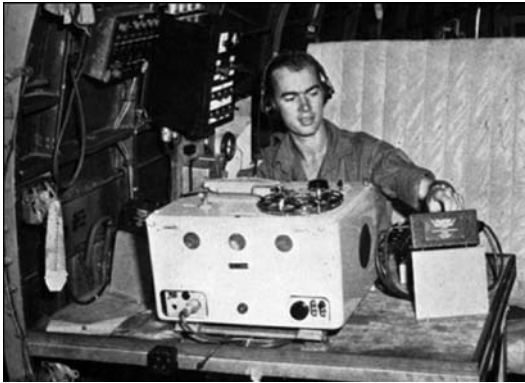
The broadcasting of recorded messages from aircraft was not introduced into the Malayan campaign until October 1952 when General Templer arranged the loan of a US Air Force C-47 Dakota aircraft from Korea for experimental purposes, through his personal friendship with General Mark Clark, the commander of US forces in Korea from May 1952.¹⁷ The Dakotas had proved to be of little use in Korea due to a sophisticated air defence system in the North, whereas air power had supremacy in Malaya.¹⁸ As a result of experiments conducted by the Far East Army Operational Research Section (Psywar), two RAF Valetta aircraft of Headquarters Far East Air Force (HQ FEAF) were fitted with voice broadcasting equipment and began operations in early 1953. Excessive engine noise – rebroadcast over the loud speakers – resulted in the Valettas being replaced by two ex-Malayan Airlines Dakotas (which were, in turn, ex-RAF) in December 1953 and March 1954. The Dakota transport aircraft, although obsolete in the RAF by that time, was more suited in the voice-broadcasting role as the engine noise was less and the lower cruising and loiter speeds enabled longer broadcasts to be made.

In January 1954 an Auster was equipped with loud hailing equipment for use over small targets on the fringe of the jungle or adjacent to roads, where accuracy was important and when the employment of larger aircraft was uneconomical.

The Voice Aircraft (VA) broadcasting equipment consisted of a diesel generator and four modified 'Tannoy' under-wing mounted speakers, offset to port. Broadcasts were normally made at 2,500 or 3,000 feet at about 75 knots and in good weather conditions the broadcast could be heard 2,500 yards left of track. The equipment could be jettisoned in an emergency, unlike the original US fit, where banks of speakers were mounted in main doorway. Typically VA flew a 2,000-yard offset box pattern to ensure adequate ground coverage. The Austers, fitted with only one speaker, could be heard some 1,000 – 1,500 yards left of track when flying at 40 – 45 knots at between 800 and 1,500 feet, but aircraft performance was hampered by the equipment weight and the need to carry a 'voice operator'. An endless loop tape system was introduced in April 1954 which obviated the requirement for the extra crew member; however the work load on the single pilot was immense. The pilot operated the equipment by hand, using his feet and knees to manage the flying controls, whilst flying at low level in mountainous tropical terrain. Any turbulence, aided by a draughty cabin, would result in the 20 feet of recorded tape breaking loose and winding itself around the pilot and his controls. Changing the endless loop cassettes was a very difficult task and it is to their credit that they achieved the many successes which reports from the ground gave them.¹⁹ By 1955 the 'Voice'



A 2,000-watt loudspeaker system on a Dakota of the Voice flight detachment of 52 Sqn RAF



A crew member prepares to make a broadcast to the terrorists in the jungle

Flight of 267 Squadron RAF had three Dakotas and two Austers; sadly the one remaining Valetta crashed in February 1954 in NW Jahore with loss of seven crew.²⁰

Typically, voice broadcasts did not exceed 28 seconds; indeed many were shorter, and a considerable amount of scripting was required to compress a meaningful message into the allocated timeframe. There were also instances where live broadcasts were given from the aircraft although the usual speaker was the principal woman announcer from Radio Malaya, 'Mrs Tan', who could speak English, Malay, and the

four principal Chinese dialects.²¹ She carried out her own translations and made her own recordings between regular Radio Malaya broadcasts. On several occasions, General Templer gave broadcasts in heavily-practised Chinese and Derry, in his unpublished account of Psyops in Malaya, noted that these broadcasts had a major effect on the insurgents. The greatest challenge was in preparing recordings to be broadcast to the indigenous Orang Asli people - the so-called 'aboriginals' - who lived in the deep jungle and were exploited by the insurgents as an intelligence screen. The broadcasts were heard by the Orang Asli but were regarded as 'wind in the head' ie a mental aberration, because of the dense jungle the aircraft were rarely visible and thus the source of the voices could not be determined.

Tasking

Requests for loud hailing or leaflet dropping sorties emanated through police channels (typically Special Branch, or State-level 'Voice Area Committees') and were passed to the Joint Operations Centre (JOC) in Kuala Lumpur, where the mission was prioritised and deconflicted with air strikes and supply drops. By 1954, the average time between a request for a voice mission and take-off time was about four hours; technical advances in tape production meant that by 1957 the request-to-launch time was reduced to two hours. Although mission coordination could result in differing voice missions being carried out during the one sortie, it was typical to saturate an area in voice broadcasts for several days, effectively tying up one – possibly two – VA in order to achieve the maximum psychological effect. Although not a regular practise, VA did sometimes operate in conjunction with

bombing and artillery engagements, although the Psywar Section believed that the insurgents were not particularly receptive to messages after such bombardments, who they thought were paralysed by fear and could not make rational decisions to surrender.²² This is in contrast with techniques later used in Vietnam and in Iraq in 1991, where leaflet dropping followed intense 'softening up' by B-52 aircraft.

Operational Tempo

From 1956 onwards the number of contacts with the insurgents reduced as their numbers decreased and it was hoped that psychological operations would play an increasing role in defeating the insurgency. As well as the tactical leaflet and voice broadcast role, strategic leaflets were used to publicise both Merdeka (Malayan independence from Britain in August 1957) and the intention of the Federal Government to prosecute a long term war against the insurgents. Although the increase in the number of insurgent 'eliminations' had a cumulative effect, they were not immediately publicised to avoid prejudicing ongoing Special Branch operations in Northern Johore and Southern Perak. This had the net effect of reducing the number of leaflet drops and VA sorties. Additionally, the Dakotas were rapidly aging in the tropical conditions and coupled with additional positioning time as the insurgency was confined to the border with Thailand, the average number of broadcasts made over an area were reduced from five to three in order to conserve remaining airframe hours.²³ Furthermore, political constraints of operating near, and sometimes over, Thai territory meant that there were delays in obtaining over-flight clearance. By the end of the Emergency in 1960,

Commonwealth air forces had delivered nearly 500 million leaflets on more than 2,500 sorties and conducted nearly 4,000 hours of voice broadcast during 4,500 sorties.

Impact of the Air contribution to the Psychological Warfare Campaign

In 1949, when the Psychological warfare campaign was in its infancy and the insurgents had the upper hand militarily, 48 of the 207 insurgents who surrendered between September and December did so after reading leaflets outlining the surrender terms.²⁴ The first measured impact of the leaflet campaign was apparent in Penang in 1951 – arguably the darkest year of the Emergency when the greatest numbers of insurgent killings took place, including the High Commissioner – when leaflets advertising cash rewards for information on the whereabouts of insurgents resulted in a five-fold increase of actionable intelligence received by Special Branch.²⁵ After 1952 SEPs also stated on many occasions that voice broadcasts influenced their decision to surrender; additionally by 1955, 70% of those who surrendered used safe conduct passes that were routinely attached to information leaflets. Although the official RAF history is vague about the effectiveness of the psywar campaign, the Operational Research Section (Psywar) (ORS(PS)) conducted a detailed analysis of the motivation of surrendered insurgents in 1956, noting *inter alia*, that of those who heard the VA broadcasts clearly, 91% considered them to be 'highly effective in destroying CT [Communist Terrorist] morale, convincing the terrorists of the futility of continuing the armed struggle and [thereby] inducing surrender.' A further 73% of SEPs also listed voice broadcasts as a factor precipitating their own surrender.²⁶ The ORS(PS)

also collated numerous statements from SEPs illustrating the propaganda effectiveness of VA eg 'Voice aircraft should be more used. The pamphlets [leaflets] are forbidden to be read whilst broadcasts from Voice Aircraft can be heard by all'.²⁷ The MCP Secretary-General Chin Peng issued an order that any MCP member found in possession of a leaflet would be summarily executed; however there was no means to block out voice broadcasts that were frequently addressed to individuals within known groups of insurgents.²⁸ The personalising of broadcasts was likely to be a key factor in success: hearing messages telling who you are, where you are, and what you should do next would be a powerful inducement to surrender. Later in the campaign, weaknesses of the MCP position were ruthlessly exploited by the Emergency Information Service. The failure of the September 1955 peace talks in Baling were portrayed as a lost opportunity for the MCP – Merdeka was proceeding and the Federal Government had made it clear that the MCP would not be legitimised and therefore would not have a role in the new government. Chin Peng had previously announced that the MCP would disarm if Merdeka took place; and although independence was granted on 31 August 1957, the Communist struggle continued, but with considerably less resolve.²⁹ Mass surrenders took place in 1957 – 1958 and although these cannot be ascribed solely to the psychological warfare campaign, the leaflets and broadcasts supported the firm line that the Federal Government had taken – such as resettlement of the Chinese squatter population (thereby removing the Min Yuen support), continued food denial programmes in 'black' areas (areas with active insurgency) and successful penetration of the highest levels of the MCP by

Special Branch.³⁰ In 1960, in a captured document the MCP – now based in a relatively benign southern Thailand, with the connivance of the Thai Government – offered the opportunity for MCP members to leave guerrilla operations if 'they had lost faith in the present struggle, were sick or old, or they wanted to marry'.³¹

Conclusions

Much has been written about the offensive actions of the air forces during the Malayan Emergency but few comparisons with the non-lethal effect of the air power contribution to the psyops campaign have been made. Kinetic targets were invariably in dense jungle thus attacking them was problematic and bomb damage assessment was a speculative pastime. At the commencement of the Emergency the lack of adequate charts, maps and photographic coverage limited the accuracy and therefore the effectiveness of the bombing and strafing campaign. Tim Hatton, a Special Branch officer throughout much of the Emergency, and who rose to be Deputy Director of Special Branch in the mid 1960s, reported on the catastrophic impact collateral damage had on the 'Hearts and Minds' campaign; such loss of support and actionable intelligence from otherwise neutral populations needed to be weighed up against the resources expended on ordnance.³² During the campaign some 35,000 short tons of bombs were dropped during 4,067 air strikes, with expenditure on ammunition and explosives alone exceeding £1.5 million per annum by 1951. There were few measures of effectiveness of the air campaign. During the first 18 months from June 1948 to December 1949 intelligence reports of questionable reliability

reported 98 insurgents killed and a further 22 wounded during air strikes; in contrast, during the same period security forces killed approximately 1,000 insurgents in ground contacts. Other reports, quoted in the official account of the air campaign, reported that 126 insurgents were killed by air strikes with a further 141 injured. In a 1963 symposium on the role of air power in Malaya, sponsored by the US Air Force, it was reported that the heavy bombing campaign conducted by the Royal Australian Air Force (eight Lincoln aircraft dropping roughly half the total ordnance – 17,500 short tons) eliminated only 16 insurgents and between 20 and 30 camps were destroyed.³³ Overall, Postgate in the official RAF history of Operation Firedog, assessed that the air campaign contributed to less than 10% of the total casualty count. This is in stark contrast with the empirical evidence obtained from insurgents who ‘self renewed’³⁴ as a result of the relatively economical psyops campaign. Perhaps if the RAF had focussed on a non-kinetic campaign of psyops support, air re-supply and helicopter operations, even greater successes would have been achieved. Such a strategy would have to have been weighed up against the need to provide close-air support to security forces. Nonetheless air strikes clearly had a deleterious effect on morale. Chin Peng reported the effect of an intense bombardment of his headquarters in March 1953.

Although the RAAF Lincolns missed the well-camouflaged camp, a number of insurgents – including two of Chin Peng’s bodyguards – were killed in the raid and his headquarters was rapidly vacated and command and control effectively neutralised because

of the fear of follow-on security force attacks.³⁵

The importance of the contribution made by the propaganda and information services to the successful outcome of the campaign cannot be underestimated. By the middle of 1951 it was clear that the cumulative effect of Security Force measures had increased public confidence in them, with a resultant improvement in co-operation and an increase in the flow of information concerning insurgent whereabouts.³⁶ It was soon identified that the preliminary to the final collapse of insurgency in a particular area was the realisation that the insurgents had lost public support (in many cases support that was built on fear of brutal reprisals) and it was at this point that psychological warfare techniques were most liable to be effective. Largely as a result of the offensive mounted by the Psychological Warfare Department, 254 terrorists surrendered during 1952, increasing to a maximum of 372 in the following year.³⁷ In 1954 and 1955 over 200 defections a year were recorded; thereafter the number declined as the Psychological Warfare Department was faced with a smaller and more obstinate group of insurgents who were largely immune to their appeals. Although propaganda appeals needed to be backed up by the threat of forces to be credible, it was a positive campaign based on rewards and appealing to the individual insurgent. It is argued that the Emergency in Malaya was the first modern campaign where psyops played a greater role in defeating the enemy than the use of force. Air power, because of its ubiquitous and timely nature, was pivotal in delivering the message to the individuals that made up the insurgency and without such means of delivery

there would have been far fewer defections and surrenders and it was likely that the campaign of violence would have continued for many more years.

Notes

1 Special Branch is thought to have handled a number of high level sources within the MCP. Their most notable success was Lai Tek, who was placed in the MCP in 1931, routinely denouncing comrades and rose to become Secretary-General from 1938 – 1946, collaborating with the Japanese during the war (resulting in hundreds of summary executions) and returning be a British run asset in late 1945. He was garrotted in Bangkok in early 1948 under the direct orders of his successor, Chin Peng (qv). Bryan J Hunt 'The Role of Intelligence in Countering Insurgency' Unpub MSS, University of Cambridge Centre of International Studies 2005.

2 In 1948 Chinese made up about 38% of the population of Malaya and comprised of two groups. The peasant squatters, who were generally illegal immigrants that had fled from China since 1900, led a semi-subsistence life on the jungle fringe working as rubber tappers and tin miners. The other group consisted of well-educated and successful Chinese bourgeoisie (shop keepers and traders), who had settled on the Malay Peninsula and Singapore in the 18th and 19th centuries.

3 Chin Peng: *My Side of History*, p 205. Malay Police Special Branch Basic Paper on the Malayan Communist Party 1950 Vol 1 Part 2 p 31.

4 Lucien W. Pye: *Guerrilla Communism in Malaya: Its social and political meaning*. Princeton: 1956, p 83, n 1.

5 Conference on Youth and Students of South East Asia Fighting for Freedom and Independence, and the Second Congress of the Communist Party of India – CPI, which were attended by delegates from various Asian communist parties, though not the MCP. Lawrence (variously Lance) Sharkey briefed the MCP in Singapore on his return from the conferences.

6 Sir Edward Gent, a career Colonial Office administrator, had devised the short-lived Malayan Union plan designed to enfranchise the Chinese

population and to diminish the influence of the Islamic Malay Rulers. He appeared to be paralysed by indecision on intelligence matters and several documents have emerged recently, most notably from Commissioner John Dalley of the Malaya Security Service, suggesting that Gent had strong Communist sympathies. Others (Hatton, Bryden) suggested that he was simply naïve and incompetent. He was recalled to London in late June 1948, but died in a plane crash on arrival. Hunt p 95.

7 Malcolm R Postgate: *Operation Firedog: Air Support in the Malayan Emergency 1948 – 1960*, London, HMSO 1992 pp 11-12.

8 Riley Sutherland: *Antiguerrilla Intelligence in Malaya, 1948 – 1960*. Memorandum RM-4172-ISA, September 1964, RAND Corporation, Santa Monica, p 32. Prior to his appointment as DOI, Morton was in charge of the joint MI5/MI6 bureau in Singapore 'Security Intelligence Far East (SIFE)'. Hunt p 63.

9 Leong Che Woh; former Assistant Commissioner of Police (Counter-Terrorism) Royal Malaysian Police; interview with author, Kuala Lumpur May 2005.

10 The Min Yuen or 'Masses Organisation' consisted of Chinese peasants, squatters and plantation workers who provided intelligence and sustenance to the insurgents, as well as providing personnel for specific operations, such as the 'Armed Work Force'. At the height of the Emergency, the Min Yuen numbered over 250,000 supporters.

11 Postgate pp 114 – 115.

12 Archie Derry *Emergency in Malaya: The Psychological Dimension*. Joint Staff College, UK 1982 p 5.

13 Later Sir Hugh Greene, Director-General BBC 1960 – 1969.

14 The MCP realised that it could not defeat the government forces and issued a Directive in October 1951 seeking to renew the struggle through subversion. This was separately analysed by the CIA, who ascribed the success to 'improved government intelligence, military operations and squatter resettlement'. Hunt pp 61-62

15 FEAF / MIS Sep 1954 Pt II

16 This was a less savoury aspect of the Emergency. Many insurgents were killed by their colleagues in order to claim the bounty; a head - generally sans

corps – was produced as evidence to support the claim. Such actions were contrary to the Malay Penal Code so Psywar material had to avoid recommending such action.

17 AOC(M) Fifth Report, Feb – Dec 1952 p6 (IJJ53/16/2); Derry 1982, Chap 6 p 1.

18 Derry reported one occasion - reported by an agent from the Kugang Kesum insurgent camp in 1953 - where the insurgents attempted to engage a voice aircraft with a Bren Gun LMG. As a result the ORS(PS) recommended that the VA should operate at a slightly higher altitude. Derry, 1982 Annex D-3. 19 Derry, Chap 6 p 2.

20 Renumbered 209 Sqn in November 1958; at that time the Austers were withdrawn from broadcasting duties. In November 1959 the Dakotas were transferred to 52 Sqn

21 Bill Bailey, former Special Branch (Research) Officer - interview with author, May 2005.

22 Derry, 1982 Annex C-3.

23 Postgate, p 117 – 120.

24 Other reasons for surrender are not given, however lack of commitment, familial pressures and disillusionment with communism were typical reasons cited during the early years of the Emergency.

25 FEAF/MIS Nov 1959 p 24.

26 These figures may have been distorted by the SEPs giving an answer that they expected the authorities wanted to hear.

27 FEORS/PW Memorandum 6/55 dated 8 August 1955, cited in Derry 1982, Annex D.

28 Chin Peng claimed that he later refuted this order in his ghost-written memoirs published in 2004, citing that the safe conduct passes were a 'lifesaver'. Chin Peng, 2004 p 404.

29 The conflict continued fitfully for another 30 years, characterised by violent disaffection and division with the MCP. Eventually the MCP survivors, led by Chin Peng, signed a peace agreement with the Malaysian Government in 1989. The few elderly survivors, including Chin Peng, now live in an 'international peace camp' on the Betong Salient in southern Thailand.

30 Riley Sutherland: *Winning the Hearts and Minds of the People of Malaya, 1948 – 1960* RAND Corporation Memorandum RM-4174-ISA Sep 1964

pp 47 – 48.

31 This captured document lacked a Special Branch evaluation, so may have been a means by which the MCP could eliminate falterers; nonetheless, it is suggestive of the Communists' own view of the health of the Party at the time. Commander's Diary 1/3 E Anglian Jun 1 – 30 1960 cited in Sutherland, p 49.

32 Tim Hatton *The Tock Tock Birds*, 2004; interview with author May 2005.

33 A H Peterson, G C Rheinhardt and E E Conger Symposium on the role of Air power in Counterinsurgency and Unconventional Warfare: *The Malayan Emergency*. RAND Memorandum RM-3651-PR, RAND Corporation July 1963, p XX

34 'Self-renewal' was the term used by the Malayan authorities to describe voluntary surrender. It avoided a grievous sense of 'loss of face' and did not imply betrayal of colleagues of the Communist cause, although betrayal of fellow insurgents frequently – and very rapidly – followed 'self-renewal'.

35 Chin Peng noted that the raid took place on 9 March 1953, 5 days after Josef Stalin died.

Postgate, in the official RAF history, reports that the raid took place in November 1953. Chin Peng p 321; Postgate, p 66.

36 Coincidentally, the MCP realised that it could not defeat the government forces and issued a Directive in October 1951 seeking to renew the struggle through subversion; in the same month the High Commissioner, Sir Henry Gurney was killed in an ambush.

37 Colonial Office Malaya Annual Report 1952 p 7; 1953 p 340.



RAF AHB

A Wapiti releasing 112lb bombs

The Origins of Military Aviation in India and the Creation of the Indian Air Force, 1910 - 1932

**Part Two: The RAF in India and the Creation of the Indian Air Force,
1918-1932**

By Clive Richards

Military Aviation and Indian Security, 1918 -1921

Peacetime Requirements

The first part of this article examined the faltering attempts by the Indian Army to establish an air arm and the subsequent integration of these efforts into the Royal Flying Corps. By 1918, the Royal Air Force had established a small but nevertheless significant force in India. However, there was considerable disagreement between the India Office and the Air Ministry as to the size of the air component that would be necessary to help ensure India's internal and external security. The Secretary of State for India was keen to exploit the potential of the aeroplane, and during mid-1918 the India Office pressed the Air Ministry to re-equip the two RAF squadrons then in India (Nos 31 and 114 Squadrons) with aircraft more suitable for operations on the Frontier than their existing Royal Aircraft Factory BE2s and to further reinforce them with additional squadrons.

The Air Ministry's response to these requests was governed by the urgent need to ensure that as many personnel and aircraft as possible were available for operations on the Western and Italian Fronts and in Palestine. In a letter dated 29 July 1918, the Secretary of the Air Council suggested that the RAF contingent in India 'shall have a total of two service squadrons and two training squadrons, the latter to be capable of mobilising for service at short notice, and to act as a reserve' – although it was 'regretted that it is not possible at the present time to divert any additional Air Force to India, but in case of urgent need, squadrons could be drawn from the service or training organisation of the Middle East'.¹ An internal Air Ministry minute noted that 'The intention is to

so site the squadrons that any three can reinforce the fourth if necessary. These squadrons should be able to more than cope with any frontier rising.'²

The position of the Air Ministry shifted dramatically after the Armistice. One factor that may have contributed to this shift was the desire on the part of the Air Ministry to ensure that 'the Royal Air Force, inasmuch as aircraft units now constitute an essential adjunct to all military and naval forces, will be administered in India on the same financial basis as units of the British army maintained there in times of peace' – and therefore paid for by the Government of India itself.³ On 20 November 1918, the Air Ministry advised the India Office that following 'a most careful review of probable Indian requirements both in respect of aircraft to co-operate with military forces and of a separate long-range striking force', it had been concluded that a total of twelve squadrons would now be required in India: four corps reconnaissance squadrons operating in the army co-operation role, two fighter reconnaissance squadrons, two squadrons equipped with 'scouts' (fighters), two day bomber (light bomber) squadrons and two squadrons of 'Giants' (heavy bombers).⁴

This increase was greeted with scepticism by the India Office. In their reply of 28 November 1918, the India Office pointed to the fact that the enlarged force was three times that proposed in July 1918, 'at a time when a Turco-German offensive towards India appeared to be possible and...the Commander-in-Chiefs estimate then seemed to the Secretary of State [for India] to err on the side of moderation. But that danger has passed, and it is not

easy to conceive that India can for a long time to come be threatened by an enemy possessing an Air Force of any kind.' In light of the fact that 'any increase beyond what is necessary for local defence must depend upon the role of India in any scheme for Imperial defence in the future, a matter which so far as Mr Montagu is aware, has not yet been decided', the India Office noted that:

*before the Secretary of State in Council can place a scheme involving such heavy post-war expenditure before the Government of India, he would wish to be informed in greater detail of the grounds on which the Air Council recommend it as a military necessity, as he doubts whether the possible advantages of utilising the squadrons during peace time in the Civil Administration...will be considered by the Indian Government sufficient in themselves to justify the introduction of a military establishment in excess of actual military requirements.*⁵

Responding in turn on 7 December 1918, the Secretary to the Air Council put forward arguments in favour of the proposed twelve squadrons on a type-by-type basis. He concluded by expressing the Air Council's strongly-held opinion

*that the establishment of an adequate and efficient force of aircraft in India will have a greater effect in maintaining internal peace and in quelling the tendency towards trans-frontier risings, than a very considerable military force. Such an air force in addition to being a guarantee for peace, could be utilise [sic] as an independent striking arm and thus save expenditure in minor operations.*⁶

The India Office informed the Air Ministry on 10 March 1919 that

although the Secretary of State for India was still 'awaiting the views of the Government India as to the future strength of the Royal Air Force in that country', it was nevertheless viewed as unlikely that this would exceed five squadrons in 1919-20. The India Office therefore ruled that this figure 'should be taken by the [Air] Council for the purposes of the Air Estimates' and steps were duly taken to bring the RAF in India up to this strength.⁷ Personnel from No 20 Squadron left Ossonge in Belgium for India via Marseilles on 30 April 1919, and the squadron's advanced party arrived at Bombay on 16 June.⁸ However, the squadron's Bristol Fighters did not arrive until some weeks later. No 99 Squadron, equipped with de Havilland DH9A bombers, left Aulnoy in May 1919, and a third squadron – No 48 Squadron, equipped with Bristol Fighters – departed from Bickendorf in Germany en route to India later in the same month.⁹

Operations on the North-West Frontier, 1919-1920

The primary role of this enlarged RAF contingent would be to help grapple with 'the ancient problem of Indian Empires' – the defence of the North-West Frontier between India and Afghanistan.¹⁰ In an article published in the February 1931 issue of *The Journal of the Royal United Service Institution*, Lieutenant General Sir George MacMunn reflected that when discussing the defence of the North West Frontier, 'it is essential to remember that there is a greater and a lesser problem'. The first of these he defined as 'the defence of the frontier of India vis-à-vis definite invaders from outside'; the second, as 'the defence of everyday peaceful citizens within our

administrative border from their fellow British subjects within our political, but outside that administrative, border.’¹¹ The RAF assisted the Indian Army in responding to both problems during 1919-20.

The external threat to the North West Frontier stemmed from Afghanistan. In May 1919 crossed the Indo-Afghan frontier, sparking what would become known as the Third Afghan War.¹² During the ensuing conflict, operations against the Afghan Army and the frontier tribes were conducted ‘along the whole length of the Afghan frontier from Chitral on the north-east to Seistan on the south-west, a total distance of 1,000 miles’.¹³ In addition to the close reconnaissance patrols flown in support of Indian Army operations in the field, Nos 31 and 114 Squadrons also mounted frequent bombing attacks. By the end of May 1919 ‘a ton of bombs a day was being dropped, mainly on Jalalabad, and against this considerable onslaught the Afghans had no defence’.¹⁴ What is regarded generally as ‘The most dramatic aerial event of the Afghan War’ took place on 24 May 1919, when the hastily re-assembled Handley Page V/1500 heavy bomber J1936 ‘Old Carthusian’ – the only serviceable heavy bomber then present in India – flew over the mountains to attack Kabul.¹⁵ Four of the bombs dropped by this aircraft ‘found their mark on the Amir Ammanulla’s palace, including demolishing a wall of the Amir’s harem and the raid so impressed the Afghans that the Amir hastily sought an armistice on 3 June, followed by a peace treaty signed on 8 August’.¹⁶ In his postwar despatch the Commander-in-Chief in India, General Sir Charles Munro, recorded that ‘pilots and observers unhesitatingly

answered every call made upon them and rendered invaluable service throughout. The same may be said of workshop personnel who laboured untiringly under the most trying climatic conditions.’¹⁷

Internal unrest in the North West Frontier Province went hand in hand with this external threat. During the Third Afghan War, the Amir had sought deliberately to exploit unrest amongst the hill tribes on the North West Frontier. The Wazir and Mahsud tribes seized the opportunity provided by the diversion of British and Indian forces away from Waziristan to commence widespread raiding. At the end of the war, it was clear to the Government of India that ‘There remained the necessity of a major campaign against the Wazirs and Mahsuds if Waziristan to punish them for the outrages throughout 1919 which had to go unpunished while the Indian authorities were preoccupied with the war’.¹⁸ Negotiations with the tribes came to naught, and after regrouping the Indian Army – supported by the RAF – duly conducted a punitive campaign against the Wazirs and Mahsuds between November 1919 and March 1920.

Operations opened with a month-long bombing campaign ‘intended to bomb the Mahsuds into submission’.¹⁹ The failure of this campaign led the Indian Army to commence ground operations in December 1919, assisted by the RAF. In the conclusion to his despatch describing the Waziristan Campaign, Sir Charles Munro asserted that it was now ‘impossible to over-estimate the value of aircraft in tactical co-operation with other arms.’ While acknowledging that the ‘results obtained from bombing and

tactical reconnaissance did not fulfil expectations...largely due to the nature of the country and the skill with which the tribesmen concealed themselves', Sir Charles nevertheless pointed to the morale effect of these sorties. The presence of RAF aircraft overhead 'greatly raised the morale of our troops, whilst correspondingly decreasing that of the enemy. Aeroplanes when thus employed did considerable damage and helped, in no small measure, towards the success of many of the actions.' He further recognised the 'great tactical and topographical value' of the photographic imagery gathered by the RAF and the 'extensive damage to the enemy's flocks and herds' caused by air attacks.²⁰ According to Robson, when taken together the Third Afghan War and the Waziristan Campaign marked 'the arrival of the aeroplane as a major factor in Frontier warfare':

*Before, it had been an item of interest, of marginal utility and uncertain potential. When the Dejarat Column dispersed in April 1920, it had become accepted doctrine that no major operations could sensibly take place without the availability of air support. Air power would not guarantee success but it would hopefully prevent defeat.*²¹

Internal security operations

RAF operations in India during 1919 did not focus solely on the North West Frontier. In April 1919 'considerable use was made of aircraft during the period of the internal disturbances' that broke out across India as a result from the passage of the Rowlatt Acts, unrest being 'worst in Delhi, Ahmadabad and in the Punjab.'²² The RAF was called upon to assist the police and the Indian Army in restoring order, being engaged to such an extent that according to Sir

Charles Munro's despatch describing the Third Afghan War, when the Baluchistan Force was mobilised only two aircraft of were available to support it 'as the bulk of No 114 Squadron were employed in connection with internal disturbances.'²³

Demonstrating crowds were attacked from the air by RAF aircraft on at least one occasion. On 15 April 1919 demonstrations broke out in Gujranwala in response to the events in Amritsar two days previously, when Indian troops under the command of Brigadier General Reginald Dyer opening fire on approximately 15-20,000 demonstrators attending a meeting within a walled area of waste ground, killing 379 of those present and wounding a further 1,500.²⁴ RAF aircraft operating from Lahore were used to help disperse the crowds. Writing to the Chief of the Air Staff, Major General Sir Hugh Trenchard, on 12 May 1919, the Officer Commanding the Royal Air Force in India, Brigadier General N D K MacEwen, stated that 'I think we can fairly claim to have been of great use in the late riots, particularly at GUJRANWALA, where the crowd when looking at it's nastiest was absolutely dispersed by a machine using bombs and Lewis guns.'²⁵ In February 1920 the journal *Flight* published details of a report on the events at Gujanwala prepared by the Punjab Government. According to this account, on the afternoon of 15 April one aircraft dropped eight bombs (at least four of which failed to explode) and fired 180 round of 0.303in ammunition, while a second fired a further 700 rounds; 'As far as has been ascertained, the total number of persons killed by the police was three, and by the aeroplanes nine, 27 in all were wounded by police and aeroplane.'²⁶

The RAF, air control, and the battle for resources

Senior RAF officers in both Simla and London were quick to use events both within India and on the North West Frontier in order to press the air power case. In his letter to Trenchard cited above, MacEwen went on:

Of course, from our point of view, ie aeronautical, this War with Afghanistan and the unrest in India will do us a lot of good, and the Government of India is realising more and more every day that machines are not mere playthings, and I believe that by the time this letter gets home if the Air Ministry could again offer India six squadrons that she would accept them.

In his November 1919 memorandum outlining the 'Permanent Organization of the Royal Air Force', the Chief of the Air Staff, Air Marshal Sir Hugh Trenchard, 'proposed to provide 8 squadrons for India' in 1920-21 'in accordance with a proposal put forward from India and now under consideration by the Government of India. The costs of the units in India will fall on the Government of India on exactly the same basis as in the case of the military garrison.'²⁷ By 1 April 1920, the strength of the RAF in India had risen to eight squadrons as advocated by Trenchard in the previous year.²⁸ However, this was to be short-lived. In a telegram to the India Office dated 18 January 1921, the Government of India suggested that the strength of the RAF in India should be reduced by two squadrons.²⁹ The two Snipe single-seat fighter squadrons then in India were little employed – both due to their unsuitability for use in policing over the frontier and to a lack of spares – and they were duly selected for the axe.³⁰

Even with the loss of these squadrons, the RAF in India at the end of 1921 would appear at face value to have been rather stronger than that available at the beginning of 1919. However, the reality was somewhat different. The difficulties by the RAF in the early postwar years were summarised by the Air Staff in a memorandum published in August 1935:

In 1919-21, the aircraft available in India were few in number, mostly primitive in type, and of very low offensive power – the total offensive power of the aircraft employed in these early operations hardly exceeded one-tenth of the total striking power now available. In the air operations in Waziristan, in 1919, the maximum scale of attack was two tons of bombs per day, or one-half of the power of one modern squadron, and this scale was maintained for five days only. Precision bombing as known to-day did not exist. The aircraft themselves were far less reliable. Each aircraft flew in all for less than a third of the time flown in peace by an aircraft to-day. The air forces available were usually wrongly employed; insufficient aircraft were directed to attack too extensive an area; air attacks were carried out when there were aircraft available after requirements of co-operation with the column had been met. Moreover, financial stringency in India had affected the supply of technical stores for these air units and by 1921 the position had become very serious. Under these difficulties it is surprising that aircraft were able to achieve all that they did.³¹

These straitened circumstances were attributable in large part to the role and status of the RAF within the Indian military establishment. From 1918 onwards there were calls from within and outside the Air Ministry to employ air control methods on the North West

Frontier. One of the first advocates was the Secretary of State for India between 1917 and 1922, Edwin Montagu. His belief – as expressed by the India Office in July 1918 – that aircraft could ‘bring about a decision in our favour on the frontier more quickly than anything else, and incidentally save many lives, considerable bloodshed, and much money’ would appear to have been an early expression of the case for air substitution – the replacement by aircraft of other forms of military force in imperial defence.³² The use of aircraft in this manner in India was also advocated by the Air Staff; according to Trenchard’s 1919 Memorandum the RAF in India was intended to engage ‘in the class of warfare approximating to police work’, operating initially as an adjunct to – and later, it was hoped, as a partial substitute for – the existing military garrison.³³ Such calls predated both the use of aircraft in the air control role in Iraq, and the subsequent extension of this doctrine to other parts of the Empire – notably, to Aden and Palestine – following the 1921 Cairo Conference.

Despite this, responsibility for safeguarding India’s borders remained firmly in the hands of the Indian Army. This reflected, in part, the long-established position of the Army; although the Air Ministry had proposed that the senior Royal Air Force officer in India should act ‘as expert adviser to the Government of India upon all questions appertaining to the employment of aircraft’ as early as November 1918, the Commander-in-Chief of the Indian Army nevertheless remained ‘the sole military advisor to the [Indian] government’ until 1923.³⁴ Moreover, while the ‘chiefs of the four main army commands

ranked fourteenth in the Indian order of precedence...the AOC came a lowly twenty-third – equal to the Vice Chairman of the Imperial Council of Agricultural Research.’³⁵ Both the Indian Army and the Government of India remained sceptical as to the possibilities of air substitution, and as a consequence the RAF was reduced largely to a supporting role.

In addition, the financial strictures that were to dog the Service in India throughout the interwar period can be attributed to the desire on the part of the Air Ministry to ensure that the costs of RAF units in India were met by the Indian exchequer. This was achieved by incorporating the RAF’s funding in the overall Army vote; one result of which was to ensure that RAF requirements carried a lower priority than those of the Army. Moreover, difficulties in the Indian economy obliged the Government of India to restrict military budgets during the 1920s. Looking back on the situation prevailing in 1922, Marshal of the Royal Air Force Sir John Slessor (who had then been a flight commander with No 20 Squadron) observed in his memoir *The Central Blue* that ‘The RAF in India...suffered far less from the malevolence of a tribal enemy than from the depredations of the Government of India’:

Elsewhere throughout the Empire the RAF had for the past three years been a separate autonomous Service, with its own budget introduced to Parliament by its own Secretary of State. In India, however, the Air Force vote was still merely one of the heads of Army expenditure in the Military Services Budget, controlled by the Commander-in-Chief in India as Army member of the Viceroy’s Council. It was

*not even shown in a separate section as was expenditure on the Royal Indian Marine.*³⁶

The Royal Air Force and the 'Indianisation' Debate, 1918-1921

The first Indian military aviators

All of the Indian Army officers that participated in the First World War in the air were of European rather than Indian descent. Nevertheless, a small group of Indian military pilots did take part in the air war – as officers of the Royal Flying Corps and later the RAF, rather than the Indian Army.

The prevailing policy of the War Office prior to the First World War was to deny commissions to applicants not of 'pure European descent', on the grounds that 'a British private will never follow a half-caste or native officer.'³⁷ A similar stance was also adopted by the Admiralty.³⁸ However, the pressure of war led to a gradual loosening of this policy on the part of the War Office, and the first Anglo-Indian candidate (W O'C Evans) was admitted to Royal Military Academy, Woolwich during November 1916.³⁹ In the same month, Jeejeebhoy Piroshaw Bomanjee Jeejeebhoy became the first Indian to enter the Royal Flying Corps, being was commissioned in the General List 'for duty with [the] RFC' with the rank of temporary Honorary Second Lieutenant on 6 November 1916.⁴⁰

Lieutenant Jeejeebhoy's active career with the RFC would appear to have been brief. Papers preserved in The National Archives show that Jeejeebhoy fell ill in January 1917 whilst training at the RFC's Oxford School of Instruction and he was suspended from training to convalesce. A medical board concluded in May 1917 that he was 'permanently



RAF AHB

Sir Sefton Brancker

unfit for further service', and an entry in The London Gazette of 29 May 1917 duly announced that 'Temp Hon 2nd Lt Jeejeebhoy Piroshaw Bomanjee Jeejeebhoy relinquishes his commission on account of ill health.'⁴¹

Jeejeebhoy was to be the first of at least five Indians that are known to have served in the RFC and the RAF.⁴² Although the factors that lay behind their recruitment are unclear, surviving papers suggest that driving force behind the acceptance of at four of the candidates is likely to have been Sir Sefton Brancker. On his return from India, Brancker served as the RFC's senior representative in Whitehall for much of the First World War, holding the posts of Director of Air Organisation in the War Office between March 1916 and February 1917 and Deputy Director General of Military Aeronautics between February and October 1917. As such, one of the then Brigadier General Brancker's responsibilities was the selection and

commissioning of RFC officers; and in a paper presented to the Air Council in September 1918, he referred to 'four Indians whom I had trained about two years ago in the Royal Flying Corps'.⁴³

A second Indian applicant, Shiri Krishna Chunda Welinkar, applied for a temporary commission in the RFC on 22 November 1916. At the time of his application Welinkar was a student at Jesus College, Cambridge. According to a handwritten note made on his application on 6 February 1917, Welinkar had been 'Recommended by Brig Gen Brancker & approved for officers cadet wing RFC'. Unlike Jeejeebhoy, Welinkar did not receive an Honorary Commission; rather, he enlisted formally in the Oxfordshire and Buckinghamshire Light Infantry on 13 February 1917 and he was posted to No 6 Officer Cadet Battalion, RFC as a cadet on the same day.⁴⁴

Welinkar was appointed a Temporary Second Lieutenant (on probabtion) on the General List (RFC) on 24 May 1917 and confirmed in this rank on 22 June.⁴⁵ Although his progress to the front line was impeded by injuries incurred in two flying accidents in the UK, he was passed fit for general service by a medical board in February 1918 and was subsequently posted to the Western Front. Whilst serving with No 23 Squadron at Bertangles he took off at 9:45am on the morning of 27 June 1918 to participate in an offensive patrol. He failed to return from this sortie, his Sopwith Dolphin last being seen heading east while engaged in combat with a German two-seater near Peronne. Lieutenant Welinkar was shot down behind enemy lines and fatally wounded, dying some three days later.⁴⁶

Erroll Suvo Chunder Sen, a former member of Rossall School Officers Training Corps, applied for a commission in November 1916, only to be rejected as being under the minimum age. In April 1917 he re-applied, and on 24 April he was also awarded a commission as a Temporary Honorary Second Lieutenant in the RFC, being requested to report the School of Military Aeronautics at Reading on the same day. On completing his training he too was posted to the Western Front. While serving with No 70 Squadron, a fighter squadron equipped with Sopwith Camels and based at Poperinghe, he took part in an offensive patrol on the morning of 14 September 1917. During the patrol, the engine of his Camel failed and he came to earth behind the German lines, being captured and held as a prisoner of war until the Armistice. Second Lieutenant Sen was repatriated to the UK on 14 December 1918.⁴⁷

Perhaps the best known of these early Indian aviators is Lieutenant Indra Lal 'Laddie' Roy DFC. In February 1917 a friend of the Roy family approached Brancker directly in order to acquire whether Roy – then a pupil at St Paul's School and a member of the latter's Officers Training Corps contingent – could enter the RFC. Brancker referred this letter to the staff officer then responsible for recruitment, who in February 1917 invited Roy 'for an interview on the subject of his admission to the Officers Cadet Wing Royal Flying Corps'. Roy submitted a completed application form in the following month, and this was approved on 26 March 1917.⁴⁸

Roy's career as a fighter pilot began in October 1917 when he was posted from the School of Aerial Gunnery at

Turnberry to No 56 Squadron, then at Estrée-Blanche, in October 1917. He met with little success, and after being injured in a crash on 6 December 1917 Roy was posted back to the UK. Here, he retrained as an armament officer and it was in this role that he was posted to No 40 Squadron at Bruay in April 1918. He was cleared by a medical board to resume flying on 13 May 1918, and a brief period in the UK for refresher flying training Roy returned to No 40 Squadron on 19 June 1918. Six days later he flew his first patrol with the commander of the squadron's C Flight, Captain George McElroy, and 'under the latter's tutelage he was to undergo a remarkable transformation', being credited with nine enemy aircraft destroyed during the next month.⁴⁹ Sadly, Lieutenant Roy's career was cut short when he failed to return from a sortie on 22 July 1918; a report from the squadron suggests that his Royal Aircraft Factory SE5a fighter may have been 'shot down in flames at 8-50am in combat with Fokkers near CARVIN.'⁵⁰ The award of a Distinguished Flying Cross to Lieutenant Indra Lal Roy, 'A very gallant and determined officer', was announced in *The London Gazette* on 21 September 1918.⁵¹

The above, the commissioning of the fifth Indian pilot to serve with the RFC, Hardit Singh Malik, would appear to have been due to the intervention of the Director General of Military Aeronautics, Major General Sir David Henderson. A student at Balliol College at the beginning of the war, Malik sought immediately to join the British Army but once again fell foul of the latter's 'pure European descent' criteria. After graduating in 1915 he was rejected once again, but was accepted by the French Red Cross

as an ambulance driver. Whilst in France, he applied and was accepted for the French Air Service; on learning his, his former tutor at Oxford 'wrote to Major-General Henderson...saying that it was disgraceful for an Indian to be denied the opportunity of joining the RFC, while the French were willing to offer him a commission.'⁵² Henderson would appear to have intervened on Malik's behalf, for a notice in *The London Gazette* of 26 April 1917 records that '3rd Cl[ass] Air Mechanic Harding Singh Malik' was commissioned as a temporary Honorary Second Lieutenant for duty with the RFC on 6 April 1917.⁵³ After training, Lieutenant Malik went on to fly as a fighter pilot with Nos 28 and 11 Squadrons on the Western Front and No 141 Squadron in the UK.⁵⁴

The first proposed recruitment programme

On 23 September 1918 the Secretary of the Air Council, W A Robinson, circulated a minute prepared by Major-General Brancker – now Master General of Personnel – with regard to the 'Proposed Recruitment of Pilots from India'. In this minute, Brancker drew the attention of the Air Council to an increasing shortfall in the number of candidates for flying training and the emerging over-capacity in the RAF's training facilities – particularly those in Egypt and Canada. While the Australian Government had already been approached with regard to the training of Australian applicants in Egypt, Brancker now suggested 'that we should start training carefully selected Indians from the fighting forces of India. I am convinced that they would make excellent pilots and would be quite trustworthy except perhaps in their own country.'⁵⁵

This memorandum was considered by the Air Council on 26 September. Brancker opened the discussion by referring to correspondence he had already received from General Cox of the India Office, in which the latter had suggested that Indians 'would make excellent pilots in view of their keen sight and their abstinence and general temperament. He thought that if the conditions of service were favourable, the India Office would agree, and suggested that an official letter on the subject should be sent.' Brancker went on to emphasise that 'a previous experiment in this direction had proved very successful, and that really good material was available to be drawn upon.'

Despite his enthusiasm, Brancker's minute received only grudging approval from the Air Council. Major General Sir Hugh Trenchard 'deprecated the proposal but noted that in view of present day conditions in India the proposal was one which might even have to be accepted – if so, it would be wise to take the lead and get the scheme on the right lines – most careful selection of a minimum number.' Major General Sir Geoffrey Paine, the Inspector General, called for the recruiting of Indian observers as well as pilots, 'as it would be impossible to have an English Observer with an Indian pilot'. In conclusion, the Secretary of State, Lord Weir, 'thought the proposal followed on present lines of policy for India. There would be no need to bring it before the War Cabinet, but the outlines of the scheme should be very carefully laid down in a letter to the India Office.'⁵⁶

On 2 October 1918, a letter informing 'the Secretary of State for India that the

question of employing Indians as pilots and observers in the Royal Air Force has lately been considered' was sent to the Secretary of the India Office by Robinson on behalf of the Air Council. It went on to propose:

if the Secretary of State for India is agreeable, to select carefully 100 Indians of good family and high physical qualifications for training as pilots or observers in Egypt. These gentlemen would be enlisted into the Air Force on the same terms in all respects with British personnel obtained for the same purpose. Whilst under instruction, they would be graded as cadets, and after successful completion of their course, they would be granted temporary commissions in the Royal Air Force, either as pilots or observers, and would it is proposed be considered as available for service in any part of the world. If at any point in their training they prove unsatisfactory, they would be returned to India.⁵⁷

'Indianisation'

The Air Council's proposal was forwarded to the Viceroy of India, Lord Chelmsford, and his Government by the India Office in a telegram sent on 7 October 1918. It was rejected in a telegram sent by the Government of India on 1 November 1918. In a second telegram dated 9 November 1918, 'Lord Chelmsford's Government explained at length their objection to the employment of Indians in the Royal Air Force and other technical services of the army':

To secure the maintenance of British supremacy in the event of internal disturbance, the Government of India had pursued for many years past a policy, the cardinal points of which had been the retention of artillery in British hands, the maintenance of a fixed ratio of British to Indian troops, and the permanent occupation

by British garrisons of strategic points, and that, in their opinion, post bellum conditions would not permit of any relaxation of these precautions, at any rate in the near future. They pointed out that the number of Indians in this country with a military training would be largely increased on demobilization, and that the danger of the revolutionary spirit, which had lately swept over Russia, spreading to some extent among Indians, could not be overlooked. Ordinary prudence, they observed, demanded the continuance of the policy hitherto followed, and its application as a natural corollary to the Royal Air Force and other scientific and technical services which had attained a high degree of development in the course of the war. They therefore recommended that all positions assigned to officers and those allotted to skilled non-commissioned officers and men, other than workshop ratings, should be filled entirely by Europeans in the following services:

- (1) *Royal Air Force.*
- (2) *Royal Artillery other than Frontier Garrison Artillery and Indian Mountain Artillery.*
- (3) *Royal Engineers other than Indian Sapper and Miner units.*
- (4) *Trench Howitzer units.*
- (5) *Machine Gun Corps including Armoured Motor Batteries other than in Frontier Brigades.*
- (6) *Wireless telegraphs whether in the Indian Telegraph Department or in the Signal Service.*⁵⁸

The objections raised by the Indian Government were relayed by the India Office to the Air Ministry in a letter dated 24 December 1918. By this stage,

support within the Air Ministry itself for the recruitment of Indian officers had waned. With the end of hostilities, the RAF's requirement for pilots and observers had eased markedly; moreover, in January 1919 the primary advocate of the Indian recruitment in the Air Ministry, Sir Sefton Brancker, retired from the RAF. As a result the Air Council accepted the Government of India's objections without protest and chose not to press further the case for the recruitment of Indians.⁵⁹

However, the 'present day conditions in India' alluded to by Trenchard in September 1918 would result in a dramatic change in the stance of the Government of India with regard to the question of the admission of Indians to the RAF. The immediate postwar period was marked growing demands within India for democratic reform. Some very limited steps towards both broadening the franchise and increasing Indian representation in the country's provincial and central legislative councils had been taken prior to the outbreak of war.⁶⁰ However, the 'invaluable loyalty' shown by India during the war itself – combined with 'a commitment to gradual political devolution' – led the British Government to 'acknowledge what they saw as India's 'maturing' status and value within the Empire.'⁶¹ One sign of this acknowledgement was an 'announcement of the goal of British policy in India' made on 20 August 1917 by Edwin Montagu, then only recently-appointed Secretary of State for India.⁶² The 'Montagu Declaration' committed the British Government to achieving 'the increasing association of Indians in every branch of the administration, and the gradual development of self-governing institutions with a view to the

progressive realization of responsible government in India as part of the British Empire'.⁶³

The internal unrest that erupted in India during 1919 did not result in the armed insurrection feared by the Government of India. Nevertheless, the end of the First World War did mark a watershed in the struggle for Indian independence as Indian nationalists sought to move beyond the largely cosmetic changes wrought by the Government of India Act and make real the promise of democratic self-government advanced by the Montagu Declaration. This article will not examine in detail the debate that raged within India during the interwar period. However, one aspect of this debate did lead directly to the establishment of the Indian Air Force – the demand on the part of Indian politicians to 'Indianise' the officer corps of the Indian Army.⁶⁴

Although the officer corps of the Indian Army prior to the First World War consisted of both British and Indian officers, they were not commissioned on an equal basis. British officers in the Indian Army held King's Commissions: these placed them on a parallel footing to their counterparts in the British Army, enabling them to command both Indian and British troops and to reach the highest ranks.⁶⁵ By contrast, the vast majority of Indian officers held Viceroy's Commissions. In comparison with King's Commissioned Officers (KCOs), the powers of 'Viceroy's Commissioned Officers' (VCOs) were limited. VCOs could not be promoted beyond regimental level; nor could they command British troops or KCO officers.⁶⁶ Moreover, as the Government of India noted in their response to the Air Ministry's proposal in November 1918, after the 1857 Indian

Mutiny certain specialist and supporting arms of the Army – notably the artillery and engineers – had been closed to Indian officers.

The first tangible change to this position occurred as the result of a decision by the War Council in 1917 'to allow ten places each year at Sandhurst to natives of India, as well as the granting of the permanent King's Commission to twenty deserving Indian officers on Viceroy commissions [sic] and temporary commissions to a further 200 Indians'.⁶⁷ However, the War Office did not envisage that those Indians granted King's Commissions would serve as KCOs in the fullest sense. In response to an enquiry from the Permanent Secretary at the Admiralty, the War Office's Director of Staff Duties wrote in December 1918 that :

*We are taking Indians into the Royal Military College for training for commissions in the Indian Army only. It is not correct to say that "there is no position in His Majesty's Army from which the Indian will in the future be debarred by reason of his race", for we are not going to let Indians command white men in British Regiments.*⁶⁸

In 1919 an 'Army in India Committee' led by Lord Esher was appointed by the Secretary of State for India 'To enquire into and report...upon the administration and, where necessary, the organisation of the Army in India including its relations with the War Office and the India Office, and the relations of the two Offices to one another'. In their final report, the members of the Esher Committee acknowledged that the VCOs then in service had 'displayed a devotion to duty which is beyond praise, and

that it is largely due to them that the discipline and loyalty of the rank and file of the Indian Army have survived the test of the great war [sic].’ However, it also went on to stress that ‘they themselves, as a class, can never rise higher in rank than risaldar major or subadar major. Their disabilities are due to the want of education which is now one of the essentials of good leadership.’⁶⁹

According to Cohen, ‘While paying lip service to the 1917 declaration on the future status of India, the committee proposed little which would have actually led to an Indian officer corps. The question of Indianization was, in fact, evaded, except in the minutes by the two Indian members’ – Sir Krishna G Gupta and Sir Umar Hayat Khan.⁷⁰ In his minute, Sir Krishna G Gupta called for a series of reforms to the structure and administration of India’s armed forces, the first of which was that ‘The superior ranks of every branch of the army, including the Artillery, *Air Force*, Engineers, Transport and Supplies, &c, should be freely open to qualified Indians, and for this purpose the number of King’s commissions to be given to Indians should be materially increased every year.’⁷¹

Sir Krishna G Gupta’s minute was of significance from a Royal Air Force perspective, in two respects. Firstly, it would appear to mark the first formal call for the commissioning of Indians into the Royal Air Force; as such, it can be regarded as the point at which the RAF entered the Indianization debate. Secondly, it is indicative of the failure on the part of Indian politicians and nationalist leaders, both within and outside the Legislative Assembly, to recognise the existence of the RAF

as a separated Service, rather than as a specialist arm of the British and Indian Armies. This confusion would prove to be a recurring feature of the Indianisation debate.

In addition to being presented to Parliament, the report of the Esher Committee was also considered by the Indian Legislative Assembly. Although a demand that the Committee’s report be discussed by the Council of State came to nought, on 7 March 1921 a resolution was moved in the Legislative Assembly that called for the appointment of a Select Committee that was to consider the Esher Report and submit its findings before 21 March. This resolution was accepted by the Government of India and a fifteen-member committee led by Sir Tej Bahadur Sapru was duly formed. The Select Committee reported its conclusions in the form of fifteen draft resolutions for the Legislative Assembly. These were subsequently introduced to the Legislative Assembly by one of the members of the Select Committee, by Sir P S Sivaswamy Aiyer, ‘a leading Madrassi moderate interested in military affairs’. Sivaswamy Aiyer ‘was far from being a [Indian National] Congress militant, and...had support among most strands of Indian opinion’.

⁷² The Sivaswamy Aiyer resolutions therefore ‘present a clear picture of what sophisticated Indian moderates and liberals wanted on defense matters.’⁷³

The debate in the Legislative Assembly took place at the end of the latter’s first session. The timing was to prove crucial; ‘Most members were absent from Calcutta at the end of the session, and the government lost its majority. After attempting to modify the resolutions by amendment, it gave up and accepted them almost in toto.’⁷⁴

As a consequence, on 28 March 1921 the Sivaswamy Aiyer resolutions were passed by the Assembly. One of the most controversial of the resolutions introduced was Resolution No 7. Part (A) of this resolution required:

That the King-Emperor's Indian subjects should be freely admitted to all arms of His Majesty's Military, Naval and Air Forces in India and the Ancillary Services and the Auxiliary Forces. That every encouragement should be given to Indians, including the educated middle classes, subject to the proscribed standard of fitness, to enter the commissioned ranks of the Army, and that in nominating candidates for the entrance examination, unofficial Indians should be associated with the nominating authority, and in granting King's Commissions, after giving full regard to the claims in promotion of officers of the Indian Army who already hold the commission of His Excellency the Viceroy, the rest of the commissions granted should be given to Cadets trained at Sandhurst. The general rule in selecting candidates for this training should be that a large majority of the selections should be from the communities which furnish recruits and as far as possible in proportion to the numbers in which they furnish such recruits.⁷⁵

Although Resolution No 7 was concerned primarily with removing the obstacles that prevented Indians from gaining King's Commissions in the Indian Army, it also called for RAF recruiting restrictions to be lifted for units in India. On accepting this resolution, the Government of India also 'gave an undertaking that we would endeavour to secure for Indian subjects the privilege which was demanded on their behalf by the Legislative Assembly.' Accordingly, in a despatch to the Secretary of State

for India on 1 September 1921 the Government of India raised 'three questions, which are inter-allied': the 'admission of Indians into the commissioned ranks of the Royal Air Force for service in India'; the granting of commissions to Indians as artillery and engineer officers; and the possibility of increasing the number of Sandhurst cadetships reserved for Indian cadets.

The Government of India argued in support of all of these proposals. With regard to the commissioning of Indian candidates in the RAF, it began by citing the Air Ministry's own suggestion of three years earlier that 100 Indians should be selected for pilot training and go on to serve as RAF officers. While acknowledging that this that had been rebuffed by the then Viceroy and his administration, it pointed out that 'great changes have taken place, consequent upon the passing of the Government of India Act, in the form of Government of this country. Public opinion has been directed more and more towards securing for Indians equal rights, with other citizens of the Empire, in the matter of their admission to all arms of His Majesty's service'. It went on:

It is true that our acceptance of this proposal is diametrically opposed to the views stated in November 1918. We have, however, examined the question afresh, and are satisfied that the time has come for making a distinct step forward and for recognizing the rights of Indians to serve in all branches of the naval, military and air forces of their own country, subject only to their attainment of the requisite standard of efficiency. Moreover, we do not endorse the view put forward by Lord Chelmsford's Government in 1918 regarding the danger to British supremacy which would result

from the admission of Indians into the Royal Air Force. We do not, of course, contemplate that the Royal Air Force in India should be officered entirely, or even mainly, by Indians, and it would be easy to guard against this possibility by imposing definite limitations on the numbers who are granted commissions. We cannot, however, see that any danger is likely to result from the admission of a limited number of duly qualified Indian gentlemen as officers in the Royal Air Force for service in India.

Drawing a parallel with Indian candidates for King's Commissions in the Indian Army, the Government of India stipulated that 'Indians desiring commissions in the Royal Air Force should undergo the same training and receive the same education as British candidates for similar commissions.' Should these recommendations prove acceptable, the Secretary of State was requested to 'move the Royal Air Force authorities to permit of a limited number of suitable Indian lads being sent home for training in the Royal Air Force.'

RAF Recruiting Policy

This *volte-face* on the part of the Government of India was forwarded by the India Office to the Air Ministry for comment in October 1921. However, Air Ministry's own policy towards the recruitment of non-European personnel had also shifted since 1919. The commissioning of Indians in the RFC had not represented a change to the rules governing British military recruiting policy, but was rather a wartime expedient adopted for a handful of Indian volunteers then resident in the UK. While the demands of war had obliged Britain's armed forces to relax their peacetime recruiting policies, the postwar period saw a return to earlier practices.

For the Royal Air Force – which had not existed prior to 1918 – this meant the adoption of the 'pure European descent' criteria used by the other two Services. Although the first RAF recruiting instructions issued in 1919 made no reference to the ethnicity of candidates, an Air Ministry Weekly Order promulgated in July 1921 required that 'With the exception of boys, recruits must be of pure European descent and the sons of natural-born or naturalised British subjects.'⁷⁶ Subsequently, even the exception granted to boys was abandoned; the first recruiting regulations to be issued in codified form as an Air Publication (AP 948) stated that 'Recruits, including boys, must be of pure European descent and the sons of natural born or naturalised British subjects. In no case will a recruit who does not fulfil the above conditions be sent forward for attestation.'⁷⁷ Similarly, membership of the Auxiliary Air Force and RAF Special Reserve was also opened only to those of 'pure European descent'. In an article published to mark the release of the regulations relating to the Auxiliary Air Force and RAF Special Reserve to the public, Flight observed that 'It would not be astonishing if the "colour bar" regulation aroused protests from India at the next Imperial Conference, seeing that during the war at least three Indians were commissioned as pilots in the RFC and RAF'.⁷⁸

The Indian Military Requirements Committee and the Salmond Report, 1921-22

Concern in Whitehall with regard to the nature of the force necessary to ensure Indian security led the Prime Minister to order the establishment of a sub-committee of the Committee of Imperial Defence (CID) chaired by the Lord Privy

Seal, Austen Chamberlain MP, in order to 'consider the military requirements of India'. This committee sat between November 1921 and June 1922. Although driven in large part by the need to consider the size and cost of the Indian Army in light of the Government of India's 'increasing financial stringency', the Sub-Committee's terms of reference also included consideration of 'The recommendations of Lord Esher's Committee on the army in India, and the resolutions adopted by the Legislative Assembly in connection with these recommendations.'⁷⁹ Both the status of the RAF and India and calls for its Indianisation would therefore fall with the remit of the sub-committee.

The Royal Air Force in India

On 8 December 1921 the Secretary of State for Air, Captain F E Guest MP, placed before the Indian Military Requirement Committee a memorandum prepared by the Air Staff on Trenchard's instruction examining the 'Status of the Royal Air Force in India'. In this, they emphasised the urgent need for two key reforms: that the Air Officer Commanding the RAF in India 'be given the status of a Secretary to the Government of India, which would carry with it the right of direct access to the Viceroy on defence matters'; and that 'funds allotted for air purposes (including works) should be a separate and comprehensive Vote, instead of being part of a Military Budget in the control of which Army interests and prepossessions have inevitably an overwhelming preponderance.'⁸⁰

During their discussions that Committee agreed that a senior RAF officer should be despatched to India in order to examine the prevailing situation in detail. The officer selected



RAF AHB

Captain F E Guest

to conduct this review was Air Vice Marshal Sir John Salmond and he together with his staff (Group Captain J A Chamier, Chief Staff Officer; Wing Commander F E T Hewlett, Technical Advisor; and Flight Lieutenant A G Jones-Williams, Aide-de-Camp) left the UK for India in May 1922.⁸¹ Salmond's terms of reference were drafted by the Air Ministry and agreed by the Secretary of State for India, the Secretary of State for Air and the Chief of the Imperial General Staff). They required him to submit a report to the Secretary of State for India (via the Commander-in-Chief and the Government of India a report examining 'the employment of the RAF in India' with particular reference to 'the possibility of effecting economies by an increased use of the Air Force in co-operation with the Army, for controlling territory'; 'the role of the air arm in Indian defence' against external threats, unrest amongst the border tribes and in maintaining internal security'; and 'the existing organisation and administration of the Royal Air Force in India with a view to ensuring the future maintenance

of air units in that country in a state of efficiency.’⁸²

During his tour of inspection Salmond found the RAF in India in lamentable condition. In his final report, he stated baldly that ‘the Royal Air Force in India is to all intents and purposes non-existent as a fighting force at this date’:

*The number of aircraft on the authorised establishment is 70; of these two-thirds or 46 should be constantly serviceable in any climate. In the Royal Air Force in India on 23rd August 1922, the total number shown as serviceable was 7 (or 15 per cent of expectation) and of this number a percentage are so old and decrepit that they should have already been struck off charge, while some are flying without the incorporation of technical equipment essential to safety.*⁸³

In order to place the RAF on a more equitable footing, Salmond repeated the requirement voiced previously by Trenchard and Guest to the Indian Military Requirements Sub-Committee for the RAF in India to have its own budget Vote separate from the Army Vote. He also pressed for this Vote to be increased to allow not only to provide the spares and equipment and the upgrading of accommodation so urgently required, but also for RAF’s strength to be expanded once again from six to eight squadrons.

The Commissioning of Indians into the RAF

The attention of the Indian Military Requirements Committee focused primarily on the Indianisation of the Indian Army; no reference is made to the Royal Air Force in its final report.⁸⁴ Nevertheless, the issue of ‘commissions to Indians’ – including the granting of commissions in the RAF was raised by

the Secretary of State for India, Edwin Montagu, during the Committee’s eighth meeting on 12 January 1922. In this meeting, Montagu reiterated the request of the Government of India ‘that Indians should be allowed to take commissions in the Air Force’ and stated that ‘he considered that in respect to the Air Force, disabilities on Indians, as such, should also be removed.’ Both Chamberlain and General Sir Claud Jacob (the Chief of the General Staff, Indian Army) supported this proposal.

The commissioning of Indians in specialist branches was opposed by the Chief of the Imperial General Staff (Sir Henry Wilson), while Guest ‘was...of the opinion it would be most dangerous to entrust to Indians the secrets of the most technical arm – the Air Service.’⁸⁵

The Committee requested that ‘the Secretary of State for Air and the Chief of the Imperial General Staff...ascertain the views of their respective Councils as regards the removing of the disability on Indians obtaining commissions in the Air Force, and the Artillery, Engineer and other branches of the Army.’ A memorandum on the ‘Admission of Indians into the Commissioned Ranks of the Royal Air Force’ was submitted by Trenchard to Guest on 23 January 1922 and circulated to the Committee on the same day. In this, the members of the Air Council restated their inability to accept ‘the Indian Government’s present proposal to grant a limited number of permanent commissions in the Royal Air Force to Indian candidates for service in India’. The latter, they noted, rested upon ‘a fundamental misapprehension as to the character of the Royal Air Force units in India, which are units of a British, not an Indian, service’:

The Government of India do not recommend that Indian gentlemen should be given commissions in units of the British Royal Artillery or Royal Engineers serving in India, but only in the Indian Artillery and the Indian Engineers; the recommendation that they should be granted commissions in the Royal Air Force is thus inconsistent with the remainder of their proposals.

Additional factors cited as precluding the commissioning of Indians included the impossibility of British airmen being subordinated to Indian officers, and the administrative problems caused by creating 'a limited category of officers in the Royal Air Force who would only be available for service in India'. It also alluded somewhat coyly to 'other arguments which have been adduced from time to time against the grant to Indians of commissions in technical services' and which 'apply with still greater cogency to the Royal Air Force, but the Air Council feel that it is not now necessary to recapitulate them.'

Significantly, however, although it was 'impossible to "Indianise" the Royal Air Force in India as present constituted', the Air Council pointed for the first time to an alternative:

If it is considered that the air service in India should comprise Indian elements it will be necessary to build up a distinctively Indian Air Force to supplement (and it may be some day to replace) the units of the British Royal Air Force at present stationed in that country.

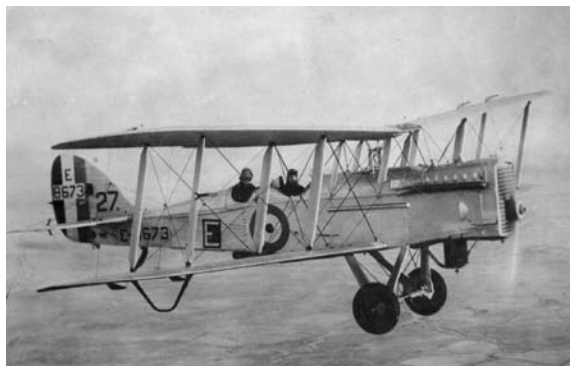
While conceding that 'The desirability or otherwise of instituting such a Force' was 'primarily a political question', the Air Council went on that advise that if an Indian air arm was created 'it should be built up as a Dominion

Force' and that should this come to pass it 'would be quite willing to undertake the training of a few Indian cadets at the Royal Air Force (Cadet) College, Cranwell, provided the requirements of the British service permit.'⁸⁶

On 6 February 1922 Trenchard forwarded to Montagu a draft copy of a second paper examining the question of commissioning Indian candidates. This took a rather more conciliatory line, acknowledging 'the desirability, on political grounds, of acceding so far as practicable to legitimate Indian aspirations' and opening the possibility that in two years time the RAF might 'be prepared to take one or two Indian cadets at the Royal Air Force Cadet College at Cranwell with a view to testing their aptitude for flying and other duties side by side with British cadets.' The time qualification is significant, insofar as Trenchard makes clear in his covering letter the real purpose of the draft – 'to try to postpone this discussion for a couple of years or so.' He concludes 'I rather feel myself, privately, that you should look into the question of forming an Indian Air Service one day.'⁸⁷ Although the Air Ministry was not called upon to admit Indians to Cranwell on the basis described by Trenchard, the exchanges within the Indian Military Requirements Committee at this time are nevertheless the first manifestation of the arguments that would later lead to the creation of an Indian air arm.

The RAF in India after the Salmond Report

While the findings of Sir John Salmond's review were approved by both the Government of India and the Commander-in-Chief of the Indian Army, this was only forthcoming 'in



RAF AHB

DH9A of No 27 Squadron

both cases with the reservation of how and where he necessary extra finance could be provided.⁸⁸ Although these budgetary issues would continue to hamper the RAF in India, sufficient funds were made available to ease the chronic supply problems that had hamstrung the RAF prior to 1923. The Commander-in-Chief in India, Lord Rawlinson, nevertheless balked at any suggestion of substituting aircraft for ground forces, thinking it "madness" to risk reducing the Field Army until the effectiveness of air policing on the frontier had been proven by experiment.⁸⁹

It would not be until 1925 that the opportunity for such an 'experiment' would present itself. In response to continuing unrest, between March and May 1925 a force consisting of a maximum of seven flights drawn from Nos 1, 5 and 20 Squadrons (all equipped with Bristol Fighters) and Nos 27 and 60 Squadrons (flying DH9As) were assembled at Tank and Miramshah under the command of Wing Commander R C M Pink. Despite being hampered by inexperienced pilots and shortages of aircraft and engines, in 54 days some 2,070 operational hours were flown against approximately forty targets in an area of 50-60 square miles

in south-east Waziristan. Pink's force combined air attacks by day and night with 'air blockade' sorties, tactics being varied regularly 'in order to keep the tribes on the "qui vive" and in a constant state of uncertainty as to when and how they were going to be attacked.'⁹⁰ During 'Pink's War', only one aircraft was lost to enemy action – a DH9A of No 27 Squadron, shot down by rifle fire on 21 March – the pilot being killed and his observer fatally injured.

On the heels of the 1925 Waziristan Campaign, in July of that year the Air Staff prepared a Memorandum on the Progress of the Development of Air Power in India. This hailed the recent operations over Waziristan – 'the first operations in the history of the NW Frontier of India to be undertaken solely by air forces' – as 'a striking tribute to the power of the air, in controlling semi-civilised [sic] peoples.'⁹¹ The Air Staff went on to argue that:

the efficiency of air control on the NW Frontier of India has now been most clearly demonstrated, and they suggest that the time has come when the Royal Air Force can definitely undertake the policing of the frontier. For this purpose, and also to deal with the air threat from Afghanistan...some three or four additional squadrons will be required, while it is unlikely that this number of squadrons could be immediately available, it is suggested that a start could be made in this progressive policy by sending out the two additional squadrons recommended by Air Marshal J M Salmond.⁹²

The memorandum continued pointedly 'It will be remembered that the Government of India at first definitely recommended this addition but subsequently in January 1923, asked



**Bristol Fighter of No 31 Squadron
over the North West frontier**

RAF AHB

permission to defer for a short period the expression in detail of their views on the subject. Since then no action has been taken.⁹³

The Air Officer Commanding the RAF in India was granted right of access to the Viceroy in January 1923 and a number of other small-scale independent air operations were conducted during the late 1920s and 1930s under the control of RAF officers. At the end of 1928 a further two squadrons (Nos 11 and 39 Squadrons) were despatched from the UK, finally bringing the strength of the RAF in India up to the eight squadrons recommended by Sir John Salmond. No 11 Squadron brought with it the Westland Wapiti – the first aircraft to be designed specifically for air control operations – and during the 1930s ‘the name Wapiti became synonymous with the RAF in India for eleven years of gruelling service’.⁹⁴ Despite this, attempts by the Air Ministry continued to press the case for air control – notably, in an ‘ambitious November 1929 paper, which suggested that the air force could control the Frontier alone’ – were unsuccessful, and the Indian Army never succumbed to calls for substitution on the North West Frontier.⁹⁵ In a note to the Air

Staff in January 1931, the Air Officer Commanding the RAF in India lamented that ‘In the holding of the Frontier and in Indian defence generally our present organisation is still substantially that of pre-aircraft days, and does not take account of the new arm and new methods, and that we could and should save many lives and much expenditure by increasing the strength of the air forces and making more use of them.’⁹⁶

The Indian Sandhurst Committee and the formation of the Indian Air Force

Although the question of the creation of an ‘Indian Sandhurst’ was raised by the Indian members of the Esher Committee, the Committee’s report concluded that the time was not then right for the establishment of such



**Bombed-up Wesland Wapitis prior to a dawn
raid, June 1930**

RAF AHB

a college. One of the resolutions submitted by Sir P S Sivaswamy Aiyer to the Legislative Assembly in March 1921 called for the establishment ‘in India [of] a Military College such as Sandhurst, should be kept in view’ and during the 1920s pressure continued to mount for the creation of an Indian equivalent to the Royal Military College.⁹⁷ In February 1925 Shri B Venkatapatrija moved a resolution on this issue in the Legislative Assembly. In response, the establishment of a committee under

chairmanship of the Chief of General Staff of the Indian Army, General Sir Andrew Skeen, 'to examine measures to improve the quality and number of Indian candidates for the King's Commission, and to discuss whether an Indian Sandhurst could or should be created' was announced by the Finance Member during discussions on the Budget in March 1925.⁹⁸ The committee's terms of reference required it to report on the following:

(a) *By what means it might be possible to improve upon the present supply of Indian candidates for the King's commission both in regard to number and quality;*

(b) *Whether it was desirable and practicable to establish a Military College in India to train Indians for the commissioned ranks of the Indian Army;*

(c) *If the answer to (b) was in the affirmative how soon the scheme should be initiated and what steps could be taken to carry it out; and*

(d) *Whether, if a Military College was established in India, it should supersede or be supplemented by Sandhurst and Woolwich so far as the training of Indians for the commissioned ranks of the Indian Army was concerned.*⁹⁹

The composition of the Indian Sandhurst Committee (or Skeen Committee) was announced in June 1925. In addition to Sir Andrew, it was made up of five Members of the Legislative Assembly (including Pandit Motilal Nehru and M A Jinnah), two Members of the Council of State, three representatives of the Indian States and three additional members.¹⁰⁰ The Committee convened at Simla in August 1925. Following a wide-ranging enquiry – including visits by a subcommittee to establishments in

the UK (including Cranwell), France, Canada and the USA – its report was completed by November 1926 and was published in April of the following year.

The conclusions of the Skeen Committee were wide-ranging. While 'The Government of India were taken aback by the liberality of their own officers', the Legislative Assembly was not and it welcomed the Committee's report and pressed for its implementation.¹⁰¹ Although most of the Committee's report relates to the Indian Army and therefore falls outside the scope of this article, specific reference was made to the failure of the Royal Air Force to accept Indian candidates for commissioning:

*The refusal of commission [sic] in the Air Force in our opinion is singularly indefensible because a number of Indians were actually employed as officers in the Royal Flying Corps during the Great War. They rendered efficient service. One was awarded the Distinguished Flying Cross and he and another of the officers referred to were killed in action.*¹⁰²

In order to address this, the Committee recommended that an initial two places be made available at Cranwell for Indian cadets in 1928, and that this number be progressively increased.

The comments of the Skeen Committee would appear to have both surprised and irritated senior RAF officers in India and London. In a letter to Trenchard dated 21 April 1927, the Air Officer Commanding the Royal Air Force in India, Air Vice Marshal Geoffrey Salmond – the brother of Sir John Salmond – noted that 'Until it was published I had no idea that they had touched on the RAF, as it seems to me



RAF AHB

Vice Marshal Sir Geoffrey Salmond

entirely outside their terms of reference. However, I think, under the curious circumstances that exist out here, it was quite inevitable that the Report should have made some mention of the possibility of Indians getting into the air services.¹⁰³ The inclusion of the Royal Air Force in the deliberations of the Skeen Committee would appear to have resulted from the continued perception of the RAF in India as a specialist arm of the Army; in his account of the Committee's report, Sharma notes that 'It was recommended that they [Indians] be admitted in the commissioned ranks in the artillery, engineers, signals, tank corps and air arms of the Army and for this purpose be admitted to the Royal Military Academy, Woolwich, and the Royal Air Force College, Cranwell.'¹⁰⁴

Salmond's first formal response to Skeen Committee report took the form of a lengthy memorandum dated 10 May 1927. In this, he reiterated the objection to the commissioning of Indians into the RAF first employed

by Trenchard in 1922:

The RAF in India are on the same basis as the British Army in India; if Indians were commissioned in the RAF in India, they will be liable to serve in the Royal Air Force in all parts of the world where units of this Service were stationed. It would be impracticable to guarantee that they would always remain as officers or RAF units in India; to do so would be creating a precedent never before established. This principle without question would be unacceptable to the Air Council.

The alternative he advanced was that Indians 'should be commissioned in order that ultimately they should form part of an Indian Air Force Unit in India.' Salmond went on to detail the manner in which the first Indian Air Force squadron might be formed 'by creating an Indian Air Unit with a cadre of British personnel to train and develop the unit; as the Indian officers and airmen gain the necessary experience, the British personnel should be gradually withdrawn until the unit becomes entirely Indian.' Cadets were to be trained at Cranwell at the rate of two per year and the squadron was to 'commence forming five years after the first cadets proceed to Cranwell', being fully up to strength fourteen years from the date of formation.¹⁰⁵

Salmond's memorandum was approved generally by Trenchard, although the latter was concerned that mixed unit advocated by Salmond might be found more efficient than those consisting purely of Indian personnel and that they might 'place Indians in command of British personnel, which I must strongly oppose.'¹⁰⁶ However, neither would appear to have had felt any enthusiasm for such a unit. In a letter dated 18 August 1927, Salmond attempted to

reassure Trenchard that:

*you may think that I am advocating an Indian Air Force whereas, of course, it is the last thing which anyone, including myself, really wants. I put up this scheme as a result of the Skeene [sic] Report (which was a surprise and a shock) because I was called upon as AOC to make remarks. I ascertained the lines that the Army were taking and I informed you by cable of the general lines I wished to go on; this you approved of but, no doubt, I went further in forming a constructive proposal which appeared more or less inevitable in any case.*¹⁰⁷

Salmond's prediction was to prove correct, although political realities in both India and the UK drove forward the creation of the Indian Air Force at a rather faster rate than anticipated by the AOC in his memorandum. On 3 December 1927 the Government of India sent a telegram to the India Office urging that 'I think that we must all agree that it is very desirable that an Indian Air Force...should be encouraged and started as soon as may be.'¹⁰⁸ The Secretary of State for India 'gave his approval in principle to the creation of an Indian Air Force' in his Military Despatch No 6 dated 5 April 1928.¹⁰⁹ Considerable discussion ensued the legislation required to establish an independent Indian air arm, and in an attempt to circumvent the many legal problems encountered the Secretary of State for India proposed in October 1928 that an Indian Flying Corps analogous to the RFC (and, indeed, the original Indian Flying Corps) should instead be created as an integral part of the Indian Army – a proposal that was roundly rejected by both the Air Ministry and the Government of India.¹¹⁰ Eventually, the Indian Air Force was passed by the

Legislative Assembly and received the assent of the Governor General on 8 April 1932. The Act came into force on 8 October 1932 and the first Indian Air Force unit – No 1 Squadron – formed on 1 April 1933.

Notes

1 TNA AIR 2/68, File A1179.

2 Minute from Lieutenant Colonel I A E Edwards, head of FO1, to Brigadier General P R C Groves, Director of Flying Operations; on TNA AIR 2/68, File A1179. Lieutenant Colonel Edwards' duties as FO1 included 'Examination and criticism of all military demands for aircraft and allocation of Air Force to meet them. Policy as regards the conduct of all aerial operations undertaken in conjunction with land forces (including Home Defence) and all general questions relating thereto. Formulation of plans for future operations of this nature in all countries'. Air Ministry: List of Staff and Distribution of Duties, October 1918, Air Historical Branch (RAF) collection, page 9. Although the RAF came into being on 1 April 1918, it did not introduce its own distinctive structure of commissioned ranks until August 1919 (Air Ministry Weekly Order 973 'New Titles for Commissioned Ranks', promulgated 27 August 1919). In this article, the ranks of RAF personnel are as quoted in the source consulted by the author.

3 Letter from Secretary of the Air Council to the India Office, 20 November 1918; AIR 2/68, File B2177 (this file is annexed permanently to File A1179 and both are held under the same reference by The National Archives).

4 Ibid.

5 AIR 2/68, File B2177.

6 AIR 2/68, File B2177.

7 AIR 2/68, File B2177.

8 Flight Lieutenant N J Robertson, *The History of No 20 Squadron Royal Flying Corps – Royal Air Force*, (private publication, 1987), page 26.

9 Chaz Bowyer, *RAF Operations 1918-1938* (William Kimber, 1988), page 153; Wing Commander C J Jefford *RAF (Retd), RAF Squadrons: A Comprehensive Record of the Movement and Equipment of all RAF Squadrons and their*

Antecedents since 1912 (Second Edition, Airlife, 2001) pages 44 and 56. Subsequently, a fourth squadron – No 97 Squadron, equipped with de Havilland DH 10 Ameins twin-engined bombers – arrived by ship at Bombay in August 1919.

10 Lieutenant General Sir George MacMunn, 'The North-West Frontier of India', *The Journal of the Royal United Service Institution*, Vol LXXVI, No 501, February 1931, page 1. Following the partition of India in 1947 the North West Frontier became part of the new state of Pakistan; as a consequence, most of the locations cited in this article are now in Pakistan.

11 'The North-West Frontier of India', Vol LXXVI, No 501, February 1931, pages 1-2.

12 In his work *Air Power and Colonial Control: The Royal Air Force 1919-1939* (Manchester University Press, 1990), David E Omissi notes that this conflict was 'known in Britain as the Third Afghan War and in Afghanistan, somewhat more pointedly, as the War of Independence' (page 9).

13 *The London Gazette*, 15 March 1920, page 3274.

14 Brian Robson, *Crisis on the Frontier: The Third Afghan War and the Campaign in Waziristan 1919-20* (Spellmount, 2004), page 126. In a Memorandum on the Progress of the Development of Air Power in India prepared in July 1925, the Air Staff stated that during the Third Afghan War 'Jelelabad [sic] was subjected to systematic bombing by No 31 Squadron, whose attacks were so accurate that large portions of the military quarter of the town were burnt out and on one occasion a parade of 2,000 troops was bombed with good results' (page 2).

15 Omissi, *Air Power and Colonial Control*, page 10.

16 Bowyer, op cit, page 151. Although Amir Amanullah had shown signs of 'regretting having unleashed a whirlwind' within days of the start of the conflict, according to Robson this raid (which he dates incorrectly as having taken place on 27 May 1919) was 'probably the real catalyst' to the Amir's subsequent peace overtures. According to Robson's account, on 28 May 1919 'the Amir wrote to Chelmsford [Lord Chelmsford, then Viceroy] seeking peace'. In this letter, the Amir denounced the bombing of his capital, stating 'It is a matter of great regret that the throwing of bombs by Zeppelins on London was denounced as a most savage act and the bombardment of places of

worship and sacred spots was considered a most abominable operation, while now we see with our own eyes that such operations were a habit which is prevalent amongst all civilised people of the West.' Robson, op cit, pages 125-127.

17 *The London Gazette*, Number 31823, 15 March 1920, page 3285. In his *History of No 20 Squadron* (op cit), Robertson states that following their arrival at Bombay the squadron's personnel 'went to Risalpur on [sic] the NWFP to set up their base. Several weeks elapsed before the aircraft arrived in India During this time of acclimatisation the temperature reached 45 degrees Centigrade in the shade and sickness was rife. One sergeant and two mechanics died from heatstroke and, in general, the Squadron's personnel suffered from the excessive heat' (page 26).

18 Robson, op cit, page 139-40.

19 Omissi, *Air Power and Colonial Control*, page 12.

20 *The London Gazette*, Number 32156, 8 December 1920, page 12139.

21 Robson, op cit, page xiv.

22 Memorandum on the Progress of the Development of Air Power in India, Air Staff, July 1925, TNA AIR1/2399, page 1; James, Raj, page 470.

23 *The London Gazette*, Number 31823, 15 March 1920, page 3282.

24 Details of the number of protesters present in the Jallianwala Bagh, Amritsar, and the casualties resulting from this atrocity vary between secondary sources. The statistics quoted in the article are taken from James, Raj, page 473.

25 On file B2177, TNA AIR 2/68.

26 Flight, 26 February 1920, page 244.

27 Cmd 467 Permanent Organization of the Royal Air Force: Note by the Secretary of State for Air on a Scheme Outlined by the Chief of the Air Staff, HMSO, 1919, paragraph 3, page 3. A copy of this memorandum is preserved as Air Council Memorandum ACM 440, TNA AIR 6/20.

28 Nos 1, (Sopwith Snipe), 20 (Bristol Fighter), 31 (Bristol Fighter) and 60 (de Havilland DH 10 Amiens) Squadrons at Risalpur; No 5 Squadron (Bristol Fighter) at Quetta; No 27 Squadron (DH 9A) at Mianwali; and Nos 3 (Snipe) and 28 (Bristol Fighter) Squadrons at Ambala. Bowyer, op cit, page 154. Although many of the squadrons present in

1920 would appear to differ from those in India in the previous year, this was not the result of a rotation of units in that country, but rather reflects a change in their numbering. Only two of the squadrons present in India in 1919 – Nos 20 and 31 – were unchanged in 1920. Of the remainder, two – Nos 48 and 114 – were renumbered with effect from 1 February 1920, becoming Nos 5 and 28 Squadrons respectively; while a further two – Nos 97 and 99 – were renumbered Nos 60 and 27 Squadrons on 1 April 1920. The remain two the squadrons were new to the theatre. In January 1920 two fighter squadrons equipped with Sopwith Snipe fighters were formed, designated initially 'A' and 'B' Squadrons. The former became No 3 Squadron and the latter No 1 Squadron on 1 April 1920.

29 Committee of Imperial Defence Sub-Committee on Indian Military Requirements memorandum IMR 28 'Status of the Royal Air Force in India', circulated to the Sub-Committee by the Secretary of State for Air on 8 December 1921; AIR 5/563 TNA AIR 8/40 enc 1, page 3.

30 In April 1921, No 1 Squadron transferred from India to Iraq in April 1921. No 3 Squadron disbanded in India on 31 September 1921 and was reformed in the UK on the following day.

31 Confidential Document CD 81, Air Staff Memorandum No 48 (S29711), Notes on the History of the Employment of Air Power (revised August 1935), TNA AIR 5/172, page 19.

32 Montagu's comments in favour of the use of air power are quoted in greater detail length in the first part of this article published in the Autumn 2007 issue of the RAF Air Power Review (Volume 10, Number 3, page 71). The definition of air substitution used here is derived from that contained in Omissi, *Air Power and Colonial Control*, page xv.

33 Cmd 467 Permanent Organization of the Royal Air Force: Note by the Secretary of State for Air on a Scheme Outlined by the Chief of the Air Staff, HMSO, 1919, paragraph 3, page 3. A copy of this memorandum is preserved as Air Council Memorandum ACM 440, TNA AIR 6/20.

34 Letter from Secretary of the Air Council to the India Office, 20 November 1918, AIR 2/68, File B2177; Omissi, *Air Power and Colonial Control*,

page 49.

35 Omissi, *Air Power and Colonial Control*, page 49.

36 *The Central Blue* (Cassell, 1956), page 34.

37 Quoted in Visram, page 172.

38 Charles Messenger, *Call to Arms: The British Army 1914-18* (Weidenfeld and Nicolson, 2005), page 322.

39 *Ibid*, page 322; page 324.

40 *The London Gazette*, 15 November 1916, page 11114.

41 WO 339/85698; *The London Gazette*, 29 May 1917, page 5297. A subsequent entry in *The London Gazette* of 19 March 1920 states that 'J P B Jeejeebhoy (late temp Hon Sec Lieut, RFC, Gen List) is granted the honorary rank of Captain' (Number 31830, page 3437)

42 Sources have suggested that in addition to the individual Indian aviators cited in this article at least three other Indians may have served with the Royal Flying Corps during the First World War:

-According to the webpage 'Indian Air Force: Journey Through Time, Those Magnificent Few' http://indianaf.tripod.com/magnificent_few.htm, downloaded 3 December 2007), a 'Lt Naoroji, grandson of the Grand Old Man of India' – Dr Dababhai Naoroji MP – was killed whilst serving with the RFC. The author has been unable to locate records confirming that an officer of this name served in either the RFC or the RAF during the First World War. However, in her work *Asians in Britain: 400 Years of History* (Pluto Press, 2002), Rozina Visram states that 'Naoroji's grandson, Kershap' did enlist in the British Army during the First World War; 'he saw action in France in 1915 as a private in the Middlesex Regiment, and later as a lieutenant in the Hazara Pioneers in Iraq' (page 172). According to an entry in *The London Gazette* of 9 November 1920 (Number 32118), Karesasp Ardeschir Dababhai Naoroji was one of a number of gentlemen appointed 'to be temporary Second Lieutenants in the Indian Army on probation, with effect from 1st Dec 1919' (page 10863).

-In *Asians in Britain*, Visram goes on to state that 'Two great-grandsons of Sake Dean Mahomed are known to have fought in France. Lt Claude

Atkinson Etty Mahomed, a civil engineer serving with the Scots Guards, died in France in August 1917; another was killed on the Royal Flying Corps' (page 172). The Commonwealth War Graves Commission's online 'Debt of Honour Register' does confirm that Lieutenant Claude Atkinson Etly [sic] Mahomed was killed on 31 August 1917 while serving with the 1st Battalion, Scots Guards, and is interred in Artillery Wood Cemetery, Boesinghe (now Boezinge), Belgium http://www.cwgc.org/search/casualty_details.aspx?casualty=101169. However, the author has thus far been unable to locate a reference to an officer or airman with the surname Mahomed who lost his life while serving with the RFC during the First World War.

-Additionally, in his recent work *Skyhawks* (Writers Workshop, 2006), Somnath Sapru describes the experiences of Dattatraya Laxuman (Dattu) Patwardhan during the First World War. In his account, Sapru notes that 'During the latter part of the war, he [Patwardhan] was transferred to the Royal Flying Corps and was on a number of missions over enemy territory. When [the] armistice came, he was sent on [the] Reserve as [an] AC2. Due recognition came soon after, with the award of the honorary rank of Second Lieutenant on 15 March 1919' (page 273). The granting of a temporary honorary commission to Second Lieutenant Patwardhan on this date is confirmed in *The London Gazette*, and his name subsequently appears in *The Monthly Air Force List* during 1919-20. He appears in the *Unemployed List* in 1920, and continued to retain his honorary rank until 1937 (*The London Gazette*, Number 31251, 25 March 1919, page 3892 and Number 34610, 24 March 1939, page 2011; *The Monthly Air Force List*, 1919-20, Air Historical Branch collection). The author has been unable to locate any further reference to the service of Dattatraya Laxuman Patwardhan in the RFC and RAF.

43 In a minute to the Air Council dated 21 September 1918, Brancker refers to four Indian pilots 'whom I had trained about 2 years ago in the Royal Flying Corps'; *Air Council Precipis* No 242, 23 September 1918, in *Air Council Precipis*, Vol 3: 201 to 300, TNA AIR 6/18. Details of Brancker's career are

drawn from Norman Macmillan, *Sir Sefton Brancker* (William Heinemann, 1935), Appendix 1, pages 423-4.

44 The Form MT 393A 'Application for Admission to a Temporary Commission to an Officer Cadet Unit with a view to appointment to a Temporary Commission in the Regular Army for the period of the War, to a Commission in the Special reserve of Officers or to a Commission in the Territorial Force' completed by Welinkar and his Army Form B2505 Short Service Attestation Form can both be found on TNA WO 339/108859.

45 *The London Gazette*, Number 30141, 20 June 1917; Number 30183, 14 July 1917, page 7074.

46 This brief description of the circumstances surrounding the death of Lieutenant Welinkar is based upon the entry for this officer contained in Trevor Henshaw, *The Sky Their Battlefield: Air Fighting and the Complete List of Allied Air Casualties from Enemy action in the First War, British, Commonwealth, and United States Air Services 1914 to 1918* (Grub Street, 1995), page 346.

47 This account is based upon *The London Gazette*, 9 May 1917, page 4449; and WO 339/10349. An entry for Second Lieutenant Sen can also be found in Trevor Henshaw, *The Sky Their Battlefield: Air Fighting and the Complete List of Allied Air Casualties from Enemy action in the First War, British, Commonwealth, and United States Air Services 1914 to 1918* (Grub Street, 1995), pages 223-4. A copy of the statement that Sen submitted on returning to the UK is contained in WO 339/10349. In the latter, he recalled that 'in attempting to catch up [with the remainder of the patrol, I] was lost in a cloud. Coming out [I] was attacked by 4 enemy machines. Both tanks [were] hit & [I] crashed outside Menin. Unwounded.' Correspondence on this file indicates that Sen had returned to India by 1923 and was serving as a member of the Indian Police in Calcutta.

48 Details of Roy's application can be found on TNA WO 339/115198.

49 David Gunby, *Sweeping the Skies A History of 40 Squadron Royal Flying Corps and Royal Air Force, 1916-1956* (Pentland Press, 1995), page 64.

50 Army Form W 3347 Royal Flying Corps: Report on Casualties to Personnel and Machines (When Flying), 22 July 1918; on TNA AIR 1/1414 204/28/50

Casualty Reports of No 40 Squadron 1st Nov 1916 to 20 Jan 1919 (enc 148). For a biography of Lieutenant Roy, see Somnath Sapru, I L Roy of 40 Squadron, *Cross & Cockade Great Britain Journal*, Volume 5, Number 1, Spring 1974, pages 13-51 Number 30913, page 11254.

52 Somnath Sapru, 'Flying Sikh: Hardit Singh Malik', *Cross and Cockade International*, Volume 6, No 4, page 180.

53 Number 30035, page 3921.

54 This account is based primarily upon Sapru, 'Flying Sikh', op cit, pages 180-83.

55 Air Council Precis No 242, 23 September 1918, in *Air Council Precis*, Vol 3: 201 to 300, TNA AIR 6/18. According to the Air Historical Branch publication *Members of the Air Council and Air Force Board of the Defence Council, 1918 – (September 1973; TNA AIR 20/12275)*, Brancker served as Master-General of Personnel between 22 August 1918 and 13 January 1919 (page 15).

56 Extract from the minutes of the Air Council, 26 September 1918; on TNA AIR 5/563 Admission of Indians into the Commissioned Ranks of the RAF, Artillery and Engineers for Service in India, Enc 1C.

57 Letter from W A Robinson to the Secretary, India Office, 2 October 1918. A copy of this letter forms Annexure A to Committee of Imperial Defence Sub-Committee on Indian Military Requirements memorandum IMR 47 Admission of Indians into the Commissioned Ranks of the Royal Air Force, circulated to the Sub-Committee by the Secretary of State for Air on 23 January 1922; AIR 5/563 Pt 1 Enc 24A. The duties of the Secretary of the Air Council and his department included the 'preparation of all official communications of the Air Council except those dealing with air operations; scrutiny or supervision of all letters addressed to other departments, to public bodies or to Members of Parliament; and of all important letters addressed to naval or military authorities and private individuals.' *Air Ministry: List of Staff and Distribution of Duties*, October 1918, op cit, page 2.

58 Despatch to His Majesty's Secretary of State for India No 74, 'Grant of commissions to Indians in the Royal Air Force, and as Artillery and Engineer officers for service in India; and increase to the number of Sandhurst cadetships reserved for

Indians,' Army Department, Simla, 1 September 1921; AIR 5/563 Pt 1 Enc 1B

59 Letter from W A Robinson to the Military Department, India Office, 27 February 1919. A copy of this letter forms Annexure B to Committee of Imperial Defence Sub-Committee on Indian Military Requirements memorandum IMR 47 'Admission of Indians into the Commissioned Ranks of the Royal Air Force', op cit.

60 Notably, the 1909 Indian Councils Act, which formed part of the Morley-Minto Reforms of 1908-09. For an overview of the Morley-Minto Reforms and their reception in both India and the UK, see Denis Judd, *The Lion and the Tiger: The Rise and Fall of the British Raj, 1600-1947* (Oxford University Press, 2004) page 118-121.

61 Ibid, page 122.

62 J R H Weaver (ed), *The Dictionary of National Biography, 1922-1930* (Oxford University Press, 1937), page 608.

63 Chapter CCXXV, 'India during the War', *The Times History of the War*, Volume XV, 1918, page 128.

64 The term 'Indianisation' was rejected by many Indian politicians during the interwar period. In a speech to the Legislative Assembly in 1928, Pandit Motilal Nehru stated that 'Indianisation is a word I hate from the bottom of my heart. I cannot understand that word. What do you mean by Indianising India?...The Army is ours; we have to officer our own army, there is no question of Indianising there. What we want is to get rid of the Europeanisation of the army' (quoted in Lieutenant Colonel Gautam Sharma, *Nationalisation of the Indian Army* (Allied Publishers Ltd, 1996), page 93). However, 'Indianisation' is used here in favour of the alternative 'Nationlisation' adopted in post-independence India as the former appears in many of the contemporary official papers upon which this article is based.

65 For example, Field Marshal Sir Claude Auchinleck was commissioned into the 62nd Punjabis in 1904 and served with the Indian Army in Egypt, Aden and Mesopotamia during the First World War. Postwar, he held a number of command and staff appointments in India. In 1940 Sir Claude commanded British forces in Norway during the ill-

fated Norwegian campaign and later went on to become the GOC-in-C Southern Command. He was appointed C-in-C India in November 1940, and in the following year replaced Sir Archibald Wavell as C-in-C Middle East, commanding all British and Commonwealth military forces in that theatre. He returned to India as CinC in June 1943 and continued to serve in this post until 1947 being promoted to Field Marshal in 1946. Sir Claude died in 1981. I C B Dear and M R D Foot, *The Oxford Companion to the Second World War* (Oxford University Press, 1995), page 77.

66 The ranks of VCO officers were, in descending order: Subadar-Major (cavalry – Risaldar-Major), the senior Indian officer of an infantry battalion or a cavalry regiment; Subadar (cavalry – Risaldar), at company or squadron level; Ressaidar (cavalry only – abolished April 1921); and Jemadar, at platoon or troop level.

67 Messenger, *op cit*, page 323.

68 Letter from the Director of Staff Duties, War Office, to Sir Oswyn Murray, Permanent Secretary at the Admiralty dated 16 December 1918, on TNA ADM 1/8545/313.

69 Esher Committee report, Section V, paragraph 51, page 78.

70 Stephen P Cohen, *The Indian Army: Its Contribution to the Development of a Nation* (revised Indian edition, Oxford University Press, 1990, reprinted 2002), page 77.

71 Annexure II, pages 103-04; author's italics

72 David Omissi, *The Sepoy and the Raj: The Indian Army, 1860-1940* (Macmillan, 1994), page 166.

73 Cohen, *op cit*, page 78.

74 *Ibid*, pages 78-9.

75 Telegram from the Viceroy, Army Department, to the Secretary of State for India, 30 March 1921; as circulated by the Secretary of State for India in Cabinet Paper CP 2799, April 1921 (on TNA WO 32/5079), page 2.

76 Air Ministry Weekly Order AMWO 509 'Instructions for Recruiting promulgated on 24 April 1919; AMWO 603 'Recruits – Nationality', promulgated on 28 July 1921.

77 Air Publication AP 948 Recruiting Regulations for the Royal Air Force, Air Ministry, August 1923 (TNA AIR 10/965), Chapter III, paragraph 46, page 13.

Similarly, paragraph 438 subsection 4 of Air Publication 958 Kings Regulations and Air Council Instructions for the Royal Air Force, Volume I: Regulations (First Edition, HMSO, 12 August 1924) stipulates that 'An applicant for entry must be of pure European descent and the son of a natural-born or (except for a boy) naturalised British subjects. Any recommendation that an exception should be made to this regulation will be referred to the Air Ministry through the Inspector of Recruiting.'

78 'Regulations for Citizen Air Forces', Flight, 4 February 1926, page 64. The regulations in question were contained in Air Publications AP 968

Regulations for the Auxiliary Air Force and for County Associations and AP 1108 Regulations for Officers and Airmen serving in the Royal Air Force Special Reserve Squadrons. The establishment and interwar history of the Auxiliary (from September 1947, Royal Auxiliary) Air Force and RAF Special Reserve is discussed in Wg Cdr C G 'Jeff' Jefford, 'Air Force Reserves 1912 to Munich', Royal Air Force Reserve and Auxiliary Forces (proceedings of a seminar held by the Royal Air Force Historical Society at the RAF Museum on 23 October 2002), Royal Air Force Historical Society, 2003, pages 11-26.

79 'Report of the Sub-Committee on Indian Military Requirements, dated June 22nd, 1922: As Amended and Approved by His Majesty's Government, dated January 26th, 1923'; attached to CID Paper No 130-D 'Indian Military Requirements', dated 26 January 1923; TNA CAB 16/38/1, page 2.

80 Committee of Imperial Defence Sub-Committee on Indian Military Requirements memorandum IMR 28 'Status of the Royal Air Force in India', circulated to the Sub-Committee by the Secretary of State for Air on 8 December 1921; TNA AIR 8/40 enc 1, page 3.

81 Letter from the Air Ministry to the Secretary of the Indian Military Requirements Committee, 11 May 1922; circulated to the Committee as IMR 93. On TNA AIR 8/40.

82 *Ibid*.

83 'Report by AVM Sir John Salmond on the Royal Air Force in India' (HMSO, August 1922), quoted in Bowyer, *op cit*, page 165-66.

84 'Report on Indian Military Requirements, dated June 22nd 1922, as amended and approved by His

Majesty's Government, dated January 26th, 1923', op cit.

85 'CID Sub-Committee on Indian Military Requirements: Minutes of 8th Mtg, 10 Downing St, Thursday Jan 12th 1922', on TNA CAB 16/38/1.

86 IMR 54 'Admission of Indians into the Commissioned Ranks of the Royal Air Force', 23 January 1922.

87 On AIR 8/40. The author has been unable to locate any reference to this paper being submitted formally to the Indian Military Requirements Sub-Committee.

88 Bowyer, op cit, page 166.

89 Omissi, *Air Power and Colonial Control*, page 48.

90 The London Gazette, 20 November 1925, page 7597. According to this source, 'Air Blockade consisted in sending machines over the area at irregular intervals during the day to attack certain definite targets or to bomb any targets which might present themselves. The object of this method was to harass the tribes continuously, to give them a general feeling of insecurity, uncertainty and discomfort, and to prevent the pursuit of their normal activities. Continuous air patrols were also employed with the same object.' The night bombing raids were conceived primarily as an extension of these daylight harassing sorties.

91 Page 5, paragraph 8; on TNA AIR 1/2399.

92 Ibid, paragraph 13, page 8.

93 Ibid.

94 Owen Thetford, *Aircraft of the Royal Air Force since 1918* (ninth edition, Putnam 1995), page 338.

95 Omissi, *Air Power and Colonial Control*, page 49.

96 Quoted in Bowyer, op cit, age 166-67.

97 Sharma, op cit, page 61.

98 Omissi, *The Sepoy and the Raj*, op cit, page 178.

99 Sharma, op cit, page 81.

100 Ibid, page 81. The full membership of the Skeen Committee was: General Sir Andrew Skeen, chairman; Pandit Motilal Nehru, M A Jinnah, Dewan Bahadur Ramchandra Rao, Captain Hari Singhand Sir Sahibzada Abdul Qaiyum, all Members of the Legislative Assembly; Sir Phiroze Sethna and Dr Ziauddin Ahmad, both Members of the Council of State; Major Bala Saheb Dafle, Captain J N Banerjee, Bar-at-Law and Major Zorawar Singh, MC, representatives of the Indian States; and Subadar-

Major Honorary Captain Haji Gul Nawaz Khan, Sir Jogendra Singh (Minister of Agriculture, Punjab Government) and E Burdon (Army Secretary).

101 Omissi, *The Sepoy and the Raj*, op cit, page 179.

102 Ibid, page 85.

103 TNA AIR 2/1219.

104 Sharma, op cit, page 85.

105 'Memorandum by the Air Officer Commanding Royal Air Force in India on the Report of the Indian Sandhurst Committee', 10 May 1927; on TNA AIR 2/1219.

106 Signal from Trenchard to Salmond, 18 June 1927; on TNA AIR 2/1219.

107 On TNA AIR 2/1219.

108 On TNA AIR 2/1219.

109 Letter from Secretary to the Government of India to the Secretary of the Military Department, India Office, 14 August 1930; on TNA AIR 2/2514

110 Correspondence relating to this proposal is contained on TNA AIR 2/1219.

RAF Counter-Insurgency Operations in Oman and Aden, 1950-1970

By Dr Sebastian Ritchie

Recent years have witnessed a marked increase in the study of counter-insurgency (COIN) warfare, driven primarily by events in Iraq and Afghanistan. The present impasse alone has generated an understandable desire to learn the lessons of earlier operations, but the multiplicity of articles and conferences currently addressing the theme of air power in small wars and insurgencies has not merely been concerned with the search for possible solutions. There is, from an air force perspective, an even more far-reaching issue to address. For while the role of land armies in modern-day COIN warfare is well established and generally accepted, it has not proved easy for air power to offer a contribution extending far beyond the provision of support for ground operations. While there is evidently a perception that air power should play a more distinct role, in practice such a role has proved very difficult to identify.

The search for examples of how air power might contribute more directly to COIN warfare has predictably led students of air power to re-examine such topics as colonial air policing between the World Wars, and the role of air forces in more recent insurgencies, notably in South Vietnam. Yet there are many other lesser-known COIN campaigns in which air forces have played a prominent part, and as some of these offer far more obvious parallels with

current operations they clearly merit investigation and analysis. Two such campaigns involving the Royal Air Force (RAF) in Oman and Aden in the 1950s and 60s are the central focus of this study.

In Oman British and Omani forces were relatively successful in maintaining stability; but by the time Britain withdrew from Aden in 1967 security in the colony had almost completely broken down. The contrast appears striking, and requires explanation if meaningful lessons are to be learnt from the British experience. In pursuit of this goal, this paper surveys the strategic background against which the Oman and Aden campaigns were mounted, RAF dispositions across the Middle East, their historic COIN role, and their specific part in the two conflicts. Finally it draws together such conclusions and lessons as may be identified from Oman and Aden, with particular reference to modern-day COIN activity.

The Strategic Background

Britain emerged from the Second World War with her empire predominantly intact, but with her capacity to maintain the empire fatally undermined. The United States and the Soviet Union were now the world's superpowers, while Britain could no longer lay claim to the great power status that she had enjoyed in the 1920s and 30s. Wartime economic

dislocation would take years to rectify, and Britain was also massively indebted to her Allies. And yet her post-war governments were confronted by new financial pressures – by a vulnerable currency, and by the need to finance the new welfare state. In this environment there were inevitably strong pressures to reduce defence spending. And yet the demands of imperial defence were in some ways more taxing than they had been in the inter-war period. The war had served to encourage nationalist movements in a number of British colonies, and in some areas communism emerged as a threat to British control. Of course, it was also perceived to be a threat in Western Europe, and consequently the demands of European defence would loom far larger in British thinking after 1945 than they had for most of the 1930s. Soon Britain would be committed to NATO.

Taking all this into account it was perhaps remarkable that Britain's withdrawal from empire in the late 1940s was virtually confined to India and Palestine. Nevertheless, it became clear during the 50s that Britain no longer possessed the military and economic muscle necessary to sustain the empire; nor, increasingly, did her governments have the will to sustain it. The old arguments used to justify Britain's overseas presence began to sound very hollow; anti-imperialist sentiments were also strong in the Labour Party, which governed Britain in the late 40s and from 1964 through to 1970. The turning point came with the Suez Crisis of 1956, which brutally exposed the limitations of British power in the post-war world. After Suez there were repeated cuts in Britain's conventional armed forces, and the process of decolonisation gathered pace. By the early 1970s the withdrawal was

complete, and British defence policy had been almost entirely reoriented towards NATO.¹

At its peak the British Empire had extended across the Mediterranean, through the Middle East, and then east to Asia, the Far East and Australasia. The Middle East had thus been of critical strategic importance providing, as it did, the essential link between Europe and Asia, and the colonies beyond. The British presence in the Arabian Peninsula area had developed throughout the 19th Century, and was founded primarily on a large number of treaties and agreements with indigenous rulers and tribal chiefs, which in most cases left Britain with responsibility for the foreign affairs and defence of the areas concerned. Through this process the entire western Peninsula coast was effectively brought under British control, primarily to safeguard sea-lanes across the Indian Ocean.²

After India was granted independence the rationale behind the British presence on the Arabian Peninsula changed. The extensive oil resources of Oman and the Trucial States (now the UAE) made them attractive possessions in their own right at a time when oil was driving Europe's post-war economic reconstruction; Britain's withdrawal from Iraq and Egypt enhanced the importance of her military bases further south; and a continued presence in these areas also appeared desirable to deter communist expansion into the Middle East.³

The RAF in the Middle East

Since 1918 the RAF had played a prominent role in maintaining British control over the Middle East. Air power's capacity to reduce substantially the cost of imperial policing was formally recognised in 1921, when the

RAF were given primary responsibility for maintaining the security of Iraq; later the RAF would also be assigned lead role in other areas.⁴ Thus, by the 1950s, the RAF had a well established base infrastructure in this theatre, stretching from Habbaniya and Basrah in Iraq, around the Gulf coast to Bahrain and Sharjah, and south to Aden via small route stations like Masirah and Salalah. There were also numerous smaller airstrips across the peninsula.⁵

while Oman and Aden were under subordinate commands based in Iraq and Aden Colony. After Suez the number of these lower-tier commands was rationalised down to just two, with Headquarters British Forces Aden attaining a heightened strategic importance, being assigned responsibility for all territories south of Egypt, including the Gulf and Oman. Initially Headquarters British Forces Aden remained an RAF Command



The Middle East Theatre in the 1950s

and control in the Middle East went through a number of changes in the post-war years. At first RAF Middle East Command was based in Egypt,

Command but in 1959 it was turned into a joint command, in which a single Commander-in-Chief presided over land, air and naval components. It was

renamed Headquarters Middle East Command in 1961.⁶

The RAF forces committed to the Oman and Aden COIN operations covered in this study were managed in very different ways. For much of the period of Oman operations (1952-1959) RAF Middle East Command was still in a position to draw on resources from Iraq, Egypt, and the Mediterranean, and there were even temporary deployments from the home commands in Britain. Consequently there were regular changes in the size and composition of RAF detachments. In terms of combat aircraft, there were never more than two squadrons committed to the Oman task at any one time; otherwise the force consisted largely of fixed or rotary-wing transport aircraft, or reconnaissance platforms.

After Suez it was no longer possible to manage Arabian Peninsula operations in this way. Britain withdrew from Egypt and then Iraq; air movements from the Mediterranean to the Persian Gulf and Aden became very much more difficult. Consequently in the late 50s the base at Aden was enlarged and made far more self-sufficient. Some 36 aircraft were permanently based at Aden at the end of 1956; by the beginning of the Radfan campaign in 1964 84 aircraft were located there, divided between nine squadrons and two additional flights. Aden was the busiest station in the RAF. There were three full squadrons of combat aircraft; otherwise the force was again largely composed of fixed-wing transport and reconnaissance aircraft, and helicopters.⁷

It is important for these commitments to be considered in their proper historical context. In the period from

1950 through to 1970 the RAF faced numerous other operational tasks, including the Malayan Emergency (1948-60), the Mau Mau rebellion in Kenya (1952-55), the Cypriot insurgency (1955-60), the Suez Crisis (1956), the Kuwaiti Crisis (1961) and the Indonesian Confrontation (1962-66). Beyond this there were extensive colonial garrison duties to perform. And then there was the task of containing the Soviet Union, which involved the assignment of UK forces to NATO, to the Central Treaty Organisation (Turkey, Iraq, Iran and Pakistan), and to the South-East Asia Treaty Organisation. Finally it should be remembered that throughout the period the RAF were solely responsible for Britain's independent nuclear deterrent.⁸ These innumerable commitments had to be carefully balanced and it was never possible for the RAF to focus on one particular area of tasking to the exclusion of all others.

Air Control

The RAF had been extensively involved in colonial policing operations in the 1920s and 30s. Consequently, by the end of the Second World War, a coherent body of doctrine had been assembled to describe how air power could best be employed to uphold imperial authority in so-called 'undeveloped countries'. This doctrine included the well-known concept of air control. According to the *RAF War Manual* of 1950, the aim of air control was 'achieved not by killing the enemy or occupying his country, but by making life a burden to him – by so dislocating the normal existence of the community that they submit to terms rather than endure the continuance of inconvenience and discomfort.' The application of air power against insurgents in the colonies was to be carefully staged:

The first thing to do is to inform the people in unmistakable terms of what is required of them – the surrender of offenders or of looted rifles or camels or cattle, or the payment of a fine or whatever it may be. They must also be given a clear warning of what will happen to them if, within a stated time, they have not complied with our terms. This is done either verbally or by political officers or by dropping pamphlets in the tribal area concerned. Action of this sort will sometimes suffice to restore order.

The pressure was then to be increased; the *War Manual* continued:

The next step is to issue a further notice that air action will begin within an area which must be clearly defined, from a certain time ... The enemy should be told to evacuate his habitations and advised to send his women and children out of the prescribed area.

On the expiration of the warning period, air action should begin and be continued until the enemy complies with our terms.

The object was 'to make it unsafe at any time for the inhabitants to return to their possessions or live any form of normal existence.' According to the *War Manual*,

Experience has shown that the inconvenience and discomfort, coupled with the feeling of boredom and helplessness engendered by this form of attack, sooner or later convinces the people that they have much to lose and nothing to gain by continued resistance.⁹

Such was the theory of colonial air control. But recent scholarship has tended to cast doubt on the effectiveness of air control as a means of prosecuting COIN warfare. The RAF has been accused of overstating its role. According to this view, air control's

utility was in fact quite limited, and dealt only with the symptoms of unrest as opposed to the causes, which were largely political. The psychological effect of air attack was limited, and quickly wore off as insurgent elements became more accustomed to the threat; and in any case, while the RAF gave the impression that air control operations were prosecuted independently, they were in fact largely undertaken in support of ground forces.¹⁰

Ostensibly this revisionist case is a strong one. Yet it can in fact be challenged on three counts. First, it does not give sufficient consideration to the political context within which colonial air control was employed. In conditions of extreme financial stringency in the 1920s and 30s British politicians and colonial administrators embraced air control as a means of limiting the cost of policing the empire; in the meantime the RAF promoted air control in order to justify its continued existence as an independent force, at a time when the other two services were attempting to destroy it.¹¹ In other words, there was far more to air control than its mere application at the operational or tactical levels. Second, it is all too readily assumed that there were practicable alternatives to air control. In fact, when air power was genuinely employed independently in the colonies it was often because there was literally no other viable means of engaging insurgent groups, either because ground forces were unavailable, or because they could not be deployed into remote and inaccessible areas. This remained a feature of British colonial operations in the post-war period, as we shall see.

Most of all, however, the critique of air control is founded on a misrepresentation of the RAF's stance;

for air control represented only a part of the RAF's doctrine on COIN warfare. The true position is again clearly spelled out in the *War Manual*. Thus, for example, the *Manual* did not make exaggerated claims about the efficacy of independent air action. Indeed, while it referred to air power playing a 'primary role' it did not actually employ the term 'independent' at all. Moreover, it openly accepted that there were many scenarios in which it would be necessary to employ ground forces to quell unrest; in such circumstances the role of air power would be to support ground operations. The *War Manual* also pointed out that the employment of air power in a COIN role should be the subject of close consultation between military and civil authorities. At no stage did it claim that air control techniques would eliminate the underlying causes of insurgent activity. At best they could 'restore order, stop raiding, or enforce collective punishment to discourage future misdeeds.'¹²

The *War Manual* contained a few further points which the critics of RAF COIN doctrine have again somehow managed to overlook. First, it stated quite specifically that classic air control techniques were best suited to open terrain. They would be impossible to employ in jungle or urban environments, where air power's role would again predominantly involve the support of ground forces.¹³ Second, the *Manual* stressed the importance of not underestimating the challenge that might be posed even by primitive adversaries:

These barbarous or semi-civilised peoples can be formidable enemies, and they usually have valuable allies in the climate and the terrain. Their very lack of formalised military organisation may in itself be a

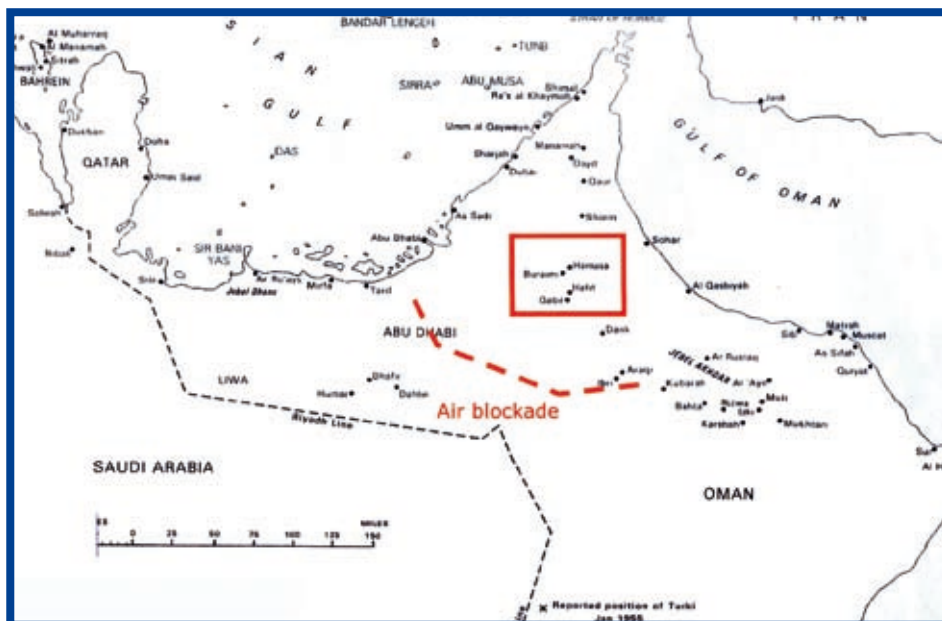
source of strength to them... They will be largely self-supporting, capable of living on the country and independent of lines of communication in the accepted sense. Unencumbered by complicated equipment they will be highly mobile and elusive opponents, operating in a climate and in country familiar to themselves but presenting considerable difficulties to normal modern land forces.¹⁴

Third, the *Manual* pointed out that the long-term subjugation of insurgent areas would only be achieved through protracted occupation. Ground forces might be deployed into particular trouble spots to restore order, but:

This method has certain disadvantages. It is expensive in men, material and money. Unless it is followed by permanent or prolonged occupation ... withdrawal is likely soon to be followed by a repetition of tribal disorder.¹⁵

Fourth, the *Manual* emphasised the critical role of intelligence in COIN operations, although warning that accurate information would often prove very difficult to obtain. Again the enemy, fighting on his own ground, might well command primitive but highly effective intelligence collection mechanisms.¹⁶

These four points were based on the extensive experience of COIN warfare gained by the RAF between the World Wars; they reflected the lessons identified from a very wide range of operations. They were written into RAF doctrine in 1950, more than half a century ago. And yet these very same lessons have since had to be re-learned repeatedly, even by the British. It has consistently proved very difficult to exploit air power in COIN campaigns waged in jungle and urban environments; and the major



The Buraimi area

powers have frequently underestimated the capability of rebel forces, and the scale of effort required to impose long-term stability upon insurgent areas. And while the acquisition of accurate and timely intelligence about insurgent activity has frequently been fundamental to successful COIN operations, winning and then maintaining information superiority has often presented another extremely tough challenge.

The air control concept was still very much in evidence when the *RAF War Manual* was reissued in 1957, but was almost completely dispensed with when Air Ministry Pamphlet 375, *Internal Security Air Operations*, appeared in 1961. This 62-page document consisting of eight chapters and eleven appendices assigned just one paragraph to 'operations which are designed to punish by causing maximum inconvenience without inflicting casualties.' Its contents otherwise dealt overwhelmingly with the application of air power in support of

ground forces or civil authorities.¹⁷

Oman

The first significant troubles in Oman in the 1950s (which also spilled over into the Trucial state of Abu Dhabi) had their origin in a long-term border dispute with Saudi Arabia centred on a remote area around the Buraimi Oasis. Saudi Arabia, which was by this time an independent and very anti-British state, had revived its long-standing claim to Buraimi in the inter-war period as it became clear that the eastern coast of the Arabian Peninsula was rich in oil. After extended negotiations came to nothing, the Saudis took matters



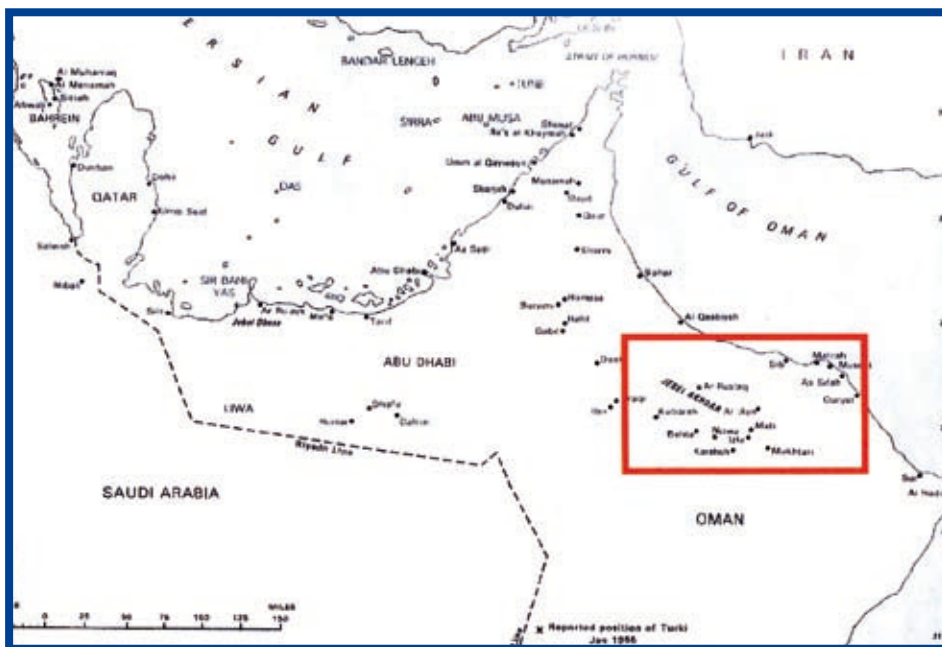
RAF de Havilland Venom at Shanjah, Oman

into their own hands, infiltrating a government representative and a police contingent into Buraimi in August 1952. They promptly set about subverting the population, primarily by dispensing money among the local tribesmen.¹⁸ The British response was cautious. There were no overt hostilities, but Omani Levies (Omani troops with British officers) established a presence in the Buraimi area and RAF Vampire jets flew a number of low-level sorties over nearby villages, while Valetta transports dropped leaflets urging the tribes to remain loyal to the Sultan of Muscat and Oman. However, although such techniques had often been employed quite effectively in the past, Britain was now confronted by an Arab country which could command considerable support in both the United Nations (UN) and Washington. The Saudis' protests subsequently led to the cessation of military activity around Buraimi, which they fully exploited by intensifying their efforts to ferment tribal unrest.¹⁹

1953 brought clear signs of insurgency in the Buraimi area, and no indication of a Saudi withdrawal. Although the Saudis' forcible ejection would have been a relatively easy task, the British government remained anxious to avoid such a solution, and unwilling to implement more aggressive air control measures. An alternative course of action was therefore proposed involving the aerial surveillance of cross-desert routes between Saudi Arabia and Buraimi to prevent overland reinforcement or re-supply of the area. Surveillance sorties began in March 1953 and involved a mixed force of combat,



RAF Avro Shackleton at Shanjah, Oman



Central Oman

transport and reconnaissance aircraft. A largely Omani Levy ground force was positioned so that it could be called in to investigate contacts of interest. The task was protracted, monotonous and unrewarding. It did not result in a Saudi withdrawal from Buraimi, for their personnel were given food and shelter by the local tribes, but it did deter the Saudis from enlarging their presence.

The operation was executed on 26 October, and involved Omani Levies supported by RAF reconnaissance aircraft and two heavy bombers of Second World War vintage, employed primarily to intimidate rather than to attack Saudi or insurgent forces. Transport aircraft were to land at Buraimi to bring out Saudi prisoners and any casualties, and ground-attack jets were held at readiness in case serious resistance was encountered. However, the extraction went largely according to plan, and within hours the entire Saudi contingent had been flown out to the RAF base at Sharjah, after which they were repatriated.²¹

This episode naturally did nothing to improve British relations with Saudi Arabia. It did lead to the re-imposition of order around Buraimi, but the British government's protracted reluctance to tackle the problem head-on had in the meantime given the Saudis ample opportunity to extend their influence into central Oman. Their success in fermenting unrest among tribes in the area became apparent in the autumn of 1955. An attempt by the Sultan of Oman to stamp his authority on the region was successful, but a number of the rebels afterwards fled to Saudi Arabia where they received rudimentary military training, weapons and ammunition, and formed the so-called Omani Liberation Army. In June 1957 a rebel force landed

on the coast near Muscat and seized control of a mountainous area slightly south of the Jebel Akhdar. Omani ground forces sent in to restore order met fierce resistance, and the Sultan duly appealed to Britain for military support. The British were inclined to view the threat very seriously: as we have seen, after Suez the Arabian Peninsula assumed a heightened importance in their strategic thinking.

The first operation against the central Oman insurgency involved the employment standard air control procedures, after which it was hoped that Omani troops with limited British Army support would be able to move into the Jebel Akhdar to occupy rebel territory. The RAF at first gathered detailed imagery of the fortified mountain villages occupied by the rebels, and warning leaflets were afterwards dropped giving 48 hours notice of air attack. Finally, on 24 July, the village fortifications were rocketed by formations of Venom ground-attack aircraft. These firepower demonstrations were followed up by further attacks on fortified structures and by patrolling over rebel-held areas, while ground troops moved into the Jebel from both north and south. By early August the rebels had been pressed into a small pocket in the Nizwa area. However, the final ground advance into this region proved extremely hazardous, and required highly effective air-land integration, the Venoms repeatedly being called in by forward air controllers to clear road blocks and sniper positions. The ground forces, having been deployed forward into the Jebel Akhdar region by air, were also then sustained by aerial re-supply. The principal insurgent stronghold fell on 12 August, but the rebel leaders and at least some of their followers escaped

capture and pulled back further into the mountains.²³

The first Jebel Akhdar campaign perfectly illustrates the reality of RAF colonial policing operations, as opposed to the popular myth. A prominent offensive role was assigned to the RAF not because of confidence in the efficacy of independent air action, but because of the weakness of the Omani army, and the remote and inaccessible location of the principal insurgent strongholds. Even then it would be impossible to argue that the strikes executed by the Venoms in July 1957 represented the independent application of air power; on the contrary, it was always anticipated that they would merely precede (and facilitate) action on the ground. Otherwise, virtually all air operations were mounted in direct support of ground forces and overwhelmingly involved close air support (CAS), reconnaissance, air movement and air re-supply.

In the second half of August the British withdrew most of the ground troops they had committed to central Oman. International and domestic opinion, resource constraints and a flawed assessment of the insurgents' residual strength may all have contributed to this decision. Omani ground forces subsequently tried to follow the rebels on to the plateau which dominated the southern approaches to the Jebel Akhdar, but on 15 November they were halted and then thrown back. In London both the government and the Chiefs of Staff were unwilling to consider a large-scale deployment of British ground forces to Oman, so again there was no alternative but to intensify air operations. For the first time in Oman the use of 1,000lb bombs was authorised; cultivated areas, livestock,

water supplies and other essential infrastructure were targeted day and night. Leaflet drops maintained the psychological pressure on insurgent villages. Air reconnaissance kept the Jebel under surveillance, and was also used to monitor supply routes into the area. Nevertheless, it seems likely that this protracted bombardment may actually have strengthened the determination of some insurgents to resist, and nearly a year passed before intelligence began to suggest some weakening of rebel morale.²⁴

In considering how to exploit this situation the government again rejected proposals for a major ground operation involving the British Army. Instead it was decided to deploy a squadron of Special Air Service (SAS) troops, which would have dedicated CAS at their disposal provided by Venoms and Shackletons. Hence this could be seen as an early attempt at Special Forces (SF)-air integration. Recent experience of SF-air integration has suggested that on-call air support cannot entirely compensate for the more fundamental limitations of the SF – particularly their numerical weakness – and this was also to be the lesson of the second Jebel Akhdar campaign. The challenge facing the SAS involved scaling the Jebel and leading Omani troops into the plateau area. After good initial progress it became clear that this task lay beyond the capability of a single SAS squadron, and a second squadron was therefore committed to the operation. By the end of January 1959 the insurgency had effectively been suppressed.

Unrest would continue in Oman for many years afterwards in the southern region of Dhofar, initially with backing from Saudi Arabia, later with the support of Yemen, the USSR and China. But the

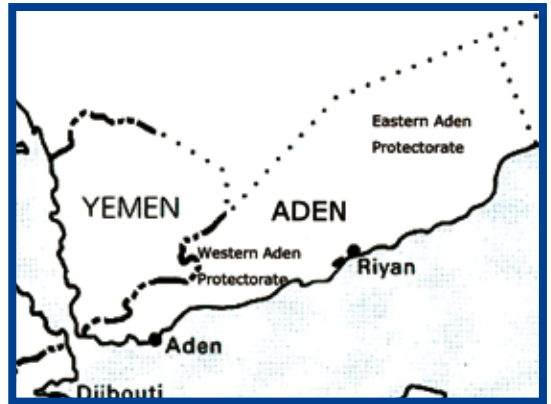
from Saudi Arabia, later with the support of Yemen, the USSR and China. But the RAF played little part in countering the insurgency beyond periodically airlifting troops into the region and providing RAF Regiment units to help defend Salalah airfield. The majority of specific threats were dealt with by the Omanis during the 60s, while UK military activity predominantly took the form of exercises, firepower demonstrations, so-called 'flag waves' and – crucially – training and equipping the Omani armed forces. The Sultan was deposed in a coup in 1970 and was succeeded by his son, but Britain nevertheless withdrew in relatively stable conditions at the end of following year. Limited assistance to the Omanis in the Dhofar area continued for several years afterwards, but ultimately the Dhofar insurgency would be defeated by the Omanis themselves, partly through military action and partly through the sustained efforts of their new Sultan to modernise one of the world's most backward and impoverished societies.²⁵



RAF police patrol at entrance to Crater City, Aden

Aden

The British presence in the far south of the Arabian Peninsula comprised two protectorates and the coastal colony of Aden; in the 60s they were turned into the South Arabian Federation, and the region has since been incorporated into Yemen. The more remote parts of the Western Aden Protectorate had for many years been characterised by tribal dissidence,



Aden

and again there was an important cross-border element in this unrest: in this instance rebellion was actively encouraged by the Imams of Yemen. Yet Aden remained relatively stable in the immediate post-war period. In the late 1940s and early 50s the RAF was still using typical air control procedures to keep order – leaflets, air presence, periodic strikes and shows of force – but on a limited scale. This ground task was largely being fulfilled by locally raised Levies.²⁶



Patrol at Crater Police Station, Aden

The most prominent COIN operation of the mid-1950s took place in Western Aden, after continuing low-level unrest in the remote Wadi Hatib area persuaded the government to establish a new fort at Robat. The fort, together with a number of other isolated military outposts, subsequently came under attack from two dissident tribes, who received backing from Yemen. The British were obliged to airlift troops from Aden Colony into the affected area, and this relief operation was soon followed by the application of more forceful air control measures – warnings followed by the bombing of rebel villages, crops and water supplies. These operations were sustained throughout the second half of 1954, but there was no obvious reduction of insurgent activity.

In the spring of 1955 more troops were airlifted into the area and again the basic infrastructure of the insurgent tribes was targeted by both air and land forces. However, it was becoming

clear that the Robat fort was a liability: it was too difficult to defend and sustain, and its presence only seemed to encourage tribal rebellion. After a further substantial airlift of troops to relieve the fort in July, it was abandoned; shortly afterwards it was levelled by the insurgents. Although the Aden government was by this time apparently satisfied that it could project force into the Wadi Hatib region with relative ease in the event of further large-scale unrest, the withdrawal was inevitably viewed by both the Yemenies and the tribes as an important victory.²⁷ The campaign perfectly illustrates the problem identified by the *RAF War Manual* in 1950. The deployment of ground troops into insurgent areas can often be difficult and expensive; a long-term commitment may well be necessary, at even greater cost; and early withdrawal may incite further disorder.

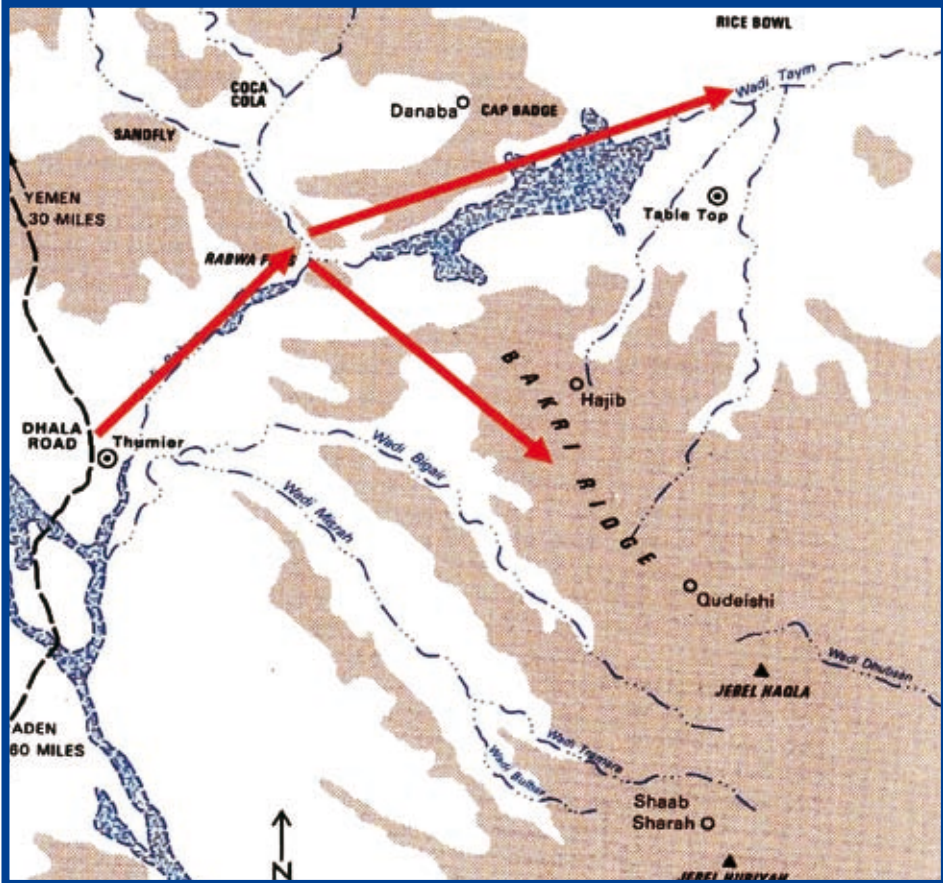
As we have already noted, the late 1950s was a period of expansion for



Wadi Hatib



Both images: RAF Bristol Belvedere helicopters operating in Aden



Operation Nutcracker: main direction of British advance

the RAF in Aden. Operational activity at this time encompassed a wide range of tasks, including the maintenance of air presence, leafletting, periodic strikes, reconnaissance, and the movement of ground troops and supplies into inaccessible areas. In an effort to sever the link between Yemen and the Western

Aden insurgents, Britain also mounted a series of cross-border ventures in this period, which included Special Forces missions, covert support for dissident Yemeni tribes, and selective air attacks. Apparently it did not occur to the British authorities in Aden that these operations might help to deliver Yemen into the

hands of a very much more hostile regime.

Had military action been coupled with an energetic political process for developing self-government in Aden, Britain's ultimate departure from southern Arabia might have been very much easier. As it was, Aden's importance as a military base was such that early proposals for political reform were strongly opposed in London. At the end of the decade belated efforts finally began to create a so-called South Arabian Federation, but the combined effects of economic development and migration from Yemen were in the meantime generating new political forces in the form of Arab nationalism and socialism, which were never likely to be pacified by limited constitutional reforms in favour of Aden's traditional ruling elements. Indeed, political exclusion only served to radicalise the population of Aden Colony. The spread of nationalism became more pronounced after 1962, when a coup in Yemen resulted in the creation of an Egyptian-backed republic, which soon embarked on a far more systematic programme of cross-border agitation and radio propaganda. Predictably enough, the main targets were Britain and the Federation, which was presented as a puppet state. The Yemeni message was enthusiastically received in both Aden Colony and in the rebellious border regions to the north.²⁸

By 1963 Britain was facing growing unrest both in Western Aden and in Aden Colony, where a new threat emerged in the form of urban terrorism. The British armed forces had some experience of urban terrorism, but in Aden the scale of the problem rapidly assumed unmanageable proportions. Unable to quell the urban insurgency but

desperate for a means to demonstrate its authority and force projection capability, the British administration once again decided to target the border tribes. The joint commander (Lieutenant General Sir Charles Harrington) saw in this operation a chance to test the newly formed South Arabian Army by deploying them alongside British troops, who would also provide armour and artillery. The RAF would lend all possible support to the expedition.²⁹

The main area of tribal unrest at this time was another remote mountainous region known as Radfan. The British operation – entitled 'Nutcracker' – was launched into Radfan in January 1964, and merely repeated the basic mistake that had been made back in 1955 in the Wadi Hatib campaign. As an exercise in force projection and as a demonstration of military strength it was quite successful. The air support was highly effective, as it should have been given the resources available and the RAF's extensive experience in theatre. But once the initial objective of Nutcracker had been achieved there was little option but to pull back from Radfan, for there were insufficient ground forces to garrison the area and maintain security across the rest of Aden. Predictably enough, the insurgents then re-occupied Radfan, while Yemeni and Egyptian radio claimed that a great victory had been won over so-called 'puppet imperialist forces'.³⁰

The decision was consequently taken to mount a second operation to end the Radfan insurgency once and for all. British ground forces were enlarged by Parachute Regiment, Royal Marine and Special Forces elements, as well as by other regular Army units. The first incursion at the beginning of May was partly planned as an airborne operation,



Paras coming down from hill top position, Radfan

but insurgents intercepted the SAS team which had been tasked with marking the drop zone. The airlift was therefore cancelled, leaving 45 Commando and the 3rd Battalion, Parachute Regiment (3 PARA), to advance into the Radfan mountains largely on foot. The offensive developed into another classic exercise in air-land integration, as 3 PARA often found themselves beyond the range of their artillery. Ground attack aircraft – Hawker Hunters – were frequently called in to strike rebel forces only just ahead of forward British units. In one instance a British soldier was injured by a spent cartridge case ejected from a Hunter overhead.³¹

Once British forces had reached their initial objectives, the nearby airstrip at Thumier was enlarged so that additional ground forces could be brought into Radfan, and two tactical landing grounds were established known as Monk's Field and Blair's Field. While the build-up was in progress frequent air strikes maintained pressure on the insurgent tribes. The subsequent advance towards the Bakri Ridge was supported by artillery which had been airlifted by helicopter into mountain-top positions overlooking the rebel stronghold. But the operation also witnessed further exceptional integration between 3 PARA and the

Hunter squadrons. After the ridge had been taken the final objective became the 5,500ft Jebel Huriyah, which could not be approached without the preliminary capture of two wadis. When elements of 3 PARA found themselves cut off and under fire in the Wadi Dhubsan, the supporting Hunters actually flew up the wadi at ground level to attack rebel positions. The final assault was executed early in June and by the 11th Jebel Huriyah had been secured. This did not bring an end to resistance in the Radfan, and air control operations were maintained for several months afterwards; but it did begin a process whereby dissident tribes began to sue for peace. The final pocket of resistance came under heavy air attack in November, and the last of the rebel tribes then capitulated.³²



Transferring a patient to the medical centre, Radfan

At considerable expense the Radfan operations dealt with one source of opposition in Aden. But the overall impact of Radfan on the insurgency was negligible, and if there were any beneficial effects at all they were quickly undermined by strategic developments. In 1964 the new British Labour government announced that the South Arabian Federation would be granted independence 'not later than 1968', although Britain might

retain a base in Aden. If this was intended as a concession to help pacify insurgent groups it was spectacularly misconceived. The announcement created a deadline for the attainment of Arab nationalist aims and gave considerable impetus to the growing wave of terrorism. It was followed by a further statement in February 1966, which declared that the Aden base itself was no longer essential. This implied a total British withdrawal, and the removal of British military backing for the Federation and for Aden's traditional rulers.³³

In later attempts to keep order the RAF's role was confined largely to maintaining the operation and security of Aden's main civil and military air bases. There were further air operations in Western Aden in the Yemeni border region, but the RAF could play little direct part in combating the urban insurgency. With little intelligence and with the relatively inaccurate weapons of the period, it was virtually impossible to strike insurgents in built-up areas from the air; aerial reconnaissance was of limited effectiveness, and there was no scope for employing traditional air control techniques.³⁴ There were leaflet drops, and helicopters were often used to lift troops to particular trouble spots at short notice, or to position them for cordon searches; fitted with machine guns they also had some deterrent value.³⁵

But increasingly the RAF's task in Aden became one of managing withdrawal. The challenge was vastly complicated both by terrorism directed towards the security forces, and by the increasingly bitter struggle between rival political elements in the Federation. Any residual political

support for the British presence collapsed; the indigenous police and armed forces became unreliable, and prone to periodic mutiny. Force protection gained a heightened importance against this background, as terrorists frequently sought to target airfields and other RAF installations; this was a particularly busy period for the RAF Regiment, although airfield guard duties were also performed by many other RAF personnel. The final British departure from Aden came in November 1967, some months earlier than originally planned. The nightmare scenario of a fighting withdrawal was at least narrowly avoided, but the new People's Democratic Republic of Yemen (established in place of Aden) remained a threat to British interests in the region as the primary sponsor of the Omani insurgents across the border in Dhofar.³⁶

Conclusions and Lessons

It is a truism that the effectiveness of COIN operations must depend to a considerable extent on the scale of the insurgency. The British experience in Oman demonstrated that military action can be successful against insurgent forces which are not numerous, and which are confined to relatively limited geographical areas susceptible to isolation and systematic targeting. By contrast it is practically impossible to quell a large-scale and widespread insurgency using military force alone. Indeed, military action will often be counterproductive, encouraging rather than suppressing opposition. This was one basic lesson of Aden. Hence there must always be a parallel political process designed to deter insurgent activity and to direct opposition along peaceful and law-abiding channels. In Aden this process was initiated far too late, and it was

too transparently designed to serve British interests at the expense of the indigenous population of Aden Colony. The British experience in Aden also illustrates how the political process can be one of the key centres of gravity of any nation engaged in COIN operations and may well be directly targeted by insurgents or by nearby countries which support them. Recently we have witnessed similar targeting in both Afghanistan and Iraq.

The successful prosecution of COIN operations also requires considerable political willpower. COIN warfare is invariably an expensive, protracted, difficult and messy business. As well as resulting in casualties among friendly forces, it is also usually characterised by the loss of civilian lives and property. Both domestic and international opinion may prove hostile. All of these factors can serve to undermine the political will that must ultimately sustain COIN operations, leaving governments desperately searching for exit strategies. And yet nothing gives more encouragement to insurgent forces than the knowledge that their enemies are seeking an opportunity to withdraw. By the 1960s British decolonisation was gathering pace and there was simply not the will in London to sustain a large-scale and protracted war in the Middle East. This fact was abundantly clear both to Yemen and to nationalist groups in Aden, and was effectively confirmed by the British government itself between 1964 and 1966.

Again, there are obvious modern-day parallels with the situation in Iraq: at the time of writing, British troop numbers are being slowly reduced, and it seems likely that an American withdrawal will be initiated at the

end of the Bush presidency. As far as the insurgents are concerned, time is on their side. The obvious distinction to make is that the British politicians and military chiefs who wrestled with the problems of decolonisation in the 1950s and 60s bore no responsibility for Britain's historic overseas presence. By contrast Britain is today paying the price for massively underestimating the difficulties involved in establishing new regimes in Iraq and Afghanistan. Critical decisions were taken as recently as 2001 and 2002 without any proper consideration being given to their implications in terms of long-term military occupation, stabilisation, peace enforcement and reconstruction. These onerous liabilities are inherent in the 'regime change' concept that has gained currency over the last ten years. If nations do not wish to accept them, they should be seeking alternatives to regime change, such as influence or containment strategies. One possible model in which air power played a prominent part is the containment strategy pursued towards Iraq between 1991 and 2003.

Failures in the political process and/or a perceived lack of long-term political commitment will almost certainly exert a direct impact at the operational level, complicating the already difficult task facing commanders responsible for COIN. Some of the other major operational issues that arose in Oman and Aden of long-term relevance to modern air forces can be summarised as follows.

First, the employment of military force in a counter-insurgency role must be geared to the achievement of measurable effects. As the *RAF War Manual* put it, 'The main thing is to be quite clear as to the effect required

to be achieved.³⁷ Second, central to the pursuit of effect is detailed and accurate intelligence about the enemy.³⁸ A number of the air and joint air-land operations described in this paper were mounted for effect, primarily through the medium of punitive action. Yet they sometimes failed to secure their main objectives, and in a number of instances they were demonstrably self-defeating, resulting at best in the short-term pacification of insurgents at a cost of longer-term political alienation. Failure often stemmed from the fact that the response of insurgent groups was miscalculated. Politicians and colonial administrators were too apt to make superficial or prejudiced assessments which ultimately proved to be unfounded.

Third, we should beware of simplistic arguments regarding the respective merits of air and land operations, for they each offer advantages and disadvantages. As a general rule, through the process of physical occupation, ground operations are likely to be more successful than independent air operations in suppressing insurgent activity in specified geographical areas. But to initiate and sustain ground operations requires the commitment of far more resources. And even when ground operations are successful in pacifying particular regions there remains the question of what to do next. Long-term occupation may prove impossibly expensive; withdrawal can hand a propaganda victory to the insurgents and encourage further rebellion. British forces in Afghanistan encountered precisely this problem as recently as 2006.³⁹ By contrast, air power's inherent flexibility, penetration, reach, and speed of response mean that an air presence over insurgent territory is very much

easier to establish and maintain than a presence on the ground. On a number of occasions in Oman and Aden these characteristics were exploited to target insurgent areas which would otherwise have escaped military action completely. It was not a question of air versus land; it was a question of air power or nothing.

Beyond this, even when resources were sufficient to mount ground operations against insurgencies, air power still had a fundamentally important part to play, particularly where the provision of fire support, troop movement and re-supply were concerned. Indeed, most of the Oman and Aden operations described in this paper would have been impossible without these capabilities. This fact was reflected in the growing sophistication of air-land integration exercised by the RAF and British Army units deployed in the Middle East. Forward air control techniques were steadily refined; air intelligence officers were deployed with forward ground troops and were even infiltrated into rebel tribes; joint operations were mounted in which the Special Forces worked with dedicated close air support; air transport was employed in every conceivable role, often using the most primitive tactical landing grounds.

The problems that arose would seem all too familiar to anyone with recent experience of operations in Afghanistan. Requests for air support were sometimes submitted at the last minute in an ad hoc and haphazard fashion, which made them difficult to answer; accurate and timely target intelligence was often lacking; small and fleeting ground targets were hard to spot; fixed-wing air transport resources were frequently stretched to

the limit, and there were never enough helicopters. Today the British armed forces are confronted by a similar shortage, reflecting the exceptional utility of rotary-wing platforms in COIN warfare.

Other air roles were no less important. Offensive air power was overwhelmingly employed either directly or indirectly in conjunction with ground operations; even the protracted air campaign in central Oman in 1958 was part of a joint operation. But there were occasions when independent air attacks were mounted against deeper insurgent targets – particularly along the border between Western Aden and Yemen. There were many strikes on mountain forts and strong-points, but the RAF also targeted the rebels' infrastructure and basic means of subsistence after appropriate warnings had been issued. Today collateral damage considerations and the law of armed conflict would rule out similar action. But improved technology – more sophisticated means of surveillance, rapid sensor-to-shooter links and the availability of precision-guided munitions – have ensured that there is still an independent role for air power to play, albeit against far more specific insurgent targets.

Otherwise interdiction operations helped to isolate rebel strongholds in both Oman and Western Aden; 'air presence' was regularly exploited, sometimes accompanied by firepower demonstrations, and leafleting was used for psychological effect. Reconnaissance was a near constant task, often providing the only intelligence (including mapping) available on insurgent areas; and as we have seen it could also be used to monitor cross-border movements

to and from adjacent countries like Saudi Arabia and Yemen. Today, in much the same way, air and indeed satellite reconnaissance is employed to monitor the frontiers of Iraq and Afghanistan. The application of air power in urban COIN operations was admittedly far more problematic; but urban operations continue to pose a significant challenge to modern air forces, despite the capability advances that have taken place since the 1960s.

Current RAF doctrine is strangely silent on the subject of COIN warfare. Curiously the only air force in the world to maintain a robust and authoritative doctrinal position on COIN operations from the 1920s through to the 1960s now appears to have suffered a crisis of confidence. Particular issues with some relevance to the problem such as urban close air support, ISTAR and force protection certainly receive ample consideration, but no broader role for air power is otherwise defined.⁴⁰ It is to be hoped that this situation will soon be rectified and that in the process the RAF will draw at least to some extent on historical experience. This would not mean developing some updated version of air control. Rather, it means accepting that the RAF employed a very broad range of air power capabilities in colonial policing operations, and that their doctrine and practice in these operations always embraced both joint and independent air activity. History also has much to tell us about the relative importance of political and military processes in countering insurgencies, and their complex inter-relationship; and it demonstrates repeatedly that military action counts for little unless its effect contributes tangibly to a clearly defined strategic or operational end state.

Notes

1. For a broad survey of British defence in the post-war era see M. Dockrill, *British Defence since 1945* (Blackwell, Oxford, 1988), chapters 1-6.
2. D. Holden, *Farewell to Arabia* (Faber, London, 1966), p.30.
3. S. Mawby, 'From Tribal Rebellions to Revolution: British Counter-Insurgency Operations in Southwest Arabia 1955-67', *Electronic Journal of International History*, Article 5, para 3.
4. RAF Air Publication 3003, *A Brief History of the Royal Air Force*, pp.62-70.
5. Air Historical Branch, *The RAF in the Mediterranean and Middle East 1945-71, Part II: The Southern Tier* (unpublished official narrative, 1978), pp.1-8.
6. RAF Air Publication 3431, *Air Chief Marshal Sir David Lee, Flight from the Middle East*: (unpublished official monograph, Ministry of Defence, Air Historical Branch (RAF), 1978), pp.25-34.
7. *Ibid.*, pp.110-137, 148-162, 204.
8. *Ibid.*, pp.58-77. On the RAF's role in the Far East see Air Chief Marshal Sir David Lee, *Eastward: A History of the Royal Air Force in the Far East, 1945-1972* (HMSO, London, 1984); on the Mediterranean theatre see Lee, *Wings in the Sun: A History of the Royal Air Force in the Mediterranean 1945-1986* (HMSO, London, 1989); on the RAF's responsibility for the British nuclear deterrent see H. Wynn, *The RAF Strategic Nuclear Deterrent Forces: their origins, roles and deployment, 1946-1969* (HMSO, London, 1994).
9. RAF Air Publication 1300, *Royal Air Force War Manual Part 1: Operations* (unpublished doctrine manual, Air Ministry, 1950), chapter 11, para 16-25.
10. J. Corum, 'Air Control: Reassessing the History', *Royal Air Force Air Power Review*, Vol. 4, No. 2, Summer 2001, pp.14-35.
11. P. Gray, 'The Myths of Air Control and the Realities of Colonial Air Policing', *Royal Air Force Air Power Review*, Vol. 4, No. 2, Summer 2001, pp.36-51.
12. Air Publication 1300 (1950), para 13, 31-45.
13. *Ibid.*, para 10, 47-54.
14. *Ibid.*, para 3-4.
15. *Ibid.*, para 13.
16. *Ibid.*, para 5-6, 55-56.
17. Air Ministry Pamphlet 375, *Internal Security Air Operations*, issued by the Air Ministry (ACAS (Ops)), March 1961.
18. J. Townsend, *Oman: the Making of a Modern State* (St Martin's Press, New York, 1977), pp.60, 66, 147.
19. Lee, *Flight from the Middle East*, pp.110-111.
20. *Ibid.*, pp.113-119.
21. *Ibid.*, pp.120-122.
22. J. Meagher, *The Jebel Akhdar War, Oman, 1954-1959*, [globalsecurity.org/ military/ library/ report/ 1985/ MJB.htm](http://globalsecurity.org/military/library/report/1985/MJB.htm), pp.5-9.
23. C. Richardson, *Masirah: Tales from a Desert Island* (Scotforth, Lancaster, 2003), pp.192-200.
24. Lee, *Flight from the Middle East*, pp.129-132.
25. *Ibid.*, pp.134-166; 261-268, 275, 278-286. On RAF support for the Omanis in Dhofar in the 1970s see JR Dowling and PR Wood, *The RAF Wessex Detachment in Oman* (unpublished official narrative, Ministry of Defence, Air Historical Branch, 1977).
26. A. Mullis, *The Limits of Air Control: The RAF Experience in Aden, 1926-1967* (Air Command and Staff College Research Paper, 1997), pp.5-16.
27. Mawby, 'From Tribal Rebellions to Revolution', para 6; Lee, *Flight from the Middle East*, pp.142-148.
28. Mawby, 'From Tribal Rebellions to Revolution', para 1, 4, 9-10, 15, 23, 27-28, 37-39.
29. Lee, *Flight from the Middle East*, pp.203-206.
30. Sir Julian Paget, *Last Post: Aden 1964-67* (Faber & Faber, London, 1969), p.49.
31. Lee, *Flight from the Middle East*, pp.209-211.
32. *Ibid.*, pp.212-216.
33. Mawby, 'From Tribal Rebellions to Revolution', para 39.
34. Lee, *Flight from the Middle East*, pp.220-231.
35. Air Historical Branch, *RAF Helicopters: The First Twenty Years, Part 2* (unpublished official narrative, 1987), pp.302-303.
36. Lee, *Flight from the Middle East*, chapter 13; Dowling and Wood, *The RAF Wessex Detachment in Oman*, p.5.
37. Air Publication 1300 (1950), para 12.
38. On the critical role of intelligence in effects-based operations see EC Mann, G Endersby and T. Searle, *Thinking Effects: Effects-Based Methodology for Joint Operations* (Air University Press, Maxwell, 2002), pp.85-86.
39. See, for example, 'Taliban forces retake Musa Qala', Telegraph.co.uk, 4 February 2007.
40. Air Publication 3002, *Air Warfare*, pp.75-77, 105-109; Air Publication 3000, *British Air Power Doctrine*, pp.2.9.1-2.9.7.



An example of combined air operations: A Tornado F3 refuels from a USAF KC-10 Extender tanker whilst a pair of US Navy F/A-18 Hornets stand by

What is is Meant by Harmonisation and What are the Implications for the RAF?

By Wg Cdr S A Harper

Since the Second World War the RAF has enjoyed a long and close relationship with the US Army Air Force and latterly the USAF. This relationship has been given new momentum by CAS' strategic priority to harmonise the RAF's air power capability with US Forces. Using the RAF/USAF relationship as a foundation for research, this paper examines what harmonisation means in conceptual terms and will theorise that when combined with political will it allows forces to operate in new 'spaces' at the strategic, operational and tactical levels. Building on this thesis and using interviews, academic and official publications, and original research, it will investigate the implications of harmonisation for both the RAF and the USAF. By providing examples where harmonisation can be achieved, it will conclude that the RAF must maintain a balanced warfighting capability and that all lines of development must be harmonised if CAS' strategic aim is to be met.

One of CAS' Strategic Priorities is to Harmonize the RAF's Air Power capability, concepts and doctrine with those of the US Forces. What is meant by harmonisation and what are the implications for the RAF?

Introduction

In January 2007, Chief of the Air Staff (CAS) met with the Chiefs of the US, Canadian and Australian Air Forces in Williamsburg, Virginia. This meeting, reported as the first of its kind since the end of the Second World War¹, is the most public demonstration of a new chapter in the development of the RAF and USAF relationship. This relationship, which has long historical significance, has been given new momentum by CAS' strategic priority that the RAF is to: 'harmonise... air power capabil-

ity, concepts and doctrine with those of the US Forces.² Before considering the implications for the RAF, this Defence Research Paper (DRP) will examine what harmonisation means and explore its relationship to the concept of interoperability. The DRP will propose that harmonisation, when combined with the appropriate political will, can increase the effect achieved from interoperability by allowing forces to operate in 'spaces' at the strategic, operational and tactical levels that would otherwise be denied. The remainder of the DRP will concentrate on the implications of harmonisation for the RAF, where its fundamental thesis is two-fold. First, that the RAF must maintain a broadly balanced warfighting capability if it is to derive maximum benefit from harmonisation with US Forces. Second, that harmonisation will only be successful if pursued across all lines of development. Due to the word limit of this paper, the thesis will concentrate on the RAF/USAF relationship and will only refer to the RAF's relationship with other arms of the US military where it is necessary to do so.

To further this thesis, the DRP will examine the strategic UK/US relationship and argue that bilateral security cooperation, based on shared strategic interests, is the foundation upon which the 'special relationship' has endured. Developing the context further, the DRP will consider the historical and operational links between the RAF and the US Air Forces from their origins towards the end of the First World War to the present day. While it is not necessary to provide an historical narrative of events, it will demonstrate that while shared heritage and tradition have been consistent themes of the RAF/USAF relationship, combined air power operations have

evolved systematically from cooperation, through coordination, to integration. The DRP will then examine interoperability and consider whether harmonisation provides an evolutionary or a revolutionary pressure on this concept. By examining current doctrine and hypothesizing that political will is now an essential element of the interoperability concept, the DRP will argue that harmonisation, if properly applied, can maximise interoperability effect. However, it will also deduce that harmonisation is a continuous evolutionary process and not an end-state in itself – it is therefore unlikely that there is a specific point when harmonisation can be declared.

Having set out the historical and theoretical framework of the paper, it will describe the RAF's development from the Cold War to its present agile and expeditionary force structure as a means to meet the current security threat and conclude that constraints on its size and capability require the RAF to be interoperable and harmonised with the USAF in order to deliver air power effect within the multinational environment. Focussing on the operational and tactical levels, it will investigate what the RAF seeks to achieve by harmonisation and ask why it is important for the RAF to pursue this strategy now. It will also consider the US view in strategic and operational terms and consider whether harmonisation is mutually beneficial. However, it will reinforce the nature of the relationship and underline that the RAF remains the junior partner and that developing harmonisation is not unconditional. These conditions will be investigated in detail as the DRP focuses on the practical application of harmonisation. Developing its thesis that CAS's aim can only be achieved by harmonising across

all lines of development, the DRP will argue that while harmonisation must be supported by conceptual and doctrinal development, it will be determined by the degree to which some technological parity and shared situational awareness is achieved in the battlespace. However, while underlining the importance of the equipment, doctrinal and information lines of development, the DRP will hypothesize that personal relationships and personality remain key. Using the Williamsburg meeting to emphasise its importance, it will examine the risk of personal relationships in maintaining the impetus of harmonisation. It will note that this risk can be reduced by strengthening doctrine and concepts, and postulate that confidence, trust and understanding must be built at all levels in the personnel component through exchange appointments and staff links. It will recommend that the RAF should create an Office of Air Power Integration to provide the necessary coherence to drive forward harmonisation across these lines of development. Importantly, the DRP will use the practical examples of harmonisation and consider how these could be used to provide analysis of achievement in harmonisation. Given the lack of statistical data available, the DRP will be unable to provide definitive analysis of whether harmonisation is being achieved or whether it will be achieved in the future.

Finally, the DRP will examine the challenges facing harmonisation. It will consider the implications of the RAF's NATO and broader European relationships and argue that harmonisation with the US is not necessarily a unilateral approach and may allow the RAF to provide the conduit for closer US/European air power integration. It will also examine the impact of the UK Defence

Budget and procurement decisions and consider, in light of Joint Strike Fighter (JSF), the implications to the RAF of the difficulties, perceived or otherwise, and implications of technology transfer. The paper will show that the most likely constraint on harmonisation will be cost rather than politics and that this provides the most significant risk to maintaining the broad and balanced capability upon which harmonisation with the USAF ultimately depends.

The UK/US 'Special Relationship' – Legacy or Opportunity?

To understand why the RAF seeks to harmonise its air power capability, concepts and doctrine with USAF, it is necessary to examine the underlying relationship between the UK and the US and the importance of the shared RAF/USAF heritage. The paper will argue that since the Second World War, the so-called 'special relationship' between the UK and US has been fuelled and reinforced by defence cooperation and that this relationship has endured and has been enhanced despite fluctuations in the strategic and political 'special relationship'. The enduring nature of the defence relationship, which CAS seeks to enhance and develop still further, is therefore less likely to be influenced by short-term shifts in political focus and emphasis from either side of the Atlantic. Although Cooper identifies that, 'Every...country defines its strategy in relation to the US'³, Dumbrell argues that the US and UK are 'united primarily by values and habits of outlook and attitude.'⁴ Values such as the rule of law, religious tolerance, freedom of speech and governance, dominated by social democratic capitalism, underpin the Anglo orientation of the US political, academic and cultural elites. While these values are shared with other, mainly, western-



F-15 Strike Eagles from 48th Fighter Wing, RAF Lakenheath

style democracies, the roots of the 'special relationship' have been reinforced by a common history and a shared language.⁵ Lady Thatcher described this link as the 'ties of blood, language and culture.'⁶ Nonetheless, Dumbrell draws attention to a recent growth in anti-US sentiment in mainland Europe, driven in part as a reaction to Bush's unilateralist and interventionist foreign policy, but also by a sense of greater and more unified European identity.⁷ Despite this dynamic, and a sense that Iraq, like Vietnam, only serves to fuel 'anti-Americanism', the UK/US 'special relationship' remains strong, albeit that both countries are not always in political agreement.⁸ The 2006 US National Security Strategy emphasizes that, 'Our cooperative relations are built on a shared foundation of shared values and interests....Just as in the special relationship that binds us to the United Kingdom, these cooperative relationships forge deeper ties between our nations.'⁹

Despite the fluctuations in the 'special relationship', such as the Suez Crisis,

the UK and the US have retained close bilateral security cooperation.¹⁰ This cooperation, originating during the Second World War and developed via NATO during the Cold War, has been the most enduring aspect of the 'special relationship'. Highlighting the Second World War as a critical enabler, Dimpleby and Reynolds suggest that 'No modern allies have fused their war efforts so successfully. The ties of language and culture.....allowing deep personal friendships to develop whose importance lasted well after 1945.'¹¹ Throughout the Cold War era, the 'special relationship' broadly developed around both countries' commitment to shared security within NATO, intelligence sharing, and specifically around the use of the UK as a base for the US strategic deterrent and bilateral cooperation on nuclear security. Although this close relationship has persisted beyond the end of the Cold War, the current complex, multi-dimensional and dynamic international security system has created a new synergy in the US/UK relationship. In simple terms, although both countries take a global perspective on security,¹² the UK finds it increasingly difficult to pursue its security objectives without the military capacity and capability of the US.¹³

Some of these themes will be explored in greater detail later in this paper. However, this shared security perspective provides the context within which defence cooperation has developed. The former Secretary of State for Defence, Hoon, commented that, 'it is highly unlikely that the UK would be engaged in large-scale combat operations without the US, a judgement born of past experience, shared interest and our assessment of strategic trends.'¹⁴ More recently, the UK Government's Policy Review document, 'Building On Progress: Britain in

the World', describes how its approach to strategic partnerships will be based on shared interests and values and a 'strong alliance with the US.'¹⁵ Given the commonality of security interests and the expected longevity of the security threats, particularly the threat of international terrorism,¹⁶ it is highly likely that defence cooperation will remain the cornerstone of the 'special relationship' for the foreseeable future.

If the UK has a 'special relationship' with the US, then it is equally accurate to describe the RAF as having a 'special relationship' with the USAF. Like its strategic cousin, the relationship between the RAF and the US Army Air Forces (the USAF was formed in 1947) is long, mutually beneficial and has been interspersed with periods of tension and disagreement. However, like the 'special relationship', both the RAF and the US Air Forces have sought to overcome these tensions in order to achieve decisive effects in the battlespace.¹⁷ Meilinger notes that, 'USAF leaders trust the proficiency and dedication of the RAF' and that, 'common language, culture and tradition make it easier (for the USAF) to work with the RAF.'¹⁸ This sense of shared tradition and professionalism, enhanced by shared operational experience, serves only to reinforce the view of this paper that the RAF has a 'special relationship' with the USAF. This relationship has developed over ninety years and where once the RAF was the dominant partner, now the USAF fulfils this role and will continue to do so. From its origins during the First World War, the RAF and the US Army Air Force and latterly the USAF have enjoyed a strong partnership that has evolved during operations from cooperation to coordination and, most recently, to a degree of integration. Not

only has this shared history cemented the 'special relationship' between the RAF and the USAF, it also provides evidence of how coalition operations have evolved to the extent, and as this paper will argue, that harmonisation can be viewed as a means to improve and maximise the effect gained from interoperability.

Although commentators¹⁹ highlight collaboration between the UK and US during the Second World War as the origins of military synergy, the history of RAF and US Air Forces cooperation can be traced back to the First World War when between 900 and 1,100 US personnel flew with the Royal Flying Corps on the Western Front.²⁰ Joining the war in 1917, the US provided much needed momentum to the allied effort, although relied heavily on UK and French operational experience to improve US combat capability. This experience and the deliberations between Lord Trenchard and Billy Mitchell on the use of air power typified a relationship built on mutual cooperation.²¹ The importance of the strong links created between the RAF and the then US Army Air Corps (embedded as part of the US Army) in the First World War would not be truly recognised until the Second World War. Nonetheless, Cox reminds us that the relationship which began with the RAF as the dominant partner in the First World War has endured over a number of generations and conflicts since, albeit those roles have since been reversed.²²

Like the First World War, the RAF and the then US Army Air Forces (AAF) used the period before the US entry into the war to develop and reinforce the relationship and allowed the AAF to view first-hand air combat operations. Following the US entry into the war, initial

difficulties were exposed in the choice of air component commanders with both the RAF and AAF concern that their air forces were under the operational command of officers from the other service. This became particularly apparent in the control of tactical air forces, when Patton complained that despite the majority of air assets being provided by the US in the Mediterranean, the RAF continued to push for integrated air commands merely as a means to retain leadership and control.²³ Despite the potential of integration between the allied air forces built on common purpose, political realities would frustrate this aim and Hughes notes that the allies did not create a mechanism to centrally conceive, plan, and execute their air campaign.²⁴ While there were examples where tactical air forces were combined, integration was the exception rather than the rule. Despite these differences, the mutual respect and understanding conceived during the First World War was strengthened and the foundations of unity of command and unity of effort in delivering air power were created.

These themes were to feature again in 1990 and 1991 when during the first Gulf War the Coalition Air Commander, Horner, permitted RAF representation in his command headquarters in Riyadh; other than Saudi personnel, RAF officers were the only foreign representatives in the Headquarters.²⁵ Air operations during Operation DESERT STORM also provided evidence that the RAF had the capability to reinforce its 'special relationship' with the USAF. Despite the growing technology gap between the USAF and other Air Forces, the RAF had maintained sufficient capability to enable it to operate in US composite air operations. Meilinger points out that throughout the air campaign, the RAF

dropped more precision-guided munitions (PGMs) than the US Navy and US Marine Corps (USMC) combined. The air campaign also provided evidence that the RAF had specific capabilities, such as laser target designating and offensive counter-air operations, which could be used to enhance (rather than just support) the overall coalition air effort.²⁶ These two trends would be repeated over the Balkans in 1995, when again the RAF dropped more PGMs than the USMC. In subsequent operations, the RAF maintained its role as the most significant partner to the USAF, delivering additional capability in the Combat Support area by providing 80% of the European air-to-air refuelling (AAR) assets over Kosovo and a similar capability for carrier-borne US Navy aircraft in the Afghanistan theatre.²⁷ Throughout this period, the RAF and USAF, involved in 4,000 days of continuous air operations enforcing the Iraqi No-Fly Zones, created a level of integration and trust that proved invaluable during Operation TELIC.²⁸ This integration and trust provided the foundation for air operations during the 2003 invasion of Iraq and allowed RAF personnel to gain insight, understanding, and influence within the US planning and execution of the air campaign. By deploying specific capabilities, such as counter-air, AAR, ISTAR and the ability to deliver PGMs, the RAF were able to configure their assets to meet US requirements. As the MOD's First Reflections report commented, 'the UK contribution was taken into the US plan where it could best complement and enhance US capabilities, both politically and militarily.'²⁹ By providing the appropriate capability, the RAF not only achieved a degree of integration with the USAF, it also secured 'an effective place in the political and military decision-making process.'³⁰

Harmonisation – Revolution or Evolution for Interoperability?

The critical question that this paper seeks to resolve is the role harmonisation plays in the concept of interoperability. This will not be straightforward despite RAND's assertion that, 'interoperability...(is) simply a measure of the degree to which various organisations are able to operate together to achieve a common goal.'³¹ Interoperability is multi-dimensional, is subject to different interpretation, and is achieved by different means at different levels. The purpose of this paper is not to arrive at a comprehensive definition of interoperability. It will examine the current strategic security climate to explain why interoperability is a necessary function of defence policy. Having explained why interoperability is necessary, the paper will seek to broadly define the concept and consider whether harmonisation is a revolutionary or evolutionary influence and the potential this might realise to increase the effect that interoperability can deliver. In their 2000 report on coalition air operations, RAND identified that, 'interoperability...must be understood in the context of the international security environment that affects coalition operations.'³² RAND argues that the change in the security environment since the end of the Cold War has resulted in a broader level of threat and a wider range of contingencies to which forces must respond.³³ Not only does this require more agile forces to respond to such threats, it also introduces a new strategic dynamic. Where the Cold War was dominated by alliance based strategic defence, where conflict would be an act of necessity rather than choice, the current security environment reverses this trend. The less predictable, but more complex and diverse security threats, require a range of responses and

are most likely to be multinational in nature. As potential coalition partners will have the choice as to whether they engage or not, multinational operations will rely more on flexible 'coalitions of the willing' and less on long-standing, and more rigid, alliances prevalent during the Cold War.³⁴

'Coalitions of the willing', by definition, add a degree of uncertainty and complexity to the use of the military instrument. Coalitions of the future will comprise of different nations, many constrained by political will and the level of military capability and effect that they can deliver. Given this unpredictability, the UK's response is to maintain broadly self-sufficient and capable Armed Forces with a deliberate focus on agile and expeditionary capability. However the cost of maintaining and engaging this military instrument remains under significant budgetary pressure and Defence Planning Assumptions already assume that, for example, UK involvement in large-scale operations will be part of a US-led coalition. As JWP 3-00 states, 'the most likely scenario for military action by UK forces at the medium and large scale operations will be as part of a coalition, perhaps under NATO or EU leadership, but increasingly US-led. Implicit in this statement is the recognition that the UK will provide a military coherent and capable force, self-standing and self-sustaining.'³⁵ This assumption allows defence planners to take risk against certain capabilities, and while this will be examined more closely in respect of the air environment later, it is sufficient to recognise that multinational operations will continue to rely on a degree of capability burden sharing among coalition partners. These strategic drivers, the nature of military operations and the sharing of the capability burden,

require both integration and interoperability to achieve the desired effect in both political and military terms. However, the political dimensions of future conflict, the complexity of the operation, and the degree to which coalition partners can interact³⁶, all impact on the level of interoperability that can be achieved. Interoperability, however defined, is therefore both complex and multi-dimensional.

Both UK and US doctrine describe interoperability as, 'The ability to operate in synergy in the execution of assigned tasks.'³⁷ UK Air Power doctrine develops this further and using the NATO definition defines interoperability as, 'The ability of systems, units or forces to provide services to and accept services from other systems, units or forces and to use the services so exchanged to enable them to operate effectively together.'³⁸ Both definitions concentrate on the ability of equipment and personnel to work collaboratively to achieve greater effect than otherwise would have been the case if interoperability was absent. To achieve this effect, interoperability relies on a degree of standardisation³⁹ between doctrine, procedures and equipment and the ability to deliver effect in the operational context.⁴⁰ However, despite standardisation efforts within the NATO context, a growing capability gap exists between the US and other NATO air forces. Reporting on Operation ALLIED FORCE, RAND noted a, 'a widening gap in capabilities between U.S. and other NATO air forces.... Moreover, despite fifty years of standardization efforts, NATO forces still exhibited significant interoperability problems.'⁴¹ While this paper will examine the capabilities gap later, the evidence suggests that standardisation efforts have failed to achieve

an appropriate level of interoperability effect. The failure to invest and procure technologies that enable interoperability, particularly in respect of the air environment dominated by technologically complex and networked aircraft, underlines the importance and impact of political will on interoperability. Doctrinal orthodoxy fails to address this paradigm which, in addition to the 'wars of choice' effect this paper suggests now exists, can influence the overall effect of interoperability. For example, the degree to which a nation's forces can undertake multinational operations across the spectrum of conflict relies not only on standardisation but on the political will of the nation's government to follow this course.⁴² Political will in the 'coalition of the willing' scenario is a combination of three factors. First, the strategic will to use military forces for specific operations; usually determined by national caveats and rules of engagement and based upon culture, ideology and political resolve.⁴³ Second, the strategic will to align procurement strategy in order that standardisation can be achieved. Third, the will at component level to commit to strategies and policies that aims to achieve a degree of standardisation or, in this case, harmonisation.

Currently there is no UK doctrinal definition of 'harmonisation'. However, US joint doctrine describes harmonisation as, 'The process and/or results of adjusting differences or inconsistencies to bring significant features into agreement.'⁴⁴ The Oxford English Dictionary describes 'harmonisation' as 'to make or form a...consistent whole' and 'to produce harmony'. In turn, 'Harmony', is described as 'agreement'.⁴⁵ Using these literal definitions describes a process which aims to achieve more than merely standardisation. In other

words, standardisation allows capability, concepts and doctrine to be brought to a standard necessary for interoperability, while harmonisation allows capability, concepts and doctrine to be brought into agreement to enhance the effect that can be achieved by interoperability. Using a musical analogy, a choir can be standardised to ensure that it performs the same song at the same time, but the effect and impact of the choir is greater if harmony is also applied and achieved. In interoperability terms, political will, when combined with harmonisation has the theoretical potential to increase the maximum achievable effect than when combining political will with standardisation, as Figure 1 illustrates:

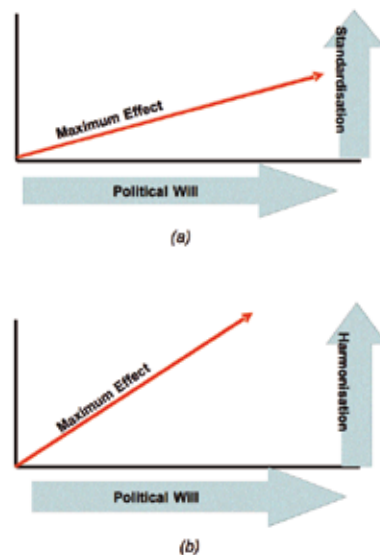


Figure 1. Diagram showing the theoretical maximum interoperability effect when combining political will with standardisation (a) and political will with harmonisation (b).

As a result, harmonisation does not represent a revolution beyond interoperability. Instead, it provides an evolutionary

means and process by which capability, concepts and doctrine can be brought into agreement in order to enhance the effect beyond that which would normally be achieved from interoperability based on standardisation only. However, achieving and measuring harmonisation is potentially complex. As RAND notes, 'much of the value is intangible... and not easily measured or quantified.'⁴⁶ Simply put, what is the end-state for harmonisation and how do you know when you have achieved it? The ability to harmonise is complicated by the nature of the current security environment. Each operation (and therefore coalition) is different, the strategic context is dynamic (unlike the Cold War) and USAF and RAF are undergoing transformation; therefore the ability to harmonise will also need to evolve accordingly. These factors suggest that harmonisation is a continuous evolutionary process and that there is no measurable end-state or a point at which harmonisation between the RAF and the USAF can be declared. As a result harmonisation can be more accurately described as a journey rather than a destination.⁴⁷ Nonetheless, it should be possible to measure progress in achieving the aim. This paper will identify specific areas where progress towards harmonisation can be measured. Before doing so, it will examine why the RAF is seeking to harmonise its air power capability, concepts and doctrine with the USAF at this time.

Why Now? Why Air Power?

Since the end of the Cold War, successive UK Defence Reviews⁴⁸ have attempted to re-align military capabilities to meet the changing and complex nature of the post bi-polar world. The Strategic Defence Review (SDR) New Chapter, published in 2002, articulated the evolutionary change towards a capabili-

ties approach to defence planning⁴⁹ by stating that, '... given the wider changes in the strategic and operational environment...we need to continue the evolution of force structures away from the legacy systems more suited to the Cold War and towards the capabilities that are optimised to meet the new threats and challenges.'⁵⁰ As a result, the period since the end of the Cold War has been one of change and adjustment for the RAF.⁵¹ In order to meet complex and multi-dimensional security challenges, the RAF has re-structured and re-orientated its force structure towards joint expeditionary operations⁵² whilst retaining a broad and balanced air power capability. This approach is supported by Sabin who argues that: 'The best way of maintaining security is...to pursue a broad and balanced approach...'⁵³ and reinforced by Defence Strategic Guidance 05 (DSG 05), which highlights that, 'Futures analysis is...an inexact science...developments in the international scene are increasingly uncertain...the (DSG 05)...underpins the maintenance of a broad range of capabilities ...and agility necessary to respond to an uncertain future.'⁵⁴ As a result, the RAF has developed an agile and adaptable force structure that is configured to meet the most frequent operations (small and medium scale), while retaining the capability to meet the most demanding operations (large scale). Nonetheless, there remains capability gaps and, as this paper will show later, this forms part of the rationale for CAS to pursue greater harmonisation with the USAF. The SDR, the 2003 Defence White Paper, and Defence Planning Assumptions (DPAs) all recognise the constraints on the size and capability of the UK Armed Forces.⁵⁵ As Clarke argues, '...the UK emerges as the 'second military expeditionary power' in the world; a long way

behind the US, but probably better able than any other power in the world...to project and use effective military force.⁵⁶ The challenge and conclusion for the RAF is that it must be able to operate and deliver effect in the joint and multinational environment and, to achieve the desired effects in large scale operations, it must be interoperable and harmonised with the USAF.

To appreciate how the RAF can deliver effect in the multinational context, it is critical to understand the characteristics of air power. Although air power is not the same as Air Force,⁵⁷ the RAF is the primary exponent of air power in the UK military. Air power is a technological activity⁵⁸ and is inherently joint, combined and multinational in nature.⁵⁹ Moreover, and as Tucker highlights, 'air forces are already better harmonised... than most maritime and land forces', and 'English (as the language) of the air makes communication between air power partners inherently easy.'⁶⁰ In joint and multinational scenarios, air power is critical to land and littoral manoeuvre and through its core attributes (height, speed, reach and ubiquity) can provide decisive effect in both the land and maritime environments.⁶¹ In addition, air power offers precise and increasingly persistent capabilities⁶², has the ability to deliver effect from the strategic to the tactical levels,⁶³ and has the ability to deliver effects across the political, economic, military and information instruments of power.⁶⁴ These attributes provide both an opportunity and challenge for the RAF. The opportunity rests with the potential of harmonisation with the USAF to improve the capability and effect that the RAF can to deliver in the future. However, the RAF must continue to develop agile, adaptable and networked 'high-end'



USAF Lockheed Martin F-22A Raptor

warfighting capabilities⁶⁵ if it is to grasp this opportunity.

CAS considers the USAF to be the premier Air Force in the world and highlights the long and enduring shared heritage and operational history as a primary reason for developing closer doctrinal, capability and conceptual links.⁶⁶ Additionally, and following the completion of 4,000 days of continuous integrated operations in policing the No-Fly Zones over Iraq, CAS is keen that the RAF and USAF do not drift apart.⁶⁷ While CAS has focused on harmonisation as a main priority of his tenure, it would be wrong to suggest that this is the only bilateral relationship of importance to the RAF. For example, following CAS' visit to Australia in March 2007, a number of RAF/Royal Australian Air Force (RAAF) visits and liaison meetings are planned or have already taken place. Moreover, the RAF continues to develop its contribution to the UK's joint operational capability through initiatives as Networked Air/Land Integration (NAiL), Rapid Global Mobility (RGM) and the Effects Based Approach (EBA). Harmonisation with

US Forces is one of 12 RAF strategic priorities and while the focus of this paper will underline the importance of this approach, it should not disguise or minimise the importance of other lines of strategic development and priority that the RAF are currently pursuing.⁶⁸

RAF/USAF Harmonisation – Mutually Beneficial?

Goulter notes that, 'in an uncertain world...flexibility comes from having a full spectrum of capabilities, unless you are certain of your alliance partners and their ability to assist you.'⁶⁹ In these terms, there are significant advantages for the RAF in pursuing harmonisation with the USAF. Although the RAF seeks to maintain a broad and balanced air power capability and force structure as possible, there remain some capability gaps against which a degree of operational risk is taken. Moreover, the RAF also holds a degree of risk in the quantity of air power capability it can deliver. The key for the RAF is to determine the level of risk in capability terms against the scale and nature of operations that it is planned and resourced to undertake. In simple terms, the RAF retains its balanced capability and force structure in order to meet the requirement of DPAs to support a UK-only or UK-led coalition operation, at either small or medium scale. Nonetheless, there is also a recognition that the UK is only likely to engage in a medium or large scale operation as part of a wider multinational coalition and that the RAF can afford to take a degree of risk in capability areas provided from other forces. The SDR articulated this approach as, 'Britain will usually be working as part of a NATO...force, or an ad hoc 'coalition of the willing'. This means that we (the UK) do not need to hold sufficient national capabilities for

every eventuality.'⁷⁰ CAS highlights capabilities gaps in the RAF's Suppression of Enemy Air Defence (SEAD) and provision of stand-off jamming, for example. In this respect, it is likely that the full spectrum of SEAD and jamming capabilities will only be required in large-scale operations where DPAs assume that the UK would be engaged as part of a US-led coalition. Therefore, this risk can be potentially offset by USAF capability. As Goulter notes, 'Because of the high cost of SEAD technology, Britain may have to be content with her dependence on the US.'⁷¹ This approach would suggest that the focus of harmonisation is unilateral and that there is no reciprocal benefit for the USAF. As this paper will show, this is not the case.

Despite its global reach and significant margin of superiority over other Air Forces, the USAF can also benefit from harmonisation.⁷² Currently, the USAF is faced with a significant enduring operational tempo as it engages in the 'War on Terrorism', an ageing fleet⁷³ and increasing budgetary challenges driven in part by the cost of maintaining its legacy fleet and by the cost growth of new platforms such as the F-22 and F-35 to replace them.⁷⁴ Through harmonisation, the RAF can augment and plug capability gaps within the USAF force structure. This paper has already highlighted the RAF's role in Operation DESERT STORM in providing offensive counter-air capability and the provision of AAR assets in the Kosovo⁷⁵ and Afghanistan theatres. During Operation IRAQI FREEDOM, the RAF provided Tornado F3 aircraft to augment the USAF's counter-air capability and Tornado GR4 to augment the USAF's tactical reconnaissance capability. In this latter role, the USAF have already indicated

that the RAF's Airborne Stand-off Radar (ASTOR) capability, to provide long-range target imaging and tracking radar, will significantly enhance coalition tactical reconnaissance capability and interoperability with the JSTARS⁷⁶



Sentinel R1, No 5 Squadron

ground segment will be delivered to enable this. The provision of advice and operational experience by the RAF Regiment as the USAF develops an organic force protection capability provides further evidence of a mutually beneficial relationship.⁷⁷ These relationships are important because it reinforces the importance of the RAF maintaining an air power capability that does not exclusively concentrate on the investment of 'high-end' warfighting platforms. While the USAF retains a significant and pre-eminent capability in this respect, the evidence of recent coalition operations suggest that it will continue to use the RAF to augment and fill capability gaps, particularly in the combat support and enabling area, such as AAR, tactical reconnaissance, and force protection. In capability terms, therefore, both the RAF and the USAF can use harmonisation to maximise their strengths and minimise their weaknesses. By providing a capability that otherwise would not be available or by enhancing an existing capabil-

ity, harmonisation has the potential to deliver greater effect across the spectrum of conflict.⁷⁸ General Moseley underlines the point by commenting that, 'the ability to plug coalition forces together...on the battlefield, provides a significant force multiplier effect.'⁷⁹

While this approach suggests significant benefit for the RAF in investing and specialising in the enabling capability of air power, there is also a strong case for its retention of a 'high-end' warfighting capability to provide the commitment, credibility and influence in its relationship with the USAF. Clarke argues that, 'nothing conveys military commitment...as much as combat risk-taking and the ability to deploy...units for combat.'⁸⁰ By investing in fifth generation fighter technology, that can deliver precise effect in potentially high air threat environments, the RAF is able to provide the US with the ability to augment their own 'early-entry' capability. The decision to procure JSF is evidence of this approach. By being able to operate alongside the US and deliver 'high-end' warfighting capability from the outset of an operation, the RAF is able to provide the commitment to share both political and military risk. However, to be able to maintain this capability, the RAF must ensure that its procurement requirements meet a minimum baseline for undertaking harmonised and integrated operations in high air threat environments. This should include, for example, defensive aid suites, combat identification, common data links, and secure communications as standard for all organic RAF air platforms. This approach would minimise risk within the operational environment and provide the necessary confidence to the USAF that the RAF are able to fight and

deliver effect without unnecessary constraint. Moreover, while the overall risk that the RAF is able to assume may be comparatively small given the number of assets it can deploy, the influence and goodwill that this generates can be disproportionately high. The degree to which RAF personnel are permitted to operate alongside and be embedded within US Headquarters during conflict is evidence that the RAF can deliver greater influence to the planning and execution of a campaign than the size of the RAF contribution in platform numbers and personnel would otherwise suggest. Meilinger points out that several USAF officers consider, 'that it is easier to work with the RAF than it was with the US Navy or USMC.'⁸¹ This synergy also provides USAF planning with a different perspective and reinforces the point that harmonisation is mutually beneficial. It is essential therefore that the RAF recognises that the ability to undertake air campaign planning and execution and operational analysis is also a capability and that it must invest in and develop this capability if it is to remain relevant and credible in the USAF context. It will also need to recognise, as this paper will explore later, that this relationship is often underpinned by personality rather than merely process. Gardner advises that during Operation IRAQI FREEDOM, 'the military contribution the UK is able to make...means that we secure an effective place in the political and military decision-making process.'⁸²

Since the end of the Cold War, the US foreign policy approach to the international system has been characterised and simplified as a choice between multilateralism and unilateralism. The US response to the terrorist attacks of 11 September 2001 has only intensified

this debate. While the Bush Doctrine in which the policies of 'military pre-emption' and the 'mission determines the coalition' serve to reinforce the unilateralist approach, they also ensure that the US will not be restrained by the policies and interests of others when its National Security interest is at stake. Kagan claims that the US is increasingly unilateralist because it is less inclined to work through international organisations, less likely to work with other nations to pursue common goals, and is content to work outside of international law, where it is in their interests to do so.⁸³ While this approach, combined with the view that the US is 'at war', has shifted the emphasis of US foreign policy away from a grand strategy based on alliances, multilateral institutions, and cooperative security during the Cold War, there is still evidence that the US seeks to build international consensus through 'coalitions of the willing' to pursue its National Security interest. Since the invasion of Iraq in 2003, there is a growing view that US influence and leadership in the uni-polar world could be better achieved by pursuing legitimacy for its use of military force.⁸⁴ Similarly, Jentleson argues the US should act as a fulcrum rather than a foil for multilateralism.⁸⁵ This approach has been reinforced by the 2006 National Security Strategy, which makes no fewer than 68 specific references to international cooperation and the importance of international institutions. This acceptance of legitimacy, both moral and political, as source of power and an appreciation of the use of multilateral military force as a means to achieve legitimacy now provide the foundation of US military policy and doctrine. However, important differences still exist with UK Defence Policy. While UK Defence acts in the liberal

traditions as a wider 'force for good in the world'⁸⁶, the US military, implicitly, is a force for good for the realist US interest and is a mechanism for delivering US sovereign power. More fundamentally, the US considers itself 'at war' in the fight against global terrorism, while the UK has yet to view its approach in similar terms.

In doctrinal terms, the focus on coalition operations and interdependency recognises that US operations will be multilateral.⁸⁷ Both the US National Security Strategy and the Joint Vision 2020 underline the importance of multinational operations to further US strategic aims, with Joint Vision 2020 highlighting the premium on, 'the successful integration of multinational...partners and the interoperability of processes, organizations and systems...as the foundation of future US military operations.'⁸⁸ In focussing doctrine and policy on coalition operations, the US seeks to achieve a number of effects. At the strategic and operational levels, coalitions provide a greater degree of political and moral legitimacy than a more unilateral US approach would otherwise achieve and provides benefits such as access to overseas basing and over-flight. Similarly, it allows the US to share political risks of operations with its coalition partners. UK doctrine reinforces this point by underlining that multinational operations are the, 'prevalent reality at the operational level of war because it reflects the political necessity of seeking international consensus and legitimacy for political action.'⁸⁹ In other words, by pursuing a strategy of coalition and multinational response to security threats, the US aims to provide both political and campaign legitimacy for its use of military force. Finally, and arguably, by pursuing a coalition-based strategy,

the US may be seeking to support and stimulate military transformation and modernisation among its allies as a means to improve interoperability and integration in the battlespace. This paternalistic approach responds to criticism, particularly within the NATO context, that some allies are unable or unwilling to maintain interoperability in respect of capability, common data links and secure communications, for example.⁹⁰ The US National Military Strategy highlights the importance of working with other militaries in order to, 'help establish favourable security conditions and increase the capabilities of partners (my emphasis).' and 'enabling multinational partners'...(to support) combatant commanders' plans to..undertake operations over great distances and in sometimes overlapping conflicts.'⁹¹ General Moseley underlines the importance of coalition operations by stating that the USAF is, 'looking to better fight this joint fight, this coalition fight, and looking for ways to more quickly win this global war on terrorism, and be able to dominate the next war should deterrence and dissuasion fail.'⁹²

Clarke reminds us that US air power is the standard 'against which all other forces must measure themselves.'⁹³ To that end, when considering its relationship with the USAF, it is important that the RAF retains a sense of perspective in what harmonisation can deliver and what it can achieve. The relationship is not unconditional and while this paper has highlighted the mutuality of the benefit harmonisation can provide, the RAF remains the junior partner. Consequently, it should recognise that harmonisation will have greater emphasis to the RAF than it will to the USAF. In other words, while both will benefit, the RAF has more to gain from harmonisa-

tion than the USAF has to lose by not harmonising. While it would be overly simplistic to suggest that the USAF supports a strategy of coalition operations because it should, rather than because it has to, it implicitly sets conditions for entry into the premier league of air power integration. Simply put, to maintain relevance and credibility, the RAF must, as a minimum, procure a fifth generation fighter capability⁹⁴, it must have Tactical Targeting Network Technology (TTNT) to download aircraft sensor data⁹⁵ and have the ability to achieve Air Command and Control (Air C²) interoperability. This paper will examine these issues and other areas where harmonisation can be developed. In doing so, it will examine the concept of harmonisation as a capability and will consider it in respect of the UK Defence Lines of Development (DLOD) model. The word limit on this paper does not permit a detailed analysis of all aspects. However, by using examples from four DLOD, (Equipment, Concepts & Doctrine, Information, and Personnel) the paper will argue that harmonisation with the USAF can only be delivered if these areas are also aligned. It will also return to its earlier theme and consider how these examples might be used to measure the progress of CAS' aim in achieving harmonisation.

Harmonisation in Practice – The Importance of Harmonising across Lines of Development

This paper has argued that harmonisation can only be achieved if the RAF retains a balanced air power capability and that it maintains and develops its 'high-end' warfighting capability through procurement of fifth generation fighter aircraft such as JSF. Both UK and US military doctrine recognise that control of the air is a necessary condition of coalition and joint expeditionary

operations providing both protection for the deployed force and force projection.⁹⁶ However, the development and proliferation of counter-air capabilities and the evolution of advanced multi-role combat aircraft pose a significant threat to this condition. Statistically, the greatest threat to aircraft has originated from the ground and Meilinger notes that since the end of the Second World War, more aircraft have been lost to surface to air missiles (SAMs) and antiaircraft artillery fire (AAA) than from other aircraft.⁹⁷ The UK plans to procure around 138 of the F-35B variant of JSF with an in-service date around 2015, at a cost of approximately £10 Billion.⁹⁸ Able to operate from land or via Carrier Strike, JSF can carry a range of diverse weapons, such as Stormshadow, and can operate in the counter-air and precision attack roles on the same mission. Moreover, using stealth technology, the JSF can threaten an adversary's centre-of-gravity and create strategic effect. While this would suggest that JSF is confined to traditional conflict and 'high end' warfighting, its utility in the non-traditional and non-linear battlespace should not be overlooked. General Keys, Commander of the USAF's Air Combat Command commented that, 'With the F-35, you have the ability to get in where people don't see them, the ability to listen where people don't know your listening, and to find things that people don't want found out.'⁹⁹

However, JSF procurement presents challenges for the RAF. On entering service, adversary counter-air capabilities, either in modern multi-role aircraft with sophisticated air-to-air missiles (AAMs) or ground based air defence systems equipped with counter-stealth capabilities may be such that JSF may not retain the technological advantage to penetrate non-permissive air environ-

ments that it theoretically can today. While the FASOC recognises that equipment must be sufficiently flexible to meet threats and technology that can evolve faster than the UK can acquire resources to meet that threat¹⁰⁰, it fails to address the explicit implications for JSF. For example, how does the RAF ensure that the JSF retains its effectiveness and technological advantage when it enters service in the next decade? Critically, the RAF must balance the need for operational sovereignty¹⁰¹ of its JSF capability while ensuring that it retains appropriate access to US research and development technology. In December 2006, the MOD signed a Memorandum of Understanding (MOU) with the US Defence Department covering the production, sustainment and development of the JSF programme. Although the MOD has received assurances from the US that the UK would receive information in order that JSF can be operated independently, the House of Commons Defence Select Committee (HCDC) voiced concern over the lack of detail in the assurances provided.¹⁰² Importantly, the HCDC were concerned that technology transfer occurs throughout the life of the JSF programme and that the UK will be able to operate JSF independently from the US. In response, Lord Drayson advised the HCDC that the MOU assured that, 'UK citizens will be in the chain of command to deliver operational sovereignty, unbroken, no US citizens in that chain of command.'¹⁰³ Therefore, the JSF programme provides a key test for the development of harmonisation with USAF. At one level, it would seem counter-intuitive for the USAF to place JSF capability as a 'condition' for harmonisation, while the US government retains rigid technology transfer rules. Moreover, the issue has wider significance for UK Defence in

general and the RAF in particular. The issues are two-fold. First, if the RAF intends to continue to operate alongside the USAF in high air threat environments from the outset of operations, it must ensure that its systems and capabilities are compatible and integrated. Second, the evolution of future security threats demand that the RAF is able to operate, maintain and upgrade equipment procured from the US.¹⁰⁴ Failure to provide timely technology transfer will place both these requirements at risk and will ultimately undermine harmonisation. Testifying before the Senate Armed Services Committee, Lord Drayson underlined the importance of operational sovereignty to the UK Government.¹⁰⁵ The UK Government's response is to reach a framework agreement with the US, which will provide greater efficiency over the inter-governmental and inter-industry technology transfer process and underline the defence relationship between the UK and the US. In response to HCDC questioning, Lord Drayson advised that, 'I hope that 2007 is a year when that framework is put in place such that we have not got to address things on a project basis...but we have a more overarching agreement which makes the whole process more efficient.'¹⁰⁶ If successful, timely technology transfer will be a key enabler in harmonisation and underlines the importance of political will in aligning procurement strategies. However, a commitment to harmonisation, when combined with a closer relationship, can create its own momentum in easing the path towards efficient and timely technological transfer. With this in mind, Bruce Lemkin, Deputy Under Secretary of USAF, describes JSF's advantages not only in capability terms but as a means to facilitate broader Air Force to Air Force relationships.¹⁰⁷

Harmonisation of equipment, although driven by technological factors, will need to be supported by closer conceptual and doctrinal alignment. Currently, the RAF's capability is supported by the interaction between the Effects-Based Approach (EBA) and Social Network Analysis (SNA).¹⁰⁸ EBA is the means by which Defence can interact with other instruments of power within the Comprehensive Approach.¹⁰⁹ While historically EBA has been applied to the traditional battlespace, SNA provides the conceptual framework for the non-traditional battlespace. To address these concepts, the FASOC considers a range of 'engagement capabilities' that can be used to influence potential adversaries.¹¹⁰ These capabilities determine the RAF's contribution to the future operations and incorporate activity within the kinetic and non-kinetic domains. Additionally, there is a growing body of opinion in both the RAF and USAF that the Industrial Age battlespace has been overtaken by the Information Age battlespace. Mason argues that: 'technology has transported air power from the industrial to the information age...'.¹¹¹ In conceptual terms, the Information Age is more than the evolution of technology. As war and conflict is a political and a social institution, the Information Age concept suggests that the character of conflict may change as society and politics change. While the USAF is currently seeking to integrate air capabilities across mission scenarios that are relevant to the current security threat (CAS in the urban environment, time sensitive targeting, homeland defence and humanitarian relief) and is in the process of creating a Cyberspace Command to exploit the electromagnetic spectrum, both conceptually aim to use the Information Age to deliver the full range of military effect.¹¹² While the USAF approach to

Network Centric Warfare (NCW) and the RAF approach to Network Enabled Capability (NEC) will be considered later, harmonisation of doctrine should recognise that adversary action against networks will degrade the ability to sustain Information Age warfare. As a result, conceptual development and harmonisation needs to appreciate that destruction and domination, the by-words of Industrial Warfare, remain essential for strategic success. Importantly, the USAF recognises the conceptual need to defeat a traditional and conventional state adversary. General Keys highlights that while the USAF is spending time, 'trying to find one white SUV racing down the road (in Iraq). When you get to Korea, your problem is not finding one white SUV your problem's going to be 1,000 tubes of artillery (and) four tank armies.'¹¹³ While the 'Information Age' and the network provide a degree of sophistication to the use of force, it needs to be relevant to the nature of warfare. Both the RAF and the USAF will recognise the enduring conceptual conflict of aligning capability to fight today's conflict whilst planning for tomorrow's conflict.

Currently, UK/US doctrine is aligned through NATO or via specific bilateral arrangements. For example, bilateral cooperation on the US Shaping Concept, or Defence Contributions to Cooperative Security, aims to align US thinking with the UK's work on 'Influence' and soft power in the battlespace. While harmonisation can be enhanced with doctrinal and conceptual convergence, it would be inappropriate for the RAF, given its size and capability, to merely copy US doctrine. To do so would erode the ethos, heritage and unique perspective that the RAF is able to bring to the air environment. Nonetheless, strong links need

to be maintained and the newly formed RAF Concepts, Doctrine and Experimentation Committee (CDEC) provide an appropriate means to do so. Routinely chaired by the Directorate of Air Staff (DAS), the CDEC aims to evaluate and support air power capability development, provide oversight to the development of air environment doctrine, and identify and coordinate air and space requirements to joint doctrine.¹¹⁴ Part of the CDEC's remit will be to develop concept and doctrinal links using USAF and RAF exchange officers in DAS and the Pentagon respectively as the primary interface. However, US doctrine is developed in joint terms by J7 staffs within Joint Forces Command (JFCOM) and Department of Defense Central Staffs, while single service doctrine is developed by the individual services. This provides a challenge for the RAF in identifying the most appropriate path for doctrinal development and whether it should use the UK Development Concepts and Doctrine Centre as the means to achieve the understanding and alignment it seeks. The CDEC should provide the appropriate focus for this work and should also aim to provide earlier engagement with US staffs in order that the appropriate influence and perspective can be provided for conceptual and doctrinal development. However, while CDEC provides potential in this area, it will only routinely comprise of 10 RAF personnel who will undertake CDEC responsibilities in addition to their existing primary duties. The Australian Air Force has 20 personnel who are employed full-time on doctrinal and conceptual development and the RAF initiative, while positive, appears modest in comparison.

To offset this modest approach and provide broader coherency to harmo-

nisation lines of development, the RAF should create an 'Office of Air Power Integration' with responsibility for advocating and coordinating its relationship with the USAF and other Air Forces. This office would also have responsibility for the integration of air power and capabilities within the UK joint context and would follow the lead taken by the USAF when they merged the Office of War Fighting Integration with the Office of the Chief Information Officer in 2005.¹¹⁵ The USAF model seeks to coordinate and synchronise capability and achieve network-centric solutions, and a similar approach in the RAF would also have the benefit of providing coherency to such concepts as Networked Air Land Integration which is critical in the RAF's operating capability with the British Army and the USMC. Currently, responsibility for the various lines of development this paper has highlighted as critical in harmonising with the USAF fall to different organisations in DAS, Air Command, the Air Warfare Centre, the Air Attaché in Washington DC, and the Defence Concepts and Doctrine Centre. An 'Office of Air Power Integration' would bring a consistency and coherency of approach and provide alignment across this broad area of responsibility to the RAF Strategy and Development Plan. The organisation would also provide a single and credible point-of-contact in which the USAF and other Air Forces can interact with the RAF. Whether the organisation is based within DAS or Air Command will depend on manning offsets being found in organisations that have both been drawn down as part of wider efficiency savings. However, formation of the office would reinforce the RAF's commitment to air power integration and the importance of the air environment in the joint and coalition battlespace.

CAS highlights networked enabled air capability (NEAC), shared situational awareness, and Air C² as the fundamental building blocks upon which coalition and interoperable operations are built.¹¹⁶ The demand for information superiority, when combined with the ability of technology to create a faster tempo to operations, creates a challenge. While effective information acts as a force enabler, too much information is inefficient, delays decision-making, and reduces appreciation of the battlespace. In order to support harmonisation, it is essential that the RAF develop information management and NEAC across ubiquitous and interoperable networks and architecture. However, this will depend as much on technology as it will on the ability of its personnel, their training, and doctrine to be responsive to this challenge.¹¹⁷ This view is supported by General Moseley who reinforces the need to, 'break down the existing security and communication barriers – to affect not only the way we talk but the way we fight.'¹¹⁸ However, the conceptual and doctrinal difference between NEC and the US NCW creates a potential challenge for the RAF. UK NEC is defined as, 'Linking sensors, decision makers and weapon systems so that information can be translated into synchronised and overwhelming military effect at optimum tempo.'¹¹⁹ Conceptually, NEC aims to deliver an evolutionary change to operational capability through deliberate and incremental changes in doctrine, equipment and processes.¹²⁰ Rather than the evolutionary change favoured by the UK, the US Office of Defense Transformation identifies NCW as the core concept in joint military transformation.¹²¹ Therefore, in seeking to harmonise the network the RAF should be cognisant of the emphasis of US NCW, which seeks

to share information across the Joint Force, and ensure that like the USAF, it only develops capabilities that can do likewise within the UK context.¹²² The FASOC would seem to address some of these issues and provides a longer-term view of the potential change that NEC can deliver to the RAF's operational capability. However, this long-term view fails to address the short-term issues. Specifically, how NEC can address the specific demands of the air environment, how coherence can be provided to the development of NEAC, and how interoperable systems with the US can be developed in order to enable fully networked Air C² and TTNT.¹²³

While the security classification prohibits this paper from conducting a detailed analysis of NEAC requirements, progress is required across a number of fronts. Management tools to enable shared situational awareness and decision superiority, via US JADOCS¹²⁴ for example, require appropriate 'gateways' across network architecture and a procurement decision to extend the ability to exchange imagery and intelligence products from the US DCGS¹²⁵ are two such examples. However, while these are equipment centric, the development of NEAC and interoperability with the US also requires a cultural and organisational change. Greater emphasis and coherency is now required in developing the RAF's NEAC capability to ensure that the requirements of the air environment are not marginalised. The RAF has already recognised that a realignment of personnel within relevant staff appointments may be required and that the USAF should be represented at the appropriate level within a focused and empowered NEAC organisation if an essential enabler of harmonisation is to be realised. Importantly, appropriate

training and experimentation with the US of NEAC capability will also be required and progress along these lines of development can form the basis of measurement towards CAS' strategic aim.¹²⁶ However, the challenge facing the RAF is the relative priority it gives to NEAC interoperability with the USAF when compared to developing NEC in the joint UK context. Importantly, interoperability only provides the means to share information – networked capability will only be genuinely achieved if there is also a cultural desire to share information in the first place.

Whilst acknowledging that development of capability, concepts and doctrine is important, the ability of personnel to operate within, and appreciate, the USAF environment is equally so. Like equipment, personnel must be interoperable, networked, and harmonised. Moreover, trust and confidence, built on shared understanding and common goals are essential ingredients if the RAF is to develop the harmonisation it seeks. Although greater emphasis is now being placed on improving the cultural understanding of potential adversaries, it is equally important that cultural understanding of potential coalition partners is also achieved. In 2004, and to develop a closer working relationship with the USAF on personnel matters, the Air Member for Personnel co-sponsored a joint work plan between Headquarters Personnel and Training Command and the USAF Air Education and Training Command (AETC).¹²⁷ As a result of this work, close working relationships were developed between RAF and USAF recruiting and flying training staffs and the RAF Leadership Centre at RAF Cranwell established links with the USAF Strategic Leadership Office. Latterly, visits by RAF training policy

and personnel management staffs to the USAF Air War College and Air Force Personnel Centre have served to reinforce and sustain the working level engagement that are now routine. While these informal links have served to enhance shared experience and understanding across a range of personnel and training related issues, the increase in the number of RAF personnel engaged in exchange appointments¹²⁸ within the US military is particularly relevant. Table 1 shows the increase in the number of RAF personnel in exchange appointments, by US component, from 2003 to 2007.¹²⁹

Location/year	1 March 2003	1 March 2007
US Army	1	1
USAF	39	51
US Coast Guard	1	1
USMC	3	3
US Navy	8	9
Total	53	63

Table 1. The increase in the number of RAF Exchange Appointments in the US by component on 1 March 2003 and 1 March 2007

While this increase is indicative of a closer relationship between the RAF and the USAF, of more relevance is the nature and level of exchange appointments that RAF personnel are now filling. For example, an RAF Group Captain is currently undertaking a Divisional Chief appointment within the Pentagon and is the first non-US officer to do so. The reciprocal arrangement has resulted in a USAF Colonel working within the future concepts area of the DAS in MoD. In addition, RAF pilots currently fill posts on the FA/22, B2 and F117 aircraft and RAF personnel of No 1115 Flt are embedded as a UK national element within the USAF's UAV 57TH Operations Group and UAV

battle laboratory. Within the training environment, in addition to places on the USAF Staff Course at Maxwell Air Force Base, the RAF now selects officers for the Joint Advanced Warfighting Course and the School of Advanced Air and Space Studies. Moreover, RAF participation on exercises such as Red Flag serves to further develop integration and understanding of air power. Although RAND argue that, 'there are limits to which any nation is willing to trust another',¹³⁰ the increase in joint exercises, the enhancement of exchange appointments, in both numbers and the influence it can deliver, and the level at which liaison is now commonplace, underlines the importance of shared understanding, confidence building and developing mutual trust between the USAF and RAF. As General Moseley argues, 'strong habitual relationships forged between...coalition partners provide the vital foundation of communication and trust that enables interdependent operations.'¹³¹

While relationships at the working level are important, it is critical that cooperation and the will to achieve harmonisation also exist at the highest level. In January 2007 the Air Chiefs of the USAF, RAF, RAAF and Canadian Air Force met at Williamsburg for meetings and presentations to discuss issues facing their respective services. While the fact that the Air Chiefs met may be more significant than the discussions themselves, CAS commented that, 'The conference provided a unique opportunity to discuss the challenges faced by our respective air forces and highlighted how much we have in common.'¹³² CAS highlighted the future environment in which air power must deliver effect, considered capability shortfalls in the RAF, and underlined the point raised in this paper that the UK's role in future

operations is likely to be contributing rather than leading. General Moseley introduced 67 initiatives for the USAF ranging from reinforcing joint and interdependent operations and developing the USAF's personnel component. Importantly, General Moseley underlined the importance of refocusing Air Force to Air Force relationships and the need to increase in exchange postings which this paper has highlighted. A further meeting of Air Chiefs is due in December 2007 and is the clearest evidence of a desire and commitment to improve, 'overall operational capability and the desire for truly integrated air operations.'¹³³ This commitment responds primarily to an evolving paradigm where security threats are engaged in a complex and non-linear battlespace by air power delivered as part of an integrated coalition force in a joint environment. Without the long-term leadership and strategic intent of the Air Chiefs, the integration that this new paradigm demands is unlikely to succeed. It is therefore critical that this 'high-level' relationship continues and is not undermined by changes in personnel.

Different Air Chiefs and their successors will usually seek to define their leadership and tenure with shifts in focus and strategy and there is a risk that the RAF/USAF 'special relationship' may receive less emphasis in the future than is currently the case. This paper has highlighted a range of areas where the relationship is strong and introduced a number of initiatives where it continues to develop – there are many others. Nonetheless, there is a risk that momentum may be lost if those at the higher levels of each Service do not build on the foundations of the Williamsburg meeting and similar working level engagements. While the harmo-

nisation of air power will depend on equipment, concepts and doctrine, working relationships and professional understanding at all levels will provide the personal and intellectual horse power to drive harmonisation forward. Importantly for the RAF, relationship building is a relatively low-cost option when compared with the price of equipment integration. Whilst its effect is difficult to quantify, the development of harmonisation can be measured against the frequency of integrated training and exercises and the number and type of exchange appointments, with additional weighting being placed on those appointments that deliver the most influence. The RAF faces a challenge in this respect. As this paper will show later, the RAF faces continued budgetary pressure and the natural and appropriate reaction is to protect the front-line capability by seeking savings and efficiencies in other areas such as manpower. As the pressure on the manpower ceiling and costs increases, so the flexibility to provide personnel for appointments and training in the US reduces. It is therefore necessary for the RAF and USAF to conduct a 'strategic' review of exchange appointments so that posts where the best value and influence can be gained are identified. Thereafter, the exchange process with the US should be operationally focussed and subjected to appropriate Air Rank supervision in order to provide the relevant coherence and scrutiny across the harmonisation lines of development. While the exchange process should continue to be managed by the Chief of Staff Personnel area within Air Command, oversight should be provided by the 'Office of Air Power Integration' that this paper suggests should be created.

Harmonisation – Politically Acceptable and Affordable?

While the Williamsburg meeting was important for what was discussed, it was also important in respect of the Air Forces represented. As this paper has suggested, the drive towards harmonisation with the US, and other RAF initiatives with the RAAF, is indicative, in part, of a new strategic emphasis on flexible 'coalitions of the willing' in response to global security threats. Importantly, no other European Air Force was represented at Williamsburg and this may support the view of Kagan that, strategically, US and European perspectives are diverging.¹³⁴ While CAS' strategic priority may suggest that the RAF sees its future divorced, or at least separated, from the European defence environment, CAS denies that harmonisation with USAF is 'anti European' and underlines the role that the RAF can play by bridging the gap between USAF and European Air Force integration.¹³⁵ The inter-relationship between the evolution of NATO, the development of a European Defence and Security Policy (EDSP) framework and the role of the US is not straightforward and the emphasis on these relationships continues to change and evolve. From the St Malo Declaration and Helsinki Agreement to transatlantic rifts over the invasion of Iraq in 2003, to the NATO Istanbul Summit in 2004, the political impetus in the UK for greater European Defence cooperation has waxed and waned. Despite this, European defence cooperation at the operational and tactical levels has been maintained with the RAF and German Air Force cooperation in the SEAD capability area, the formation of the European Rapid Reaction Force (ERRF), the provision of European Strategic Airlift, and the development of the European Air Group.

This paper does not propose to debate whether the RAF should make an either/or choice between closer integration with the USAF, or integration within a regional European context in order to pursue Garden's vision of a European Air Force.¹³⁶ Garden's focus on closer European Union (EU) air integration is motivated primarily, but not exclusively, as a means to improve capability and minimise the increasingly prohibitive costs of defence inflation. While these arguments are relevant, the discourse has been polarised into a debate as to whether integration of an independent EU military force is necessary to rival US hegemony (the French vision) or whether military integration is a means to make Europe a strategic partner of the US (the UK vision) and to create a European pillar under NATO.¹³⁷ Both these views recognise that the EU lacks the capability, such as PGMs, Air C², AAR, strategic lift, and secure communications,¹³⁸ to project credible military power and both seek to influence the US, albeit using different means to do so.¹³⁹ These capability deficiencies were seriously exposed during Operation ALLIED FORCE and have led the US to demand progress on closing the 'capabilities gap' between the US and Europe before the latter can be treated as an equal strategic partner. This desire is borne out by O'Hanlon who considers that, 'The strengths, capabilities, and cohesion of the members of the NATO alliance therefore have important global implications for the US.'¹⁴⁰ This paper has already argued that the US Military Strategy seeks to 'enhance the capabilities of partners' and despite NATO and EU initiatives such as the Prague Capability Commitments, Helsinki Headline Goals, the NATO Response Force and the ERRC, the gap between the US and its European allies continues to grow.¹⁴¹

Comparison of relative defence expenditure only serves to underline the problem. NATO Europe spends around \$12 billion annually on defence research and development, while the US spends up to \$70 billion annually.¹⁴² Nonetheless, there has been progress and the US Joint Forces Command has established strong ties to NATO in order to develop new operating concepts and the 2004 Istanbul Summit led to agreement on developing the expeditionary capability of military forces.¹⁴³ However, with the capability gap comes a credibility gap and if the European allies are to play a substantive role in future US-led coalitions they must deliver the necessary capability and interoperability rather than merely making declarations of longer-term intent. Furthermore, Kagan argues that Europe's military weakness has also resulted in a lack of political influence with the US.¹⁴⁴ Harmonising with the USAF implies a vision of the future RAF as the 'partner of choice' for the USAF rather than as the dominant partner in the European context. However, this view over simplifies the debate. The RAF can assume both roles and harmonisation with the USAF enables the RAF to set the benchmark against which other European Air Forces can align their capability with the US. This paper does not accept the view of Clarke that, 'NATO is struggling to remain relevant to the US.....and the changed strategic landscape may cause soul-searching in Washington over the way in which it operates with allies'¹⁴⁵. Nonetheless, the RAF is right to pursue air power integration with the USAF because it is this approach that delivers the full range of air power effect while allowing the RAF a unique position of influence within the USAF planning and execution mindset. By doing so, it reinforces its credibility in the European context. Dumbrell

argues that, 'for British foreign policy, closeness to Washington serves always to enhance, not to destroy, other dimensions of international British influence,'¹⁴⁶ and the RAF should view its relationship with the USAF and other European Air Forces in similar fashion. However, it may be necessary for the RAF to reinforce its European credentials in order to dispel any concern or misunderstanding that harmonisation with the USAF may create.

As this paper has already argued, the RAF must maintain a broad and balanced capability not just to satisfy the requirement of UK Defence Policy but also to provide a credible 'high-end' warfighting capability which can be harmonised with the US military. However, the single largest challenge facing the RAF in pursuing this approach does not come from Europe, but from Whitehall. One of the key drivers of RAF transformation since the end of the Cold War has been the reduction of UK defence spending as a share of GDP. Even if defence spending remains level in real terms, its share of GDP will have declined from 5.3% in 1982 to 1.3% by 2020.¹⁴⁷ Moreover, the share of government departmental expenditure for the MOD has dropped from 17% in 2000 to 12% in 2005, with the difference absorbed from the Health, Local Government, and Education Departments.¹⁴⁸ Although overall government expenditure has also risen, the political battleground and focus of government expenditure is likely to remain on the Health and Education Departments. This tension is likely to increase in the short-term with the Comprehensive Spending Review (CSR) 2007. Critically, while the FASOC underlines the RAF's desire to retain a balanced capability across the spectrum of operations,

it does not address the degree to which the retention of this capability will be put at risk in the light of future budgetary constraints.

Pressure on government expenditure, such as the CSR, when combined with the effects of Defence Inflation¹⁴⁹ and the doubling of equipment costs every 7.5 years, will potentially affect the RAF's ability to maintain the balanced capability that is a prerequisite for harmonisation with the USAF. Difficult decisions will be required. Since the end of the Cold War, budgetary pressure has seen a reduction in force numbers and this trend is unlikely to change.¹⁵⁰ Moreover, this trend is unlikely to be reversed while the UK Military engage in operations overseas and where the link to the defence of national security, at least in the perception of the public, is tenuous at best. Even if this link is made, Defence is unlikely to join Health, Education and Pensions in the 'premier league' of government expenditure.¹⁵¹ As a result, continuing budgetary pressure is likely to result in the RAF taking greater risk in the depth of its capability rather than removing a capability altogether. The Times reports that reductions in the Typhoon force, JSF, and FSTA are already being considered.¹⁵²

Historically, policy-makers have sought to offset the gap between resources and commitments by pursuing a parallel approach of seeking greater efficiencies in defence spending while maximising effectiveness in Defence outputs.¹⁵³ This has been particularly evident in RAF spending, which has seen a significant increase percentage spend on its 'front-line' at the expense of its 'overheads' in the support area.¹⁵⁴ Analysis of the RAF's spending profile on capability areas, as a percentage of the RAF

Capability Area/Year	1976	1992	2002	2003	2004
	%	%	%	%	%
AD/Strike/Attack/Recon	43	48	64	66	68
Maritime	5	4	12	8	5
Transport/AAR	9	11	13	14	16
Training/HQ/Support	43	37	11	12	11

budget, between 1976 and 2004, is set out in *Table 2*.

Table 2. The percentage of the RAF budget spent on broad capability areas from 1976 to 2004

The increase in percentage spend on the front-line is indicative of the RAF's desire to retain a 'high-end' warfighting capability, while the increase within the air transport and AAR areas is indicative of the development of Rapid Global Mobility. In contrast, in the period 1998 to 2006, the USAF spent 24% of its budget on joint combat forces (close air support, loitering indirect fires, and advanced air to ground munitions), 45% on joint force enablers (C4ISR, airlift and AAR), and 31% on overheads.¹⁵⁵ To maintain its balanced capability, the RAF has reduced 'overheads' in seemingly relentless drives for efficiency, re-organisation and rationalisation. Although most of the 'quick wins' have already been taken, continuing budgetary pressure will inevitably lead to further reductions in 'overheads'. Leaning, rationalisation, efficiency will remain a constant paradigm in the future RAF.

This essay has argued that the RAF must maintain its balanced, 'high-end' warfighting capability. To do so, in a technologically demanding environment and long procurement cycles, will require difficult decisions. While harmonisation with the USAF might suggest that it is more efficient and cost effective for the RAF to exclusively procure US equipment, this is an overly simplistic

approach. This paper has already argued that the RAF is configured to undertake a range of operations without the US and the requirement for operational sovereignty requires UK industry to support,

modify and sustain defence equipment independently.¹⁵⁶ This approach has been reinforced by the Defence Industrial Strategy (DIS) which, for example, sees no requirement for UK industry to design and build manned aircraft after Typhoon and JSF, although procurement must include some through-life 'value' for the UK defence industrial base.¹⁵⁷ This provides the opportunity for more efficient and economic procurement and the UK is likely to look to the US for its high technology defence assets. However, it will also require assurances on technology transfer and that key skills are preserved in order that the UK can retain operational sovereignty in maintaining and upgrading equipment. Despite the potential of the DIS, the balance between what capability it wants and what capability it can afford will remain a consistent aspect of RAF procurement issues for the foreseeable future. Much will depend on the outcome of the CSR 07 and a poor settlement for the MoD may result in a new Defence Review or the RAF taking its share of reductions in the Equipment Programme. Both outcomes may adversely impact on the capacity of the RAF to maintain a broad and balanced capability.

Conclusion

By seeking to harmonise its air power capability, concepts and doctrine with the US Forces, CAS is shaping a new chapter in the RAF and USAF relationship. Given the shared heritage and operational history of both Air Forces,

CAS' aim is neither revolutionary nor surprising, but it does recognise a new security environment, a new battlespace, the prevalence of coalitions to react to these challenges, and an appreciation that merely standardising capability is an insufficient response. As USAF military superiority will continue for the foreseeable future, CAS' aim is a realist and pragmatic approach to the current strategic and operational environment.

Harmonisation, as a concept is not well defined, and further research will be required to demonstrate its utility in doctrinal and conceptual terms. This paper has argued that while interoperability requires both equipment and personnel to work collaboratively to achieve an effect, harmonisation, when combined with the necessary political will, can achieve a demonstrably greater effect. This thesis is theoretical and its practical application is complicated by the nature of the security environment in which harmonisation must be delivered. Given the dynamic nature of security threats and the contrasting military responses to meet these threats, harmonisation is likely to be an evolutionary process and a means to an end rather than an end in itself. As such, harmonisation can be best described as a journey rather than a destination. Nonetheless, whilst at one level harmonisation is a force multiplier and enabler, it has broader implications for the RAF and the USAF. By minimising differences and maximising the combined effect of capability, harmonisation provides the potential for both forces to operate in 'spaces', at the strategic, operational and tactical levels which hitherto have been denied or restricted.

Despite the importance of the 'special relationship' between the USAF and



**Bombing of Iraq cities
by coalition forces**

RAF, it is not unconditional and the RAF remains the junior partner. It would be irresponsible and wholly inaccurate to suggest that the relationship is equal and similarly incorrect to describe harmonisation as being equally beneficial to both the RAF and the USAF. In strategic terms, the UK considers its partnership with the US of critical importance and the US, chastened by its inability to turn military power into decisive influence, increasingly recognises that diplomacy and multinational cooperation are valid means to pursue its national interest. While the US military remains a realist force for good for the US, it is now more willing to seek greater legitimacy for its actions and to share political and military risk via 'coalitions of the willing.' In operational terms, this provides an incentive for the USAF to develop integrated coalition air operations and to increase the capabilities of its partners to 'join the joint fight.' Consequently, harmonisation is not a one-way street. While harmonisation benefits the RAF by allowing it to mitigate the capability

risk that it holds, the RAF can also provide reciprocal benefit to the USAF by plugging capability shortfalls as it did during Operation IRAQI FREEDOM. Indeed, there is evidence that despite its superiority in the 'high-end' warfighting spectrum, the USAF will continue to use the RAF to augment capability shortfalls in the combat enabling areas such as AAR, tactical reconnaissance, force protection, and air campaign planning. Despite this focus, the USAF implicitly places conditions on air power integration. In order to maintain its relevance, influence and credibility, therefore, the RAF must maintain a 'high-end' warfighting capability. It must also ensure that it retains a degree of technological parity with the USAF, via JSF for example, and procures air assets that can integrate and operate in high air threat environments. This will demand a minimum standard of capability from RAF procurement strategies and continued development of NEAC and fully networked Air C²; it also requires the retention of the RAF's combat and combat enabling capability as a precondition for harmonisation.

Harmonisation can only be achieved by pursuing strategies across the appropriate lines of development, while maintaining coherence with the RAF Strategy and Development Plan. The formation of an Office of Air Integration could provide the necessary coherency to this work and deliver the necessary intellectual horsepower to make harmonisation a reality. While early and closer alignment of doctrine and concepts will be necessary, the RAF should ensure that it retains its unique experience and perspective of the air environment. This perspective has allowed the RAF to maintain significant influence in USAF air campaign planning where the RAF

has much to offer. However, while the extent of harmonisation between the USAF and RAF will be supported by doctrinal and conceptual development, and determined by the degree to which shared situational awareness is achieved in the battlespace, its ultimate success will be dependant on building trust, understanding and confidence among the personnel component at all levels. The extension of the RAF/USAF exchange programme and an increase of integrated training and exercises, when combined with the will of Air Chiefs to enable harmonisation, can deliver the shared understanding, confidence, and mutual trust that will ultimately define whether harmonisation is successful.

A number of challenges lay ahead. Harmonisation with the USAF may be viewed as a unilateral act that seeks a definitive departure from closer integration of European air power. Such discourse can become politically polarised. Nonetheless, while CAS seeks to maintain and develop the RAF's position as 'partner of choice' for the USAF, this does not necessarily suggest that the RAF seeks to disengage from its European partners. Indeed, the opposite would seem to be the case and the RAF can act as the bridge upon which closer US and European air power integration can be encouraged. Therefore, while harmonisation with the US may be considered as a definitive move away from Europe, this overly simplifies the debate and fails to address the possibility that there is merit in pursuing one strategy as a means of developing the other. Nonetheless, appropriate reassurances to European partners may still be required. However, the single greatest challenge to harmonisation comes not from Europe, but from Whitehall. Since the end of the Cold War, the RAF has mitigated the

impact of declining defence budgets by drawing down its force structure and significantly reducing its overheads. Given the political focus on Health and Education, the defence budget will remain under pressure and the CSR 07 will provide the first significant challenge to CAS' aim. A poor settlement has the potential to affect the RAF's ability to maintain the broad and balanced capability that is essential to harmonisation with the USAF. It is therefore critical that the RAF continues to argue the case for combat and combat enabling air power as a relevant and affordable means to deliver integrated effect in the joint and coalition battlespace.

Acknowledgements

The author would like to thank ACM Sir Glenn Torpy, Air Cdre Goodman, Gp Capt Hill, Col Rand Miller (USAF), Gp Capt Cass, Gp Capt Gibson, Wg Cdr Gudgeon, Cdr Robertson (RN), Professor Uttley, Dr Davis, and Dr Goulter for their advice and support in completing this paper.

Bibliography

Books

Cooper, Robert., *The Breaking of Nations*, (London: Atlantic Books (2004).

Dimbleby, David., & Reynolds, David., *An Ocean Apart* (London: Guild Publishing, 1988).

Dumbrell, John., *A Special Relationship – Anglo-American Relations from The Cold War to Iraq*, (Basingstoke: Palgrave Macmillan, 2006).

Kagan, Robert., *Paradise and Power*, (London: Atlantic Books, 2003).

Lacquement, Richard., *Shaping American Military Capabilities After the Cold War*, London: Praeger, 2003).

Lambeth, Benjamin, S., *The Transformation of American Air Power* (New York: RAND, 2000).

Lock-Pullan, Richard., *US Intervention Policy and Army Innovation*, (London: Routledge, 2006).

O'Hanlan, Michael, E., *Defense Strategy for the Post Saddam Era*, (Washington DC, Brookings Institute, 2005).

Articles

Air Force Association Special Report., 'Strategy, Requirements and Forces – The Imperative of Air and Space Power', (Aerospace Education Foundation, 2003).

Baldwin, Wg Cdr K J., 'Can Europe Project Air Power Without the Support of the United States?', *Air Power Review*, Spring 2001, pgs 58-79.

Barry, Charles, L., 'Coordinating with NATO', in *Transforming America's Military*, Binnendijk, Hans, (ed.), (Washington DC, National Defence University, 2002), pgs. 231-258.

Bolkcom, Christopher., 'Air Force Transformation', CRS Report to Congress, (The Library of Congress, updated 18 January 2006).

Burridge, Air Chief Marshal Sir Brian, 'Strategic Guidance and the Context for Air Power', *RUSI Journal*, June 2004., 30-33.

Cebrowski, Arthur, K., 'Transformation and the Changing Character of War?', in *Warfighting*, Air War College, (2005)

Chau, Donovan, C., 'Political Warfare-An Essential Instrument of US Grand Strategy Today', *Comparative Strategy*, 25: 121-131, 2006

Chao, Pierre, & Niblett, Robin., *Trusted Part-*

ners: Sharing Technology within the US/UK Security Relationship, (CSIS Working Paper, 26 May 2006).

Clarke., Professor Micheal., 'NATO and the EU: Strategic Futures in the 'War against Terrorism' in A Second Aerospace Century, John Andreas Olsen (ed), The Royal Norwegian Air Force Academy (2001).

Clarke, Professor Michael., 'The Political Context of Air Power in the United Kingdom' in British Air Power, P W Gray (ed), JDCC, (2003).

Codner, Micheal., 'Integration and Interoperability: The Who and the What', RUSI Journal, October 1996, pgs., 35-38.

Cox, Sebastian., 'Aspects of Anglo-US Cooperation in the Air in the First World War', Air and Space Power Journal., Winter 2004.

Deptula, Maj Gen. David, A., 'Air Force Transformation Past Present and Future', Air and Space Power Journal, Autumn 2001, [online]. Available from: <http://www.airpower.au.af.mil/airchronicles/api/api01/fall01/phifa01.html> [Accessed 15 October 2006]

Dudney, Robert, S., 'USAF - A force for the long run', Air Force Magazine, 4 December 2006 [online]. Available from: <http://aim-points.hq.af.mil/display.cfm?id=15376>. E-mail to Sharper.jscsc@defenceacademy.mod.uk

Dutton, Jim, & Waldhauser., 'Operation Iraqi Freedom – US/UK Operations', RUSI Journal, December 2003., pgs., 8-14.

Engler, Glodowski, & Lee, 'Coalition Operations, Politically Essential, Operationally Challenging', (Joint Forces Staff College, 8 Mar 04)

Flanagan, Stephen J., 'Sustaining US-European Global Security Cooperation', National

Defense University Strategic Forum, September 2005.

Finn, Gp Capt Christopher, & Berg, Lt Col Paul (USAF), 'British American Cooperation in Air power and Space Power', Air and Space Power Journal., Winter 2004.

Finn, Gp Capt Christopher, & Berg, Lt Col Paul (USAF), 'Anglo-American Strategic Air Power Cooperation in the Cold War and Beyond', Air Power Review., Winter 2004., pgs., 41-55.

Gardner, Sqn Ldr Sophy, 'Operation Iraqi Freedom: Coalition Operations', Air Power Review, Winter 2004, pgs., 83-95.

Gates, David, 'The US-UK 'Special' Relationship and Aerospace Power' in Gray, Peter, (ed.), British Air Power (London: The Stationary Office, 2003) 131-150.

Goulter, Dr C., 'Air Power and Expeditionary Warfare in Gray, P., (ed) Air Power 21: Challenges for the New Century., (London: The Stationary Office, 2000)

Gray, Colin, S., 'The Quadrennial Defense Review (QDR), 2006, and the Perils of the Twenty-First Century', formal text of lecture delivered to the Department of Defense and Strategic Studies of Missouri State University, 3 March 2006.

Grimes, Lt Col Malcolm (USAF), & Ferguson, Maj Donald (USAF), 'Joint Publication 3-16, Joint Doctrine for Multinational Operations', Air and Space Power Journal., Winter 2004.

Gudgeon, Wg Cdr Andy., 'Warfighting Integration: Delivering NEC to the Warfighter Today and Tomorrow', Service Paper, March 2007.

Hughes, Dr Alexander., 'Air Lines: Anglo-

American Tactical Air Operations in World War II', *Air Power Review*, Winter 2004, pgs. 23-37.

Kampelman, William, R., 'A Serious Look at Our World', formal text of lecture delivered to the Department of Defense and Strategic Studies of Missouri State University, 27 Apr 2006.

Kem, Dr Jack, D., 'Military Transformation – Ends Ways and Means', *Air and Space Power Journal*, Autumn 2006, pg 85-93.

Kluger, Richard, L., & Binnendijk, Hans., 'Choosing a Strategy' in *Transforming America's Military*, Binnendijk, Hans, (ed.), (Washington DC, National Defence University, 2002), pgs. 57-97.

Lindley-French, Julian., 'The Revolution in Security Affairs: Hard and Soft Security Dynamics', in *European Security*, 2004.

Jones, Omar., (ed), 'Security Cooperation – Working with Others in a Globalised World', Comments made by Krauthammer, Dr Charles, Ikenberry, Dr John, and Funa-bahsi, Dr Yoichi., during Eisenhower National Security Conference, September 2002, pgs. 103-139.

Jones, Wg Cdr R W., 'The Implications of European Security and Defence Identity for Future Air Force Structure 2015-2030', *Air Power Review*, ???, pgs 82-96.

Martin, Gen.Gregory S., 'A Second Aerospace Century - Options for the Future', in *A Second Aerospace Century*, John Andreas Olsen (ed), The Royal Norwegian Air Force Academy (2001)

Mason, Professor Tony., 'Air Power in Coalition', in *A Second Aerospace Century*, John Andreas Olsen (ed), The Royal Norwegian Air Force Academy (2001)

Metz, Steven., 'America's Defense Transformation: A Conceptual and Political History' in Chin, Warren., and Dorman, Andrew., (eds), *Defence Studies*, The Journal of the Joint Services Command and Staff College (Abingdon: Taylor & Francis, 2006) 1-25.

Meilinger, Philip, S., *Air War Theory and Practice*, (London: Frank Cass Publishers (2003)).

Meilinger, Philip, S., 'Working with Allies: The USAF and the RAF' in Gray, Peter, (ed.), *British Air Power* (London: The Stationary Office, 2003) 117-130.

Moseley, T. Michael. (2006) 'Interdependence and Coalition Operations', *RUSI Defence Systems*, Spring 2006, p.24-25.

Moseley, T. Michael. (2006) Speech to the Air and Space Conference and Technology Exposition, 27 September 2006 [online]. Available from: http://www.afa.org/media/scripts/conf2006_Moseley.asp [Accessed 7 November 2006]

Naumann, General Klaus., 'From Cooperation to Interoperability', *NATO Review*, July 1996., pgs 17-20.

Pugh, Philip., Kirkpatrick, Professor David., Brookes, Andrew., Blackham, Sir Jeremy., Howarth, Gerald, MP., 'Our Unaffordable Defence Policy: What Now?', *RUSI Defence Systems*, Autumn 2006, pgs., 12-17.

RAND., 'Interoperability – A Continuing Challenge in Coalition Air Operations', (RAND, Arlington, 2000).

Read, Col Robyn, USAF Rtd., 'Coalition Warfare: Coordination and Planning Options', *Air power Research Institute*, Air University, 2003.

Sabin, Professor Philip., 'The Changing Face

of Conflict', in *A Second Aerospace Century*, John Andreas Olsen (ed), The Royal Norwegian Air Force Academy (2001).

The National Military Strategy of the United States of America, 'A Strategy for Today; A Vision for Tomorrow (Joint Chiefs of Staff, 2004).

Tucker, Flt Lt D., 'Preparing the Way for Cooperation in European Air Power', *Air Power Review*, Spring 2004, pgs 45-57.

Turner, Mike., Chief Executive Officer, BAe Systems, to the Washington Economic Club on 10 May 2006, <http://www.baesystems.com/Newsroom/.html>, accessed on 22 April 2007.

Uttley, Professor Matt., 'Public-Private Partnerships in United Kingdom Defence: Opportunities and Risks', *RUSI Defence Systems*, Autumn 2006, 82-84.

Uttley, Professor Matt., 'The Management of UK Defence' in *Britain and Defence 1945-2000*, Croft, Stuart, & others (ed), (Harrow: Longman, 2001).

Wolsztynski, General Richard., 'The French Air Force: European Integration Factors', *RUSI Defence Systems*, Spring 2006, pgs 26-27.

Wood, Jason, D., 'Survival of the Fittest: The Evolution of US Military Command and Control Structures During and After the Cold War', *Comparative Strategy*, 25: 121-131, 2006

Official Documents

2005 Air Force Transformation, 'The Edge', (USAF, 2005)

Air Publication 3000, *British Air Power Doctrine*, 3rd Edition, 1999, pg. 3.13.6.

Air Publication 3002, *Air Warfare*, 1st Edition,

(London: Crown Copyright 2006).

Capability Management Handbook, Interim Edition, (Ministry of Defence, 26 February 2007) Draft Paper to CAS., *The Delivery of a Network Enabled Air Capability*, (18 Feb 07).

FASOC Wargame Engagement Capability White Paper, undated.

Future Air and Space Operating Concept, (London: Directorate Air Staff, 2006).

Joint Discussion Note 1/07, Joint Action, (DCDC, February 2007).

Joint Doctrine Publication 1.02, *Department of Defense Dictionary of Military and Associated Terms*, April 2001 amended to March 2007.

Joint Services Publication 777., 1st Edition, *Networked Enabled Capability*, (Ministry of Defence, 2005).

Joint Vision 2020, (Washington DC, Joint Chiefs of Staff, June 2006)

Joint Warfare Publication 3-00., 'Joint Operations Execution', 2nd Edition, March 2004.

Ministry of Defence Policy Paper No 2., 'Multinational Defence Cooperation', (Director General of Corporate Communications, February 2001).

Royal Air Force Strategy 2006, (London: The Stationary Office, 2006).

Strategic Defence Review, (London: The Stationary Office, 1998).

Strategic Defence Review New Chapter, (London: The Stationary Office, July 2002).

The National Military Strategy of the United States of America (Washington DC, Joint Chiefs of Staff, 2004).

The National Security Strategy of the United States of America (March 2006).

UK Government Policy Review, Building on Progress: Britain in the World, Prime Minister's Strategy Unit, April 2007.

House of Commons Defence Select Committee Reports

HCDC Report., The Defence Industrial Strategy: Update., published 15 February 2007.

Defence Research Papers

Allen, Maj D A J., In Keeping with the US, can the UK maintain a balanced capability?', (JSCSC, 2004).

Moore, Wg Cdr CJ., 'Network Enabled Capability – From Concept to Reality', (JSCSC, 2005)

White, Maj S W., 'How must the United Kingdom adapt to the Changes of the Twenty-First Century 'Revolution in Military Affairs', (JSCSC, 2005).

Presentations

Presentation by Professor Bruce Jentleson to ACSC Students, JSCSC, 31 January 2007.

Newspaper Articles

RAF News., 'CAS in Historic Meeting', Edition 1167., dated 16 February 2007.

The Times., 'Treasury Threatens to Cut £35bn of Defence Projects', 5 March 07.

Web-sites

<http://www.iwar.org.uk/rma/resources/uk-mod/nec.htm>, accessed 1 May 2007.

<http://www.mod.uk/DefenceIntranet/AboutDefence/Organisation/DefenceVision.htm>, accessed on 15 May 2007.

<http://www.mod.uk/defenceinternet/defencenews/pressrelease.htm> accessed on 18 May 2007.

Interviews

Interview with Air Chief-Marshal Sir Glenn Torpy,

Chief of the Air Staff, 9 January 2007

Interview with Professor Matthew Uttley, 5 January 2007

Notes

1 Joint Doctrine Publication 0-01.1., United Kingdom Glossary of Joint and Multinational Terms and Definitions, 7th Edition, June 2006.RAF News., Edition 1167., dated 16 February 2007., pg. 24.

2 RAF Strategy 2006., (Directorate of Air Staff, 2006)., pg. 5.

3 Cooper, Robert., The Breaking of Nations, (London: Atlantic Books (2004)., pg. 45.

4 Dumbrell, John., 'A Special Relationship', (Basingstoke: MacMillan, 2007), pg. 6.

5 Dumbrell., op.cit., pgs., 6/15.

6 Quoted in Dumbrell., op.cit., pg., 273.

7 Ibid.

8 For example, views on climate change, the Kyoto agreement, and the International Criminal Court.

9 US National Security Strategy 2006, Washington DC, The White House, March 2006.

10 Chao & Niblett, Trusted Partners: Sharing Technology within the UK/UK Security Relationship, (CSIS Working Paper, 26 May 2006)., pg. 9.

11 Dimpleby & Reynolds., An Ocean Apart, (London: Guild Publishing, 1988), pg. 331.

12 Defence Strategic Guidance 2005 lists the UK's key security regions as Europe, Near East, North Africa, and the Gulf, with Sub-Saharan Africa, & South Asia added later.

13 Chao & Niblett., op.cit., pg., 16-17.

14 Geoff Hoon, then Secretary of State for Defence, speech to RUSI, 26 June 2003.

15 UK Government Policy Review, Building on Progress: Britain in the World, Prime Minister's Strategy Unit, April 2007., pg.33.

16 In a speech on 12 January 2007, Prime Minister Blair stated that the threat from international terrorism may 'last a generation'.

17 Finn, Gp Capt Christopher., & Berg, Lt Col Paul., 'British-American Cooperation in Air power and Space Power', Air and Space Power Journal, Winter 2004., pg., 11.

18 Meilinger., op.cit., pgs., 122/125.

19 See Dumbrell, Dimpleby, for example.

20 Cox, Sebastian., Aspects of Anglo-US Cooperation in the Air in the First World War., Air and Space Power Journal., Winter 2004., pg., 27.

- 21 Meilinger, Philip, S., *Working with Allies: The USAF and the RAF*, in Gray, Peter, (ed.), *British Air Power* (London: The Stationary Office, 2003), pg. 117.
- 22 Cox., op.cit., pg., 33.
- 23 Hughes, Dr Alexander., 'Air Lines: Anglo-American Tactical Air Operations in World War II', *Air Power Review*, Winter 2004, pg. 31.
- 24 Hughes., op.cit., pg. 36.
- 25 Meilinger., op.cit., pg., 123.
- 26 Ibid.
- 27 Meilinger., op.cit., pg.124.
- 28 Gardner, Sqn Ldr Sophy., *Operation Iraqi Freedom – Coalition Operations*, *Air Power Review*, Winter 2004., pg. 85.
- 29 *Operations in Iraq: First Reflections* (London: Ministry of Defence, July 2003), quoted in Gardner., op.cit., pg., 94.
- 30 *Delivering Security in a Changing World*, quoted in Gardner., op.cit., pg. 87.
- 31 RAND., 'Interoperability – A Continuing Challenge in Coalition Air Operations', (RAND, Arlington, 2000)., pg. 7.
- 32 RAND., op.cit., pg. 23.
- 33 Ibid.
- 34 Codner, Michael., 'Integration and Interoperability: The Who and the What', *RUSI Journal*, October 1996., pg. 35.
- 35 *Joint Warfare Publication 3-00.*, 'Joint Operations Execution', 2nd Edition, March 2004., pg., 1-5.
- 36 Primarily in technological terms, but may also include language, cultural, and doctrinal aspects.
- 37 *Joint Doctrine Publication 0-01.1.*, United Kingdom Glossary of Joint and Multinational Terms and Definitions, 7th Edition, June 2006., pg.1-12. See also *Joint Doctrine Publication 1.02*, Department of Defense Military & Associated Terms, Amended to March 2007, pg. 275.
- 38 *Air Publication 3000*, *British Air Power Doctrine*, 3rd Edition, 1999, pg. 3.13.6.
- 39 See *JDP 0.01.1.*, pg. S-15 for definition of standardisation.
- 40 Codner., op.cit., pg.36.
- 41 Bruce R. Nardulli, RAND, MR-1406, p. 47, in Engler, Glodowski, & Lee, 'Coalition Operations, Politically Essential, Operationally Challenging' (Joint Forces Staff College, 8 Mar 04).
- 42 Adapted from *Hanging Together, Military Interoperability in an Era of Technological Innovation*, pg. 81.
- 43 JDN 1/07., *Joint Action*, DCDC, (February 2007).
- 44 JDP (DOD)., op.cit., pg. 234.
- 45 *Concise Oxford English Dictionary* (1995), (Oxford, Oxford University Press), pg 538.
- 46 RAND., op.cit., pg.15.
- 47 Term adapted from a description of US Military Transformation used by Downes, Cathy., during a presentation to ACSC Students at the National Defence University, Washington, DC., 28 February 2007.
- 48 *Options for Change* (1990), *Front-Line First* (1994) and the *Strategic Defence Review* (SDR) (1998); the SDR New Chapter was published in 2002.
- 49 Dorman, A., 'Transformation and the United Kingdom', *JFQ* (issue 37), p.27-32.
- 50 *Strategic Defence Review New Chapter*, (London: HM Stationary Office, July 2002), pg. 28.
- 51 Mason, T., 'Reflections on Change, Perception and Visibility', in *British Air Power*, Peter W Gray (ed), *Joint Doctrine and Concepts Centre*, (2003), p.209.
- 52 *RAF Strategy 2006.*, op.cit., pg.1.
- 53 Sabin, Professor Philip., 'The Changing Face of Conflict', in *A Second Aerospace Century*, John Andreas Olsen (ed), *The Royal Norwegian Air Force Academy* (2001), p.98.
- 54 *Defence Strategic Guidance 2005*, quoted in *DAS Strat Op1's presentation to ACSC 10*, *Air Component* on 26 Jan 07.
- 55 *RAF Strategy*, op.cit., p.3.
- 56 Clarke., Professor Micheal., 'NATO and the EU: Strategic Futures in the 'War against Terrorism'' in *A Second Aerospace Century*, John Andreas Olsen (ed), *The Royal Norwegian Air Force Academy* (2001), pg. 76.
- 57 *AP3002.*, op.cit., p.13.
- 58 Caddick, op.cit., p 54.
- 59 *AP3000*, p.1.2.2.
- 60 Tucker., 'Preparing the Way for Cooperation in European Air Power', *Air Power Review*, Spring 2004, pg., 54.
- 61 *AP 3000.*, op.cit., pg. 1.2.2.
- 62 *Future Air and Space Operational Concept* (FASOC), (London: Directorate Air Staff), 2006., p.8
- 63 Martin, Gen.Gregory S., 'A Second Aerospace Century - Options for the Future', in *A Second Aerospace Century*, John Andreas Olsen (ed), *The Royal Norwegian Air Force Academy* (2001), p22.

- 64 Burridge, Brian., 'Strategic Guidance and the Context of Air Power', RUSI Journal, June 2004, p29.
- 65 'High-end' warfighting refers to the conduct of combat operations against an adversary and implies use of high technology air assets in delivering effect across the spectrum of conflict.
- 66 Interview with CAS., 9 January 2007.
- 67 Interview with CAS., 9 January 2007.
- 68 See RAF Strategy 2006.
- 69 Goulter, Dr Christina., 'Air Power and Expeditionary Warfare in Gray, P., (ed) Air Power 21: Challenges for the New Century., (London: The Stationary Office, 2000)., pg.207.
- 70 The Strategic Defence Review Supporting Essay No 6., London: The Stationary Office 1998, pg. 6-4., quoted in Tucker., op.cit., pg.52.
- 71 Goulter., op.cit., pg.198.
- 72 2005 Air Force Transformation., 'The Edge', (USAF, 2005)., pg. 6.
- 73 For example the F-15 and KC-135.
- 74 Budgetary pressure also brought about by rising fuel prices, defence health care costs, and aircraft retirement restrictions. See Moseley, T. Michael. (2006) Speech to the Air and Space Conference and Technology Exposition, 27 September 2006 [online]. Available from: http://www.afa.org/media/scripts/conf2006_Moseley.asp
- 75 During Operation ALLIED FORCE, 20% of UK sorties were AAR where 85% of the fuel dispensed went to allied aircraft. See Clarke, Professor Michael., 'The Political Context of Air Power in the United Kingdom', in British Air Power., P W Gray (ed)., pg. 16.
- 76 Joint Surveillance and Target Attack Radar System.
- 77 Interview with CAS., 9 January 2007.
- 78 Grimes & Ferguson., op.cit., pg. 72.
- 79 Moseley, General T.Michael., 'Interdependence and Coalition Operations', RUSI Defence Systems, Spring 2006., pg. 25.
- 80 Clarke., op.cit., pg. 16.
- 81 Meilinger., op.cit., pg. 125.
- 82 Gardner., op.cit., pg. 8.
- 83 Kagan, Robert., *Paradise and Power*, (London: Atlantic Books, 2003)., pg. 4.
- 84 Jones, Omar., (ed), 'Security Cooperation – Working with Others in a Globalised World', Comments made by Krauthammer, Dr Charles; Ikenberry, Dr John; and Funabahi, Dr Yoichi., during Eisenhower National Security Conference, September 2002, pgs. 103-139.
- 85 Presentation given by Professor Bruce Jentleson to ACSC Students, JSCSC, 31 January 2007.
- 86 The Defence Vision, Available from <http://www.mod.uk/DefenceIntranet/AboutDefence/Organisation/DefenceVision.htm>, accessed on 15 May 2007.
- 87 Kluger, Richard, L., & Binnendijk, Hans., 'Choosing a Strategy' in *Transforming America's Military*, Binnendijk, Hans, (ed)., (Washington DC, National Defence University, 2002)., pg 91.
- 88 Joint Vision 2020, (Washington DC, Joint Chiefs of Staff, June 2006), pg.36.
- 89 JWP 3-00, op.cit., pg. 1-5.
- 90 See Barry, Charles, L., 'Coordinating with NATO', in *Transforming America's Military*, Binnendijk, Hans, (ed)., (Washington DC, National Defence University, 2002)., pgs. 231-258.
- 91 National Military Strategy of the US., Joint Chiefs of Staff, Washington DC., 2004., pg. 8-11.
- 92 Moseley, Speech, op.cit.
- 93 Clarke, Professor Michael., 'The Political Context of Air Power in the United Kingdom', op.cit., pg. 13.
- 94 For example, F-35, Joint Strike Fighter.
- 95 Gudgeon, Wg Cdr Andy., 'Lessons from the USAF – a Paper on Network Centric Warfare', March 2007.
- 96 FASOC., op.cit., pg. 7.
- 97 Meilinger., Philip S., *AirWar Theory and Practice*, (London: Cass (2003))., pg. 212.
- 98 RAND Report., pg. xiii.
- 99 Quoted in Dudney, Robert, S., 'USAF - A force for the long run', *Air Force Magazine*, 4 December 2006 [online]. Available from: <http://aimpoints.hq.af.mil/display.cfm?id=15376> . E-mail to Sharper:jscsc@defenceacademy.mod.uk
- 100 FASOC., op.cit., pg. 5.
- 101 Defined as the ability of the UK to integrate, upgrade and sustain defence equipment without recourse to other nations.
- 102 HCDC Report., *The Defence Industrial Strategy: update.*, published 15 February 2007., pg. 3.
- 103 HCDC Report., op.cit., pg. 26.
- 104 Chao & Niblett., op.cit., pg. 26.
- 105 MOD Press Release dated 3 March 2006, <http://www.mod.uk/defenceinternet/defencenews/press-release.htm> accessed on 18 May 2007.

- 106 HCDC Report., op.cit., pg. 27.
- 107 Taken from Speech given by Barry Lemkin entitled 'USAF International Affairs Transformation', at RUSI, 24 May 2006.
- 108 SNA is the mapping and understanding of social relationships between people, groups and organisations. Krebs, V., Social Network Analysis – A Brief Introduction.
- 109 JDN 1/05.
- 110 FASOC Wargame Engagement Capability White Paper, undated., p.1.
- 111 Mason, T., 'Rethinking the Conceptual Framework', in Air Power 21 Challenges for the New Century, Peter W Gray (ed), Directorate of Air Staff (2000), p.236.
- 112 E-mail from Wg Cdr Gudgeon, SAF/XCXA, Pentagon, dated 3 May 2007.
- 113 Quoted in Dudney., op.cit.
- 114 D/DAS/6/2 dated 11 January 2007, 'CDEC Terms of Reference'.
- 115 Gudgeon, Wg Cdr Andy., Warfighting Integration: Delivering NEC to the Warfighter Today and Tomorrow', Service Paper, March 2007., pg. 2.
- 116 Interview with CAS dated 7 January 2007.
- 117 BurrIDGE, op.cit., p.31.
- 118 Moseley., op.cit., pg. 24.
- 119 <http://www.iwar.org.uk/rma/resources/uk-mod/nec.htm>, accessed 1 May 2007.
- 120 JSP 777, Network Enabled Capability, (Ministry of Defence, 2005), pg. 10.
- 121 Lock-Pullan, Richard., US Intervention Policy and Army Innovation., (London: Routledge, 2006), pg. 177.
- 122 Gudgeon., op.cit., pg. 3
- 123 Draft Paper to CAS., The Delivery of a Network Enabled Air Capability, (18 Feb 07).
- 124 Joint Automated Deep Operations Coordination System.
- 125 Digital Common Ground System.
- 126 Draft paper to CAS., op.cit., pgs. 3-A-4.
- 127 PTC/360/AMP dated Feb 05 – 'Visit to USAF Air Education and Training Command 0 6-12 Feb 05'.
- 128 Exchange appointments are posts of either the USAF or RAF filled by personnel from the other Service.
- 129 Information provided by PMA 34(Exchange & Loans), 27 March 2007.
- 130 RAND., op.cit., pg. 11.
- 131 Moseley in RUSI., op.cit., pg 24.
- 132 CAS quoted in RAF News article, 'CAS in Historic Meeting', dated 16 February 2007.
- 133 Ibid.
- 134 Kagan., op.cit., pg. 3.
- 135 Interview with CAS dated 7 January 2007.
- 136 See Garden, T., 'The Future for European Military Power', in A Second Aerospace Century, John Andreas Olsen (ed), The Royal Norwegian Air Force Academy (2001), pgs. 245-257.
- 137 Dumbrell., op.cit., pg. 239.
- 138 Ibid.
- 139 Lindley-French, Julian., 'The Revolution in Security Affairs: Hard and Soft Security Dynamics', in European Security, 2004, pg. 12.
- 140 O'Hanlon, Michael., Defense Strategy for the Post Saddam Era, (Washington DC, Brookings Institution Press, 2005), pg. 3.
- 141 Flanagan, Stephen J., 'Sustaining US-European Global Security Cooperation', National Defense University Strategic Forum, September 2005., pg. 5
- 142 Ibid.
- 143 Flanagan., op.cit., pg. 6.
- 144 Kagan., op.cit., pg. 48.
- 145 Clarke., op.cit., pg. 75.
- 146 Dumbrell., op.cit., pg. 12.
- 147 Garden., op.cit., pg. 246.
- 148 DASA UK Defence Statistics 2005, (London: Stationary Office), p.8.
- 149 Defence inflation is somewhere between 7-9% per annum.
- 150 Dorman, op.cit., p.165.
- 151 Mason, op.cit., p.205.
- 152 Times Article, 'Treasury Threatens to Cut £35bn of Defence projects', Times, 5 Mar 07.
- 153 Uttley, Professor Matt., 'The Management of UK Defence' in Britain and Defence 1945-2000., Croft, Stuart, & others (ed), (Harrow: Longman, 2001), pg. 88.
- 154 Based on the different methods that Defence Expenditure is measured between 1976 and 2004.
- 155 Presentation 'Air Force Transformation' to ACSC 10 by Maj Gen (USAF) Fletcher .
- 156 Taken from speech by Mike Turner, Chief Executive Officer, BAe Systems, to the Washington Economic Club on 10 May 2006, <http://www.baesystems.com/Newsroom/.htm>, accessed on 22

Historic Book Review

AIR POWER AND WAR RIGHTS

By J.M. Spaight

Publisher: Longmans, Green and Co. (London)

Reviewed by Gp Capt Neville Parton

James Molony Spaight holds an almost unique place in the pantheon of air power writers, being one of the most widely published in the 1920s, '30s and '40s, in English, and yet being almost unknown today. The breadth of his writing and its accessibility, at least in terms of the tongue in which it was written, certainly provides a differentiation between Spaight and a number of his contemporaries who we have already examined in this series. But Spaight was very different in other ways as well, and we shall therefore start with a brief overview of the man, his life and times, before moving on to consider what he actually had to say in *Air Power and War Rights*.

For such an extensively published individual, information on Spaight is fairly thin on the ground. Indeed his obituary in the Times in 1968 consisted of just over 200 words, and mentions nothing of his life beyond the Air Ministry – and is even incorrect in giving the details of his retirement from the Ministry.¹ We do know that he was born in Ireland in 1877, and educated at Trinity College Dublin, where he gained both graduate and doctoral degrees in law before joining the Civil Service of

the United Kingdom in 1901. From his evident familiarity with a number of French and German writers on air power he was also well-read in a number of European languages, although Douhet is significant by his absence from the list of references in his work. He obviously entered the War Office at some point, as he was recruited from there to the newly-formed Air Ministry in 1918. However his interest in air power predated the First World War, as his second publication, printed in 1914, was entitled *Aircraft in War*.² But it is for his legal perspective on the use of air power that Spaight came to be best known, and the majority of his 'serious' work was in this area.³ Titles such as *Aircraft in Peace and the Law* (1919), *Aircraft and Commerce in War* (1926), *Air Power and the Cities* (1930), *An International Air Force* (1932), *Air Power in the Next War* (1938), *The Atomic Problem* and *Air Power can Disarm* all centred around various legal aspects of the use of aircraft.

His work certainly achieved a degree of recognition within the Ministry, having been made an OBE in 1918, a CBE in 1927 and a CB in 1936; given his obvious intelligence, and clear willingness to apply it, it is not surprising that he

achieved fairly high office within the Air Ministry. His last post was as one of only 3 Principal Assistant Secretaries in the ministry which he held from 1934 until his retirement in 1938 – a crucial period in the run-up to the Second World War. He was obviously both known to Trenchard and trusted by him; when a passage in the RAF's first doctrine manual was considered by the then Director of Operations and Intelligence to provide cause for concern, it was to Spaight that Trenchard directed the publication should be sent, to – in his words: "...read through the book with a view to finding (1) if there is anything in it that offends against the laws of war as known at present, or (2) that offends against the provisions of the Washington Conference..."⁴ But little exists in terms of understanding his relationships with many other senior RAF personalities between the wars, and whilst surmise can have a legitimate place in historical analysis, in this case the evidence is so thin that it is with facts that we must content ourselves.

So what of the book itself? Given what we know of his background, it should perhaps not come as a surprise that this is a fairly hefty tome (493 pages in the first edition, 523 in the last), and that much of it is effectively a legal textbook. Comprising twenty-two chapters, it covers such abstruse legal areas as the markings of combatant aircraft, lawful and unlawful ruses, special ammunition, special missions, and even the legitimacy of propaganda dropping. The reader might therefore be forgiven for asking why consideration of the contents of a legal textbook of the early 1920s might be of interest today. However it also examined more mainstream issues, such as the whole issue of bombing from the air – which covered 4 chapters, and considered in detail what could or

could not legitimately be considered a target. Here a number of different perspectives were considered, ranging from extrapolations of previous understandings related to the use of both land-based and naval artillery, through to completely new arguments based upon Spaight's own logic. It should be borne in mind that this publication appeared in the year following the establishing of a set of rules relating to air warfare, drawn up by a commission of jurists at the Hague; and whilst detailed negotiations were taking place on the possibility of establishing limits to air armament.⁵

All of the chapters, with the exceptions of those associated with introducing the overall subject of air power, took a fairly similar approach. This consisted of a brief introduction to the topic, followed by a number of case studies – in other words establishing what had actually been the *practice* during the Great War, and from this eliciting both precedent and what various authorities, as well as the actors themselves, had believed to be the legal situation at the time. Consideration was then given to what existing law could be considered appropriate, or if inappropriate, what changes were recommended. Alternatively, an entirely new set of 'rules' would be suggested – as for instance is suggested at the end of the chapter dealing with *aircraft and enemy populations*, where the possibility of widespread air control is clearly foreseen, and the extant rules relating to occupation are quite evidently shown to be inadequate.⁶

The introduction provided a useful overview of the 'establishment' perspective relating to air power, or at least that element of the establishment which was air minded. Major themes which emerge echo much in other contemporary UK writings, such as the

'direct impact' of air power, its 'moral effect' (morale in current parlance), the impossibility of absolute defence against attack from the air and the fear of reprisals. He also outlines the extremes of positions held by air power commentators of the time – from the more bloody-minded:

The only effect an International Bombing Code can have is to cramp the style of the RAF at the beginning of the war... If we go bang into the next war all hair and teeth and blood, as the saying goes, free from any fetters of rules and regulation, we may achieve quite useful results at the start.⁷

to the rather more considered:

The aerial battles of 'the interior' will complete the land or naval engagements of 'the fringe', but both the one and the other will seek the same end, which is the overthrowing of the will of the enemy nation by every means.⁸

His central thesis is that air power has the potential to cause enormous destruction, and therefore unless international law can be used to limit its application – but in a practical and pragmatic manner – the outcome will be disastrous for all mankind. "Let there be no mistake about it : unless air power is regulated and controlled, it will destroy civilisation itself."⁹ His suggested approach is that air power should be enabled to destroy property, but in a manner that deliberately aims to minimise the loss of non-combatant life.

However Spaight was certainly a realist when it came to the application of law during a time of major conflict. When considering the rights – or otherwise – of bombing civilian property, after a long series of logically constructed propositions, he finishes with the

following: "Let there be no mistake about it: the cities will be bombed, whatever rule is laid down. In no other way will belligerents be able to obtain the moral effect which they will certainly seek."¹⁰ Yet his actual approach seems eminently logical, in this case he suggested that the rules should be framed such that they allowed 'devastation' of particular target sets, but in a manner which reduced the loss of non-combatant life to a minimum. He was also an extremely even-handed analyst, and almost seems to take pleasure in debunking some of the glib statements made with regard to bombing during the War.

With regard to bombing experience during the War, he clearly points out the difference between the intention and actual performance: "The fact is that what the airmen on each side set out to do and what they actually did were not always identical ... it is entirely beyond question that the Allied airmen on their side set out to bomb military objectives only. What they did bomb, on some occasions at least, may be seen from the photographs which appeared in various war publications."¹¹ The problems here were exacerbated as air defences improved, and drove attackers to operate at night in order to survive. However night operations called into doubt the accuracy of both navigation and bomb delivery – and a list of the factors which contributed to both of these is provided, which includes the effect of enemy action, the difficulty of bombing from greater altitudes, and in particular the effect of the weather. It will be noted that these same factors significantly affected, in an adverse manner, the efficacy of RAF bombing operations at the beginning of the Second World War. If the factors could be so rationally identified by a civilian analyst, with a decidedly non-technical background, it does beg the question as

to why the RAF did not seem to place the same emphasis on solving these problems during the inter-war years.

Another section of interest deals with air combat, and besides considering such aspects as ruses and the possibility of surrender in the air, also examines such questions as whether the ramming of enemy aircraft is legitimate, and the differentiation of parachutists and their liability to attack by the enemy. In the section on ruses a 'legitimate' approach is mentioned which would appear to have some contemporary parallels. This involved what was known as a 'reversed march', whereby troops on the ground would march in one direction whilst observed, and as soon as the watching aircraft had departed, would set off on the direction of the real march. This involved an understanding of the problems caused by observation which was restricted – in this case by time. In both current and recent campaigns against insurgents, the use of a particular activity, clearly visible to watching reconnaissance assets, has been used to draw attention away from another more important endeavour – in this case exploiting the restricted view and capacity of some systems.

A minor footnote of curiosity is that a noteworthy line is taken with regard to what is termed the 'colour line', or in other words, an airmen's perspective on the attitudes of the day towards differences in race. After pointing out that in terms of aerial fighting race is immaterial, and that there is no colour line in the rules of war, a number of positive examples of ethnic minorities serving in the Allied air forces are then quoted, ranging from an American Negro who served with the French Air Force and won the *croix de guerre* with star for his gallantry, to several Indian pilots

with the RFC, one of whom was credited with the destruction of nine enemy aircraft and awarded the DFC. Although his perspective might be seen as rather colonial in tone, Spaight was clearly no bigot.

From a contemporary viewpoint his approach was certainly not universally accepted, as readers of the historic book review on *Basic Principles of Air Warfare* will recall, where in particular the assumption that one air force could conduct its own activities and effectively ignore those of the opposition was challenged. In general though it was well received, and certainly became a standard work for those interested not only in air power, but also in the legal implications of exercising that power, as its longevity clearly illustrates.

From our perspective at the beginning of the 21st Century, what should we make of Spaight's major work eighty years on? At the time it was quite clearly a tour de force; no other single book brought together so many aspects of air operations and considered their permissibility against extant law, or so cogently argued for extensions to cover new capabilities. In Robin Higham's book on British military thinkers of the period, Spaight is one of the very few non-military writers felt worthy of detailed consideration, and this publication is described as a 'mine of information'.¹² For the historian, all three editions provide a considerable degree of insight into contemporary views regarding air warfare, and because they are so well referenced and footnoted, are a tremendous source of places to commence research.

It is also interesting to consider just how closely the law has been associated with the practice and theory of air power from its earliest days: those who feel

that the prominence given to legal advice in current operations is a new phenomenon should consider that our earliest doctrine in the areas of strategic bombing and counter-insurgency was significantly altered by legal advice – and in fact considerably improved in both cases. However where Spaight really shone, at least perhaps as far as we are concerned, was in the area of the analytical skills that he brought to bear on a broad range of issues. Whilst perhaps not consciously intending to do so, he clearly identified many of the limitations of contemporary air power, and thereby defined what was reasonable to expect in terms of achievement. In other words, his was a counsel of caution regarding extravagant claims, and a call for a realistic understanding of what air power could achieve, and the costs that were associated with it.

In days where ill-informed understanding can significantly affect expectations of achievement – in some cases not helped by over-extravagant claims from airmen themselves – Spaight's words have a good deal of contemporary resonance. Indeed, given current debates over the legality of attacking non-military targets to produce a military effect (as in the 1999 Kosovo campaign), it is interesting to note that Spaight commented: "Unless and until the right of air power to attack property the destruction of which will affect the economic life and business of the enemy people is admitted, the problem of air bombardment cannot be regarded as solved."¹³ In this respect at least, the major issues identified by Spaight are still relevant today, even if matters of detail may have significantly changed.

Reference

Dean, Sir Maurice. "Dr J. M. Spaight." *The Times*, 24 January 1968.

Air Ministry file "CD 22 Printing and Publication, 1921: The National Archives (TNA) AIR 5/299.

Spaight, J M. *Air Power and War Rights*. London: Longmans, Green and Co., 1924.

Higham, Robin. *The Military Intellectuals in Britain: 1918-1939*. New Brunswick: Rutgers University Press, 1966.

Notes

1 Sir Maurice Dean, "Dr J. M. Spaight," *The Times*, 24 January 1968.

2 His first publication was *War Rights on Land* (1911)

3 Other publications included *The Beginnings of Organized Air Power* (1927), which examined the institution of the Air Ministry within the UK, and a series of popular air power books during the Second World War (*The Sky's The Limit*, *The Battle of Britain*, *Volcano Island and Bombing Vindicated*).

4 CD 22 Printing and Publication, 1921, TNA AIR 5/299.

5 To follow on from the Washington Naval Treaty of 1922, which limited naval armaments.

6 "The same shifting of the scene of defence from the ground to the air ... will probably render obsolete the existing rules in regard to the effectiveness of military occupation." J M Spaight, *Air Power and War Rights* (London: Longmans, Green and Co., 1924), 371.

7 Mr C. G. Grey quoted in *The Aeroplane* 11 July 1913. *Ibid.*, 14.

8 Marcel Jauneaud, *Ibid.*, 17.

9 *Ibid.*, 18.

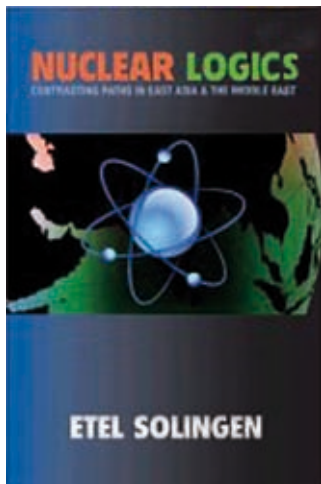
10 *Ibid.*, 259.

11 *Ibid.*, 220. This refers to various publications, some official, which clearly show a range of targets hit in Germany – including hospitals and a nunnery. The point is also well made that in June 1918, as a result of Allied air operations the insurance rates for life and property in the Rhine towns were raised by 38%.

12 Robin Higham, *The Military Intellectuals in Britain: 1918-1939* (New Brunswick: Rutgers University Press, 1966), 231.

13 Spaight, *Air Power and War Rights*, 256.

Nuclear Logics



By Etel Solingen

Publisher: Princeton University
Press: 2007

ISBN: 978-0691134680

Price £10.52

Reviewed by Gp Capt Ian Shields

When I first picked up this book I rather anticipated an International Relations (IR) theory rant against the iniquities of nuclear weapons. I was, however, pleasantly surprised that it was much more than that; indeed, although very firmly rooted in IR theory it is well-balanced, does not rant and does approach the issue from the IR feminist viewpoint.¹ Instead, this book offers a detailed and frequently illuminating insight into the complex question of why some States acquire nuclear weapons, others consciously choose not to, and others acquire but then voluntarily surrender their Weapons programme. As if this is not enough in itself to recommend this book, its sub-title,

“Contrasting Paths in East Asia and the Middle East” means that this book will have interest wider than to IR theorists or those studying the nuclear issue; anyone with an interest in the complex geo-political make-up of either the Middle East or East Asia will gain a useful insight into State behaviour in these regions from this study.

Solingen sets out her stall early. She acknowledges that the book cannot ever be truly current, such is the pace of change in both regions. Indeed, she admits to having been in an advance stage of research and writing when North Korea undertook its 2006 test. However, much of what she says, and certainly her analysis, will withstand the test of time. Solingen approaches the issue of the logic of the nuclear weapons question in four stages. First she examines the contrasting IR theories of why States act as they do over this question, then looks in detail at selected countries in each of her two study regions to seek common ground, before concluding with a more general review.

Let me first address where I think her book falls slightly short. The introduction, which acts as her first chapter, is largely repeated in Chapter Two where she conducts the bulk of her IR theory analysis. This is more of an irritation than a fault, but I was surprised in the subsequent two sections where she examines the actions of nine States across the two regions (Japan, South Korea, Taiwan and North Korea in East Asia, then Iraq, Iran, Israel, Libya and Egypt in the Middle East) that she confines her IR analysis only to neo-realism. Solingen (very effectively) proves that neo-realist analysis of the Actions of these nine States cannot adequately answer the question of why some States acquire the nuclear option while others do not, and in this she rather betrays her colours as being against the neo-realist model. She does not attempt to analyse her question from

the viewpoint of other IR models in these chapters, confining herself instead to an implied criticism of neo-realism. Finally, while I accept that she could only look at a limited number of countries in the two regions (and one could quibble whether Libya was the Middle East of the Maghreb) I felt that Saudi Arabia should have been included in the Middle East review.

So much for weaknesses, but this book more than makes up for this with its strengths. Her depth of research is humbling; the notes (sensibly saved to the end of the book rather than appearing as footnotes) run to some 50 pages and are immaculately presented. Solingen's writing style is fluid and easy to read, and she weaves a compelling thread throughout the book. From the East Asia section, I would particularly pick out the chapter on North Korea; even if you have no interest in that country's nuclear ambitions this is an excellent review of the workings of this closed society. Her analysis, that the twists and turns of North Korean foreign policy (such as can be detected) say as much about Kim's efforts to retain power but wrong-footing not only the international community but also his own internal detractors, strikes me as very sound. She rightly highlights the difficulties in dealing with such regimes and that conventional Western thinking does not easily understand such actors. Indeed, her introduction of the Juche Idea (the official State ideology of North Korea and its political system, based on the idea that mankind can master and control everything) displays not only Solingen's own understanding of North Korea, but the complexity of our engagement with a political system we find so alien.

Within her review of the Middle East, I was equally taken by her analysis of the Iranian quest for the nuclear option. Solingen draws four broad conclusions as to why Iran is

seeking such weapons: external threats in the 1980s (Iraq); how Islam could be used to justify their actions; the contempt with which the (inward-looking, insular and arguably inexperienced) political leadership treated international institutions, international actors and international law; and the degree to which the more radical elements of the Iranian leadership use the nuclear issue for regime survival. Not only are her conclusions drawn from well-presented arguments within her text, but offer a good insight into the Iranian leadership. This is indeed quality work.

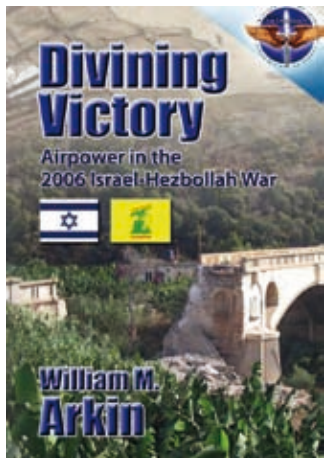
But Solingen saves her best to last. Her final chapter, "Findings, Futures and Policy Implications" returns to the different IR theory models with which she started, and looks at the issue from a number of approaches (with a hint that she tends towards the Constructivist model). If IR theory models do not appeal, turn to her closing eleven pages where she analyses Policy Implications and argues convincingly for the need for engagement and dialogue, using Libya as an example of how it is possible to move States away from the nuclear path.

Early in this very good book Solingen states: "Nuclear choices have wide-ranging implications for international security" – a sentiment with which it is hard to disagree. As the Nuclear Non-Proliferation Treaty continues to be challenged, why some States acquire nuclear weapons but others do not is worthy of serious academic study. Solingen has set herself an immense task with this book, and to a very large extent succeeds. This book is worth seeking, and reading.

Notes

1 The feminist theory of international relations is a broad term given to works of those scholars who have sought to bring a concern with gender into the academic study of international politics.

Divining Victory: Air power in the 2006 Israel-Hezbollah War



By William M Arkin

Publisher: Air University Press, Maxwell

ISBN978-1-58566-168-8

Price \$30 (326 pages, paperback)

Reviewed by Gp Capt Neville Parton

The conflict between Israel and Hezbollah, played out in Lebanon during the summer of 2006, may well come to be seen as something of a watershed in future years; a relatively short and intense conflict between a technologically-focussed set of defence forces on the one hand, and a sub-state irregular force on the other, albeit one that had been well-equipped and trained by external agencies. What is certain is that potential protagonists in the arena of sub-state actors will have undoubtedly paid close attention to the outcome, and it therefore behoves those who might be involved

in activities against such opposition in the future to also consider what lessons might be drawn. In that regard, William Arkin's book has an extremely valuable role to play. It has certainly succeeded inasmuch as it is one of the few recent books on air power to rate a review – and a positive one at that – from the pages of the New York Times.

In terms of content this is very much a book of 2 halves; with the first part of the book containing background, description and analysis, whilst the latter part contains supporting information – and in significant quantities. The background to the conflict and examination of Hezbollah provide an excellent lead in to a neat campaign summary, and thence to consideration of the overall effects of the war, and a detailed examination of the damage actually caused in the Lebanon. The final three chapters then look at the link between targeting and effect and Israel's own understanding of the campaign, before considering what can be extracted in terms of conclusions regarding the use of air power in a 'terrorist' campaign. Appendices cover the IDF order of battle and main personalities, as well as a detailed chronology of the entire campaign, gazeteer of all ground targets struck in Lebanon and a detailed bibliography of sources. These elements alone will make it an invaluable starting point for any individual wishing to delve deeper into the conflict, and probably provide the most accurate overall summary of the campaign that is likely to be found outside of a classified intelligence report. What is more, it reflects the tremendous care that has been taken by the author to try and identify 'facts'

as far as is possible, via a considerable investment in technologically-driven detective work, and to then contrast these with the perceptions that either existed at the time or have persisted to this day.

Arkin is an interesting character, having been involved in both post-conflict analysis and reporting for a number of years, for a range of non-governmental organisations ranging from Greenpeace International to the United Nations, and with considerable experience of evaluating the effects of air power on the ground. Having been a fierce critic of air power in places such as Serbia and Afghanistan, as he himself admits it was a courageous move by the USAF to then invite him to produce a book predominantly looking at the air power aspects of the Lebanon conflict.

So, having considered the layout and author, what about the content? Well, it will not perhaps make comfortable reading for out and out exponents of air power, although for the more reflective reader it will probably provide a great deal of food for thought. Perhaps some of the most prescient observations have to do with the difference between the actual impact (no pun intended) of IDF operations on the ground in Lebanon, compared with the perceptions that have been presented by the worlds media, or indeed perpetuated by agencies such as the UN. Whilst some of these can be attributed to the very competent media/info ops campaign run by Hezbollah, much of the responsibility lies with the IDF. Here, despite careful military and legal analysis being undertaken to ensure that individual elements of

each target group were justified, the overall summary led to an inevitable conclusion that "...Israel also undertook an intentionally punishing and destructive air campaign against the people and government of Lebanon." In fact in one of the most vivid images of the book, Arkin says that "Arguing that Israel achieved what it set forth to achieve in the 2006 war, however, is a little like saying that the operation was successful but the patient died." Yet one of the clearest conclusions is that whilst air power did not provide a 'silver bullet', it did remain one of the most flexible tools for fighting Hezbollah – and that a land-led campaign might well have suffered even greater problems in the media, as well as much higher losses. The major fault – that of a failure at the grand strategic level, in terms of expecting the military to reach an end state which was quite simply unachievable, is clearly identified. The sub-text is that Israel in general, and the IDF in particular, failed in terms of the challenge to tell its air power story effectively, and that focus on the 'battle of the narratives' is one which needs to be picked up on.

This publication, in common with other Air University Press (AUP) titles, is available in a number of different ways – although all of them initially involve a visit to the AUP website (<http://aupress.au.af.mil/>). It can be purchased via the AUP direct if you prefer hardcopy for your bookshelf, or downloaded as a pdf document free of charge – so there really is no excuse for not reading it. It is also highly likely to feature on the 2008 CAS Reading List, so if you want to get a step ahead in your professional education – get hold of a copy now!

The Provision of Transport and Support Aircraft to British Airborne Forces during the Second World War: Too Few Aircraft or Too Many Airborne Troops?

By Dr Sebastian Ritchie

Major John Greenacre's interesting study, *The Provision of Air Transport and Support Aircraft to British Airborne Forces in the Second World War* (Air Power Review Vol. 10, No. 3, Autumn 2007), raises important questions about both the RAF's and the USAAF's relationship with the airborne. Broadly speaking, Greenacre reiterates the long-standing airborne argument that the RAF's support for the airborne forces was half-hearted and inadequate, and that this exerted a direct and detrimental impact upon the outcome of successive operations. Due to 'the RAF's unyielding attitude towards their core doctrine of bomber supremacy' they consistently obstructed the transfer of bombers to the airborne forces for both parachute and glider-tug work. British aircraft production became largely focused on fighters and strategic bombers, the Air Staff preferring to look to America for production of a purpose-built AT platform (the Douglas C-47, or 'Dakota'). The limited allocation of British aircraft was then further restricted by the protracted modifications required for airborne work, while the Americans allegedly assigned 'low priority' to the production of transport aircraft, so that C-47 deliveries to the RAF were long-delayed. Consequently, when the first large-scale airborne operations were launched in North Africa (Operation Torch) in 1942 and then Sicily (Operation Husky) in 1943, the British airborne forces were entirely dependent on the USAAF for AT. The poor quality of US aircrew is said to have been largely responsible for the unsatisfactory outcome of British airborne actions in both Torch and Husky.

According to Greenacre, there was little subsequent change in the RAF's priorities, which although 'perfectly legitimate in the first part of the war' were less so 'as the war progressed and manoeuvre became more imperative than either defence or attrition.'

A deficiency of aircraft directly reduced the size of an airborne force that could be committed to an operation. In the case of Market Garden it necessitated spreading 1 Airborne Division's deployment over three days, which contributed to the failure of the operation.¹

Greenacre's article is well researched and carefully documented. Nevertheless there is an area where an alternative assessment could be made. In particular the article considers the entire airborne AT issue in the context of supply rather than demand. The result is an article that is arguably unbalanced and therefore a misleading depiction of events.

Logically the supply constraints which Greenacre identifies should have directly influenced both the structure and employment of the British airborne forces. A force tailored to the airlift available would have been small (perhaps two brigades) and lightly equipped; it would not have been suitable for use in a strategic capacity, but could have been tasked very effectively to seize limited and clearly defined tactical objectives a short distance behind enemy lines – objectives which could easily and quickly be reached by a simultaneous ground offensive.

Unfortunately, however, the War Office pursued an entirely different strategy.

They simply embarked on the construction of the largest possible airborne force, paying little heed to airlift considerations. At the end of October 1941 they decided to create 1st Airborne Division. In the spring of 1943 they obtained authority to form a second division – 6th Airborne Division. Other airborne formations such as the Special Air Service Brigade and the Independent Polish Parachute Brigade also appeared. Moreover the extensive use of heavy assault gliders with significant cargo-carrying capacity soon led to the procurement of all manner of air-portable equipment. The British airborne emerged as a far heavier force than the German airborne, and became heavier still as the war progressed.² This inevitably increased their airlift requirements still further as a growing proportion of their capacity came to be used for transporting equipment rather than combat troops, as well as expendables such as fuel, ammunition, and spare parts, and support personnel.³

A reluctance to co-ordinate the growth of the airborne with the expansion of the air transport fleet would have serious consequences in the US too. Between 1940 and mid-1942 the US airborne forces were steadily enlarged from a single experimental platoon to a four-regiment force, and in August 1942 the decision was taken to form two airborne divisions. Each division would be somewhat larger than a British airborne division and again far more heavily equipped than the German airborne. Against this background airborne lift requirements along with other burgeoning AT demands consistently outstripped C-47 production.⁴ This did not reflect the low prioritisation which Greenacre alleges; after all, almost 11,000 C-47s were ultimately produced during the war (nearly 2,000 of which saw service with the RAF). Rather, the initial supply problems resulted in part from delays finalising a design acceptable to the US military, and in part from the time required to place C-47 manufacture on a true mass-production footing.⁵

During 1942 the generation of airborne

forces in both the UK and the US created a demand for AT which could not be fulfilled either by converting bombers or by the production of purpose-built troop carriers and glider tugs. But as America at least possessed a prototype troop carrier in 1941, and as her vast industrial resources were relatively untapped at this stage of the war, it is hardly surprising that the USAAF began to form airborne AT units more rapidly than the RAF. In these circumstances (and given the British Army's reluctance to let RAF AT supply considerations shape their plans for generating a multi-division airborne arm) it was inevitable that the British airborne would come to depend on the USAAF to some extent. Such an arrangement represented an entirely rational allocation of Allied resources and was in fact approved at the very highest level – by Churchill and Roosevelt – as early as May 1942.⁶

Greenacre is thus wrong to imply that there was some objection in principle to the employment of American troop carrier wings to carry British airborne troops in Torch and Husky. Equally it is very misleading to suggest that the difficulties encountered during these operations stemmed directly from this dependence on American airlift. Indeed the worst disaster to befall a British airborne unit in North Africa (2 PARA at Depienne) had nothing to do with the airlift, but stemmed simply from the fact that 2 PARA were committed to a fundamentally flawed operation plan by an Army commander who was completely ignorant of airborne warfare.⁷

That many of the US aircrew who participated in Torch and Husky were inadequately trained is well known, but this was another direct result of the Allies' determination to generate very large airborne forces in a very short space of time. In the second half of 1942 C-47 production was only just beginning to accelerate and there had been minimal scope for aircrew training when the decision was taken to send several troop carrier wings to Europe so that American

airborne troops could participate in Torch.⁸ Their limitations were well understood at the time and should therefore have been factored into Allied airborne plans, but instead they were completely ignored. This is perfectly illustrated by the first Torch mission, which involved a 1,100-mile direct and unescorted transit by night from Cornwall across neutral Spain to North Africa, and then two potential courses of action, depending on whether or not French forces around Oran (in Algiers) seemed likely to offer resistance. The senior RAF officer on Eisenhower's staff dismissed the plan as 'hair-brained', but he was overruled.⁹ Predictably enough the outcome was a complete fiasco. However, in many ways the tasks assigned to the American crews in Husky were even more daunting in that they required long night transits with several turns over water to route around the Allied invasion fleet and, as events turned out, low-altitude formation flying through both Allied and German anti-aircraft barrages. 'In vain did the British Airborne Forces adviser, Group Captain TB Cooper, RAF, protest that a glider assault on a dark night with inexperienced crews was not practicable. The decision stood.'¹⁰

The RAF's stance on the employment of aircraft – whether bombers, fighters, or transports – was that they should be used to optimum *operational* effect. The Air Staff's early scepticism concerning the airborne forces was primarily based on the fact that they seemed certain to be non-operational for long periods of time, i.e., between the limited number of missions ultimately conducted. The permanent assignment of numerous aircraft *and* their accompanying support infrastructure to airborne AT seemed to represent an unaffordable luxury, particularly in the desperate circumstances of 1941 and 1942 when Bomber Command was still a relatively small and poorly equipped force. Greenacre briefly acknowledges this point, but his contention that the RAF's position imposed permanent and detrimental constraints on operational activity does not stand up to careful examination. To

suggest combat aircraft were only suited to a war of 'defence or attrition' ignores the fact that Allied bomber and fighter formations were extensively employed in support of ground forces during the liberation of Western Europe; and nowhere in his article is there any recognition of the fact that by the summer of 1944 both the RAF and the USAAF could field very substantial airborne AT forces. On the night of 5/6 June the US 9th Troop Carrier Command's front-line strength exceeded 900 aircraft, while the RAF's 38 Group and 46 Group had a combined strength exceeding 350 aircraft.

After the Allied breakout from Normandy in August the permanent assignment of these enormous resources to the airborne became increasingly controversial. With the logistical position of the Allied land armies deteriorating daily there was a natural tendency to look on air supply for a solution. Yet the need to keep aircraft and crews at a state of near immediate readiness for successive airborne ventures (sixteen of which were considered between Neptune on 6 June and Market Garden on 17 September) had the effect of grounding a large part of the Allied AT fleet. The RAF's 46 Group, which had between 175 and 185 serviceable C-47s at this time, could only use small numbers of aircraft each day to move cargo between the UK and the French landing fields. The number of USAAF transport aircraft held back for the airborne was far greater.¹¹ It is hardly surprising that in these circumstances senior American ground commanders such as Bradley began to argue that all troop carrier aircraft should be withdrawn from airborne operations and training and committed entirely to logistical support.

Nothing could vindicate more completely the Air Staff's earlier efforts to limit airborne AT demands. But is Greenacre nevertheless correct to argue that when an operation (Market Garden) was finally launched it failed partly because there were insufficient aircraft to convey 1st Airborne Division to Arnhem in a single lift?

In actual fact there was nothing inherently wrong with the concept of multiple-airlift operations. They were successfully employed in earlier ventures such as Neptune and Dragoon (the Allied landings in southern France), and they were a feature of most Allied airborne plans later in the war, including many that did not come to fruition. The fundamental cause of Market Garden's failure was not the requirement for multiple lifts *per se*, but the belief that a multiple-lift operation could successfully be mounted against a deep and defended objective accessible only by a single narrow road and on the wrong side of a series of major water obstacles. The two British Army officers who shared this disastrously mistaken view were Montgomery, who had little knowledge or understanding of airborne warfare, and the British Airborne Corps commander, Lieutenant General Browning, who had no operational command experience.¹² In any case, to have mounted Market Garden with a single airlift would have required an AT force of well over 3,000 aircraft.¹³ The idea that so much AT could have been held in a state of inactivity pending some future airborne operation is of course completely absurd given the Allies' logistical position in August and September 1944.

As for 1st Airborne Division, they were in Market Garden the beneficiaries of a larger airlift than any other British airborne force had so far secured during the Second World War. That they needed a second lift of equivalent size the next day was primarily due to their massive demand for assault glider capacity. In the aftermath of Operation Husky the War Office and the Air Ministry had agreed that airborne division glider requirements should in future not exceed 430 aircraft for operations mounted from the UK.¹⁴ 1st Airborne Division required a total 660 glider sorties on the first two days of Market Garden. In all, on the first day, they were assigned 476 sorties (155 parachute and 321 glider sorties). The second lift allocated a further 422 sorties to 1st Airborne's infiltration and 33 sorties to re-supply. In summary, then, a total of

931 aircraft were assigned to 1st Airborne Division on the first two days of Market Garden. This amounted to 311 more than the 620 allocated to 6th Airborne's two lifts in Neptune.

Why did 1st Airborne require this immense glider lift? Much of it was in fact needed to carry divisional units, vehicles, weapons and equipment, rather than combat troops. Only 5,850 of the 10,241 personnel conveyed by the first and second Arnhem lifts were members of 1st Airborne's two parachute brigades, or of the glider-born Air Landing Brigade. Of the remainder the largest group was the Glider Pilot Regiment, which numbered more than 1,200 personnel.¹⁵ But even after the glider pilots are removed from the total there would still have been 3,129 personnel additional to the three brigades. Otherwise the two lifts brought in 96 artillery pieces and 863 additional items described in the available record as 'other vehicles'.¹⁶ A total of 86 gliders provided the equipment lift for the two parachute brigades; the Light Regiment, Royal Artillery, required 57 gliders, the two anti-tank gun batteries 48 in total, the divisional headquarters 29, the Royal Engineers 26, and the 17-pounder battery 22. The Light Composite Company, Royal Army Service Corps, absorbed 41 glider and parachute sorties, while the divisional Reconnaissance Squadron absorbed 30.¹⁷ On average each glider sortie mounted for 1st Airborne on 17 and 18 September carried just eight personnel, two of whom would have belonged to the Glider Pilot Regiment.¹⁸ Such statistics do not sustain the argument that division suffered from a shortage of AT.

The possibility of extensively revising airlift arrangements to accelerate the deployment of combat troops seems never to have been considered by 1st Airborne. There is no record of contingency schemes for operating on 'light scales', with reduced equipment holdings or a smaller support infrastructure. Only the experience of Market Garden would lead the Allies to conclude that a single lift should be staged

for Operation Varsity (the Rhine crossing) in March 1945. This did not involve a very substantial enlargement of the Allied air transport force, but it did necessitate a marked reduction of airborne requirements (as well as a far less ambitious airborne plan). Demand management was the key. Varsity was restricted to two rather than three divisions, and 6th Airborne Division were forced to base their deployment plans on a total glider lift of some 440 aircraft.¹⁹

From an army perspective the creation of multi-division airborne forces was a relatively straightforward task in the circumstances of the Second World War. It required little more than the formation of infantry divisions with some specialised training and equipment. The task of generating airlift (including large numbers of trained aircrew and a substantial support organisation) for the airborne forces was infinitely more difficult and time-consuming for both the RAF and the USAAF. It was therefore inevitable that unless the Allied armies agreed to manage their airborne ambitions carefully the demand for airborne AT would outstrip supply. Every attempt to find a supply-based solution to the problem by accelerating the generation of lift capacity merely resulted in the premature commitment of under-trained aircrew to complex and conceptually flawed operations, as it did in North Africa, Sicily, and indeed western (and to some extent eastern) Normandy. Multiple-lift plans could provide a solution in certain operational scenarios, but not in an exceptionally high-risk venture such as Market Garden. The only alternative was to curb airborne lift demands – the course of action ultimately pursued in Varsity. It is time history acknowledged that the Allies would have done better to accept the realities of this situation earlier in the war by imposing far tighter constraints on the expansion of the airborne forces.

Notes

1 Major John Greenacre, '“There is, I'm afraid, no alternative ...” The Provision of Transport and Support

Aircraft to British Airborne Forces during the Second World War', *Royal Air Force Air Power Review*, Vol. 10, No. 3, Autumn 2007.

2 Lieutenant Colonel TBH Otway, *Airborne Forces* (War Office official monograph, 1951), pp.21, 37-39, 45-48, 94-95, 147, 229. According to Otway, the glider-borne air landing troops were the most heavily armed infantry in the British Army.

3 Maurice Tugwell, *Airborne to Battle: A History of Airborne Warfare* (William Kimber, London, 1971), pp.233-234.

4 John C Warren, *Airborne Missions in the Mediterranean 1942-1945* (USAF Historical Division Research Studies Institute, Air University, 1955), pp.1-3.

5 Arthur Percy Jnr, *Dakota: A History of the Douglas Dakota in RAF and RCAF Service* (Ian Allen, London, 1972), pp.9-10, 16, 20-28.

6 *Air Publication 3231, The Second World War, 1939-1945*, Royal Air Force, *Airborne Forces* (unpublished Air Ministry monograph, 1951), p.43.

7 Otway, *Airborne Forces*, pp.78-82; William Buckingham, *Arnhem 1944* (Tempus, Stroud, 2004), pp.19-20.

8 Warren, *Airborne Missions in the Mediterranean*, p.3.

9 *Ibid.*, pp.5-9.

10 *Ibid.*, p.23.

11 AP 3231, *Airborne Forces*, pp.146-147.

12 Buckingham, *Arnhem*, pp.74-76.

13 Sebastian Cox, 'Air Power in Operation Market Garden', *Air Clues*, (April, May and June, 1985), p.152.

14 Extract from Joint War Office / Air Ministry Report on the Employment of Airborne Forces, Appendix V / 18, Appendix D, Notes on the Planning and Preparation of the Allied Expeditionary Air Force for the Invasion of North West France in June 1944, appendices (held at Air Historical Branch).

15 Martin Middlebrook, *Arnhem 1944: The Airborne Battle*, 17-26 September (Penguin, London, 1995), pp.455-460.

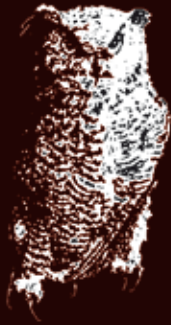
16 John C Warren, *Airborne Operations in World War II, European Theatre* (USAF Historical Division, Research Studies Institute, Air University, 1956), p.227.

17 Middlebrook, *Arnhem*, pp.455-460; see also Major General RE Urquhart, *Arnhem* (Pan, London, 1958), p.217.

18 Warren, *Airborne Operations*, p.227. The breakdown for 17 September was 359 glider sorties and 2,908 personnel, or 8.1 personnel per glider; Warren's figure for personnel on 18 September is clearly incorrect but an accurate figure can be established by deducting the 17 September figures and the 18 September parachute lift (7,496) from the total 1st Airborne Division personnel figure of 10,241. On this basis the lift for 18 September involved 329 gliders and 2,745 personnel, or 8.3 personnel per glider.

19 Otway, *Airborne Forces*, pp.304-305, 318; Warren, *Airborne Operations*, pp.157-158. The first Market lift involved 1,544 aircraft while the Varsity lift involved 1,596. Some 74 C-46 transports were used in Varsity, which had twice the capacity of the Dakota; otherwise lift capacity was increased by 'double-towing' American Waco gliders – a technique made possible by forward basing some of the American air transport wings in France.

Notes



 **ROYAL
AIR FORCE**

Centre for Air Power Studies

Concordia res parvae crescent
"Work together to accomplish more"