

Royal Air Force Woodvale



Flying Order Book

Section C

Standing Orders - Flying

Tutor

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FOB Section C - Standing Orders Flying (Tutor)

ORDER WDV C1 – Authorisation and Passenger Flying

References:

- A. 6FTS Flying Order 2306 – Authorisation of Flights.
- B. MAA RA 2340.
- C. 6FTS Flying Order 2340 – Flying of Passengers in UK Military Air Systems.

Rationale

Authorisation is the authority given to an Ac Cdr to fly a particular air system on a specified mission or duty. It provides an immediate level of assurance and direction.

Contents

C1 (1): Powers of Authorisation
C1 (2): Authorisation Procedures
C1 (3): Tutor Outbrief and Inbrief
C1 (4): UAS Solo Briefing Checklists
C1 (5): Passenger Flying in Tutor Air Systems.

Flying Order WDV C1 (1)

WDV C1 (1) Flight authorisation **shall** be performed by an individual who has been delegated the appropriate power to do so.

Acceptable Means of Compliance WDV C1 (1)

Powers of Authorisation

1. **Delegated Powers of Authorisation.** Detailed regulation and guidance on Powers of Authorisation (PoA) are detailed at Reference A. OC Flying **should** ensure that the most up-to-date HQ 6FTS document detailing RAF Woodvale Delegated PoA is prominently displayed at the point of authorisation in stn ops. OC Flying, in consultation with the Stn Cdr, **should** notify HQ 6FTS through Sqn Ldr UAS of any changes required or requested to RAF Woodvale Delegated PoA.

Guidance Material WDV C1 (1)

2. **PoA - UAS/AEF Establishments.** Definitive PoA for all RAF Woodvale operators are defined within the latest HQ 6FTS document detailing RAF Woodvale Delegated PoA.

Flying Order WDV C1 (2)

WDV B1 (2) All flights **shall** be authorised in accordance with regulated procedures.

Acceptable Means of Compliance WDV C1 (2)

Authorisation Procedures

3. **Written Authorisation.** The content of every flight **should** be clearly defined in the authorisation sheet duty column. Authorising officers **should** ensure that:

- a. Except for those elements implicit in all flights, sortie details are entered using one or a combination of:
 - (1) Syllabus exercise numbers from the UAS syllabus or Light Aircraft Conversion Syllabus (LACS).
 - (2) Unambiguous wording.
 - (3) FTP 3225 exercise numbers.
 - (4) Where applicable, trainee IA/FE sorties **should** refer to an

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appropriate syllabus exercise.

(5) The annotation SCT **should** be amplified with descriptors entered as GH, IF, Nav, Form with appropriate caveats. Local authorisation codes, based on TIG exercises, to articulate authorised flying exercises are detailed at Annex A. Authorisers **should** use the appropriate local authorisation code(s) at Annex A to define the authorised sortie profile. OC Flying **should** ensure that a copy of Annex A is prominently displayed at the point of authorisation in stn ops

b. The phrase 'as briefed', supported with sortie formation briefing slides retained at the point of authorisation, should be used for formation sorties. Formation slides may be retained electronically on the Woodvale MOSS (DII) provided that the Ops Clk is on duty (or the DP remains on the ground) and has access to the slides via DII.

c. MSD is entered for all navigation sorties below 2000ft and for all sorties that include PFLs away from an airfield. General handling authorisation codes detailed at Annex A imply the appropriate MSD for exercises such as PFL and EFATO training; if the implied MSD is correct an authorisation code does not need to be amplified with MSD.

d. Air Cadet Manifest. For ease of use, AEFs may record cadet details using the AEF cadet manifest form.

4. Nil.

Guidance
Material
WDV C1 (2)

Flying Order
WDV C1 (3)

WDV C1 (3) Ac Cdrs **shall** complete the prescribed Outbrief Checklist at the point of authorisation before flight and the prescribed Inbrief Checklist whilst completing mandatory post sortie administration.

Acceptable
Means of
Compliance
WDV C1 (3)

Outbrief and Inbrief Procedures

5. **Tutor Outbrief.** Tutor Ac Cdrs **should** use the outbrief checklist detailed at Annex B during the flight authorisation process. Flight authorisers **should** be present to supervise the outbrief process whenever practicable.

6. **Tutor Inbrief.** Immediately following completion of a sortie and after signing the ac back to the engineers on the Tech Log, Tutor Ac Cdrs **should** use the inbrief checklist detailed at Annex.

7. **Location of Outbrief and Inbrief.** OC Flying **should** ensure that the latest version of the outbrief and inbrief checklists are prominently displayed at the point of authorisation in the stn ops room.

8. **Landaway Procedures.** When operating from an airfield away from RAF Woodvale, Ac Cdrs **should** ensure that copies of the approved outbrief and inbrief are carried and actioned appropriately.

9. Nil.

Guidance
Material
WDV C1 (3)

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Flying Order WDV C1 (4)

WDV C1 (4) Authorisers **shall** ensure that solo student sorties are prepared and authorised in accordance with current regulations and guidelines.

Acceptable Means of Compliance WDV C1 (4)

UAS Solo Briefing Checklists

10. **Authorisation of UAS Solo Students.** Authorisers **should** use the checklist and supporting information at Annex C to ensure that a UAS student is fit to be authorised for a solo sortie. OC Fg **should** ensure that an up-to-date copy of the 3FTS EFT/RPAS course solo briefing checklist is retained at the authorisation point when EFT/RPAS course flying is conducted at RAF Woodvale

Guidance Material WDV C1 (4)

11. Further guidance for briefing officers and flying authorisers is at Annex C.

Flying Order WDV C1 (5)

WDV B1 (2) All passenger flights **shall** be correctly authorised and administered.

Acceptable Means of Compliance WDV C1 (5)

Passenger Flying in Tutor Air Systems.

12. **Tutor 3rd Party Passenger Air Experience Flying.** The Tutor ADDH has suspended flying of all Tutor 3rd party passenger sorties from RAF Woodvale TFN.

13. **Fitness to Fly.** Passengers for flight in Tutor air systems **should** be medically fit to undertake the flight. Passengers should declare themselves fit on the passenger briefing form found at Annex B to Reference B. A current version of the form is printed on the reverse of Annex A in hard copy only. Medical examination is not necessary unless the passenger is obviously ill or unfit.

14. **Passenger Briefing Checklist.** The RAF Woodvale passenger briefing checklist is detailed at Annex C. The standard passenger briefing form is at Annex B to Reference B; this **should** be completed and retained with the Authorisation Sheets for the duration of the flight.

15. **Passenger Flight Restrictions.** Full restrictions on the type of flight on which passengers may be carried are detailed at Reference C.

16. **AEF Cadet Flying.** Cadet flying has an alternate authorisation procedure detailed at Reference C and the passenger briefing form at Annex B to Reference B does not apply. Additional restrictions apply to Cadet flying and can be found at Reference C. In addition, Ac Cdrs **should** note the following limitations:

- a. No test flights.
- b. No low flying.
- c. No consecutive visual circuit flying due to RAF Woodvale EFATO considerations.
- d. A 10 AEF cadet flying detail **should not** consist of more than 3 back-to-back (notionally 25 minute) AEF sorties before the air system is signed back to groundcrew for refuelling.

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e. To provide more time for abandonment in the event of loss of control, the minimum height for aerobatics is to be 3000 ft agl.

17. **AEF Cadet Flying Limits.** Ac Cdrs flying cadets **should** adhere to the limitations detailed with the flying phase chart at Order WDV B1 (3) and further guidance at Reference C. Sorties flown with cadets **should** be flown in VMC and in sight of the ground only. Except to comply with arrival or departure procedures cadet sorties should not be conducted below 1000 ft agl to allow for a forced landing or abandonment option in the event of serious emergency. Ac Cdrs **should** be mindful that 1000 ft agl is the absolute minimum operating height for cadet AEF sorties outside of the ATZ. There may be occasions when a higher minimum operating height is appropriate, for example if the immediate surrounding terrain is unfavourable for a forced landing. Ac cdrs should comply with direction on Management of Risk at Reference C para 38.

**Guidance
Material
WDV C1 (5)**

18. Full regulation regarding carriage of passengers is detailed at References B and C.

Annexes:

- A. RAF Woodvale – Local Tutor Sortie Authorisation Codes.
- B. Tutor Outbrief and Inbrief Checklists.
- C. UAS Solo Student Briefing Checklist.
- D. RAF Woovale Non-cadet Briefing Checklist.

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Annex A to Order WDV C1

RAF Woodvale – Local Tutor Sortie Authorisation Codes

1. **Authorisation Descriptors.** The following descriptors **should** be used to amplify written sortie authorisation for non-syllabus SCT sorties:

Sortie Element	Sub-elements and Detail	Ex
Visual Circuits	All visual circuits defined within the TTM and approved for the in-use runway.	1
Visual Practice Forced Landing (PFL)	PFL conducted to an airfield (from high/low-key) or an off-airfield field. The following MSD applies: (See Note) a. Ac Cdr is a Qualified Pilot – 100 ft MSD. b. Ac Cdr is a Trainee Pilot – 500 ft MSD.	2
Stalling	Stall in the Clean (incipient or full), Final Approach (incipient or full) or Final Turn (incipient) configurations.	3
Advanced (Steep) Turns	Academic advanced turning exercises (45 and 60 deg AOB).	4
Maximum Rate Turn	Practice emergency break or maximum rate turn with entry from 80/100 kts.	5
Aerobatics	Aerobatic manoeuvres as defined within the TTM.	6
Spinning	Recovery at the full or incipient stage.	7
Navigation	Practice navigation sortie with MSD of 2000 ft or higher.	8
Radar PFL	Practice forced landing through cloud for instrument rated pilots with the following absolute MDH: a. No circuit traffic - 1500 ft aal. b. Circuit traffic – 3000 ft aal.	9
Instrument Flying	Annotate pre-booked practice diversion.	10
Practice Turnback	Simulated engine failure after take-off and turnback to fly an approach to the airfield. MSD 100 ft (See Note).	11
Low Flying	Low flying navigation. Annotate LFA(s) and MSD 500ft	12
Formation	Include the caveat 'as briefed'. Formation briefing slides to be displayed at the authorisation point.	13
Flying Ability Test (FAT)	All sortie elements prescribed at Annex A to 6FTS Tutor Order 2102 (FAT Profile). MSD 100 ft for PFL and practice EFATO (See Note).	FAT

Note: This implies compliance with CAA General Exemption E3940 to SERA.5005(f) (Ex-Rule 5 of Schedule 1 to UK Rules of the Air).

2. **Example use of Codes.** Below are 2 examples of written authorisation within an authorisation sheet duty column:

SCT GH Ex 1-7 and *SCT FAT*

3. **Mixed Profile SCT sorties.** Sortie profiles containing mixed disciplines **should** be fully described as such within written authorisation. For example:

SCT GH/IF Ex 1, 6 + 10. PD EGNO.

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Annex B to Order WDV C1 - Tutor Outbrief and Inbrief Checklists

Tutor Outbrief

SER	ITEM	DETAIL
1	FIT TO FLY	Medications* / fatigue / alcohol.
2	CALL SIGN	Allocated.
3	TASK/EXERCISE	Briefed.
4	AUTHORISATION SHEET	Task Description (MSD?), Authorisation, Ac Cdr sig, RF sig?
5	AC TAG	Allocated.
6	WEATHER SUITABLE	MOMIDS TAF/METAR, Flying Phase, Inst Rating Required?
7	AIRFIELD STATE	Runway. WIP/Warnings? See Ops Brief.
8	DIVERSION & FOG	Runway. WIP/Warnings? Fuel on Gnd? See Ops Brief.
9	STOP PRESS	See Ops Brief.
10	LAST LANDING TIME	See Ops Brief.
11	ROYAL FLIGHT	See Royal Flight board & Ops Brief. R/F sig on auth sheet?
12	LOCAL NAV WARNINGS	See NOTAM Board. SAROPS notified?
13	DUTY PILOT	Informed?
14	RADAR SERVICE	Available? Traffic Service or Basic Service?
15	DE-CONFLICTION	Annotate De-confliction Map.
16	PERFORMANCE & LOAD	Ac all-up weight and C-of-G. T/O and landing distances.
17	PRACTICE DIVERSION	Booked and approved? Annotated on auth sheet?
18	PILOT CURRENCY	QSP – Google Docs. Trainee – EssEx (inc. Abandon Drill)?
19	IN THE GREEN	Check 'In the Red/Green Board'. Last Change on Ops Brief.
20	ESSENTIAL DOCS	Local area maps / FRCs carried (<i>Classic or EA?</i>).
21	DRESSED TO SURVIVE	Standard flying clothing and gloves. Cold Wx jacket?
22	MOBILE PHONE	Secure. Set to 'Flight Mode' as a minimum.
23	LOOSE ARTICLES	Crew sanitised for potential loose articles. Boot check.

Specific Considerations:

24 Nav / Low-Level	25 IF	26 Passenger
Map – Copy in Ops Route Forecast NOTAM / CANP / CALF / PINS Late warnings (TELECON) CADS MSD / LFA / SALT Any additional docs (i.e. TAPs)?	PD booked Visor / patches Competent Safety Pilot?	Approval & Authorisation PAX brief complete Sortie category / exercises PAX form complete Dress / Footwear Sick bag Camera
27 Landaway	28 Formation	29 Trainee Solo
Booked / PPR Tech Log/A-check/F6840 Ac docs / Landaway kit / Hi-viz Return Authorisation	Briefed Slides displayed in Ops or on MOSS ATC pre-note	UAS solo briefing checklist (Annex C) Supervisor in tower Groundcrew briefed

Last Checks:

SER	ITEM	DETAIL
30	EMERGENCY OF DAY	Studied
31	HIGH TIDE TIMES	Noted from Ops Brief and considered for... (Ser 32)
32	EFATO OPTIONS	Studied from imagery in Ops.
33	TECH LOG	By Ac Cdr

* Pilots not under Service medical care should consult with a qualified Military Aviation Medical Examiner (MAME) if they are taking any medication.

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Tutor Inbrief

SER	ITEM	DETAIL
1	AC SERVICEABLE?	If not, notify Ops Clerk or DP for flypro considerations.
2	AIR SAFETY	DASOR required? (Mandated: Birdstrike, Airprox, Lightning, Fatigue, LASER, Loss of Thrust, etc. Full list beside Auth Sheets) If so, notify Ops Clerk/DP and Engineers.
3	TECH LOG	Ac Cdr completed Tech Log.
4	IF VISOR?	Returned to Line.
5	AC TAG	Returned to Ops.
6	DE-CONFLICTION BOARD	Tile removed.
7	AUTHORISATION SHEET	Completed. Sortie times, IF, SCT, EssEx and landings recorded. Ac Cdr signed-in.
8	LOW FLYING RECORD? (inc PFL)	Low flying return if applicable. Details (including time <500ft MSD and location for PFL) recorded on RAF Woodvale Low Flying Return sheet.
9	NAV MAPS / FORMATION SLIDES	Retrieved from Ops.
10	F6840?	Submitted if 'services rendered' by civilian agent.
11	CURRENCY AND STUDENT PROGRESS	Currency exercises recorded on Google Docs. Student progress recorded on Google Docs.
12	LOOSE ARTICLES?	Ensure that you retain everything with which you boarded.
13	NO IECD?	If no IECD, record daily operating time on noise log.
14	DEBRIEF	

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Annex C to Order WDV C1

UAS Solo Student Briefing Checklist

BRIEFING OFFICER

- A solo student **should** be given pre-flight briefings by an instructor sufficiently familiar with the student's performance such that adequate supervision can be maintained.
- Briefing Officers are responsible to the Authorising Officer to check the Student Report folder for: solo clearances, critical faults and omissions, points from the last dual sortie.
- Student briefed on **no use** of RPM low **for training** whilst solo.

AUTHORISING OFFICER

- Authorising Officers **should** ensure that Ac Cdrs are competent and current to undertake the briefed sortie. He need not be present at the brief himself.
- Authorising Officers **should** inform the DP whenever solo student flying is being conducted.
- Royal Flight in local flying area – check GASO 3015 for limitations.
- EFATO options – In-depth check of understanding.
- Latest landing time is ECT minus 45 min including time for diversion plan.

WEATHER

- A local weather check, including circuit conditions, **should** be carried out before solo student flying. The weather check may be a dedicated sortie or conducted as a part of a routine exercise.
- Consider and brief the Diversion Plan.

FATIGUE

- Max of 4 hrs flying in previous 24 hrs, 35 hrs in 30 days or 80 hrs in 90 days.
- 10 hours available for rest before starting the working day.
- Not taken drugs or medicines within the last 24 hrs unless cleared by a MO.
- Not given initial course of vaccines within 24 hrs. No restrictions following 'boosters' if feeling well.
- Not given blood in the last 36 hrs.
- Not given a general anaesthetic in last 48 hrs or a local in last 12 hrs.
- Maximum 3 sorties per day (dual to solo sorties count as a single sortie).
- Where a trainee flies 3 sorties per day on consecutive days, the third sortie on the second day is to be dual

CURRENCY

- Dual sortie mandatory following extended illness, injury or air system accident.
- Completed Crit Pts 1 and 2.
- Last Dual sortie within 7 days.
- Essential exercise requirements satisfied (see overleaf).

Overleaf:

Essential Exercise Currency – Solo UAS Student Sorties.
Further Guidance on Solo UAS Student Sorties

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Essential Exercise Currency – Solo UAS Student Sorties.

1. **Essential Exercises.** Valid for 3 months.

Essential Exercise	Details
Essex 1	Abandonment drill

2. **Essential Exercises.** Valid for 6 months.

Essential Exercise	Details
Essex 2	Canopy jettison drill

3. **Essential Exercises.** Valid for 31 days.

Essential Exercise	Details
Essex 3	Stalling. To include stalling on the approach and in final turn
Essex 4	Emergencies. To have practised an engine failure in the air
Essex 5	Circuits, including take-off. To include glide, low level and flapless circuits if required for the solo sortie. To include a brief on PIO/Bounce
Essex 6	EFATO, for each individual runway clearance as required
Essex 7	PFL
Essex 8	Incipient Spin/Unusual Attitudes.
Essex 9	Full Spin
Essex 10	Aerobatics

4. **Sortie Requirements.**

Sortie Content	Essex 1	Essex 2	Essex 3	Essex 4	Essex 5	Essex 6	Essex 7	Essex 8	Essex 9	Essex 10
Circuits	X	X	X	X	X	X				
PFLs	X	X	X	X	X	X	X			
Steep Turns	X	X	X	X	X	X	X			
NAV	X	X	X	X	X	X	X			
FORM	X	X	X	X	X	X	X			
Max Rate Turns	X	X	X	X	X	X	X			
Stalling	X	X	X	X	X	X	X			
Aerobatics	X	X	X	X	X	X	X	X	X	X

Overleaf:

Further Guidance on Solo UAS Student Sorties

Further Guidance on Solo UAS Student Sorties

SOLO CIRCUIT CONSOLIDATION

Minimum Phase 3.

- Directly observed and supervised from the VCR by instructor who conducted dual check.
- Remain in visual circuit (including initials, overhead and Hi Key) and 200 ft vertically clear of cloud.
- Max 4 consecutive circuits to touch and go or go around before carrying out an intermediate landing or by clearing the circuit to initials, overhead or Hi Key as briefed and authorized.
- Min go around heights (unless cleared to land / touch and go):
In the cct – 200ft.
PFL outside the cct – 500 ft MSD.

SOLO SECTOR RECCE

Minimum Phase 5 (4 post PFB)

- Completed Crit Pt 3
- Flown within 72 hrs of the dual ex, over the same route.

GH

Minimum Phase 5 (4 post PFB)

- Completed Sector Recce.
- No intentional spinning.
- Stalling and aero height minima 4000 ft AGL and 1000 ft vertically clear of cloud.
- Student specific aerobatics as per CRF.
- Passed SAC, practised spinning on 3 separate sorties.
- For all solo EFT ICCS and pre-SAC UAS trainees, the trainee should understand that if a full spin is entered unintentionally, the correct course of action is to **abandon the air system**.

NAV

Minimum Phase 5 (4 post PFB) remain 500 ft vertically clear of cloud with a minimum 5 km visibility throughout the route

- Crit Pt 4.
- Dual navigation sortie in previous 31 days.
- Weather avoidance procedure.
- Controlled airspace (including Royal Flights), proximity and avoidance.
- Safety altitude. Fuel planning, Bingo fuel, emergency divs and frequencies. Lost procedure.

FORMATION

Minimum Phase 4

- Dual formation sortie in the previous 14 days.

EMERGENCIES

- No simulated engine failures in the circuit.
- CAA General Exemption E3940 to SERA.5005(f) (Ex-Rule 5 of Schedule 1 to UK Rules of the Air) to be adhered to at all times.
- EFATO actions.
- Action in the event of engine failure or malfunction.
- Woodvale radio failure drill.

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RAF Woodvale Non-cadet Briefing Checklist

Location	Briefing Material/Action to be Delivered
Briefing Room	<ol style="list-style-type: none"> 1. Confirm suitably dressed: sensible clothes, footwear and secure jewellery. 2. Brief sortie content and purpose including forecast weather 3. Show Passenger Safety Brief Video (version 4 with LSJ & QRB).
Sortie Brief	<ol style="list-style-type: none"> 4. Authority of Ac Cdr. 5. Use of cameras (in secure pocket, confirm before use). 6. Clearing of ears. 7. Manoeuvre warnings and application of 'g': <ol style="list-style-type: none"> a. Good head and neck position, brace: passenger responsibility to as ready as possible. b. Emergency break: warning may not be given.
10 AEF Building	<ol style="list-style-type: none"> 8. Conduct Egress training under supervision on 10 AEF rig to include: <ol style="list-style-type: none"> a. Releasing the seat harness. b. Standing up c. Locating and pulling the parachute D-ring.
Escorted to Safety Equipment	<ol style="list-style-type: none"> 9. Dress passenger ready for flight. 10. Positively handover passenger to a handler or escort throughout pre-flight if unavailable.
At the Air System	<ol style="list-style-type: none"> 11. Escort passenger to (or meet at) air system and conduct anthropometric check to confirm they do not impinge flying control movement or other system while seated.

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ORDER WDV C2 – RAF Woodvale Diversion Airfields

References:

- A. 6FTS Tutor Flying Order 2305 (1) – Selection of Diversion Airfields.
- B. 6FTS Tutor Flying Order 2305 (1) – Fuel Planning.
- C. Letter of Agreement between BAe Systems Warton and RAF Woodvale.

Rationale

A suitable diversion airfield should be available for the duration of Tutor flying operations at RAF Woodvale.

Contents

C2 (1): RAF Woodvale Diversion Airfields

Flying Order WDV C2 (1)

WDV C2 (1) Supervisors and Ac Cdrs **shall** ensure that a suitable diversion airfield is available and that an appropriate minimum Fuel on the Ground (FoG) is declared considering the nominated diversion airfield

Acceptable Means of Compliance WDV C2 (1)

Selection of Diversion and Minimum FoG

1. **Diversion Selection Criteria.** Information regarding minimum weather limits for selection of a diversion airfield are summarised at Annex D to Order WDV B1. More detailed regulation is at Reference A. BAe Warton airfield is rarely open over weekend periods. A suitable diversion airfield is mandatory in order for Ac Cdrs to operate 6FTS Tutors from Woodvale. Ac Cdrs **should not** operate with 'no diversion' under any circumstances.
2. **Minimum FoG.** Prior to commencement of UAS and/or AEF operations, the DP **should** nominate the stn diversion airfield and resultant minimum landing fuel (FoG) as detailed at Order WDV B1. More detailed regulation is at Reference B.
3. **Standard Diversion Airfields for RAF Woodvale.** A diversion planning guide for RAF Woodvale, including recommended VFR diversion transit routes is detailed at Annex A.
4. **BAe Warton Diversion Commitment.** As detailed at Reference C, BAe Warton airfield may be used as a crash diversion during Warton's hours of operation. The following conditions apply:
 - a. Woodvale ATC will advise Warton Radar when flying operations cease for the day.
 - b. Woodvale ATC will advise Warton Radar immediately when the airfield is unavailable and that air systems will be diverting to Warton.
 - c. In the event of air system diversion, Warton ATC will advise Civil Air Terminal (CAT) Ops.
 - d. Woodvale-based air systems diverting to Warton will park on the CAT or Nimrod Aprons unless otherwise advised by CAT Ops.
 - e. Warton ATC will advise Woodvale ATC if the Warton runway becomes unavailable.

Guidance Material WDV C2 (1)

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Annex:

A. RAF Woodvale – Diversion Planning Guide.

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Annex A to Order WDV Order C2

RAF Woodvale – Diversion Planning Guide

Set RPM HIGH, 20" MP, BPM, flaps up, 100 kts IAS once at transit altitude.

With BPM set, fuel consumption is approximately 38 ltrs/hr (6.3 ltrs/10 min).

Fuel required in the table below includes fuel required for climb to transit altitude:

DIVERSION (Note 3)	DISTANCE nm	FUEL REQ'D Litres (Notes 1 and 2) QSP Student		Safety Alt	Transit altitude	ICF	R/W	APPROACH AIDS
Blackpool EGNH	13 (Note 6)	31 (Note 4)	41 (Note 4)	2900	1500' QNH	APP/ TWR 119.95	10/28 13/31	ILS/DME (RW28) (Note 5)
Hawarden (Note 7) EGNR	27	36	QSP ONLY	3100	2000' QNH	RADAR 123.35	04/22	ILS/DME (RW04/RW22)
Liverpool EGGP	20 (Note 6)	38 (Note 8)	48	2900	1500' QNH	RADAR 119.85	09/27	ILS/DME (RW27) SRE
Warton EGNO	12 (Note 6)	30	40	3500	1500' QNH	RADAR 233.175	07/25	ILS/DME (RW25) SRE

Notes:

1. The above are CLEAR WX, still wind figures based on the criteria in SYS202, 6FTS Supplement to Tutor Flying Orders. Add 5 ltrs for one radar approach at diversion if an IMC diversion is anticipated. Apply an increase of 10% per 10kts of additional headwind. A solo student flying phase means VFR recovery wx at diversion.
2. Fuel figures are for diversion from overhead Woodvale and based on minimum landing fuel of QFI 20 ltrs (min of 10 per side) and STUDENT 30 ltrs (min 15 per side).
3. The DP (through ATC if necessary) should confirm airfield availability and the serviceability state of the approach aids before nominating the diversion airfield.
4. Fuel required for Blackpool as a diversion includes contingency in the event that traffic ahead is conducting backtrack on the active runway after landing.
5. Since the demise of radar services at Blackpool in Oct 14, Blackpool should only be planned as a VFR diversion.
6. Recommended VFR diversion transit routes are detailed at Annex B.
7. Use of Hawarden as a diversion is primarily envisaged when Liverpool Airport is unavailable (ie. closed or out of crosswind limits). Diversion to Hawarden requires VFR transit of the Liverpool Control Zone. VFR limits within Class D airspace constrain this transit to be flown with a flight visibility of 5km. Therefore, Hawarden **should** only be selected as a diversion when relevant local forecasts satisfy flying Phase 4 conditions (as defined at Annex D to WDV B1).
8. IAW SYS202, 6FTS Supplement to Tutor Flying Orders, it is assumed that a diversion to Liverpool will entail an ATC radar directed approach using 7 ltrs irrespective of weather.

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Recommended VFR Diversion Transit Routes

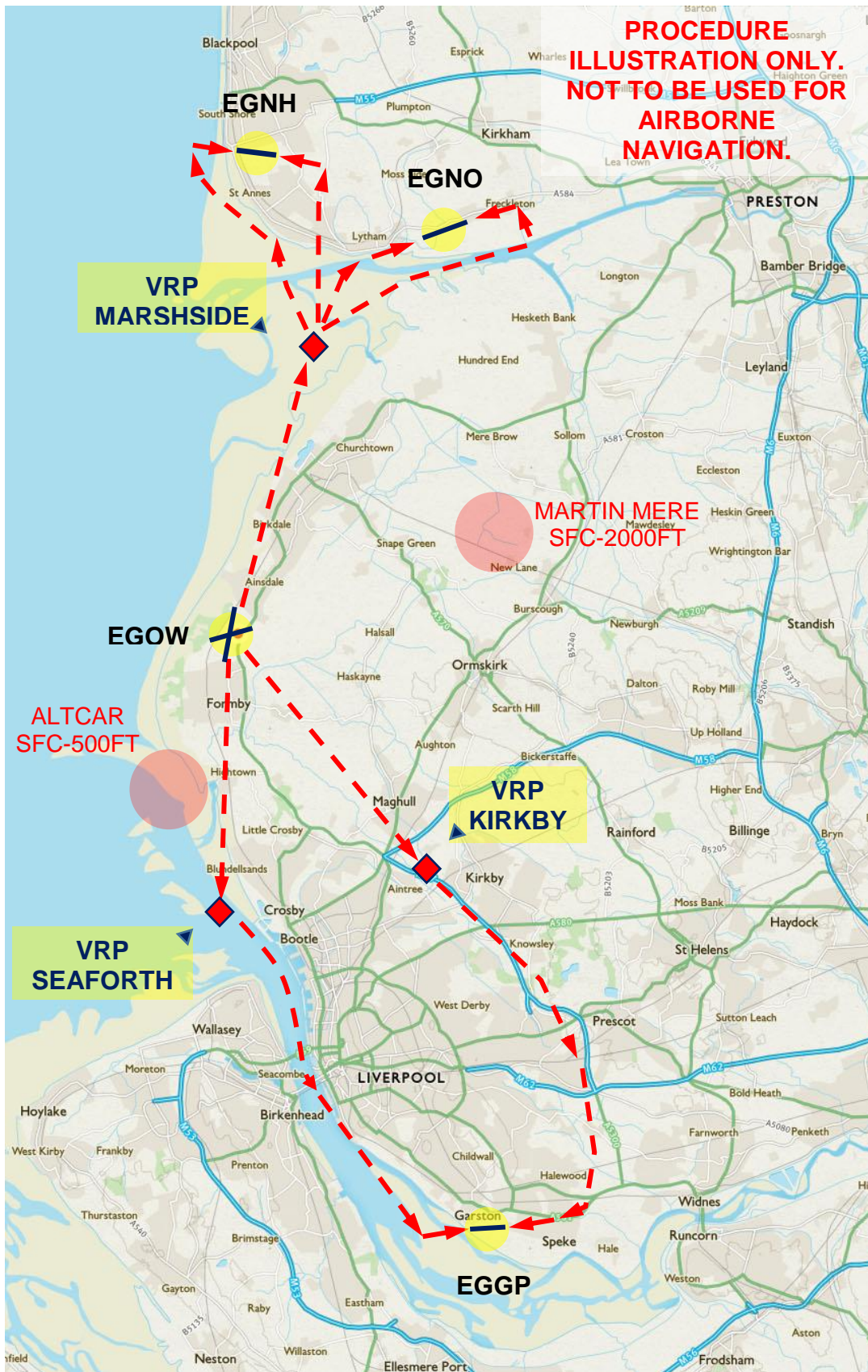


Figure 1 – Recommended VFR Diversion Transit Routes to Blackpool, Warton and Liverpool

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ORDER WDV C3 – RAF Woodvale Local Tutor Procedures

Rationale

Local air system operating procedures need to be defined for Tutor operations from RAF Woodvale.

Contents

C3 (1): RAF Woodvale Local Tutor Procedures

Flying Order WDV C3 (1)

WDV C3 (1) Ac Cdrs **shall** adopt local standard procedures whilst operating Tutor ac from RAF Woodvale.

Acceptable Means of Compliance WDV C3 (1)

RAF Woodvale Local Tutor Procedures

1. **Planned Last Landing Time.** When planning the last daily landing time at RAF Woodvale, Ac Cdrs, flying authorisers and supervisors **should** consider the time required to transit from Woodvale to land at an alternate (diversion) airfield within the 'day flying period'. The 'day flying period' ends at:
 - a. Qualified pilots - ECT minus 30 mins.
 - b. Non-qualified pilots - ECT minus 45 mins.
2. **Noise Sensitive Areas.** Local populated areas which are prone to generating noise complaints relating to Tutor flying operations are illustrated at Annex A. Without prejudice to air safety, Tutor operators **should** avoid conducting prolonged general handling exercises overhead or directly adjacent to the areas detailed at Annex A.
3. **Crew Change for First Solo and Circuit Consolidation.** In order to facilitate a crew change for a first solo or solo circuit consolidation sortie, the QFI may exit the air system with the engine running abeam ATC or in dispersal in accordance with extant procedures.
4. **Altimeter Setting Outside Woodvale ATZ.** Whilst conducting general handling, UAS instructional sorties or AEF flying tasks within the local flying area, the default altimeter setting for Tutor air systems is the Woodvale QNH unless the pilot is required to use an alternative setting by an ATC controller (ie. for Traffic Service). This convention provides a coordinated altitude reference for the air system de-confliction procedures described at Order WDV B3.
5. **Tutor Radio Frequency Card.** A radio frequency card used to stud air system radios (as is displayed within RAF Woodvale Tutor air systems) is at Annex B.

Guidance Material WDV C3 (1)

Annexes:

- A. Local Tutor Operations - Noise Sensitive Areas.
- B. RAF Woodvale Tutor Frequency Card.

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Local Tutor Operations - Noise Sensitive Areas

The following populated areas, illustrated at Figure 1, are susceptible to noise complaints resulting from local Tutor operations at RAF Woodvale:

- a. Southport and Birkdale (A).
- b. Tarleton and Hesketh Bank (B).
- c. Lytham St Annes (C).

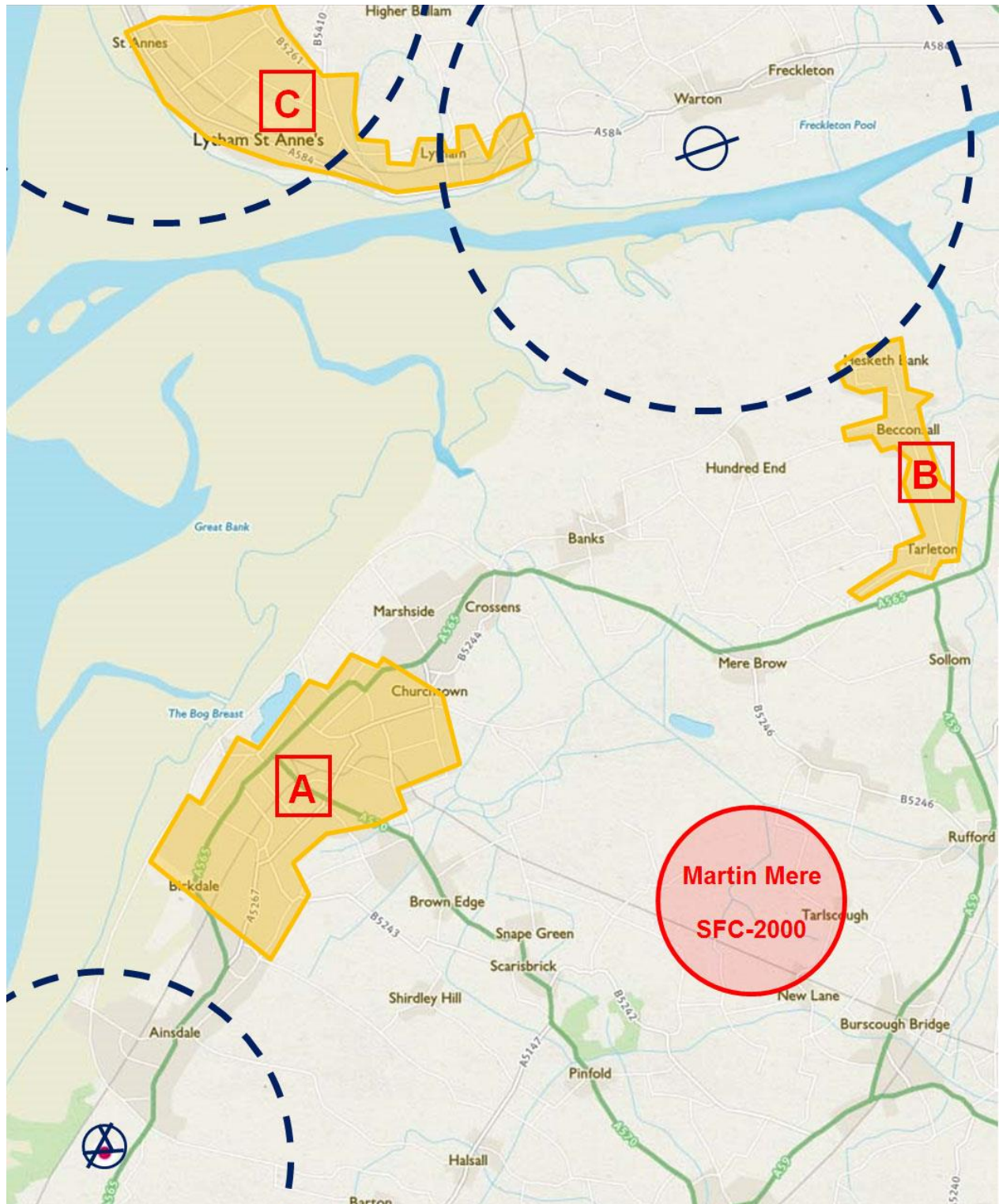


Figure 1 - Local Noise Sensitive Areas

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RAF Woodvale Tutor Frequency Card

RAF Woodvale Frequency Card		
UHF RADIO		
Channel	Frequency	Purpose
1	278.2	WDV TWR
2	282.575	WDV APP
3	233.175	WARTON APP
4	234.65	WARTON RDR
5	282.0	SHAW LARS
6	278.0	LOW LEVEL
7	245.1	PETF
8	233.750	WDV AIR TO AIR
9	282.125	SHANWICK (WEST - N)
10	280.35	SHANWICK (WEST - S)
11	292.525	SHANWICK (CEN - N)
12	231.7	SHAW APP
13	378.45	SHAW TWR
14	262.95	LEEMING LARS
15	235.200	LINTON LARS
16	268.625	CRAN TWR
17	280.775	CRAN APP
18	368.925	LEEMING TWR
19	242.825	LINTON TWR
20	243.0	DISTRESS
VHF RADIO		
	119.75	WDV TWR
	121.0	WDV APP
	119.95	BPOOL APP/TWR
	130.8	WARTON TWR
	129.53	WARTON APP
	126.35	LPOOL TWR
	119.85	LPOOL APP
	123.35	HAWAR TWR
	124.95	HAWAR RAD
	121.5	DISTRESS
NAVIGATION		
	114.1	WALL VOR
	112.1	POL VOR
	115.7	TNT VOR
	113.2	WTN DME
	109.9	WTN ILS/DME
	111.75	LPOOL ILS/DME

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ORDER WDV C4 – RAF Woodvale Tutor Circuit Procedures

Rationale

Local circuit operating procedures and limitations need to be defined for Tutor operations from RAF Woodvale.

Contents

C4 (1): RAF Woodvale Tutor Circuit Restrictions C4 (2): RAF Woodvale Tutor Circuit Procedures

Flying Order WDV C4 (1)

WDV C4 (1) Tutor Ac Cdrs **shall** comply with local visual circuit flying restrictions and procedures whilst operating from RAF Woodvale.

Acceptable Means of Compliance WDV C4 (1)

RAF Woodvale Tutor Circuit Restrictions

1. **RAF Woodvale Circuit Environment.** The environment around the RAF Woodvale visual circuit includes significant areas which are unsuitable for conducting an emergency forced landing in the event of engine power-loss. These constraints necessitate restrictions for Tutor operations from RAF Woodvale. Restrictions include the type of circuits that may be flown, minimum pilot qualification for certain runways and bespoke circuit procedures to optimise availability of a suitable emergency forced landing area. On all runways, pilots **should** line-up to ensure that the maximum take-off run distance is available.
2. **Tutor Circuit Types and Minimum Pilot Qualifications.** Tutor circuits permitted from RAF Woodvale runways and restrictions on minimum pilot qualifications are detailed at Annex A. Tutor Ac Cdrs **should** comply with the restrictions and procedures detailed at Annex A unless an emergency situation necessitates a variance in the pursuance of air safety.

Flying Order WDV C4 (2)

WDV C4 (2) Ac Cdrs **shall** adopt local circuit flying procedures whilst operating Tutor ac from RAF Woodvale.

Acceptable Means of Compliance WDV C4 (2)

RAF Woodvale Tutor Circuit Procedures

4. **Tutor Circuit Procedures.** Tutor Ac Cdrs **should** adopt the following standard procedures whilst operating within the RAF Woodvale visual circuit.
5. **Runway 03 'Right-Hand Jink Procedure'.** This procedure is illustrated at Annex B. It is designed to maximise availability of forced landing options in the event of an EFATO from runway 03L. It also ensures that Tutor air systems maintain a height of 800 ft QFE over the majority of Ainsdale town, reducing noise pollution and providing optimal forced landing options within the circuit. Areas most likely to provide a viable forced landing area following an EFATO on climb-out from runway 03L are illustrated at Annex C. The procedure is as follows:
 - a. Line-up to ensure max TORA.
 - b. Once airborne, maintain runway track until no longer able to land ahead (within EFATO Area 1) in the event of engine failure.
 - c. When no longer able to land ahead in the event of EFATO and with 80 kt / 150 ft achieved, turn right using approx 10° AOB to track towards

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the 'Works' visual feature. When wings-level, complete the Checks After Take-off and continue climbing on a track towards the 'Works'.

d. Level-off at 800 ft QFE. Commence a left hand turn to complete the wide crosswind leg onto the downwind leg.

6. **Runway 21 'Right-Hand Jink Procedure'**. This procedure is illustrated at Annex D. It is designed to maximise availability of forced landing options in the event of an EFATO from runway 21R. Areas most likely to provide a viable forced landing area following an EFATO on climb-out from runway 21R are illustrated at Annex E. The procedure is as follows:

a. Line-up to ensure max TORA.

b. Once airborne, maintain runway track until no longer able to land ahead (within EFATO Area 1) in the event of engine failure.

c. When no longer able to land ahead in the event of EFATO and with 80 kt / 150 ft achieved, turn right using approx 10° AOB to track towards the 'Golf Course' visual feature. When wings-level, complete the Checks After Take-off.

d. At 500 ft QFE:

(i) **Normal circuit.** Commence a right-hand climbing turn to establish at 800 ft on the downwind leg.

(ii) **Glide circuit.** Turn left to track 210° and maintain a straight climb to 1000 ft QFE. Passing 1000 ft QFE, commence a right-hand climbing turn to establish at 1500 ft QFE on the downwind leg.

7. **Runway 21R Approach - Inset Runway Aiming Point.** The procedure detailed at Annex F is designed to constrain the downwind boundary of the final turn and prevent ac from descending excessively low over the town of Ainsdale during a right-hand final turn to approach Runway 21.

8. **Tidal conditions – Runway 21R and 26R.** Supervisors **should not** permit solo UAS trainees to operate from runways 21R and 26R unless there is sufficient beach area available for a forced landing in the event of EFATO or engine failure in the circuit. Tidal conditions vary significantly, so a visual check of the beach area may be necessary before authorising such a sortie. As a guide, high tide times are published daily within the RAF Woodvale flying operations brief.

9. **VRIAB Constraints.** For runway 03L, 21R and 08L, the minimum height during a VRIAB is 800 ft due to limited forced landing options in the event of engine failure.

**Guidance
Material
WDV C4 (2)**

10. **RAF Woodvale Runways - EFATO Options.** Detailed imagery displaying possible land-out options following an EFATO from each runway are prominently displayed in the stn ops room.

11. **Increased Risk in the Event of EFATO.** As Runway 08/26 is the sole

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serviceable runway at RAF Woodvale, operators will tend to use this runway in lighter headwind components in comparison to when Runway 03/21 was available. Runways 08 and 26 have more restricted options in the event of EFATO compared to those for Runways 03 and 21. Supervisors and operators should consider the following measures to mitigate increased risk in the event of EFATO:

- a. **Touch-and-go.** In light headwind conditions (i.e. less than 10 kts) EFATO options become more restricted on both Runway 08 and 26. Under such circumstances, operators **should** consider a go-around or full-stop landing as preferable to a touch-and-go. Touch-and-go landings with a headwind component less than 10 kts **should** be restricted to a minimum in order to achieve essential pilot training.
- b. **Glide and flapless landings.** Whilst conducting glide or flapless landings on Runway 08/26, operators **should** consider a go-around or full-stop landing as preferable to a touch-and-go landing, especially when the headwind component is less than 15 kts.

Annexes:

- A. Tutor Circuit Types and Minimum Pilot Qualifications.
- B. Runway 03L - 'Right-hand jink procedure'.
- C. Runway 03L - EFATO Areas.
- D. Runway 21R - 'Right-hand jink procedure'.
- E. Runway 21R - EFATO Areas.
- F. Runway 21R Approach - Inset Runway Aiming Point.

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Annex A to Order WDV C4

Tutor Circuit Types and Minimum Pilot Qualifications

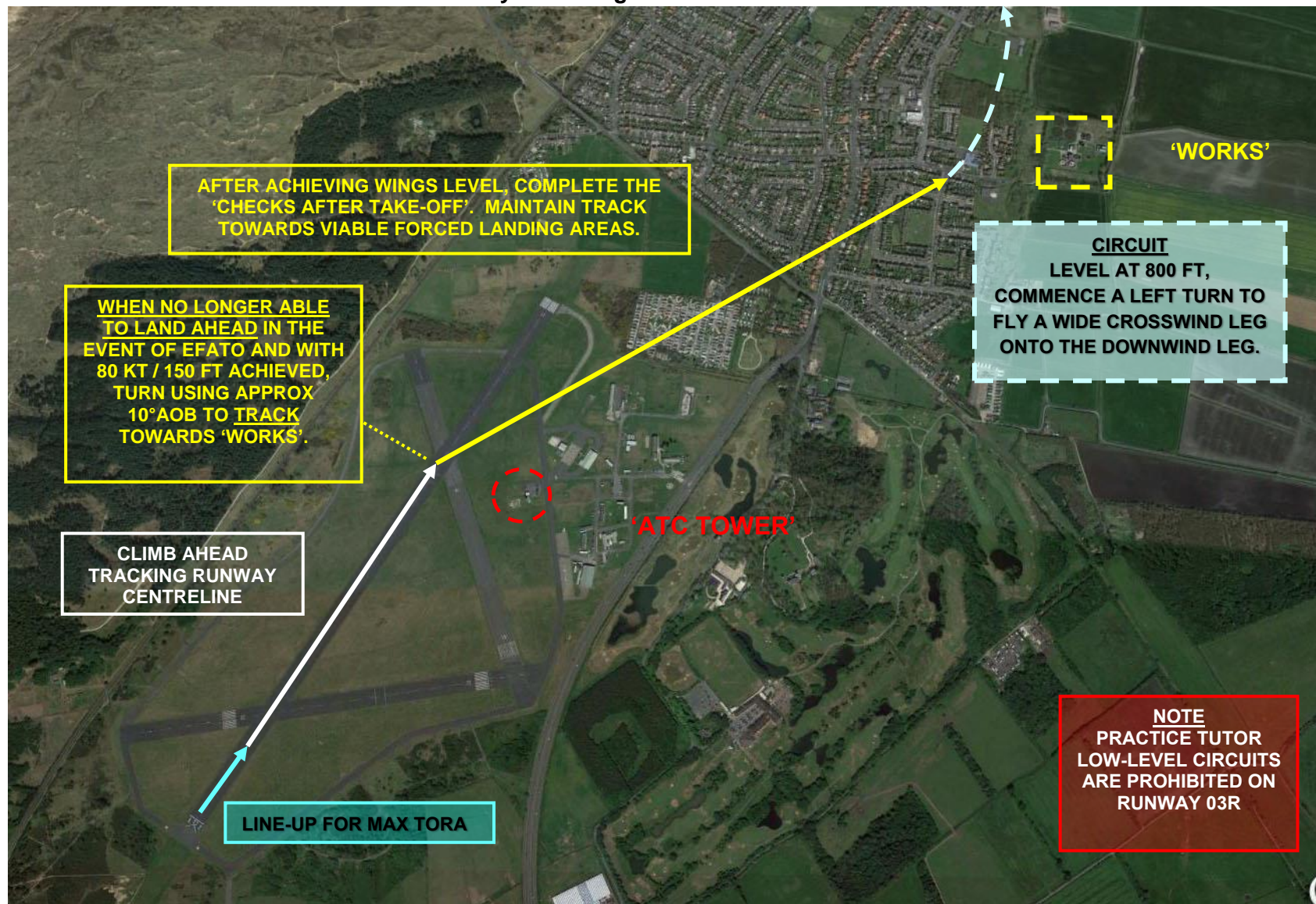
Tutor circuits permitted from RAF Woodvale runways and restrictions on minimum pilot qualifications are summarised below:

Rwy	Circuits Permitted	Additional Constraints
03 L	<ul style="list-style-type: none">- Normal- Glide- Flapless	<ul style="list-style-type: none">• The 'RW 03 right-hand jink procedure' is mandatory (para 3).• Low-level circuits are prohibited except in an emergency.
08 L	<ul style="list-style-type: none">- Normal- Glide- Flapless	<ul style="list-style-type: none">• No planned touch-and-go landings for solo UAS trainees (<i>see Note</i>).• Low-level circuits are prohibited except in an emergency.
21 R	<ul style="list-style-type: none">- Normal- Glide <p>QSP Only: - Flapless</p>	<ul style="list-style-type: none">• The 'RW 21 right-hand jink procedure' is mandatory (para 4).• Low-level circuits are prohibited except in an emergency.• Practice flapless circuits are limited to QSPs only. Pilots should constrain the downwind boundary of the final turn as detailed below.• To retain satisfactory forced landing options over Ainsdale town, pilots should constrain the downwind boundary of their circuit pattern in accordance with procedures detailed at Annex F.• Solo UAS trainee sorties should not be conducted if there is insufficient beach area for a forced landing in the event of engine failure after take-off iaw WDVC4 (2) para 8.
26 R	<ul style="list-style-type: none">- Normal- Glide- Low-level <p>QSP Only: - Flapless</p>	<ul style="list-style-type: none">• No planned touch-and-go landings for solo UAS trainees (<i>see Note</i>).• Practice flapless circuits are limited to QSPs only.• Solo UAS trainee sorties should not be conducted if there is insufficient beach area for a forced landing in the event of engine failure after take-off iaw WDVC4 (2) para 8.

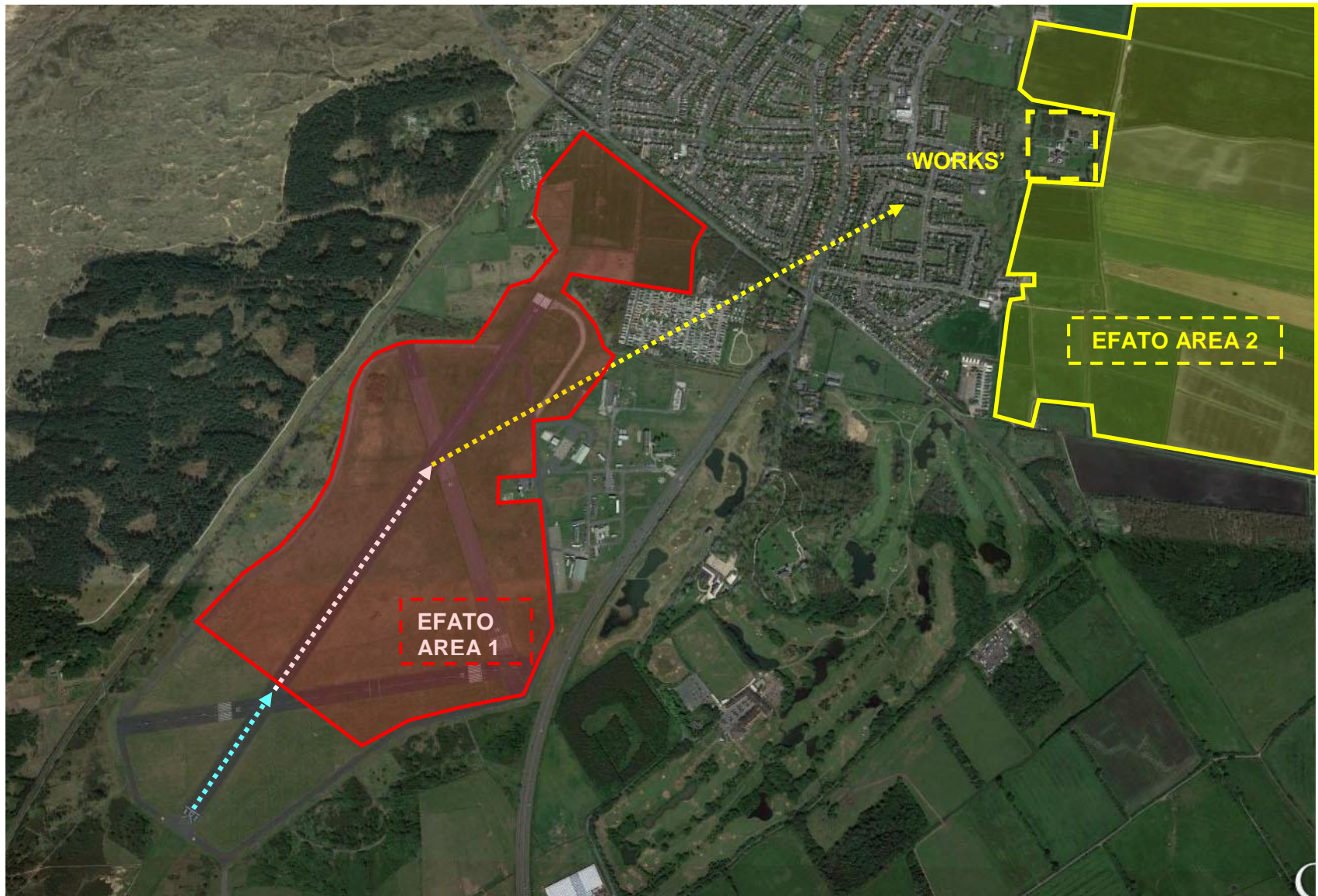
Note: In the event of Engine Failure After Take-Off (EFATO) from runway 08L/26R, limited forced landing options may present a challenging handling scenario. An EFATO occurring after a touch-and-go landing may further reduce forced landing options. Therefore planned touch-and-go landings from runway 08L/26R are restricted to Tutor QSPs who have the experience and competency to correctly handle such a scenario.

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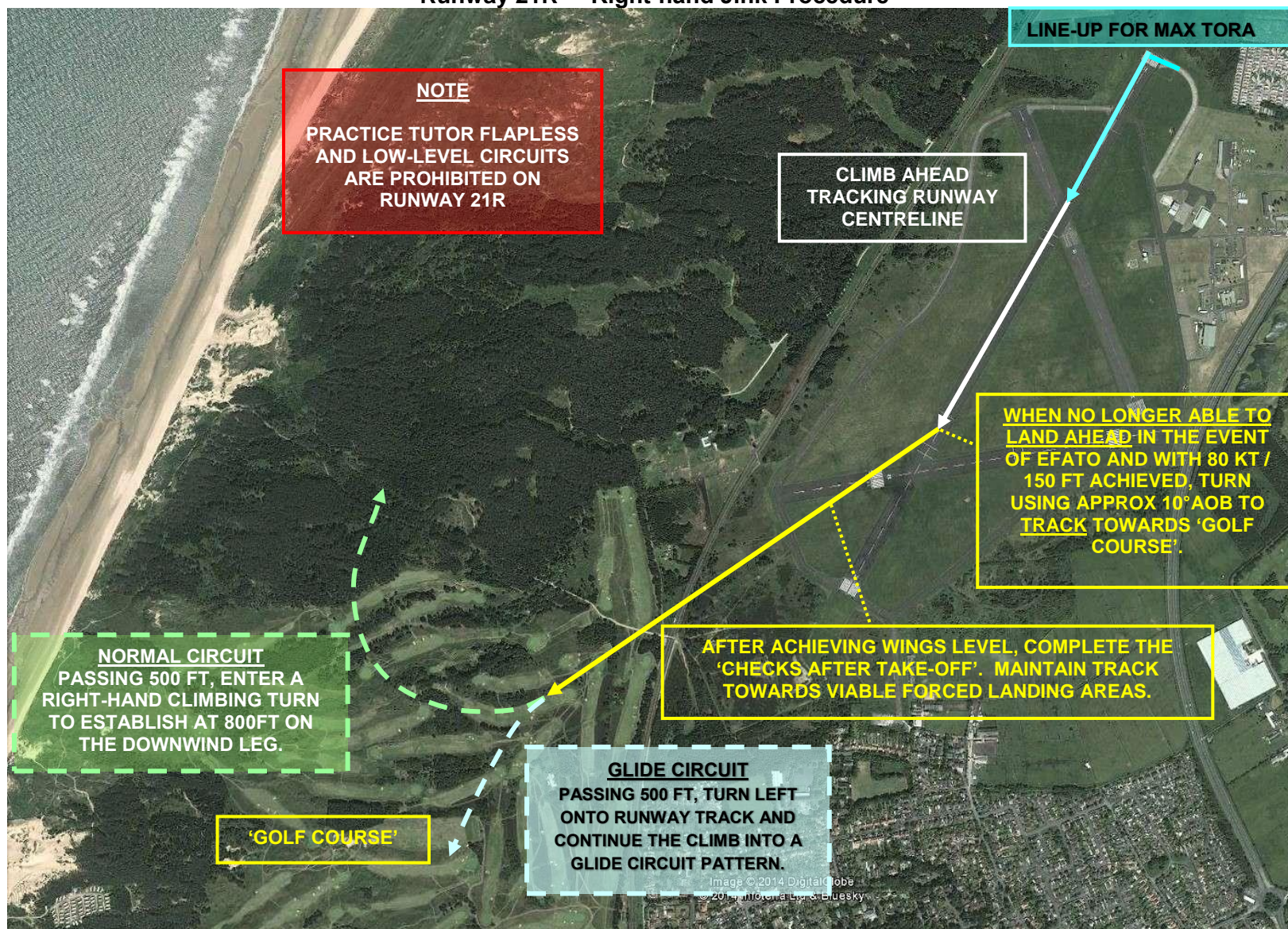
Runway 03L – ‘Right-hand Jink Procedure’



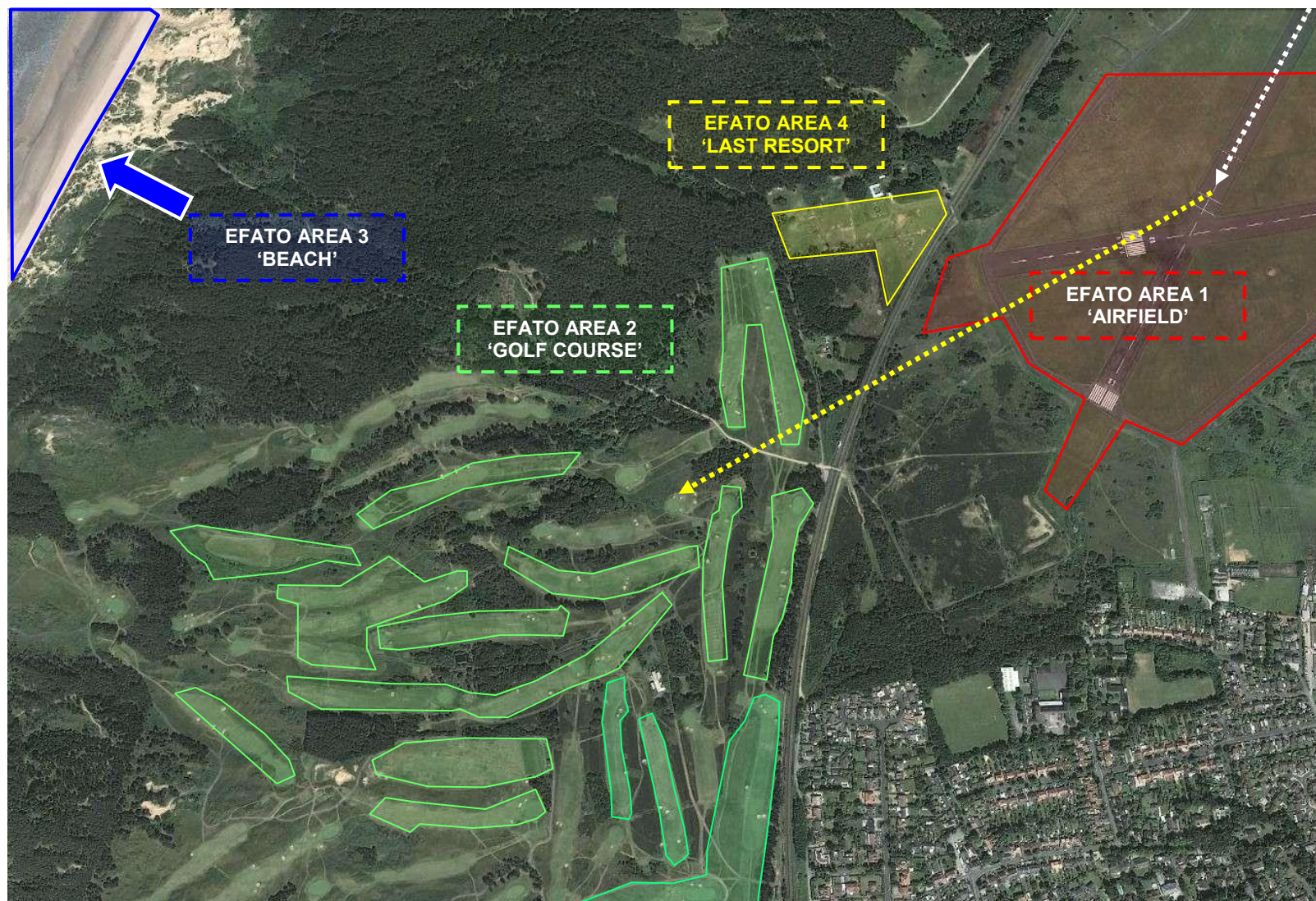
Runway 03L – EFATO Areas



Runway 21R – 'Right-hand Jink Procedure'

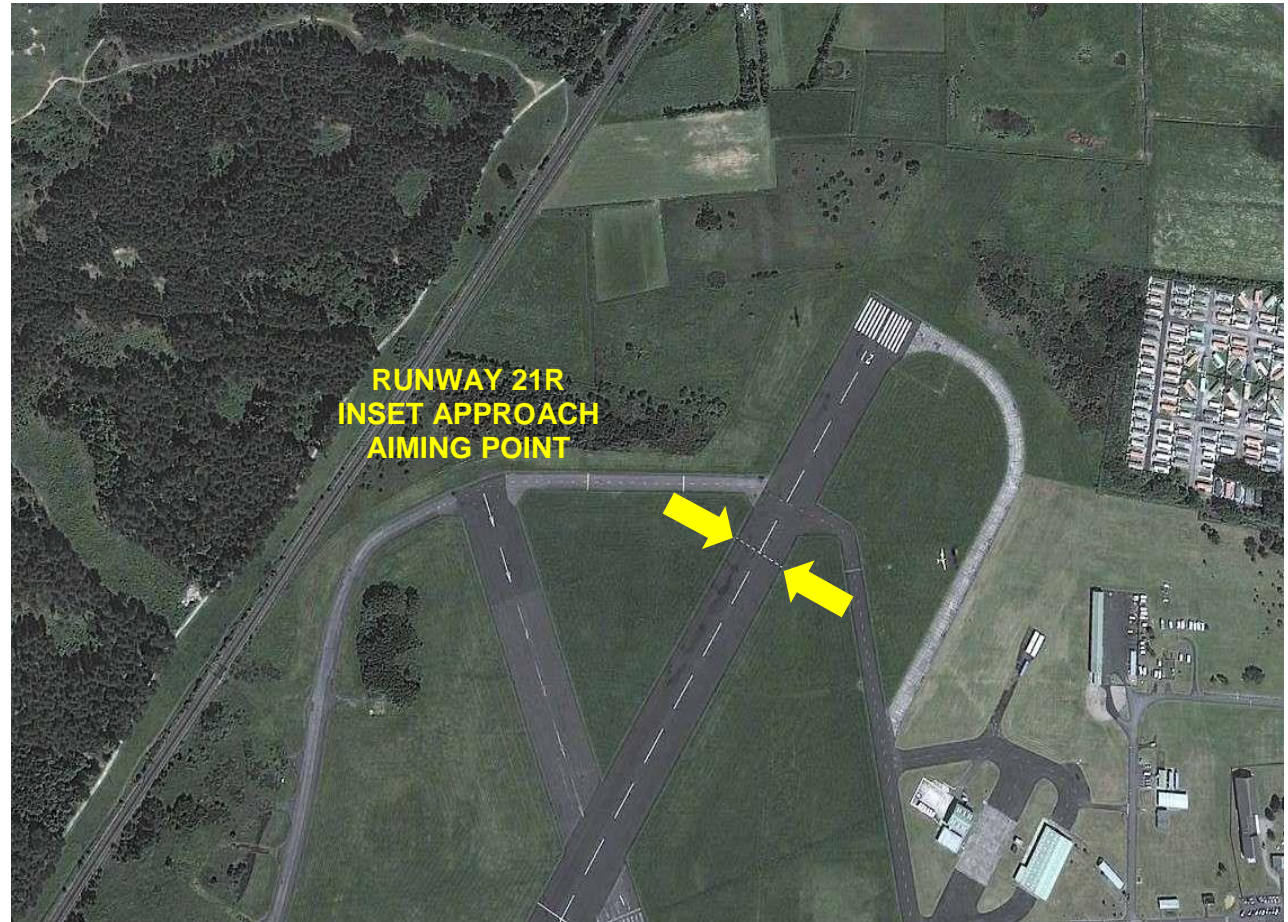


Runway 21R – EFATO Areas



Runway 21R Approach – Inset Runway Aiming Point

1. An inset approach aiming point on Runway 21R is defined by a pecked white line across the runway, immediately SSW of the 'Runway 21 short hold intersection'.
2. The following procedure should prevent ac from descending excessively low over the town of Ainsdale during a right-hand final turn to approach Runway 21. This should alleviate noise pollution over the town and provide more forced landing options in the event of engine failure late downwind or during the final turn.
3. Tutor pilots should plan their circuit and 400 ft approach reference point using the inset approach aiming point rather than the marked threshold. This constrains the downwind boundary of the final turn.
4. After a straight-in final approach is established and the ac is approaching the SSW boundary of the town, pilots may adjust their final approach aiming point towards the marked threshold for Runway 21, thereby increasing the available landing distance.



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ORDER WDV C5 – RAF Woodvale Local Airspace Procedures

Reference:

A. Letter of Agreement (LOA) between RAF Woodvale and BAe Systems (Warton).

Rationale

Local airspace procedures are defined within current Letters of Agreement between RAF Woodvale and air traffic control agencies as detailed at Reference A.

Contents

C5 (1): Local Airspace Procedures

Flying Order WDV C5 (1)

WDV C5 (1) Tutor Ac Cdrs **shall** comply with agreed local area operating procedures as detailed within the Letter of Agreement at Reference A.

Acceptable Means of Compliance WDV C5 (1)

Local Airspace Procedures

1. **Letter of Agreement.** Woodvale SATCO **should** ensure that a valid LoA is maintained between RAF Woodvale and Bae Systems (Warton) in consultation with Warton SATCO . Following each amendment to the LoA, SATCO **should** present OC RAF Woodvale with the proposed amendment for ratification on behalf of RAF Woodvale. OC Fg **should** ensure that a copy of the current LoA is retained within the RAF Woodvale Defence Aerodrome Manual (DAM) at Chapter 2 Annex F (Formal Related Operating Agreements).
2. **Operating Without Radar Service.** When operating within the RAF Woodvale local operation area and when not receiving a service from an ATC Radar Unit (ATCRU), Tutor Ac Cdrs **should**:
 - a. **Transponder Procedures.** Squawk Code 7375 + ALT for conspicuity. Both the mode A and mode C information will be treated as un-validated and unverified.
 - b. **ATC Service.** Obtain a Basic Service (BS) from Woodvale Approach (normally on 121.0 MHz) unless intending to operate with a different ATCRU.
3. **Traffic Service from Warton Radar.** During BAE Warton airfield hours of operation, the preferred method of airborne de-confliction for RAF Woodvale Tutor ac is a Traffic Service from Warton Radar. Tutor Ac Cdrs **should** endeavour to comply with the guidance below as agreed at Reference A. Due to limitations in operational coverage of the Warton Radar, it is necessary to limit radar services due to 'radar suppression'. A complete map detailing the areas of 'radar suppression' is at Reference A, but in practical terms this covers the entire area likely to be used for RAF Woodvale Tutor operations between the Liverpool CTZ and Barrow-in-Furness. To reduce R/T, radar services from Warton Radar will be deemed to be limited due to radar suppression; controllers will not state that fact on R/T. Pilots are to be mindful that other air systems may not be observed on radar.
4. **Warton MATZ and Area WHISKEY.** Ac Cdrs of Woodvale-based Tutor ac **should** contact Warton Radar prior to entering the Warton MATZ. Area WHISKEY is that portion of the MATZ between 1000-3000 ft amsl, from 5nm radius of Warton to the western boundary, and from 2nm south of the extended

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centreline of Runway 07 to the southern MATZ boundary. It is primarily designated for use by Woodvale-based Tutor air systems remaining in contact with Woodvale ATC whilst carrying-out a QGH approach procedure to Woodvale. Whilst operating in Area WHISKEY, Ac Cdrs **should**:

- a. Operate on a Woodvale ATC frequency unless otherwise directed by Warton Radar.
- b. Squawk 7375 + ALT unless otherwise directed by Warton Radar.

5. **Operations Close to Controlled Airspace.** Woodvale is located close to controlled airspace (CAS). Pilots **should** remain outside of CAS at all times as Warton Radar is not permitted to provide ATC services inside CAS. Pilots **should** be aware that operations close to a CAS boundary increases controller workload significantly as the controller has a responsibility to warn pilots of their position, often to the detriment of fulfilling responsibilities to other pilots receiving an ATC service

Guidance Material WDV C5 (1)

6. **Warton Radar Service.** When Warton Radar is available, including on those occasions at weekends, Warton Radar will provide UK Flight Information Services to air systems outside controlled airspace subject to controller workload. Woodvale-based Tutor air systems conducting general handling in those operating areas which lie outside controlled airspace **should** contact Warton Radar on UHF 233.175 MHz (STUD 3) for a service. Whenever possible, pilots will de-conflict their sorties such that Tutor air systems operate in different areas or in different locations within the same area (refer to Order WDV B3).

7. **Communications Procedures.** Having first made initial contact with Warton Radar, the pilot should state his operating area and the requested level band. Warton Radar will allocate a squawk, identify the ac and request the level passing in order to verify SSR Mode C. A TS will be provided unless the controller downgrades to a BS or the pilot asks for a different service. In order to keep R/T to a minimum, example phraseology is as follows:

Air system: Warton Radar, UAM ##, request Traffic Service.

Warton: UAM ##, squawk 36##, pass your message.

Air system: U##, Squawk 36##, operating Area Central in the block 3 to 5 thousand feet.

Warton: U##, identified, Traffic Service in the block 3 to 5 thousand feet remaining clear of controlled airspace. Warton QNH 1021. Request level passing.

Air system: Traffic Service, QNH 1021, passing 3200 feet, U##.

8. **Radar climb and descent to VMC.** Pilots of a Woodvale air system departing Woodvale may request a radar service from Warton Radar to enable them to climb through IMC to operate VMC and then for the subsequent descent to VMC below cloud. Deconfliction Service (DS) is only available above the appropriate safe sector level¹ to air systems flying under IFR. Warton Radar, workload permitting, will identify the air system and provide a radar service until such time that the pilot requests an alternate service, or wishes to go to an en-route frequency. If a number of air systems request a radar service prior to departure, Warton may issue a minimum departure interval through Woodvale ATC.

¹ ATC SURVEILLANCE MNM ALTITUDE for Warton Radar is published at No1 AIDU Chart K1.

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9. The control of a Woodvale-based air system will normally be undertaken by a Warton Radar controller working VHF and UHF frequencies simultaneously. Therefore, pilots should be aware that radio calls may not be answered immediately. Furthermore, there may be occasions when the Warton Radar controller requires Woodvale-based air system to transfer to VHF; this will normally be on 129.525 MHz.

10. **Service Limitations.** TS provided may be limited due to radar coverage, controller workload or nature of the Tutor flying task.

11. Having transferred a Woodvale-based ac to a Woodvale frequency, Warton Radar may request that the ac returns to the Warton Radar frequency if further traffic conflicts occur. This may be achieved by Warton contacting Woodvale ATC direct.

12. **Formation Operations.** When Woodvale-based air systems are operating as a formation within the local flying area, pilots within the formation **should not** use the Warton Radar frequency (Stud 3 – 233.175) for general formation ‘chat’. Formation leaders wishing to use Warton Radar VHF frequency (129.525 MHz) as the primary control frequency should pre-arrange this with Warton Radar.

13. **Total Radio Failure Above Cloud.** The LoA provides for an emergency diversion to Warton in the event of total radio failure above cloud. This emergency procedure is detailed at Order B5.

14. **Cooperation with Warton Radar.** Whilst receiving from a TS or DS with Warton Radar, 6FTS Tutor Ac Cdrs **should** endeavour to accept a requested restriction of their operating area or altitude to facilitate air traffic management by Warton Radar when this restriction has no impact on flight safety. Such cooperation will help to maintain a good mutual relationship between the units and to retain valuable benefit of a local area radar service.

Annex:

A. Warton MATZ – Area Whiskey.

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Annex A to Order WDV C5

Warton MATZ – Area Whiskey



Figure 1 – Area Whiskey within the Warton MATZ

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FOB Section C - Standing Orders Flying (Tutor)

ORDER WDV C6 – Air Experience Flying within Liverpool Control Zone

Reference:

A. MAA RA 2307 (1) – Visual Flight Rules.

Rationale

In order for air experience sorties to be flown safely within the Liverpool Zone, minimum altitudes higher than those routinely granted by Liverpool ATC are required.

Contents

C6 (1): AEF use of the Liverpool Control Zone

Flying Order WDV C6 (1)

WDV C6 (1) Tutor Ac Cdrs **shall** comply with agreed operating procedures in order to conduct AEF sorties within the Liverpool Zone.

Acceptable Means of Compliance WDV C6 (1)

AEF use of the Liverpool Zone

1. **Minimum altitudes.** Liverpool Zone controllers generally clear VFR GA traffic to enter Liverpool controlled airspace not above 1500ft amsl on the Liverpool QNH. In order to ensure adequate options in the event of forced landing in the vicinity of the more densely populated areas of the Liverpool CTZ and the river Mersey, AEF cadet sorties **should** be flown at or above 2000ft amsl. Flight over the centre of Liverpool or down the river Mersey **should** be avoided (except when diverting to Liverpool following the published diversion route), however air systems are permitted to route direct to the football stadia and return not below 2500ft amsl. Three suggested routes that have been checked for suitability are defined at Annex A, with map illustration at Annex B, but Ac Cdrs are not restricted to these routes. They have not been agreed with Liverpool ATC and any routing should be negotiated individually on R/T using standard visual reporting points. In the event that ATC direct a transit altitude that is below the minimum specified altitudes, the Ac Cdr **should** take reasonable action to avoid transit below the specified heights, even if this means aborting the planned route and requesting an alternative route to exit controlled airspace to the north.
2. **Weather minima.** In accordance with Reference A, the absolute minimum VFR conditions to fly within Class D airspace are:
 - a. **Flight Visibility** – 5 km
 - b. **Separation from Cloud (below 3000 ft amsl)** - Clear of cloud and in sight of the surface.
3. **Engine Failure Options.** Although not restricted to these routes only, the 3 routes suggested below have been examined to ensure that adequate engine failure options exist along the entirety of each route, provided that each route is flown not below the specified transit height.

Guidance Material WDV C6 (1)

Annexes:

- A. AEF Routes within Liverpool Control Zone.
- B. AEF Route Map within Liverpool Control Zone.

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FOB Section C - Standing Orders Flying (Tutor)

Annex B to Order WDV C6

AEF Suggested Routes within Liverpool Control Zone

Route VIA SEAFORTH, HOYLAKE, NESTON and return		
<i>Ensure adequate beach available for Engine Failure options</i>		
Transit Height Minimum 2000 ft QNH		
Grid locator	Description	Route Remarks
N/A	Formby-Liverpool Railway	Stay to the right of the railway where possible
SJ 314 968	VRP Seaforth	Entry point to Liv airspace
SJ 309 947	Perch Rock <i>NE tip of land</i>	Stay to the right of the coastline (over the beach)
SJ 203 885	Hoylake <i>NW tip of land</i>	
SJ 288 795	Leighton Hall	Turn before VRP NESTON, around HESWALL
SJ 236 908	Parkfields <i>Caravan park</i>	Stay to right of coastline (over the land)

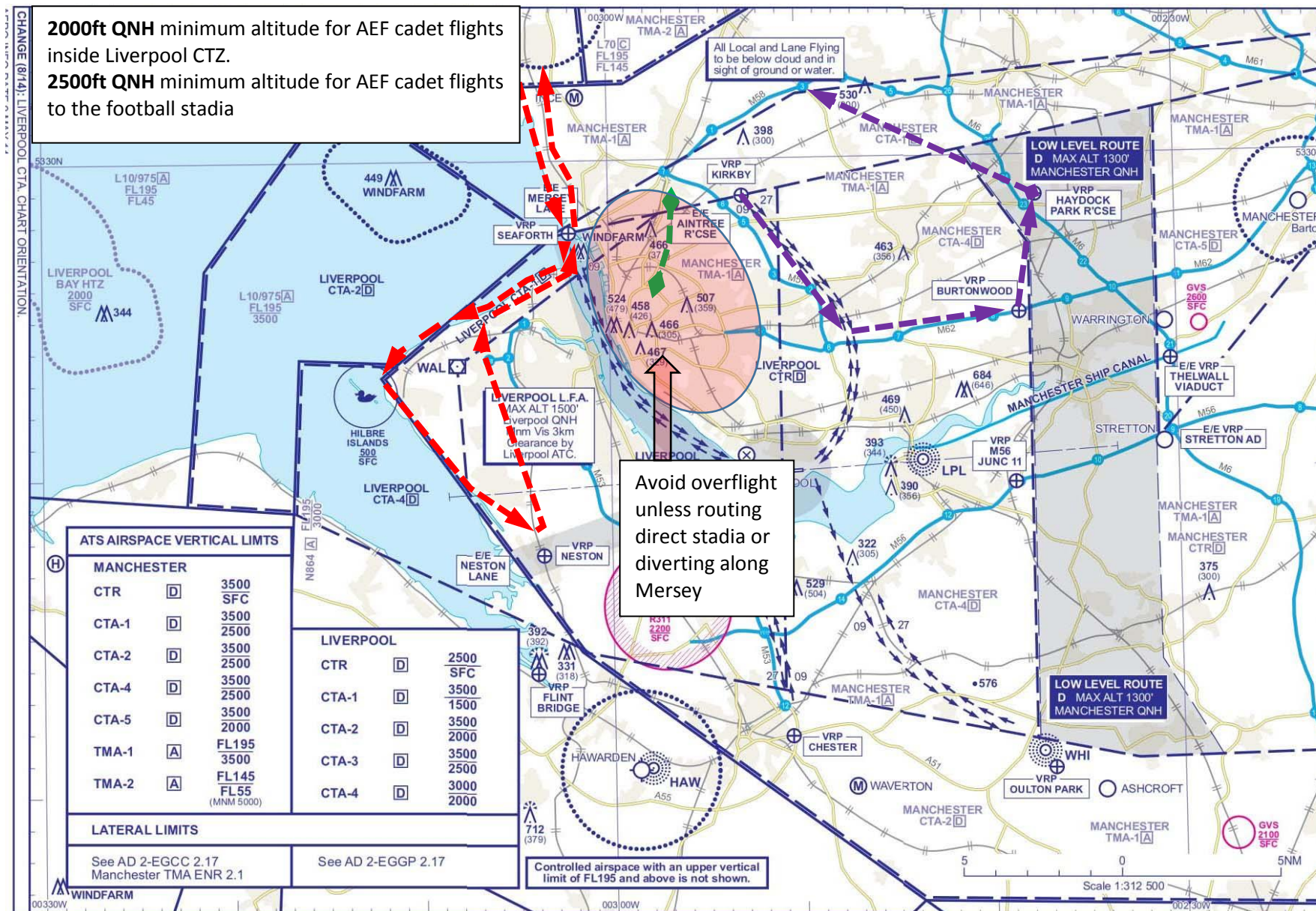
Route VIA AINTREE to FOOTBALL STADIA and return		
Transit Height Minimum 2500 ft QNH		
Grid locator	Description	Route Remarks
SJ 373 983	VRP Aintree <i>Racecourse</i>	Entry point to Liv airspace
SJ 375 959	Everton Cemetery	
SJ 362 935	Football Stadia	Return to exit the zone at Aintree via reverse route

Route VIA KIRKBY, M57, M62, BURTONWOOD, HAYDOCK PARK and return		
Transit Height Minimum 2000 ft QNH		
Grid locator	Description	Route Remarks
SJ 421 988	VRP Kirkby	Entry point to Liv airspace
SJ 469 899	Windy Arbor <i>NE side of M57/M62 Junct</i>	Stay North of M62
SJ 577 913	VRP Burtonwood <i>Services</i>	
SJ 588 981	VRP Haydock Park <i>Racecourse</i>	
SD 452 048	Junct 3 M58	

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Annex B to Order WDV C6 – AEF Suggested Route Map within Liverpool Control Zone



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