CARDIFF (EGFF) VMATS PART 2
EGFF

REVISION 2024/08 - EFFECTIVE 8 AUGUST 2024

DISTRIBUTION AND SCOPE

This manual is for controllers of Cardiff Aerodrome, containing specific and local procedures relevant to these positions. Procedures for St Athan Aerodrome are also detailed within this document. Controllers must be familiar with controlling procedures in the UK; this manual should be read in conjunction with CAP 493 (MATS Part 1) and guidance on standard UK Radiotelephony phraseology, detailed in CAP 413.

EXCLUSION OF LIABILITY

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ACKNOWLEDGEMENTS

This document has been written and proofread by a huge wealth of people, without which the development of this document would not have been possible. On behalf of all VATSIM UK's members, this acts as an acknowledgement and thanks for their work.

DEFINITIONS

The key words "SHALL", "IS TO", "ARE TO", "MUST", "SHOULD", "MAY" are to be interpreted as described in MATS Part 1 (CAP 493).

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MARKED CHANGES

Changes made since the last release are marked with a black bar, as indicated, in the left-hand margin. They are also described briefly in the table below.

AMENDMENT HISTORY

Revision	Effective Date	Notes
2024/08	8 August 2024	Updated 25MHz frequencies to 8.33 spacing; Changes to Cardiff Cotswold CTA delegation from AC West (APC 1.2); Changes to Bristol delegated airspace from AC West (APC 1.2.2); Changes to Bristol delegated airspace from Cardiff (APC 1.2.4); Changes to release conditions for traffic routing via EXMOR with Bristol APC (APC 4.2.1); Updated agreement for Cardiff LEKCI traffic with Bristol APC (APC 5.7)
2023/03	23 March 2023	MSL table amended for clarity (GEN 1.5); Updated Standard Instrument Departures (LEKCI 1B) (ADC 2.3); Introduced Departure Warnings for eastbound traffic (ADC 2.3.1); Updated Cardiff APC Area of Responsibility (APC 1.2); Additional information on delegated airspace (APC 1.2.2 and APC 1.2.4); New airspace delegation diagrams (Figure 1 and Figure 2); Amended responsibility for BRI hold between FL105 and FL135 (now owned by Bristol APC) (APC 1.3 and APC 3.3.2); Removed terrain diagram; Updated new Cardiff and Bristol STARs (APC 3.2); Updated hold details and procedures (APC 3.3); Updated inbound releases (APC 3.4); Updated standing agreements with Bristol (APC 4.2); Updated final approach separation and spacing procedures (APC 4.3.1 and APC 4.3.2); Bristol departure procedures moved to new section (APC 5.5); Updated standing agreements for departures (APC 5.6); New procedure for LEKCI SID departures (APC 5.7); Updates to overflight procedures (Chapter 7) including new section on Gloucester (EGBJ) procedures (APC 7.4); Updated VFR procedures with VRP amendments (Section LOW and Figure 3); New Cardiff Standing Agreements diagram (Appendix A); Other minor changes to wording throughout for clarity or to align with new procedures.
2021/04	8 May 2021	Full re-write
4	9 April 2008	Controller positions, SID updates, GMC updates, VFR operations
3A	26 Nov 2006	Low visibility procedures
3	23 Nov 2006	Ground movement & stand allocation
2	9 Oct 2006	Noise preferential routings documented
1A	7 Sep 2006	ERNOK 1A SID suspended
1	21 Aug 2006	First publication

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INTRODUCTION AND STRUCTURE

The Cardiff virtual Manual of Air Traffic Services (vMATS) Part 2 is complementary to the MATS Part 1 (CAP493). Together, these two documents provide comprehensive instructions and information for Cardiff and St Athan ATS staff within VATSIM UK.

This vMATS has been divided into separate sections for ease of reference, each with its own three letter identification code.

This document is divided into sections as follows:

Page Abbreviation	Section
PRE	Preface
GEN	Unit General Operating Procedures
ADC	Aerodrome Control
APC	Approach Control
LOW	Low Level Operations (VFR & SVFR Procedures)

TIME REFERENCES

All time references within this document are Coordinated Universal Time (UTC), or Zulu time, unless otherwise specified.

The UK observes daylight saving time in the summer months (British Summer Time, or BST), so the clocks shift forwards by one (1) hour. In summer therefore, UK local time is one hour ahead of UTC/Zulu time.

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GEN | UNIT GENERAL OPERATING PROCEDURES

Chapter 1   Altimeter Setting Procedures

1.1   Departing Aircraft

All departing aircraft will operate on the Cardiff QNH. VFR pilots may request to operate on the Cardiff QFE when remaining within the visual circuit or the vicinity of the Cardiff ATZ. Departing aircraft should state the QNH on first contact with ADC, otherwise it should be issued by the ADC controller. Aircraft should be informed of any subsequent change to the QNH at the earliest opportunity.

1.2   Arriving / Transiting Aircraft

Arriving aircraft at or below the Transition Altitude will operate on the Cardiff QNH unless the pilot specifically requests to use the Cardiff QFE. Aircraft will be issued the QNH once cleared to descend to an altitude by APC, or with clearance to enter the Cardiff CTR. Aircraft should be informed of any subsequent change to the QNH at the earliest opportunity.

1.3   QFE Threshold

The Cardiff QFE is calculated by subtracting 8 hPa from the Cardiff QNH.

1.4   Transition Altitude

The Transition Altitude is 6000 feet AMSL. This applies throughout the entire Cardiff CTR/CTA and within the Bristol, Cotswold and Severn CTAs

> *Note: From here on, unless otherwise specified, vertical references measured in feet (ft) are to be assumed as altitudes AMSL.*

1.5   Transition Level and Minimum Stack Level

Both Cardiff Radar and Bristol Radar must agree on the transition level and minimum stack level at every QNH change based on the lower of the two unit's QNHs. The Transition Level (TL) and MSL are determined by reference to the following table:

Lowest Unit QNH (hPa)	Transition Level (TL)	Minimum Stack Level (MSL)
1032 – 1049	FL65	FL70
1014 – 1031	FL70	FL70
995 – 1013	FL75	FL80
977 – 994	FL80	FL80
959 – 976	FL85	FL90
940 – 958	FL90	FL90

> *Note 1: The classification of 1013 hPa as 'low pressure' aligns with MATS Part 1.*

> *Note 2: When the QNH is 1050 hPa or greater that MSL shall remain at FL70.*

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1.6　　Altimeter Setting Region (ASR)

For flights operating below the Transition Altitude which are not operating beneath controlled airspace, the most appropriate Regional Pressure Setting (RPS) is to be provided. For flights operating to the west this is the Wessex RPS, to the south-east it is the Portland RPS, and to the north-east the Cotswold RPS.

Flights operating beneath controlled airspace shall be passed the Cardiff QNH to mitigate against inadvertent infringement of controlled airspace due to pressure setting.

A chart of the ASRs can be found in eAIP ENR 6-18.

Chapter 2　　Noise Abatement Procedures

The published noise preferential routings (NPRs) are as follows. They are applicable to **all jet aircraft** and **all other aircraft with a maximum authorised weight of greater than 5700 kg.**

Runway	NPR
Runway 12 – Aircraft departing to the north	Climb straight ahead to 4.5 DME before turning left
Runway 12 – Aircraft departing to the south	Climb straight ahead to 2 DME before turning right
Runway 30 – Aircraft departing in all directions	Climb straight ahead to 4 DME before commencing any turn

All Cardiff SIDs incorporate the published NPRs.

The obligation to follow the NPRs cease when the aircraft passes through 3000ft. Controllers shall not vector traffic off the NPR below this altitude unless required for reasons of safety.

Chapter 3　　All Weather Operations

3.1　　Aerodrome Equipment

Cardiff is not equipped for CAT II/III operations. However, in periods of low visibility and in order to safeguard CAT I operations, ATC will instigate Low Visibility Procedures (LVP).

3.2　　Low Visibility Procedures

3.2.1　　Enforcement

LVP must be enforced when the runway visual range or meteorological visibility falls below 800 metres.

3.2.2　　Instrumented Runway Visual Range (IRVR)

At Cardiff the IRVR value is automatically generated, and this is to be used by controllers to determine the measured visibility at the aerodrome when deciding to enforce LVP.

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3.2.3 Runway Safeguarding Procedures

In order to safeguard CAT I operations, holding points A1, B1, C and G are closed to the movement of aircraft during LVP.

Additionally, during LVP access to the runway for departing aircraft is via the runway end only, with aircraft holding at either A2 or B2 as required.

Holding point H south side of the runway is considered protected from the ILS and therefore can be used during LVP however departing aircraft shall cross to the north to line-up via A2/B2 as required.

3.2.4 Arrival Separation

During LVP successive IFR arrivals are to have a minimum of 10 NM spacing.

3.3 Windshear

Once turbulence or windshear has been reported to Cardiff ATC, ADC (or APC where appropriate) should inform all subsequent landing aircraft that windshear conditions have been reported until confirmation has been received that the conditions no longer exists.

3.4 Meteorological Information

The ATIS shall be maintained by the aerodrome controller, though this can be delegated to another controller. Aircraft are expected to confirm the current ATIS information on first contact with a Cardiff ATC station. When LVPs are in force then this should be included in the ATIS broadcast.

Chapter 4 Description of Airfield

4.1 Airfield Geographical Data

ICAO Code	EGFF
Aerodrome Reference Point (ARP)	Lat: 512348N Long: 0032036W
Elevation	220ft
Magnetic Variation / Annual Change	0.58° W (2022)/0.20° (E)
Transition Altitude	6000ft
Minimum Safety Altitude	3900ft (N)

4.2 ATC Communication Facilities

Aerodrome Control (ADC)

Callsign	Logon Callsign	Abbreviation	Frequency (MHz)
Cardiff Information	EGFF_ATIS	ATIS	132.480
Cardiff Tower	EGFF_TWR	ADC	133.105

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Approach Control (APC)

Callsign	Logon Callsign	Abbreviation	Frequency (MHz)
Cardiff Radar	EGFF_APP	RAD 1	125.855
Cardiff Radar	EGFF_L_APP	RAD 2	119.155

Note: The combined RAD 1 and RAD 2 functions are referred to as APC.

RAD 1 is the master radar controller. They are responsible for all traffic operating at and above 6000ft within the Cardiff CTR and CTA including all departures, and all traffic within the Area Control delegated airspace. RAD 2 is responsible for provision of final radar sequencing for IFR inbounds (including surveillance radar approaches) and provision of a lower airspace radar service within 40 NM (subject to workload).

RAD 1 must be open before RAD 2 and when band-boxed is responsible for the provision of both functions.

4.2.1 8.33 KHz Frequencies

Due to the limitations of simulators used on VATSIM, the 8.33 KHz frequencies for Cardiff as found in the eAIP are unable to be used.

4.3 Radio Navigation and Landing Aids

Type	Identifier	Frequency	Remarks
ILS/LLZ GP (CAT I)	I-CDF	110.700 MHz	Runway 12
ILS/LLZ GP (CAT I)	I-CWA	110.700 MHZ	Runway 30
NDB (L)	CDF	388.5 kHz	Range 40 NM

Chapter 5   Use of Runways

5.1 Preferential Runway

The preferential runway when the tailwind component is less than 5 knots is Runway 30.

5.2 Runway Change Procedures

In case of a change to the active runway, ADC shall initiate co-ordination with APC to agree a last arrival and time for the runway change. ADC shall inform APC of the intended last departure before, and the first departure after, the runway change (callsign and routing). APC will inform ADC of the first arrival after the runway change.

5.3 Runway Vacation Guidelines

Arrivals should vacate the active runway in the most expeditious way. Locally based aircraft exiting towards the southern maintenance areas should be told to vacate via Taxiway G when landing on Runway 30 and via Taxiway H when landing on Runway 12. This is to enforce a safe 'one-way' system around the southern maintenance areas.

5.4   Land After Procedures

When aircraft are using the same runway, a landing aircraft may be permitted to touch down before a preceding landing aircraft which has landed is clear of the runway subject to the MATS Part 1 criteria for land after procedures.

Responsibility for ensuring adequate separation rests with the pilot of the following aircraft.

At Cardiff land after procedures cannot be issued in the following circumstances:

- The leading aircraft has declared either MAYDAY or PAN, or
- There is a significant difference in landing speeds between the two aircraft, or
- The following aircraft is a B747 or A380 type aircraft.

Chapter 6   Coordination Procedures

6.1   Coordination between ADC and APC

All IFR and SVFR departures require release from APC however Cardiff operates a free-flow departure system for VFR departures. There are certain circumstances in which additional coordination is required before a departure and ADC is responsible for initiating coordination with APC in the following circumstances:

- Any aircraft on a SID that will not meet the climb performance criteria
- Aircraft conducting IFR training approaches (IFR circuits)
- IFR non-SID departures
- IFR flights to St Athan
- IFR flights to Bristol
- SVFR departures to obtain clearance
- Any departure (including VFR) following a missed approach.

AIR is also responsible for informing the APC controller when the visual circuit is active and again when it is inactive.

6.1.1   VFR Outbound Coordination

ADC is responsible for prenoting VFR departures to APC immediately prior to departure. VFR outbounds shall be cleared via the standard VFR routings unless otherwise coordinated with APC.

6.2   Coordination between APC and ADC

APC will coordinate with ADC the following:

- Arriving VFR flights
- IFR flights conducting anything other than an ILS approach with a 10 NM range check
- Aircraft which will route through or close to the ATZ (defined as within 5 NM of the aerodrome up to an altitude of 2500ft)
- Planned low approach and go-arounds with after departure instructions.

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6.2.1   VFR Inbound Coordination

APC is responsible for prenoting VFR arrivals to ADC when they make initial contact with APC. ADC is responsible for integrating VFR arrivals into the Cardiff CTR and it is good practise to inform APC as to the anticipated join. APC shall clear aircraft into the CTR and ADC is responsible for issuing the joining clearance into the visual circuit.

6.3   Split APC Coordination

When Cardiff APC is split into RAD 1 and RAD 2 positions, ADC shall coordinate with RAD 1 regarding:

- SID departures (including traffic unable to meet climb performance criteria)
- IFR non-SID departures with an RFL at 6000ft or greater

And with RAD 2 regarding:

- IFR non-SID departures with an RFL below 6000ft
- Aircraft conducting IFR training approaches (IFR circuits)
- IFR flights to St Athan and Bristol
- Missed approaches
- Departures following a missed approach
- VFR and SVFR traffic.

Chapter 7   St Athan (EGSY) Procedures Summary

7.1   General

St Athan is a former RAF airbase located 3 NM west of Cardiff airport. The site was transferred to civilian ownership under the Welsh Government in April 2019 and the airfield is now a major centre of aircraft disassembly. The airfield also houses the NPAS St Athan police aviation base and continues to host the University of Wales Air Squadron Grob Tutor T1 fleet. This chapter provides an overview of the procedures in place at St Athan for ADC controllers. St Athan ADC and Cardiff APC controllers should consult APC 8 for full details.

7.2   Provision of Air Traffic Services

St Athan ADC operates on 122.865 MHz and an ATIS is available on 130.560 MHz. Cardiff APC provides and approach radar control function and is responsible for St Athan IFR inbounds and outbounds and additionally provides a top-down aerodrome control service in the absence of St Athan ADC.

7.3   Local Flying Zone and VFR Traffic

When VMC prevails, St Athan is delegated a Local Flying Zone (LFZ) within the Cardiff CTR from the surface to 1700ft Cardiff QNH / 1500ft St Athan QFE as depicted in Figure 3.

St Athan ADC may clear aircraft for VFR circuits and certain VFR departures within the LFZ without reference to Cardiff ADC or APC.

All VFR inbounds will be provided clearance by Cardiff APC before transfer to St Athan ADC.

VFR circuits are at 800ft St Athan QFE for light piston aircraft, 1300ft St Athan QFE for all other types. Circuits are to the south: Runway 07 – right-hand. Runway 25 – left-hand.

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7.4   IFR Traffic

IFR inbounds route via Cardiff STARs and will be radar vectored to either an ILS (Runway 25 only – 111.15 MHz I-SAT 254°) or visual approach by Cardiff APC. IFR outbounds are cleared to *"Climb straight ahead to altitude 4000ft Cardiff QNH XXXX, squawk XXXX, VFR. On passing altitude 2500ft flight becomes IFR."*

IFR departures are subject to release from Cardiff APC.

7.5   'St Athan Secure' Procedure

St Athan ADC is to implement *'St Athan Secure'* when notified by Cardiff ADC of a pending Runway 30 IFR departure or by Cardiff APC of a Runway 12 IFR arrival at 15 NM from touchdown.

'St Athan Secure' is defined as when there is no traffic operating within the LFZ north or east of the St Athan Runway 07/25 mid-point.

Should St Athan ADC not be able to implement the *'St Athan Secure'* process in a timely manner they shall coordinate with Cardiff ADC or APC as required to facilitate the provision of effective traffic information to Cardiff traffic which ensures separation between the Cardiff IFR and St Athan VFR traffic.

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ADC | AERODROME CONTROL

Chapter 1   Aerodrome Control (ADC) Responsibilities

Aerodrome Control is responsible for issuing information and instructions to aircraft under its control to achieve a safe, orderly, and expeditious flow of air traffic and to assist pilots in preventing collisions between:

- Aircraft flying in and in the vicinity of the control zone (CTR)
- Aircraft taking off and landing
- Aircraft moving on the apron
- Aircraft, obstructions and other aircraft on the manoeuvring area.

Furthermore, Aerodrome Control has specific responsibility for the following:

- Determining the runway in use
- Providing the Airfield Terminal Information Service (ATIS)
- Flight plan review with amendments as required in accordance with the UK Standard Route Document
- Issuing departure clearances for standard IFR and VFR departures
- Issuing all landing and take-off clearances
- Obtaining releases for departing IFR/SVFR aircraft as described in ADC 5
- Control of the visual circuit as described in ADC 7
- Control of VFR aircraft within the Cardiff CTR and within the vicinity
- Coordination with APC as described in GEN 6
- Updating the flight progress display for all aircraft under their control.

Cardiff ADC is **not** to provide aerodrome control service to aircraft at St Athan or operating within the LFZ but may control aircraft transiting the Cardiff CTR to the extent required to ensure separation.

Chapter 2   Departure Clearances

2.1   Issuing Clearances

Prior to issuing any clearance ADC is responsible for checking the following:

- Aircraft type reported by the pilot matches that in the flight plan
- The aircraft routing and destination are correct, using a published SID whenever possible
- The requested final level (RFL) is correct for the direction of flight
- The pilot communication type (voice/text/receive only) is updated

Pilots should report the following information when requesting clearance:

1. Their stand number,
2. Their aircraft type,
3. The ATIS letter they are in receipt of, and
4. The current Cardiff QNH.

ADC should ensure that both the stand number and aircraft type are confirmed by the pilot before issuing a clearance.

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An IFR clearance should follow the format:

1. Callsign
2. Destination / Clearance Limit (ie. the CTR boundary for flights leaving CAS)
3. Standard Instrument Departure / After Departure Instructions
4. SSR Code

Example: *"ABC123, cleared to Gatwick, Brecon 1 Alpha departure, squawk 0356."*

ADC must obtain a full read back of the given clearance.

If the QNH and/or ATIS letter were not correctly reported by the pilot, the ADC controller will pass this to the pilot.

Example: *"ABC123, correct. Information A, Cardiff QNH 1020."*

2.2   SSR Code Allocation

For IFR flights joining the ATS route network, ADC shall generate a valid general SSR code via either UKCP or the eAIP SSR Code Allocation Plan.

For VFR departures, ADC shall allocate a local SSR code from the range 3640-3657, allocating codes in ascending order.

For all other flights departing Cardiff, ADC shall obtain an SSR code from APC.

2.3   Standard Instrument Departures

All Cardiff Standard Instrument Departures (SIDs) are conventional navigation procedures:

Route	Runway 12	Runway 30	Remarks
LEKCI	1B 6000ft	-	Runway 12 only
BCN	1A 6000ft	1B 6000ft	*See Note*
EXMOR	1A 5000ft	1B 5000ft	

Note: BCN SIDs are designated as 'RNAV overlay' procedures – this is because the BCN VOR has been decommissioned and functions solely as a DME station. This means the BCN SIDs can only be flown with RNAV equipment. Aircraft unable to fly RNAV procedures will require an alternative clearance to be obtained from APC.

2.3.1   Departure Warnings

Traffic joining the ATS route network **eastbound** via either LEKCI 1B or BCN 1A routing BCN P4 HAWFA L607 is subject to a 'departure warning' to AC West. This is to be issued by ADC at start-up/pushback.

Departure warnings may be issued either electronically via the UKCP pre-note function, via text or via voice and should include the departure aerodrome, callsign and SID.

Example: *"Cardiff departure warning, G-ABCD, LEKCI 1B."*

2.4   IFR Flights to Local Airfields

2.4.1   Flights to Bristol

Flight Plan Routing: DCT BRI

IFR flights positioning to Bristol from Cardiff shall be treated as a non-standard IFR departure and are not required to use a Cardiff SID.

ADC should coordinate with RAD 2 to obtain a clearance.

The standard clearance is *"(Callsign), cleared to Bristol, after noise abatement turn left/right direct BRI, climb to altitude 4000ft, squawk (local SSR code)."*

ADC shall obtain a release from RAD 2 prior to departure.

In the absence of Cardiff APC (or the appropriate top-down controller), Cardiff ADC shall coordinate directly with Bristol APC.

2.4.2   Flights to St Athan

IFR flights positioning to St Athan from Cardiff shall be treated as a non-standard IFR departure and are not required to use a Cardiff SID.

ADC should coordinate with RAD 2 to obtain a clearance.

The standard clearance is *"(Callsign), cleared to St Athan, after departure climb straight ahead to altitude 4000ft, squawk (local SSR code)."*

ADC shall obtain a release from RAD 2 prior to departure.

2.5   Non-SID IFR Departures

All non-SID IFR departures shall be coordinated with either RAD 1 (if the RFL is 6000ft or greater) or RAD 2 (if the RFL is below 6000ft).

ADC shall obtain a release from the relevant APC controller prior to departure.

2.6   VFR Departures

VFR departures shall be cleared via the standard VFR outbound routes detailed in LOW 3.3.1.

VFR departures shall be prenoted to RAD 2 immediately prior to departure.

Chapter 3   Manoeuvring Areas and Parking

3.1   Stand Occupancy and Pushback Clearances

Stand	Max Aircraft Size	Remarks
1	B739/A321	
2	B739	Cannot be used if stands 1, 3, 7 or 7L are occupied
3	B739/A321	
4	A320	Cannot be used if stand 6 is occupied
5	A320	Cannot be used if stand 6 is occupied
6	B744/B773/A346	Cannot be used if stands 4 or 5 are occupied
7	B738/A320	
7R	B788	Cannot be used if stand 3 is occupied
8	JS41	
8R	B738	
9	A321	
10	B767	
11	A321/B738	
12	A321/B738	
13	A321/B738	
14	B733/A319	
15	A321/B738	
16	A321/B738	
17	A321/B738	

Stands 12-17 are nose in stands.

Aircraft on these stands are to be instructed to *"Push and start into the Cul-de-sac."*

3.2   Taxiway Restrictions

Taxiway C must not be used by Code D or E aircraft to enter or vacate the runway, with the exception of B757/B767 series aircraft.

Code D and E aircraft, except B757/B767 series aircraft, cannot make turns from Taxiway E onto Taxiway B. These aircraft must be instructed to turn left onto Taxiway A and either enter the runway via Holding Point D and backtrack or continue down Taxiway A to another suitable parking position.

3.3   A380/B747 Ground Movement

Although uncommon, British Airways Maintenance Centre (BAMC) occasionally accepts A380 aircraft for maintenance purposes. The BAMC maintenance area is the main A380 parking area. If the aircraft is not required at BAMC, then stand 6 is to be used.

A380 and B747 series aircraft are not able to taxi along Taxiway A between Holding Point B3 and D.

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For a Runway 30 arrival, A380 and B747 series aircraft are to vacate via Holding Point B1 onto Taxiway B, then turn left onto Taxiway F.

For a Runway 12 arrival, A380 and B747 series aircraft are to vacate via Holding Point A1 onto Taxiway A, continue to Holding Point D, re-enter Runway 12 via Holding Point D, then exit the runway via Holding Point E continuing to the BAMC.

3.4   Ground Movement – South Maintenance Area

ATC permission is not required for engine starting or self-manoeuvring within the confines of the maintenance area. A one-way traffic system exists on the southside of the aerodrome using Holding Points G and H.

Access through Holding Points G and H is restricted to one aircraft at a time.

When Runway 30 is in use, aircraft from the south maintenance area should line up via Holding Point H and vacate via Holding Point G, unless otherwise instructed.

When Runway 12 is in use, aircraft from the south maintenance area should line up via Holding Point G and vacate via Holding Point H, unless otherwise instructed.

During LVP the only access to the south maintenance area is via Holding Point H.

Chapter 4   Runway Procedures

4.1   Line up Clearance

In order to protect the ILS sensitive areas departing aircraft are to be taxied initially to A2 for Runway 30 and B2 for Runway 12. Once aircraft reach these positions. and it is safe to do so, aircraft may enter the runway using the phraseology *"Via A1/B1, line-up (and wait) Runway 30/12."*

Holding Point C may be used as an intermediate departure point at the pilot's request.

4.2   Runway Occupancy and Conditional Clearances

Aircraft may cross behind a departing or in front of a lined-up aircraft on the runway providing that LVPs are not in force.

When lining-up a departure which will have an aircraft cross ahead of it the following phraseology shall be used: *"(Callsign), line-up and wait Runway 30, aircraft crossing ahead."*

4.3   Intersection Departures

Pilots are responsible for determining the take-off length required for their departure. Controllers may offer intersection departures to aircraft which they think could accept, however it is the pilot's decision as to whether to use the full length or not.

Intersection lengths are published in the eAIP under EGFF AD 2.13 – Declared Distances.

4.4   Cancelled Take-offs

If take-off clearance has to be cancelled before the take-off run has commenced, the pilot shall be instructed to hold position and to acknowledge the instruction. In certain circumstances ADC may consider that it is necessary to cancel take-off clearance after the

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aircraft has commenced the take-off run. In this event the pilot shall be instructed to stop immediately and to acknowledge the instruction.

In the event of a pilot or controller initiated rejected take-off, APC shall be informed and aircraft sent around if there are arrivals in close succession until the runway is vacated.

4.5   Runway Clearances

It is accepted that a degree of anticipation is permissible in the issuance of take-off and landing clearances. In all cases, except where a land-after clearance (GEN 5.4) is issued, take-off/landing clearances shall not be passed until the preceding aircraft:

- Has passed the runway edge markings, and
- Is in motion, continuing in the required direction.

Vacating aircraft must not be instructed to stop until they have passed entirely beyond the runway holding point.

When a clearance is issued in anticipation of meeting the vacated requirement, controllers shall continuously monitor the situation using the SMR and take positive action if the runway vacation requirement may not be met.

4.6   Landing Clearance

4.6.1   Late Landing Clearances

Aircraft should be cleared to land no later than 2 NM from touchdown. If the traffic situation is anticipated to change rapidly allowing an aircraft to land, the phrase *"expect late landing clearance"* may be used. If there is any doubt as to the ability to issue a landing clearance within 2 NM the aircraft must execute a missed approach.

4.6.2   Cancelling Landing Clearance

It is the responsibility of the ADC controller to issue landing clearances to all aircraft. If they are not satisfied that an approach can continue safely, they may issue instructions to re-position a particular aircraft or instruct the aircraft to go-around.

Chapter 5   Departure Releases and Separation

5.1   Departure Releases

All IFR and SVFR departures are subject to release from APC. It is the responsibility of APC to provide releases for IFR traffic that ensure separation between departing aircraft (see APC 5.3).

SID departures and non-standard IFR departures with an RFL of 6000ft or greater shall be released by RAD 1.

Non-Standard IFR departures with an RFL below 6000ft, VFR and SVFR departures shall be released by RAD 2.

In the absence of a controller providing radar services aircraft may depart with a 2-minute departure interval, reduced to 1-minute when the initial route diverges by 45° or greater.

5.2 Wake Turbulence Separation

Wake turbulence separation should be provided in accordance with MATS Part 1.

5.3 Runway 30 Departures – 'St Athan Secure'

In accordance with GEN 7.5, whenever the St Athan LFZ is active Cardiff ADC must notify St Athan ADC of pending IFR departures and have received confirmation of *'St Athan secure'* prior to issuing take-off clearance.

5.4 Speed Limitation on Departure

A speed limit of 250 knots IAS applies to all departures from Cardiff whilst flying within Class D and Class C airspace. This limitation may only be removed by a radar controller when necessary for safety of flight reasons.

If departing aircraft are unable to comply with the standard speed limit, this may impact on the initial separation against previous departures. In all such cases, pilots should inform ADC prior to departure and ADC is to inform APC who may specify a higher speed limitation and/or additional take-off separation as necessary.

ADC is to advise the pilot, before take-off, of any higher speed limitation imposed.

The onus for removing the speed limitation rests with the appropriate radar controller. ADC controllers are not to remove a speed limitation without first obtaining the approval of the appropriate radar controller.

Chapter 6 Transfer of Control and Communication

6.1 Departures

Departures may only be transferred to the appropriate APC frequency once all aerodrome conflictions have been resolved. Ideally transfer shall occur no later than 2000ft or 2.5 NM from the departure end of the runway, though if required to retain traffic to resolve a confliction, the AIR controller shall look out for pilots climbing to above their initial (cleared) level and take action by reiterating the cleared level as required.

SID departures and non-standard IFR departures with an RFL of 6000ft or greater shall be transferred to RAD 1.

Non-Standard IFR departures with an RFL below 6000ft, VFR and SVFR departures shall be transferred to RAD 2.

In the absence of Cardiff APC all departures are to be transferred to LW – AC West (126.080 MHz), or in their absence L – AC Bandbox (127.830 MHz), as these positions assume responsibility for APC top-down.

ADC is responsible for **observing** a Mode C readout (but not validating the Mode C readout) from all departing aircraft prior to transferring communication and shall instruct aircraft to transmit Mode C when this is not observed.

6.2   Aircraft on Approach

Transfer of communication for arriving aircraft should occur when the aircraft reports established on the ILS or reports final and shall occur no later than 4 NM from touchdown.

APC will retain control of all aircraft on approach until 4 NM from touchdown. It remains the responsibility of APC to monitor the wake turbulence separation and radar separation up to this point. Any instruction which ADC wishes to issue outside of 4 NM must be coordinated with APC before it is given.

6.3   Arrival Spacing

All arrival wake turbulence separation is as per MATS Part 1.

In routine operations APC shall ideally achieve spacing of 8 NM to allow one departure for each arrival. APC should ensure a minimum of 6 NM spacing exists behind VFR arrivals (including those in the visual circuit).

Chapter 7   Missed Approaches/Go Arounds

The standard missed approach procedures for Cardiff are:

Runway	Missed Approach Procedure
12	Climb straight ahead. On reaching 3000 or I-CDF DME 2 outbound (CAT A/B) or I-CDF DME 4 (CAT C/D) outbound whichever is the later, turn left to return to NDB CDF at 3000.
30	Climb straight ahead. On reaching 3000 or I-CDF DME 2 outbound (CAT A/B) or I-CDF DME 4 (CAT C/D) outbound whichever is the later, turn right to return to NDB CDF at 3000.

Normally there is no requirement for pilots to follow the full missed approach procedure. As soon as ADC becomes aware of an aircraft executing a missed approach, or having instructed an arrival to go-around the following actions must be taken:

- Inform APC (RAD 2 if split)
- Ensure the aircraft is climbing straight ahead by using the ATM
- Pass traffic information if appropriate
- Pass any instructions from APC to the aircraft and transfer communication back to the appropriate APC frequency (RAD 2 if split unless otherwise directed).

The next departure following a missed approach requires a release from APC, this includes VFR departures.

Chapter 8   Circuit Procedures

Circuits may take place to the north of the aerodrome at a **height** of 1200ft or an **altitude** of 1500ft; with right-hand circuits from Runway 30 and left-hand circuits from Runway 12.

APC shall be informed when the circuit is active and ceases to be active, whenever the downwind leg for traffic extends beyond 4 NM or when circuit traffic is orbiting close to the final approach track.

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SVFR circuits require the approval of APC and shall be coordinated to ensure standard separation is maintained against other IFR or SVFR traffic.

Aircraft remaining within the visual circuit should be instructed to squawk the VFR circuit conspicuity code (7010).

8.1.1 Integrating circuit traffic with IFR approaches

VFR traffic may be instructed to orbit at the start or end of the downwind leg, to change circuit direction, land or to leave the circuit and hold away from the instrument approach. Traffic information is to be passed as appropriate. Circuit traffic must report the relevant traffic in sight before turning base.

If the pilot cannot see the aircraft on final, they must either extend downwind or orbit left/right at the end of their downwind leg until the aircraft on final is sighted or has landed. Once the traffic is in sight or has landed, wake turbulence advisories should be passed (if applicable) with the instruction to report final.

SVFR traffic must either land or be routed to maintain 3 NM separation from the final approach track whenever inbound IFR traffic is within 10 NM.

8.1.2 Re-join Procedures

Aircraft shall typically be cleared to join in the most expeditious way appropriate to their direction of arrival, however ADC may integrate traffic however necessary. Overhead joins are not normally to be permitted.

8.1.3 Glide Approaches, Flapless Approaches and Engine Failures after Takeoff (EFATO)

All requests for glide approaches, flapless approaches and EFATO should be made with ADC. ADC should endeavour to accept this request, providing there is no adverse delay on other aircraft.

Controllers are reminded that approach speeds for flapless approaches will be higher than normal, and glide approaches will be much slower, with tighter base turns.

Aircraft executing an EFATO are to be instructed to *"report climbing away."*

Chapter 9 Helicopter Procedures

Helicopters are to be treated as per fixed wing aircraft with regards to routing and re-join procedures.

Helicopters are to generally make all approaches/departures to and from the active runway. A helicopter aiming point (HAP) exists on Taxiway A, however this is to be used only when the surrounding taxiway and apron are clear of other aircraft.

Helicopter parking is normally on the southern maintenance area or along the line adjacent to taxiway G and helicopters will be required to ground/air taxi as appropriate.

Direct approaches to the southern maintenance area are not permitted.

Chapter 10 Use of the Aerodrome Traffic Monitor

An Aerodrome Traffic Monitor (ATM) is available, and the information derived from the ATM may be used by all AIR controllers to:

- Determine the landing order, spacing and distance from touchdown of arriving aircraft.
- Assist in applying longitudinal separation for departing aircraft.
- Enable controllers to confirm that the initial track of departing aircraft conforms with the clearance issued.
- Provide information to aircraft on the position of other aircraft in the circuit or carrying out an instrument approach.

Additionally, **radar validated controllers (S3+)** may utilise the ATM for advanced uses:

- Following identification, validate SSR codes of departing aircraft and verify associated mode C read-outs.
- Monitor the progress of overflying aircraft identified by Approach Radar Control to ensure that they do not conflict with the tracks of arriving or departing aircraft.
- Establish separation between departing aircraft.
- Pass traffic information.
- Establish separation in the event of a missed approach.
- Assist in taking initial corrective action when the separation between arriving aircraft becomes less than the prescribed minima.

APC | APPROACH CONTROL (APC)

Chapter 1   Area of Responsibility and Sector Organisation

1.1   General

In this section, the following convention for the naming of the Cardiff APC positions is adopted:

RAD 1	- Cardiff Radar
RAD 2	- Cardiff Radar
APC	- Combined RAD 1 and RAD 2 functions

1.2   Area of Responsibility

Cardiff APC is responsible for the Cardiff CTR and CTA. Additionally, Area Control (AC) West delegates portions of the overlying Berry Head/Cotswold/PEPZE/Severn/Strumble CTAs from the declared base of controlled airspace (DB) to FL165. The AC delegated airspace extends from DIZIM in the north to overhead Exeter airport in the south, and from AMMAN in the west to the portion of CTA 12 west of the buffer, as well as CTA 11 to the east. The airspace delegation is depicted in Figure 1. Cardiff APC delegates a portion of the Cardiff CTA (and overlying Cotswold CTA) to the east of the buffer zone to Bristol APC. Aircraft operating under the control of Bristol APC are fully released within the confines of the airspace limits shown in Figure 2. Note that portion of the Berry Head CTA depicted in crosshatch is flexible use airspace and only available at weekends (Fri 1600 (1500 summer) - Mon 0745 (0645 summer))*.

Cardiff APC shall provide approach and approach radar control services to aircraft from the time and place at which:

- Arriving aircraft are released by Area Control until control is transferred to ADC, or for aircraft inbound to Bristol, to Bristol APC
- Aircraft approaching from outside controlled airspace place themselves under the control of APC until control is transferred to ADC
- Overflying aircraft are within the Cardiff CTR/CTA or relevant delegated airspace
- Departing aircraft are transferred from ADC until control is transferred to Area Control, or they are clear of controlled airspace and are transferred to an appropriate agency.

1.2.1   Bristol/Cardiff Radar Buffer Zone

A 3 NM wide radar buffer zone, extending DB-FL105, is established between Cardiff APC and Bristol APC along the common boundary between Cardiff CTA 5 and Bristol CTAs 4/5 with an extension north towards WEVBE. The buffer zone permits autonomous radar operation by both units whilst minimising coordination. Neither unit is permitted to entire the buffer zone without prior coordination with the other unit, this ensuring that 3 NM radar horizontal separation will always exist between aircraft under the control of Bristol or Cardiff without the need for coordination.

> ***Note:*** *Aircraft operating in accordance with a standing agreement are deemed coordinated to enter the buffer zone without additional individual coordination.*

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The buffer zone is permanently active in a single configuration and must always be displayed on the situation display. If an aircraft inadvertently enters the buffer zone, coordination must be effected between Cardiff and Bristol APC **without delay** to ensure separation is maintained.

1.2.2 AC West – Bristol Delegated Airspace

Area Control (AC) West delegates the Cotswold CTA-3 in addition to part of CTA-13 coincident with the lateral boundary of the Bristol CTA from the declared base of controlled airspace (DB) to FL135; plus, portions of Cotswold CTA 12 east of the buffer zone to Bristol below FL 105..

Figure 1 – AC West airspace delegations in the vicinity of Cardiff and Bristol
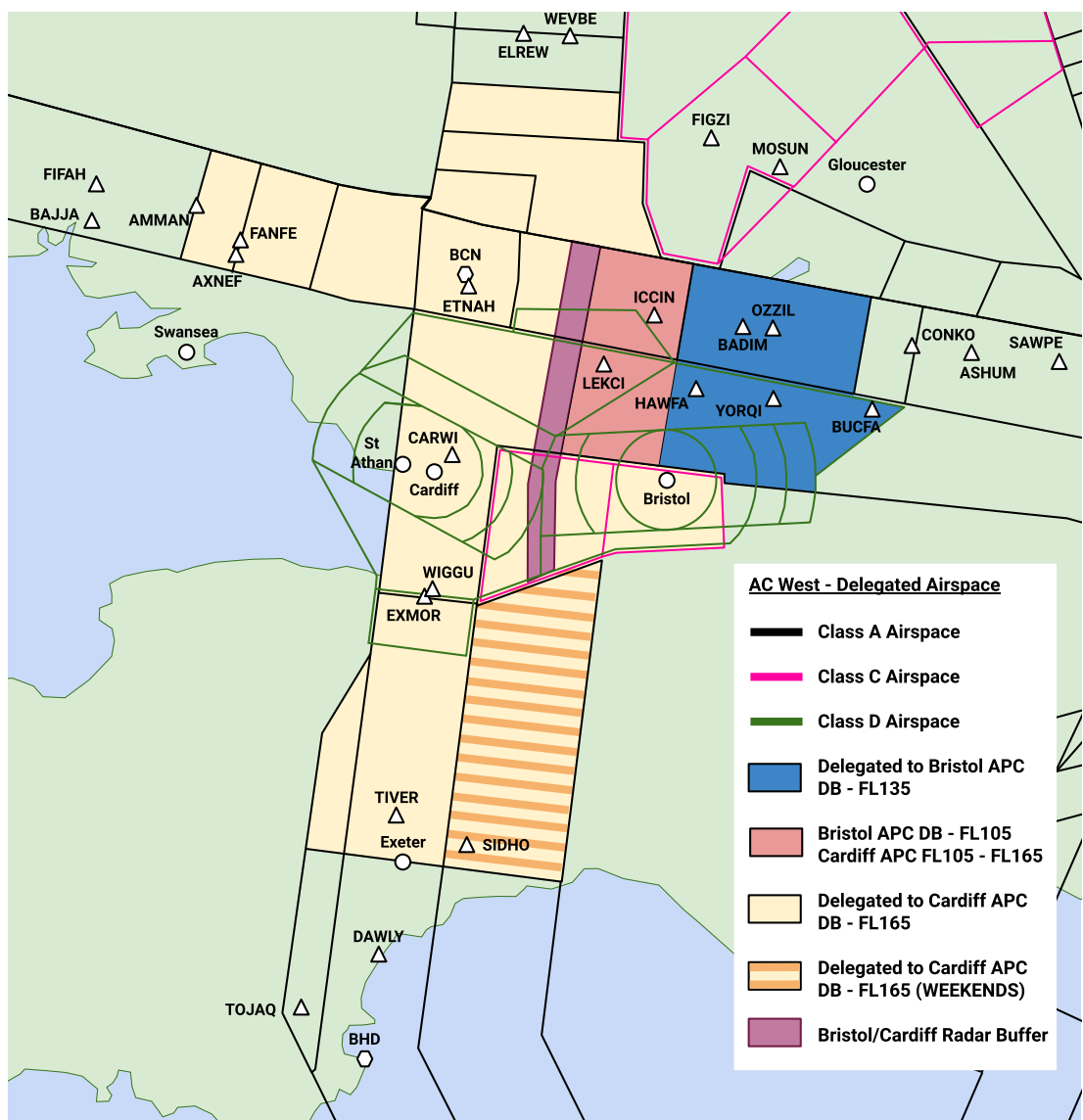
1.2.3 Burnham Box (EXMOR – Burnham Line)

The Burnham Box (as depicted in Figure 2) is a handover box, through which aircraft inbound to Bristol via EXMOR shall be positioned. Aircraft routing through the box must be

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transferred from Cardiff to Bristol at or before the handover box and are not released for left turns until east of the Buffer Zone (i.e. once outside the Burnham Box).

1.2.4   Cardiff CTA – Bristol Delegated Area

Cardiff APC delegates a portion of the Cardiff CTA (and overlying Cotswold CTA) to the east of the buffer zone (as depicted in Figure 2) to Bristol APC. Aircraft operating under the control of Bristol APC are fully released within the confines of the airspace limits shown in Figure 2.

Figure 2 - Bristol/Cardiff interface depicting only Bristol and Cardiff CTAs
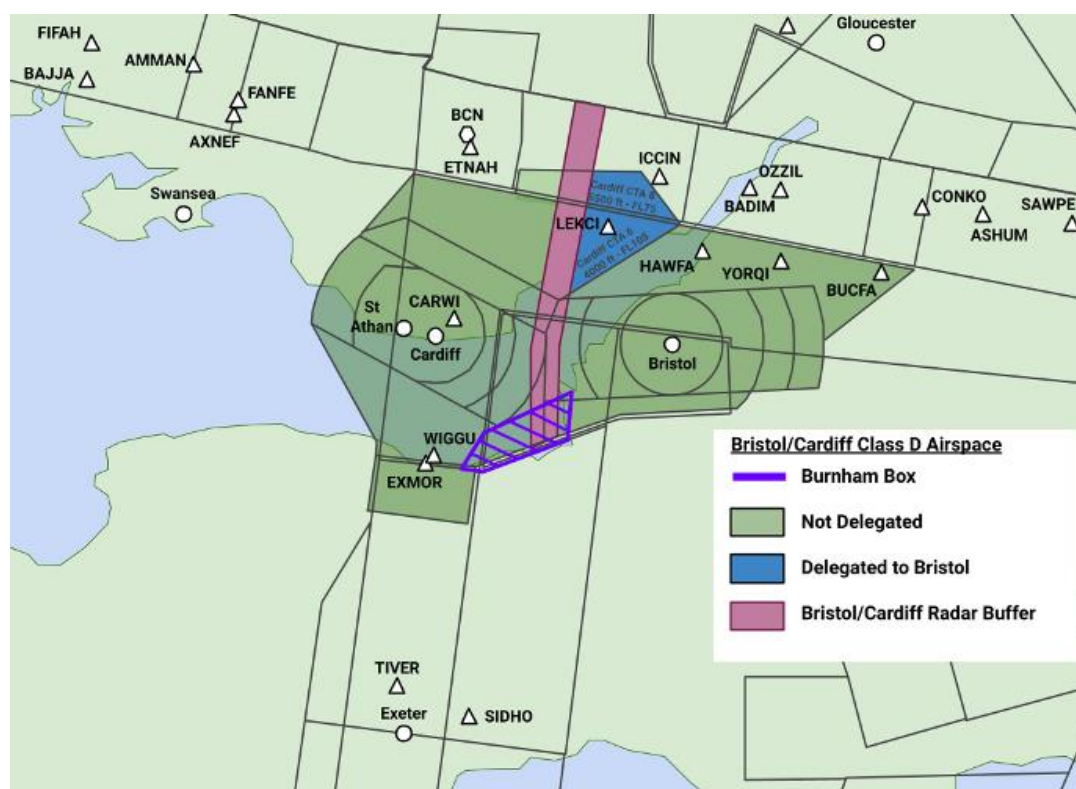
1.3   RAD 1 Responsibilities

RAD 1 is responsible for providing a radar control service to all aircraft within the Cardiff CTR/CTA operating at and above 6000ft and to all aircraft operating within the airspace delegated by Area Control. They are to provide intermediate approach control for all IFR inbounds to Cardiff, for IFR inbounds to Bristol routing via BCN/WEVBE and EXMOR, for all IFR outbounds from Cardiff, and for IFR outbounds from Bristol routing via BCN and EXMOR.

Additional, specific responsibilities are:

- Acceptance of inbound releases from Area Control
- Control of the CDF hold
- Control of the BRI hold above FL135.

RAD 1 is the primary radar position and must be opened before RAD 2. RAD 1 is responsible for all executive coordination with other units.

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1.4   RAD 2 Responsibilities

RAD 2 is responsible for providing a radar control service to all aircraft within the Cardiff CTR/CTA operating below 6000ft. They are responsible for providing final approach control for all IFR inbounds to Cardiff and are also responsible for VFR and SVFR traffic operating within and in the vicinity of the Cardiff CTR/CTA.

Additionally, all IFR outbounds or transit traffic that has a cruise level below 6000ft will be the responsibility of RAD 2.

Additional, specific responsibilities are:

- Control of traffic conducting planned and unplanned missed approaches
- Provision of surveillance radar approaches
- Provision of the lower airspace radar service within 40 NM of Cardiff
- Provision of 'top-down' control over St Athan in the absence of St Athan ATC.

RAD 1 assumes responsibility for the provision of RAD 2 functions when the positions are operating combined.

Chapter 2 Approach Radar Control - General Operational Procedures

2.1 General Procedures

RAD 1 is responsible for acceptance of inbound releases and the initial sequencing of inbounds by radar vectors. The arrival order is derived from the stack ATA or EAT subject to tactical considerations. RAD 1 is also responsible for the initial control of all outbounds from Cardiff alongside inbounds/outbounds to/from Bristol routing via BCN/WEVBE and EXMOR.

RAD 2 is responsible for final sequencing of inbounds by radar vectors following transfer from RAD 1.

RAD 1 is the master radar controller and responsible for executive coordination and overall flow through the Cardiff area of responsibility. This does not preclude RAD 2 from coordinating with other agencies. Both directors will manage their own electronic flight progress strip display.

2.2 Inbound Releases

All inbound releases will be to RAD 1. Both Cardiff and Bristol inbounds routing via BCN/WEVBE and EXMOR will be released in accordance with the silent release procedures detailed in APC 3.4. It is the responsibility of Cardiff APC to cancel the silent release procedures with AC, in good time, when it is unable to accept an aircraft in accordance with the silent release.

Aircraft that are not able to be released in accordance with these procedures shall be released by means of either a full release or, if in conflict with an overflying aircraft, a radar release. For reasons of expedition Cardiff APC may request, and AC may offer alternative releases for aircraft that would otherwise be subject to the standard releases.

Except where agreed in a full release or radar release, following transfer of communication Cardiff APC may:

- Apply or remove speed control
- Issue descent to a lower level in accordance with release procedures
- Turn and descend the aircraft after reaching the release point.

Cardiff APC must not climb the aircraft or stop its descent above the release level; however, the approach controller may instruct aircraft to disregard any 'level by' restrictions imposed. Once traffic has entered the Cardiff area of responsibility, it shall not be instructed to leave it.

2.3 Standard Approach Types

Unless requested otherwise, the standard instrument approach will be a radar vectored ILS approach.

Surveillance radar approaches are available for training purposes for both pilots and controllers subject to workload.

RAD 1 should coordinate aircraft inbound to Bristol who request an RNP approach (via ADVED/BAXUN) prior to transfer of communication.

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2.4   Transfer of Data and Control between Cardiff APC Controllers

Transfer of data and control from RAD 1 to RAD 2 (and vice versa) will be by electronic transfer of the aircraft track data-block coincident with the transfer of communication.

For the transfer of IFR inbounds conducting instrument approaches, RAD 1 is to ensure that all information on the electronic flight progress strip is accurate before transfer to RAD 2. When this is the case, no verbal coordination is required, unless either controller feels it necessary for reasons of clarity, or to highlight non-standard positioning or coordinated restrictions.

2.5   Identification and SSR Validation and Verification Procedures

All aircraft under the control of Cardiff APC must be identified, the assigned SSR code validated, and Mode C return verified. Except where described below this is to be by one of the methods described in MATS Part 1. Aircraft transferred from another radar unit either by standing agreement or individual coordination are deemed to have been validated and the Mode C return verified.

Aircraft departing Cardiff and Bristol which are automatically code-callsign converted (correlated) with the correct callsign and are not displaying a squawk error (DUPE) indicator within the track data-block are deemed identified and validated. The first radar controller working these aircraft must however verify the Mode C return.

Any aircraft that does not automatically code-callsign convert, is displaying an incorrect callsign, or that is displaying a squawk error (DUPE) indicator shall be reassigned a unique code; however, for initial identification a controller may request an IDENT to avoid requiring the pilot to set a new squawk during the workload intensive departure phase.

Aircraft departing St Athan or any other unit outside controlled airspace, which has been passed a UKCP general SSR code or a Cardiff APC local SSR code shall be instructed to IDENT or identified by another method regardless of whether automatic code-callsign conversion has taken place.

2.5.1   SSR Code Allocation

Cardiff APC shall allocate codes in the range:

- 3601-3607 for IFR/SVFR traffic
- 3610-3635 for VFR traffic.

Cardiff ADC shall allocate codes 3640-3657 for outbound VFR traffic.

St Athan ADC shall allocate code 3637 for outbound VFR traffic via Nash/Nash South.

Code 3636 is the designated frequency monitoring code ("listening squawk"), aircraft squawking this code in the vicinity of the Cardiff CTR/CTA should be maintaining a listening watch on the Cardiff APC frequency 125.855 MHz, however the Mode A and C readout displayed must be considered unvalidated and unverified, respectively.

Selection of SSR code 3636 does not grant the permission to enter Cardiff CAS without authority and does not imply the aircraft is under any type of air traffic service. The pilot remains responsible for their own navigation, obstacle and terrain clearance and their own separation. Code 3636 is not to be assigned to aircraft.

2.6   Separation Requirements for Cardiff APC

Cardiff APC controllers may apply reduced radar separation of 3 NM between aircraft provided that:

- Both aircraft are identified, and
- If greater than 3 NM, the appropriate wake turbulence separation is applied, and
- If applied against an aircraft under the control of another agency, direct voice communication is available between the controllers, and the other agency must also be approved to apply reduced radar separation.

    Note: Bristol APC is authorised to provide 3 NM radar separation, Exeter APC is authorised to provide 3 NM radar separation within 30 NM of Exeter, AC West may only apply 3 NM separation within the confines of the Area Control delegated airspace.

2.7   Terrain and Obstacle Clearance

Within the Surveillance Minimum Altitude Area (SMAA) the lowest level that can be assigned in the sector north of Cardiff is 2500ft. In the sector south of Cardiff it is 1900ft.

Aircraft within the Final Approach Vectoring Areas (FAVAs) for Cardiff, which are either established on the approach track or are on an intercept of 40° or less and cleared to establish the final approach track, may be descended to 1500 ft.

The Minimum Sector Altitude (MSA) within 25 NM of Cardiff:

NW	NE	SW	SE
3900ft	3900ft	2700ft	3000ft

Cardiff ATC SMAA chart: **AD 2.EGFF-5-1**.

2.8   Change to MSL Procedure

When a change to the Cardiff or Bristol QNH results in a new MSL, Cardiff APC shall coordinate with Bristol APC and AC West to agree when the change to MSL becomes effective. Aircraft operating at the old MSL are deemed separated from aircraft operating at altitude 6000ft until the new MSL is agreed to be in effect.

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Chapter 3   Inbound Procedures

3.1   Information to Arriving Aircraft

After an arriving aircraft has made its initial call to APC, the following information shall be passed as soon as practicable:

- Runway in use and the type of approach, if not already received from the ATIS
- Current ATIS code
- LVP in operation, if not already received from the ATIS
- Any delay to be expected.

APC is to confirm the cleared level of an aircraft transferred from other units on first contact. If it is not volunteered by the pilot it is to be requested and verified by the receiving controller before giving any executive instruction. In addition, APC is to confirm aircraft type, including type variants. Any aircraft type which is not as filed must be changed as soon as possible and advised to any controller who may be reliant on up-to-date information, say for the provision of wake vortex separation.

Aircraft that have received the information above must be kept informed of the following until they have landed:

- Significant changes in the meteorological and runway conditions
- Relevant reports from other pilots
- Implementation or cancellation of LVP.

3.2   Standard Arrival Routes (STARs)

Cardiff and St Athan inbounds from the ATS route network shall route via the following STARs:

STAR	RNAV Spec.	Arrival Via	Route
BAJJA 1C	RNAV1	Q63	BAJJA - FANFE - BCN - CDF
DAWLY 1C _See Note 1_	RNAV5	N864	DAWLY - IZLAW - EXMOR - CDF
ELREW 1C	RNAV5	_See Note 2_	ELREW - DIZIM - BCN - CDF
FIFAH 1C _See Note 1_	RNAV5	DCT	FIFAH - AMMAN - BCN - CDF
ICTAM 1C _See Note 3_	RNAV5	L179, L722, Q63, T421	ICTAM - SAWPE - CONKO - OCTIZ - BRI - CDF
TOJAQ 1C	RNAV1	P16, DCT (FRA)	TOJAQ - COXPE - IZLAW - EXMOR - CDF
WEVBE 1C	RNAV5	N862	WEVBE - UBCAM - ACBAZ - KUKIS - CDF

> **Note 1:** The DAWLY 1C and FIFAH 1C are RNAV5 alternate STARs for the TOJAQ 1C and BAJJA 1C respectively; they should not be issued unless traffic explicitly states they are unable RNAV1 **except** that traffic from the south below FL100 shall route via the DAWLY 1C regardless of RNAV performance.

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*Note 2: The ELREW 1C is **not** used on VATSIM as it is designated for when the N862 ATS route is closed due to gliding activity.*

Note 3: Inbounds via the ICTAM 1C are provided an initial approach control service by Bristol APC prior to transfer to Cardiff by silent transfer agreement (see APC 4.1.1).

3.2.1   Bristol STARs

Cardiff APC is responsible for the initial sequencing of Bristol inbounds routing via the STARs listed below routing via BCN/WEVBE and EXMOR. Bristol has further STARs details for these are in the Bristol vMATS Part 2.

STAR	RNAV Spec.	Arrival Via	Route
BAJJA 1B	RNAV1	Q63	BAJJA - FANFE - BCN - PEGZA - BRI
DAWLY 1B *See Note 1*	RNAV5	N864	DAWLY - EXMOR - BRI
ELREW 1B	RNAV5	*See Note 2*	ELREW - DIZIM - BCN - PEGZA - BRI
FIFAH 1B *See Note 1*	RNAV5	DCT	FIFAH - AMMAN - BCN - PEGZA -BRI
TOJAQ 1B	RNAV1	P16, DCT (FRA)	TOJAQ - COXPE - IZLAW - EXMOR - BRI
WEVBE 1B	RNAV5	N862	WEVBE - UBCAM - INGUR - BRI

*Note 1: The DAWLY 1C and FIFAH 1C are RNAV5 alternate STARs for the TOJAQ 1C and BAJJA 1C respectively; they should not be issued unless traffic explicitly states they are unable RNAV1 **except** that traffic from the south below FL100 shall route via the DAWLY 1C regardless of RNAV performance.*

*Note 1: The ELREW 1B is **not** used on VATSIM as it is designated for when the N862 ATS route is closed due to gliding activity.*

RNAV1 equipped Bristol inbounds (routing via either DAWLY N92 EXMOR, DAWLY 1B or TOJAQ 1B) which are requesting an RNP approach may, following coordination with Bristol APC, be cleared by Cardiff APC via the following STARs:

STAR	Bristol Runway	Route
ADVED 1A	09	EXMOR – ADVED
BAXUN 1A	27	EXMOR – ROTLU – BAXUN

Traffic requesting an RNP approach should indicate this using the phraseology *"Request STAR via EXMOR"* on first contact with Cardiff APC. This traffic will typically already have been cleared via DAWLY 1B or TOJAQ 1B by Area Control.

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3.3   Holding Procedures

3.3.1   Holding Patterns

The table below indicates the holding areas available for Cardiff APC traffic:

Hold	Inbound Course	Direction	Holding Levels	Max Holding Speed
CDF	297°	Left	Minimum holding level 2500ft (QNH)	200 knots below FL70 220 knots FL70 and above
BRI	090°	Left	FL105 – FL165	185 knots below FL70 220 knots FL70 and above

3.3.2   Holding Pattern Separation

The CDF and BRI holds are deemed separated up to FL105.

When the BRI hold is in use, Bristol APC is responsible control of the hold up to FL135. Between FL135 and FL165, Cardiff Radar is responsible for control of the BRI hold.

When the BRI or CDF holds are in use, coordination must be effected between Bristol APC and RAD 1 to ensure standard separation is maintained and standing agreements terminated as appropriate.

When traffic is holding at the BRI below the MSL, then each IFR departure from Bristol Runway 27 will be initially transferred to Bristol Radar and coordination is to be effected with Cardiff Radar prior to transfer of communication. This is to occur no later than the Bristol CTA boundary.

3.4   Inbound Releases

AC West shall transfer Cardiff/Bristol/St Athan inbound aircraft to RAD 1 by silent handover in accordance with the following standing agreements:

STAR	RNAV Spec.	Arriving From	Standing Agreement
WEVBE 1B	RNAV5	North	FL160 level WEVBE
WEVBE 1C			
BAJJA 1B	RNAV1	West	FL180 level FANFE
BAJJA 1C			
FIFAH 1B	RNAV5		FL170 level FIFAH
FIFAH 1C			
TOJAQ 1B	RNAV1	South	Descending FL170 *Note: Released for descent to FL130 until north of Exeter*
TOJAQ 1C			
DAWLY 1B	RNAV5		Individually coordinated
DAWLY 1C			

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Inbounds may be transferred either on own navigation or on an appropriate radar heading without individual coordination provided the pilot is instructed to report a radar heading when assigned.

AC West shall endeavour to stream successive inbounds with 10 NM spacing.

Unless otherwise coordinated, transfer of control is coincident with the transfer of communication. Aircraft are released for vectoring and descent upon entering delegated airspace, subject to outbounds under the control of Cardiff APC or those transferred to AC West which have not climbed above the outbound agreed level.

3.5   Expected Approach Times

EATs are not normally passed if the expected delay is less than 20 minutes; instead, the anticipated hold delay shall be passed in 5-minute intervals, standard phrases for this are: *"Less than 5 minutes"*, *"5 to 10 minutes"*, *"10 to 15 minutes"* and *"15 to 20 minutes."*

If the expected delay is greater than 20 minutes, then EATs shall be issued in 5-minute intervals for both radar vectored or procedural approaches. APC shall only issue an EAT alongside a specific additional instruction to hold.

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Chapter 4   Procedures for Intermediate and Final Approach

4.1   Intermediate Approach Procedures – Cardiff

4.1.1   ICTAM 1C Arrivals – Standing Agreement with Bristol APC

Inbounds routing from the east via the ICTAM 1C are initially worked by Bristol APC prior to transfer to Cardiff. AC West will transfer these aircraft to Bristol APC. Bristol APC is responsible from separating ICTAM 1C inbounds from its own arrival stream before transfer to Cardiff APC by standing agreement:

Cardiff Runway	Standing Agreement
Runway 30	Descending to 3500ft on the Cardiff QNH level by 10 DME, positioned on a radar heading towards a 10 NM final ***Note:** Transfer to RAD 2 when Cardiff APC split.*
Runway 12	Descending FL80, positioned on an appropriate radar heading and transferred when clear of conflicts

Aircraft are released for turns and descent upon transfer of communication to Cardiff APC.

If the MSL is above FL80, these agreements are suspended and individual coordination is required.

4.1.2   Speed Control

Instructions for an aircraft to simultaneously maintain a high rate of descent and reduce its speed should be avoided and, where possible, aircraft should be allowed to descend at their own preferred speed. Most operators have indicated that their preferred economical descent profile is in the speed range 250 – 280 kts, with 270 kts being seen as a good compromise where streaming is necessary.

Arriving aircraft below FL150 should not be allocated a speed of less than 210 kts (200 kts for propeller aircraft) until within 20 track miles of the runway threshold, at which point the speed may be reduced to between 150 and 180 kts.

A Speed Limiting Point (SLP) is featured on all STARs into Bristol and Cardiff. By this point, all aircraft should to be 250 kts or less unless explicitly permitted by Cardiff APC. There should be a significant operational reason as to why this SLP is not enforced.

Standard Speeds for intermediate and final approach vectoring are as follows:

- During intermediate approach, i.e. during radar vectors below MSL to a base leg approximately 6 NM prior to ILS intercept: 220 kts
- Thereafter, and until established on final approach: the highest possible speed between 160 – 180 kts as required to ensure accuracy of spacing
- Established on final approach, until 4 NM DME: 160 kts

These speeds are to be used as a guide and controllers are ultimately responsible for applying any speed control as required to ensure separation during the intermediate and final approach phases.

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4.1.3   Continuous Descent Approach (CDA) Procedure

The purpose of the CDA technique is to minimise noise disturbance on the ground while at the same time meeting ATC requirements. CDAs should avoid unnecessary periods of level flight and requires interception of the approach glide path at the appropriate altitude/height for the distance from touchdown. CDAs require tactical management of aircraft speed and track mileage to touchdown, accounting for external factors such as weather.

The procedure requires ATC to pass adequate "range from touchdown" information. Range from touchdown shall typically be provided on first descent below MSL and again on first contact with RAD 2. Should the range become inaccurate, a new range shall be issued.

Cardiff APC controllers are to employ CDA techniques however, if for safety reasons a need for level flight arises, this will override the need to continue with the CDA.

4.1.4   Transfer of Traffic to RAD 2

Traffic shall normally be transferred to RAD 2 descending to 6000ft on a downwind radar heading at an airspeed of 220 knots, clean of outbounds and other traffic under the control of RAD 1.

4.2   Intermediate Approach Procedures – Bristol

4.2.1   Bristol Inbounds – Standing Agreements

RAD 1 is responsible for providing intermediate approach functions for the Bristol inbounds routing from the north via WEVBE (WEVBE 1B), the west via BCN (BAJJA 1B/FIFAH 1B) and the south via EXMOR (DAWLY 1B/TOJAQ 1B).

Cardiff RAD 1 shall ideally transfer traffic once clear of traffic unknown to Bristol. Inbound traffic from the north and west shall be transferred by Cardiff APC no later than the Bristol CTA boundary or radar buffer zone (whichever is earliest). Inbounds from the South shall be transferred no later than entry into the Burnham Box.

STAR	Agreement
WEVBE 1B	Descending FL110 on track or on a radar heading towards the BRI NDB *(Note 1)*
FIFAH 1B BAJJA 1B	Descending FL110 on a radar heading towards a point 3 NM south of ICCIN *(Note 2)*
ADVED 1A BAXUN 1A DAWLY 1B TOJAQ 1B	Descending to MSL on a radar heading to parallel the southern CTA boundary (ideally within 2 NM of the boundary), positioned with the Burnham Box (APC 1.2.3) *(Notes 2 and 3 and 4)*

Note 1: Aircraft are released for descent to MSL on contact. Traffic is fully released once east of the Bristol/Cardiff buffer zone.

Note 2: Aircraft released for descent to MSL and right turn within Cardiff airspace. Aircraft are not released for left turns until east of the Bristol/Cardiff Buffer zone.

Note 3: The ADVED/BAXUN STARs shall only be assigned following coordination; inbounds assigned these STARs may remain on own navigation.

Note 4: Aircraft are released for descent to MSL and right turn on transfer. When runway 09 is in use, traffic is released for descent within the Burnham box and is released for left turn east of the Bristol/Cardiff buffer zone. When runway 27 is in use, traffic is released for turn and descent east of the Bristol/Cardiff buffer zone and clear of the Bristol Departure Zone.

RAD 1 is also responsible for the allocation of RNAV1 STARs via ADVED and BAXUN for Bristol inbounds requesting an RNP approach. Requests for RNP approaches via BAXUN and ADVED are to be made to RAD 1, and Cardiff APC is responsible for coordinating this request with Bristol APC. Traffic routing via the RNP STARs shall be transferred in accordance with the standing agreement for Bristol inbounds from the south on the DAWLY 1B/TOJAQ 1B STAR but may remain on own navigation.

Aircraft shall be transferred to Bristol APC on 125.650 MHz, callsign *"Bristol Radar."*

Transfer of communication for traffic routing via BCN and WEVBE to Bristol APC should occur once clear of traffic unknown to Bristol; this shall be no later than the Bristol CTA boundary or radar buffer zone (whichever is earliest). Transfer of communication for traffic routing via EXMOR should occur no later than entry into the Burnham Box.

4.3   Final Approach Procedures

The ILS platform altitudes are:

- Runway 12 – 2200ft at 8 DME
- Runway 30 – 1600ft at 6 DME (CAT A/B) or 2200ft at 8 DME (CAT C/D)

Aircraft should typically be vectored to establish the ILS no closer than 8 DME at 2000ft. Aircraft establishing the Runway 30 ILS at greater than 10 DME will enter the radar buffer zone and must be coordinated with Bristol APC in advance.

4.3.1   Final Approach Separation

Cardiff APC is responsible for applying both radar and wake turbulence **separation** on final approach until touchdown.

Radar separation minima are described in APC 2.6; Wake turbulence separation between aircraft on final approach shall be applied in accordance with MATS Part 1 (CAP 493).

The 'catch-up' (sometimes referred to as compression) that occurs after the leading aircraft passes 4 NM from touchdown must be factored into the spacing provided, to ensure that radar and wake turbulence separation are ensured until touchdown. In most cases, adding 1 NM to the required separation between aircraft and maintaining this until 4 NM from touchdown will act as a sufficient buffer.

Note 1: APC shall not assume Reduced Separation in the Vicinity of an Aerodrome is being applied without coordination with ADC.

Note 2: Aircraft performing a visual approach are responsible for their own wake turbulence separation.

If either radar or wake turbulence separation are eroded below the required minima, the approach must be discontinued and the aircraft taken off the approach.

4.3.2   Final Approach Spacing

In routine operations controllers shall aim to achieve **spacing** of 8 NM to allow one departure per arrival. Controllers should ensure a minimum of 6 NM spacing exists behind light aircraft arrivals (including those in the visual circuit) due to the significant speed differential on final approach against larger aircraft.

4.3.3   Final Approach – Transfer of Communication

Aircraft are to be transferred to the AIR controller when the APC controller is satisfied that:

- The aircraft is on a stable approach
- Spacing against aircraft ahead or behind is maintained
- Any speed restrictions imposed are being complied with.

Transfer of communication is to occur no later than 4 NM from touchdown.

4.3.4   Runway 12 Arrivals – 'St Athan Secure'

In accordance with GEN 7.5, whenever the St Athan LFZ is active RAD 2 must notify St Athan ADC of IFR inbounds to Runway 12 at 15 NM from touchdown.

If by 10 NM from touch down RAD 2 has not received confirmation of *'St Athan Secure'* or, alternatively, relevant traffic information from St Athan ADC then the inbound should be vectored away from St Athan and re-sequenced for another approach.

4.4   Non-Precision Approaches

LOC/DME and NDB/DME non-precision approaches are available to both runways.

Aircraft may be either be radar vectored to final or conduct a procedural approach. For all holding at the CDF NDB the lowest holding altitude is 2500ft.

4.5   RNP Approaches

RNP approaches are available to both runways. Aircraft requesting an RNP approach will typically be radar vectored towards the most appropriate RNP initial approach fix (IAF) based on the direction of flight. In light traffic conditions, aircraft can be directly cleared via the appropriate IAF.

When able controllers shall either instruct aircraft to resume own navigation or position them on an intercept heading prior to the intermediate fix (IF) and instruct *"cleared RNP approach runway (designator), QNH (hPa)."* When vectoring for an approach, controllers shall not issue vectors to any point beyond the IF.

> *Note:* When instructed to resume own navigation, the aircraft's current track must be within 45 degrees of the IAF.

> *Note:* The Cardiff QNH must be included in the RNP approach clearance.

Aircraft executing an RNP approach to Runway 30 via the IAF AMRUR will enter the radar buffer zone and require coordination with Bristol APC prior to entry.

4.6 Surveillance Radar Approach (SRA) Procedures

SRA terminating at 2 NM are available to both runways.

SRAs are to be conducted in accordance with the standard phraseology found in CAP 413, Chapter 6 – Approach Phraseology. Advisory heights and altitudes for SRA are listed on the next page:

Runway 12 SRA:

OCA 770 ft (OCH 565 ft) - 3° Glidepath

NM	Altitude (QNH)	Height (QFE)
5 NM	1800	1595
4 NM	1480	1275
3 NM	1160	955
2 NM	840	635

Runway 30 SRA:

OCA 770 ft (OCH 620 ft) - 3° Glidepath

NM	Altitude (QNH)	Height (QFE)
5 NM	1800	1595
4 NM	1480	1275
3 NM	1170	957
2 NM	850	637

4.7   IFR Circuits

Aircraft wishing to undertake radar vectored ILS approaches, or other forms of training approaches are required to have a flight plan filed with an aircraft type as a minimum.

Upon receiving a request for IFR circuits or any other type of training approach, ADC will contact RAD 2 requesting a departure clearance. The standard missed approach procedure for the runway in use is typically used however controllers may generate alternative clearances so long as they are terrain safe. A Cardiff local IFR SSR code (3601-3607) is to be allocated.

Training flights are afforded reduced priority at per MATS Part 1 and should not hinder other IFR traffic operating routine flights.

4.8   Missed Approach Procedures

The standard missed approach procedures for Cardiff are:

Runway	Missed Approach Procedure
12	Climb straight ahead. On reaching 3000 or I-CDF DME 2 outbound (CAT A/B) or I-CDF DME 4 (CAT C/D) outbound whichever is the later, turn left to return to NDB CDF at 3000.
30	Climb straight ahead. On reaching 3000 or I-CDF DME 2 outbound (CAT A/B) or I-CDF DME 4 (CAT C/D) outbound whichever is the later, turn right to return to NDB CDF at 3000.

When APC is split RAD 2 is responsible for the control of traffic conducting both planned and unplanned missed approaches.

In the event of a missed approach, controllers should provide the most expeditious routing back towards the approach. IFR aircraft carrying out low approaches shall remain with RAD 2 who will obtain the relevant clearance from AIR. Until any such clearance is obtained the aircraft must not overfly the runway below 1000ft.

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Chapter 5   Outbound Procedures

5.1   General

Cardiff APC (RAD 1) is responsible for the initial control of all outbound SID traffic from Cardiff and, additionally, Bristol outbounds routing to the north/west/south via the BCN and EXMOR SIDs.

5.2   Identification of Departing Traffic and SSR Validation/Verification

APC is responsible for identification, and SSR validation and verification of all outbounds in accordance with APC 2.5. This must be performed prior to transfer of outbound traffic to the next agency.

When Bristol Runway 09 is in use Bristol APC will be responsible for identification, and SSR validation and verification of BCN and EXMOR outbounds.

5.3   Cardiff Departure Releases

With the exception of VFR traffic, all traffic departing Cardiff is subject to release from APC.

It is the responsibility of APC to pass releases that ensure adequate separation between departing aircraft and other aircraft. This may be achieved by passing a *"released time XX"* or *"released subject [preceding departure] plus X minutes"* restriction.

Alternatively, separation based on radar derived information may be applied between aircraft taking off and a preceding departure or other aircraft in receipt of a surveillance service provided that there is reasonable assurance the departing aircraft will be identified within one mile from the end of the runway and at that time, the required separation will exist. Therefore, departing aircraft may be allocated the same/higher level than a previous departure provided the **assigned heading** will ensure radar separation from such other traffic (this form of separation must **not** be applied with aircraft on own navigation).

5.3.1   Responsibility for Departure Releases

When APC is split each controller is responsible for releasing traffic which will come under their control:

RAD 1:

- SID departures
- All other traffic requesting to operate at or above 6000ft

RAD 2:

- Non-ATS route network departures operating below 6000ft
- IFR training traffic operating below 6000ft
- SVFR traffic

5.4   Departure Speed Limits

All outbound traffic is to comply with the 250 knot speed limit whilst within Class C or D airspace. This restriction must not be removed by Cardiff APC unless for safety reasons or

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when operationally necessary for the flight (ie. the minimum clean speed is in excess of 250 knots).

5.5   Bristol – Departures via BCN and EXMOR

Bristol SIDs operate free-flow however Cardiff APC may apply a check on Bristol AIR.

When Bristol Runway 27 is in use BCN and EXMOR departures are transferred from Bristol AIR to Cardiff RAD 1 following the SID routing and climbing to the SID final level of 6000ft. Traffic is released for further climb upon transfer of communication and turns off the SID track once west of the radar buffer zone.

When Bristol Runway 09 is in use Bristol APC will take initial control of BCN and EXMOR departures to deconflict against their inbound stream. Bristol APC will climb any such traffic to FL130 and, once clean of traffic under their control, will transfer communication to Cardiff RAD 1 by silent handover on the SID track or an appropriate radar heading. Traffic is released for further climb upon transfer of communication and turns off the SID track or assigned heading once either west of the radar buffer zone or above FL135.

When traffic is holding at the BRI below the agreed MSL, then each IFR departure from Runway 27 will be initially controlled by Bristol APC and coordination will be effected with Cardiff RAD 1 prior to transfer of communication. This is to occur no later than the Bristol CTA boundary.

5.6   Agreements with Area Control

RAD 1 will transfer outbound traffic to AC West by silent handover, clean of traffic unknown to AC West and released for climb, in accordance with the following standing agreements which apply to all traffic outbound from Cardiff, Bristol and St Athan unless stated otherwise:

Departure Route	To/Via	Agreement
BCN *Cardiff Runway 30/St Athan only*	**East** via P4/L607 (LEKCI)	Climbing FL150 *(Notes 1 and 2)*
BCN	**West** via P4/L9 (NICXI)	Climbing FL160
BCN	**North** via P69 DIZIM N864	Climbing FL150
EXMOR	**South** via N92/N40 *(Note 3)*	Climbing FL160 *(Note 4)*

Note 1: Traffic must achieve FL140 by LEKCI.

Note 2: Traffic is to be transferred on or south of L607, preferably on own navigation to a fix no further east than HAWFA, 10 NM constant or increasing in trail.

Note 3: N40 only available at weekends (Fri 1700 - Mon 0745 (0645 summer)).

Note 4: Traffic must achieve FL120 by either 10 NM north of Exeter (routing via N92) or by SIDHO (routing via N40).

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5.7   LEKCI SID Departures – Agreement with Bristol APC

Cardiff outbounds on the Runway 12 LEKCI SID may conflict with Bristol outbounds operating on BCN SIDs. This is particularly the case when Bristol operate Runway 27. Care must be taken when releasing LEKCI SID outbounds and controllers should consider implementing a short check on Bristol BCN departures when releasing LEKCI traffic.

Cardiff APC will identify, validate and verify LEKCI departures (only available from runway 12) and climb according to the agreement below before transfer to Bristol APC.

SID/Route	Runway 12	Runway 30
LEKCI 1B	Climbing FL 80 *(See Note)*	N/A

Note: Traffic is released for right turns and climb.

In the absence of Bristol APC traffic shall be transferred to AC West in accordance with the above agreement.

5.8   Level Allocation for ATS Route Network Traffic

Cardiff APC is responsible for level allocation for traffic with an RFL below FL165. Aircraft are to be offered the highest level available in accordance with the traffic situation at the time and shall be coordinated prior to transfer to the next sector.

Controllers must be careful of conflict with low-level opposite direction traffic routing along ATS routes and the potential for aircraft departing aerodromes outside controlled airspace (Newquay/Exeter) inadvertently entering controlled airspace without a clearance.

5.9   Non-ATS Route Network Departures

RAD 2 is responsible for providing a radar service to non-ATS route network departures until they are clear of controlled airspace and is (subject to workload) responsible for providing LARS/UK FIS within 40 NM of Cardiff to any traffic leaving controlled airspace which requires a service.

ADC will request clearance from RAD 2 for any non-standard IFR, VFR or SVFR departure.

Coordination is required for aircraft wishing to transit airspace not controlled by Cardiff APC and RAD 2 is responsible for this.

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Chapter 6   Flights to and from Local Airfields

6.1   Flights to Bristol

Flight Plan Routing: DCT BRI

IFR flights positioning to Bristol from Cardiff shall be treated as a non-standard IFR departure and are not required to use a Cardiff SID.

ADC should coordinate with RAD 2 to obtain a clearance.

The standard clearance is *"(Callsign), cleared to Bristol, after noise abatement turn left/right direct BRI, climb to altitude 4000ft, squawk (local SSR code)."*

ADC shall obtain a release from RAD 2 prior to departure.

Coordination shall be effected with Bristol APC as to how the arrival will be routed through the radar buffer zone in good time.

VFR flights will be handled as described in LOW 3.3.4.

6.2   Flights to St Athan

IFR flights positioning to St Athan from Cardiff shall be treated as a non-standard IFR departure and are not required to use a Cardiff SID.

ADC should coordinate with RAD 2 to obtain a clearance.

The standard clearance is *"(Callsign), cleared to St Athan, after departure climb straight ahead to altitude 4000ft, squawk (local SSR code)."*

ADC shall obtain a release from RAD 2 prior to departure.

Further information regarding St Athan specific procedures is provided in Chapter 8.

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Chapter 7   Area Control Delegated Airspace and Overflights

7.1   General Procedures

Cardiff APC is delegated parts of the Berry Head/Cotswold/PEPZE/Severn/Strumble CTAs from the declared base of controlled airspace (DB) to FL165 by AC West as depicted in Figure 1. RAD 1 is responsible for the control of all overflights within the delegated airspace including flights routing along ATS routes. Additionally, Bristol APC, Exeter APC and AC West will be required to coordinate aircraft which request to cross or enter the controlled airspace that RAD 1 is responsible for (except for flight operating in accordance with a standing agreement).

AC West retains responsibility for all controlled airspace above FL165.

7.2   Radar Separation Minima

Within delegated airspace Cardiff APC, AC West and Exeter APC (within 30 NM of Exeter) are authorised to apply 3 NM horizontal radar separation.

Outside of delegated airspace AC West may only apply 5 NM horizontal radar separation and this must be established prior to control being transferred to AC West and prior to traffic leaving delegated airspace.

7.3   Exeter (EGTE) Procedures

7.3.1   General

All agreements with Exeter APC are with Exeter RAD North – *"Exeter Radar"* – 128.980 MHz.

7.3.2   Exeter Inbounds

RAD 1 is responsible for providing an intermediate approach control function to arrivals into Exeter which route from the north via N92 EXMOR. This traffic is transferred to Cardiff APC from AC West descending to FL160 to enter Cardiff delegated airspace. Cardiff APC shall, where possible, provide a 15-minute prenote to Exeter on arrivals routing via the following procedure.

A silent transfer agreement exists between Cardiff APC and Exeter APC. Aircraft inbound to Exeter via EXMOR will be descended to FL80 and either routed direct to TIVER or placed on a radar heading to remain inside controlled airspace. Aircraft are only released for turns and descent once they have passed EXMOR.

Exeter APC may provide a "when ready" descent clearance and is not obliged to descend aircraft out of controlled airspace by any particular point (except that aircraft must not cross from Cardiff APC delegated airspace into AC West airspace) unless RAD 1 specifies otherwise.

Individual coordination of EXMOR arrivals is not required, unless Cardiff APC or Exeter APC deems it appropriate. RAD 1 may release aircraft to Exeter by means of a radar release when there is conflicting traffic within delegated airspace.

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7.3.3   Exeter Outbounds

7.3.3.1   Departures via EXMOR (N864)

Exeter APC is responsible for obtaining a joining clearance from RAD 1 for any traffic joining the N864 northbound via EXMOR (routing EXMOR DCT CARWI N864). Exeter will typically put aircraft on request prior to departure and will additionally provide AC West with a departure warning notifying the aircraft callsign and route.

RAD 1 will provide a joining clearance specifying the joining fix (typically EXMOR) and level (typically FL70 to deconflict against the silent inbound agreement).

Exeter APC will transfer the aircraft to RAD 1 when the aircraft is inside controlled airspace and under a radar control service.

Cardiff APC shall transfer to AC West by silent transfer agreement climbing to FL160 within Cardiff delegated airspace.

7.3.3.2   Runway 08 Departures to the Southwest

Exeter outbound aircraft routing to the southwest via LND will be coordinated individually with AC West by Exeter APC.

However, when Runway 08 is in use at Exeter, coordination between Exeter APC and RAD 1 will be required to facilitate a continuous climb through Cardiff delegated airspace to the acceptance level with AC West. This should be approved whenever the traffic situation permits and, unless there is conflicting traffic, control shall be retained by Exeter APC whilst transiting Cardiff delegated airspace.

7.4   Gloucester (EGBJ) Procedures

7.4.1   General

Gloucester APC (128.555 MHz) typically operates as a procedural approach control position. However, a primary radar service may be available on request.

Services from Gloucester are limited to within 25 NM of Gloucester at and below FL80.

7.4.2   Gloucester Inbounds

The following agreements are established with AC West to Cardiff APC for inbounds to Gloucester from the south and west:

From	Via	Agreement
South (RNAV1)	N864	FL170 level WIGGU
South (RNAV5)	N92	FL170 level EXMOR
West	Q63	FL180 level AXNEF

Inbounds are released for descent into Cardiff delegated airspace and will have an onward routing of BCN/ETNAH DCT EGBJ.

Traffic is to leave controlled airspace via Cardiff delegated airspace and must not enter airspace under the control of another agency with coordination.

RAD 1 shall individually coordinate a handover with Gloucester APC.

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7.4.3   Gloucester Outbounds

Gloucester outbounds routing to the south and west will typically join the ATS route network at BCN to route BCN DCT EXMOR N92 southbound or BCN P4 FELCA L9 westbound.

Gloucester ATC will provide AC West with a departure warning and then coordinate a join with Cardiff APC via BCN. Traffic is to join controlled airspace via Cardiff delegated airspace and must not enter airspace under the control of another agency with coordination.

There are no standing agreements for Gloucester outbounds and traffic is individually coordinated with AC West.

7.5   Coordination of Overflights with Area Control

7.5.1   Deemed Coordination of En-route Traffic

Cardiff APC and AC West may apply deemed coordination of en-route traffic in accordance with London FIR (EGTT) vMATS Part 2 GEN Chapter 5.2.

Cruising traffic which has reached the RFL indicated on the flight plan is deemed to have been coordinated provided that:

- The aircraft is at a correct level for the direction of flight,
- The RFL has not been changed within 30 NM of the area of responsibility boundary (*see note*), and
- No objection has been raised by the receiving controller.

    Note: *Any change to the RFL within Cardiff Delegated Airspace should be notified to AC West.*

Transfer of control is at the boundary of delegated airspace, unless otherwise coordinated. Traffic climbing/descending to the RFL must be level by the boundary in order to be considered deemed coordinated.

7.5.2   Electronic Coordination – COPX

APC controllers using EuroScope and UKCP may use the EuroScope electronic coordination facility with Area Control. Electronic coordination requires less time to perform and generally lowers controller workload. Unlike verbal coordination, it does not require both controllers' attendance at the same time. However, it is not suitable for time critical situations where a timely response is essential.

The EuroScope coordination feature allows aircraft to be offered and received at a different level and/or routing. Should controllers wish to amend how the aircraft is offered or received from the default agreement displayed, they may do so using this feature. The receiving controller must acknowledge the request for it to be deemed as coordinated.

Additionally, the UKCP release function allows controllers to flag release restrictions relating to turns/descent electronically.

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Chapter 8   St Athan (EGSY) Procedures

8.1   Airfield Geographical Data

ICAO Code	EGSY
Aerodrome Reference Point (ARP)	Lat: 512417N Long: 0032609W
Elevation	164ft
Magnetic Variation / Annual Change	0.61° W (2022)/0.20° (E)
Transition Altitude	6000ft
Safety Altitude (MSA)	3900ft (N)

8.2   ATC Communication Facilities

Callsign	Logon	Identifier	Frequency (MHz)
St Athan Information	EGSY_ATIS	SY ATIS	130.560
St Athan Tower	EGSY_TWR	SY ADC	122.865

8.3   Provision of Air Traffic Services

St Athan ADC is responsible for the provision of an aerodrome control service including control of VFR traffic within the Local Flying Zone when it is active. Cardiff APC provides an approach radar control service for IFR and SVFR traffic.

In the absence of an aerodrome controller at St Athan, Cardiff APC (RAD 2) will cover St Athan top-down and provide aerodrome control service to aircraft on the ground and in the air.

Cardiff ADC does not provide a service for St Athan in the absence of Cardiff APC.

8.4   Radio Navigation and Landing Aids

Type	Identifier	Frequency	Remarks
ILS/LLZ GP (CAT I)	I-SAT	111.150	Runway 25

8.5   Use of Runways

Runway 25 is the only runway fitted with an Instrument Landing System and no other instrument approach procedures are notified. As such, when the tailwind component is less than 5 knots Runway 25 is the preferred runway.

When Runway 07 is in use inbound IFR traffic will be radar vectored to a visual approach.

8.6   Noise Abatement Procedures

All aircraft are to avoid over flights of St Athan village south east of the aerodrome below 1700ft St Athan QNH.

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8.7 St Athan Local Flying Zone

A portion of the Cardiff CTR, known as the St Athan Local Flying Zone (LFZ), is delegated to St Athan ADC during VMC conditions. This enables St Athan to operate autonomously within the LFZ provided:

- Aircraft are in communication with and comply with instructions from St Athan ATC
- All aircraft conduct their flights within the weather criteria specified for VFR flights within Class D Airspace.

The LFZ is depicted in Figure 3 and is notified from the surface to 1700ft Cardiff QNH / 1500ft St Athan QFE.

Pilots operating in the LFZ are responsible for maintaining their own visual separation from other aircraft, including aircraft on final approach to Cardiff Runway 12 and departing from Cardiff Runway 30, which are in close proximity to the LFZ.

Flights to and from St Athan which are unable to comply with the requirements to operate within the LFZ will be subject to individual clearance from Cardiff APC and will be integrated with Cardiff arriving and departing traffic.

8.8 'St Athan Secure' Procedure

St Athan ADC is to implement *'St Athan Secure'* when notified by Cardiff ADC of a pending Runway 30 IFR departure or by Cardiff APC of a Runway 12 IFR arrival at 15 NM from touchdown.

'St Athan Secure' is defined as when there is no traffic operating within the LFZ north or east of the St Athan Runway 07/25 mid-point.

Should St Athan ADC not be able to implement the *'St Athan Secure'* process in a timely manner they shall coordinate with Cardiff ADC or APC as required to facilitate the provision of effective traffic information to Cardiff traffic which ensures separation between the Cardiff IFR and St Athan VFR traffic.

8.9 VFR Operations

St Athan ADC may clear traffic for VFR circuits and for VFR departures via Nash Point without reference to Cardiff ATC. VFR departures via the VFR North, VFR East and VFR South routes require coordination and release from Cardiff APC (RAD 2).

VFR arrivals will be cleared into the LFZ by Cardiff APC (RAD 2) who will prenote the inbound to St Athan ADC. St Athan ADC shall provide joining instructions to integrate traffic into the visual circuit.

8.9.1 SSR Code Allocations for VFR Traffic

Circuit traffic shall be assigned SSR code 7010.

VFR outbounds via Nash Point/Nash South shall be assigned SSR code 3637.

VFR inbounds and outbounds via VFR North/East/South will have a code assigned by Cardiff APC from the range 3610-3635.

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8.9.2   Visual Circuit Procedures

Circuits are to the south (Runway 07 - right hand, Runway 25 - left hand). The maximum number of aircraft permitted in the visual circuit is three. A fourth aircraft may be permitted to join provided that the intention of at least one aircraft is to land. Due to the mix of civilian and military operations conducted at St Athan, several circuit heights are available depending on the aircraft type. When circuit flying is taking place involving mixed military and civil aircraft, civil circuits are to be flown.

Type	Height (QFE)
Light Piston Aircraft and Rotary Circuit	800ft
Fast Jet	1300ft
Multi-Engine Turbine/Piston Aircraft	1300ft
Glide Circuit	1500ft
Low Level	500ft

8.9.3   St Athan VFR Departure Routes

St Athan ADC should issue the appropriate VFR clearance at the holding point in the format: *"(Callsign), cleared to leave controlled airspace on a published (Designator) departure, not above (altitude restriction) (QNH) VFR, squawk (SSR code)."* A complete read back is required and controllers should also confirm the clearance limit for traffic routing via the VFR East route by instructing the aircraft to hold east of Aberthaw Power Station.

Traffic routing via VFR North, VFR East and VFR South requires coordination with Cardiff APC. Traffic may route SVFR subject to clearance from Cardiff APC.

The following routes are available to a maximum of 1500ft QNH.

Designator	Runway	Route	Remarks
Nash Point	07/25	After departure remain within the confines of the LFZ and leave CAS to the west via Nash Point VRP remaining overland and south of the Cardiff Runway 12 final approach track	Runway 07 departures should remain west of the quarry.
North	07/25	Leave CAS between the St Hilary and Wenvoe TV Masts.	
East	07/25	Aircraft remain west of the quarry and route to remain west of Aberthaw Power Station over water, clearance limit Aberthaw power station then as directed by Cardiff ATC	Traffic must not proceed east of Aberthaw Power Station until cleared by Cardiff ATC
South	07/25	Aircraft remain west of the quarry and leave CAS towards Minehead VRP	

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8.9.4   St Athan VFR Arrival Routes

Cardiff RAD 2 is responsible for clearing all inbounds into the LFZ and will issue the appropriate VFR clearance in the format: *"(Callsign), cleared to enter controlled airspace on a published (Designator) arrival, not above (altitude restriction) (QNH) VFR."*

RAD 2 shall prenote inbounds to St Athan ADC.

The following routes are available to a maximum of 1500ft QNH.

Designator	Runway	Route	Remarks
Nash Point	07/25	Enter CAS via Nash Point route east bound along the coast over water then as directed by St Athan ATC	
North	07/25	Enter CAS towards the St Hilary VRP to orbit and remain north of the mast then as directed by Cardiff ATC	
East	07/25	From the North East route as directed by Cardiff ATC to hold east of Aberthaw Power Station and then as directed by St Athan ATC.	Traffic must not proceed west of Aberthaw Power Station until cleared by St Athan ATC
South	07/25	Enter CAS from the South, remain west of the quarry and as directed by St Athan ATC.	
Straight In	07/25	Enter CAS to position Straight in for the Runway in use.	

8.9.5   Helicopter Operations

Two helicopter training areas exist to the north of the aerodrome between Taxiway E and Taxiway G. All helicopters are to arrive and depart via the active runway.

8.10   IFR Operations

8.10.1   IFR Outbounds

Cardiff APC is responsible for control of IFR flights into and out of St Athan. In the event of an IFR departure, St Athan ADC is responsible for gaining a departure clearance from RAD 2. The standard clearance is *"Climb straight ahead to altitude 4000ft Cardiff QNH XXXX, squawk XXXX, VFR. On passing altitude 2500ft flight becomes IFR."*

Traffic departing using this procedure must depart in VMC.

IFR departures are subject to release from RAD 2.

For traffic joining the ATS Route Network RAD 2 is responsible for coordination with RAD 1.

St Athan ADC shall also issue a departure warning to AC West.

8.10.2   IFR Inbounds

IFR inbounds route via Cardiff STARs (APC 3.2) and are transferred in accordance with the standing agreements detailed in APC 3.4. Traffic will be radar vectored to either an ILS (Runway 25 only) or visual approach by Cardiff APC. Traffic should be vectored to intercept the ILS at 2500ft at 8 NM from touchdown.

8.10.3   Missed Approach Procedure

The Runway 25 missed approach procedure is to climb straight ahead to 4000 then as directed by Cardiff APC.

8.10.4   Positioning Flights to Cardiff

IFR flights positioning from St Athan shall be treated as a non-standard IFR departure.

St Athan ADC should obtain a departure clearance as above.

When possible, APC controllers are to make use of the area overhead the Bristol Channel for vectoring in order to minimise noise disturbance over land.

LOW | LOW LEVEL OPERATIONS

Chapter 1   General Principles

1.1   Provision of Air Traffic Services

RAD 2 is responsible for all VFR and SVFR aircraft operating within the Cardiff CTR/CTA and may offer LARS/UK FIS to aircraft outside controlled airspace, subject to controller workload.

Cardiff ADC is responsible for VFR aircraft operating within the visual circuit and issuing clearances to VFR traffic leaving the Cardiff CTR.

1.2   Coordination

VFR departures are not subject to a release prior to departure however a departure warning should be given to RAD 2 prior to departure.

RAD 2 will prenote ADC of inbound traffic and ADC will provide the anticipated joining clearance.

Chapter 2   Airspace

2.1   Classification

The Cardiff CTR and CTA are classified as Class D Airspace.

2.2   Local Flying Areas

The St Athan Local Flying Zone (Figure 3) is detailed in GEN 7.3/APC 8.7.

2.3   Visual Reference Points (VRPs)

A number of VRPs are established for the use of aircraft operating VFR to and from Cardiff and St Athan. The majority of these are depicted in Figure 3 below; the full VRP dataset is available at the UK AIP Digital Dataset.

Chapter 3   VFR Operations

3.1   VFR Minima

VFR and SVFR flights within the Cardiff CTR are permitted in accordance with the criteria detailed in MATS Part 1. In marginal weather conditions, when the reported meteorological visibility falls below 5km or the reported cloud ceiling falls below 1500ft, RAD 2 shall inform pilots of transiting aircraft requesting a VFR clearance of the reported weather and ask them to specify the type of clearance required. It is the pilot's responsibility to determine his flight conditions, whether or not the relevant VMC can be maintained, and whether he can accept a SVFR clearance bearing in mind he must remain clear of cloud and in sight of the surface.

Controllers should note that pilots may be simulating alternate weather to real world conditions and therefore may be able to maintain VMC at any time. If the pilot reports this to be the case, the controller may choose to issue a VFR or SVFR clearance.

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3.2   SSR Code Allocations

SSR Code allocations are as per APC 2.5.1.

3.3   VFR Routes

In order to integrate VFR flights to/from Cardiff with the normal flow of IFR traffic, a number of published VFR routes are established along which VFR clearances will be issued. These routes are determined by prominent ground features and are detailed in the following sections.

In order to reduce RT congestion, the published outbound and inbound visual routes are allocated route designators. Level instructions will be passed with the appropriate VFR clearance. All departure and arrival routes are based on the Cardiff QNH.

Figure 3 - Cardiff VRPs and VFR Routes
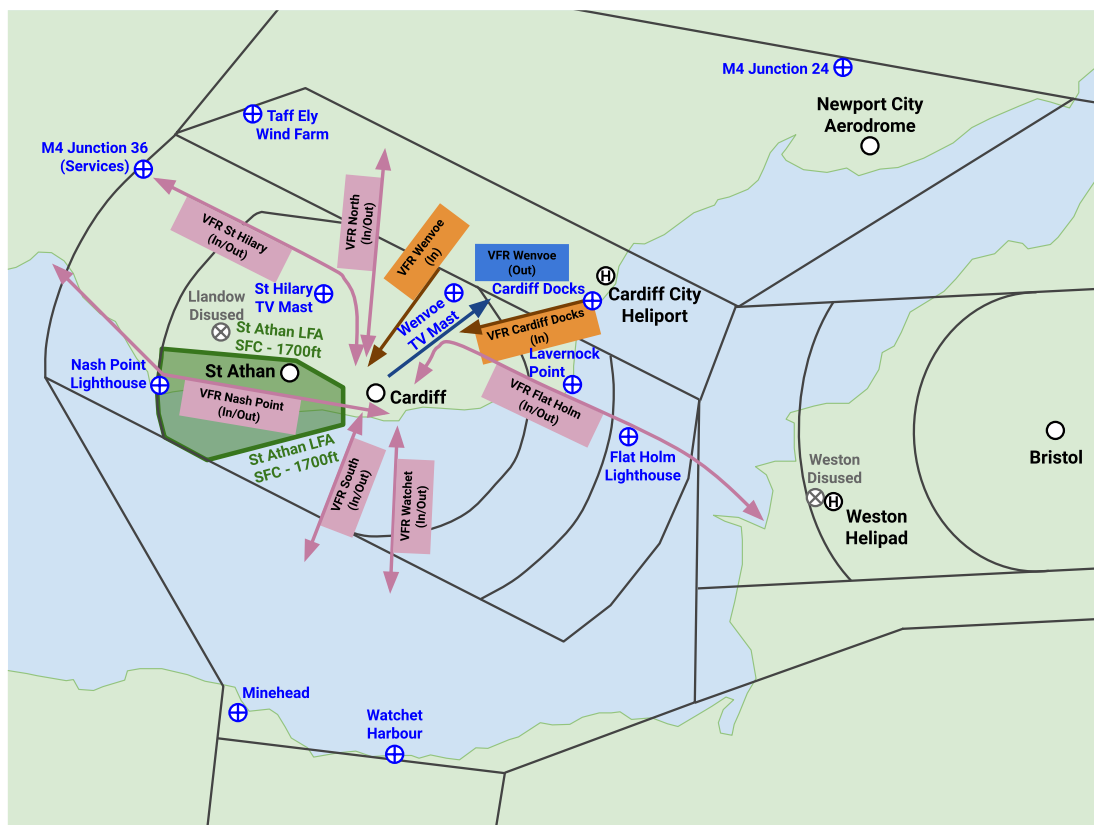
Note: *The following VRPs are not depicted: Clatworthy Reservoir (located south of Watchet Harbour), Llandegfedd Reservoir (located north of M4 Junction 24), Watchet Harbour VRP and VRPs defined for Bristol airport. All VRPs are available to select for display in Euroscope.*

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3.3.1   VFR Departure Routes

Cardiff ADC shall clear VFR traffic via the following routes not above 1500ft:

Designator	Exit Point	Runway	Route	Remarks
VFR St Hilary	Bridgend	30/12	Route north of St Hilary TV Mast and leave controlled airspace to the west routing north of Bridgend at Junction 36 VRP	
VFR North	North	30/12	Route between the St Hilary and Wenvoe TV Masts and leave controlled airspace to the north	
VFR Wenvoe	W of Cardiff Docks	30/12	Route east of the Wenvoe TV Masts and leave controlled airspace to the northeast	
VFR Flat Holm	NE of Flat Holm Lighthouse	30/12	Route north of Barry then north of Flat Holm Island, and leave controlled airspace at the east/southeast zone boundary	See LOW 3.3.3
VFR South	N of Minehead	30	Route east of the quarry (1 NM west of Cardiff airport) and leave controlled airspace to the south towards Minehead VRP	See LOW 3.3.3
VFR South	N of Minehead	12	Route south and leave controlled airspace to the south towards Minehead VRP	See LOW 3.3.3
VFR Nash Point	Nash Point	30	Route east of the quarry (1 NM west of Cardiff airport) and leave controlled airspace to the west along the coast, over water, via Nash Point	Normally only available when St Athan LFZ is not active
VFR Nash Point	Nash Point	12	Leave controlled airspace to the west along the coast, over water, via Nash Point	Normally only available when St Athan LFZ is not active
VFR Watchet	Watchet Harbour	30	Route east of the quarry (1 NM west of Cardiff airport) and leave controlled airspace to the southeast via Watchet Harbour	See LOW 3.3.3
VFR Watchet	Watchet Harbour	12	Route southeast and leave controlled airspace to the southeast via Watchet Harbour	See LOW 3.3.3

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3.3.2   VFR Arrival Routes

RAD 2 shall clear VFR traffic via the following routes not above 1500ft:

Designator	Exit Point	Runway	Route	Remarks
VFR St Hilary	Bridgend	30/12	Enter controlled airspace via Bridgend and route north of St Hilary TV Mast	
VFR North	North	30/12	Enter controlled airspace from the north between the St Hilary and Wenvoe TV Masts	
VFR Wenvoe	W of Cardiff Docks	30/12	Enter controlled airspace via the Wenvoe TV mast	
VFR Cardiff Docks	Cardiff Docks	30/12	Enter controlled airspace via Cardiff Docks	
VFR Flat Holm	NE of Flat Holm Lighthouse	30/12	Enter controlled airspace via Weston aerodrome, route north of Flat Holm Lighthouse towards Laverrnock Point	See LOW 3.3.3
VFR South	N of Minehead	30	Enter controlled airspace to the south	See LOW 3.3.3
		12	Enter controlled airspace from the south, remaining east of the quarry (1 NM west of Cardiff airport)	
VFR Nash Point	Nash Point	30	Enter controlled airspace via Nash Point, route along the coast, remaining over water	Normally only available when St Athan LFZ is not active
		12	Enter controlled airspace via Nash Point, route along the coast, remaining over water and east of the quarry (1 NM west Cardiff airport)	
VFR Watchet	Watchet Harbour	30	Enter controlled airspace from the southeast	See LOW 3.3.3
		12	Enter controlled airspace from the southeast, remaining east of the quarry (1 NM west of Cardiff airport)	

3.3.3   VFR South, VFR Flat Holm and VFR Watchet Routes – Altitude Restriction

The published maximum altitude for the South, Flat Holm and Watchet routes is 1500ft Cardiff QNH. However, every effort should be given to offer higher altitudes (2000ft-3000ft) as soon as possible for single engine piston aircraft, in order to increase gliding distances in the event of an engine failure over water.

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3.3.4   Positioning Flights between Bristol and Cardiff

Positioning VFR flights between Bristol and Cardiff are to follow the most appropriate VFR route towards their destination.

Traffic inside controlled airspace must not enter the radar buffer zone without coordination.

Traffic outside controlled airspace should be coordinated prior to the radar buffer zone.

Chapter 4   Helicopter Operations

There are no helicopter specific procedures and any helicopter traffic shall be handled in the same manner as fixed wing traffic.

4.1   Cardiff City (Tremorfa Foreshore) Heliport (EGFC)

Cardiff APC is not responsible for providing an air traffic service at Cardiff City Heliport. However, flights operating in and out of Cardiff City Heliport require clearance to enter controlled airspace.

Cardiff APC shall handle this traffic as per the procedures above.

Chapter 5   Lower Airspace Radar Service (LARS) and UK Flight Information Services (UK FIS)

5.1   Lower Airspace Radar Service

Cardiff is a designated LARS provider for traffic within 40 NM of the aerodrome operating up to FL100 within the limits of radio and surveillance coverage.

RAD 2 will provide a LARS, subject to workload, to all aircraft requesting a service outside of controlled airspace within the area of coverage.

Pilots intending to operate above FL100 should be advised to contact AC West.

5.2   Provision of UK FIS

APC should by default provide a Basic Service to VFR traffic operating outside controlled airspace unless the pilot requests a different service. IFR traffic will by default be offered a Deconfliction Service outside controlled airspace.

UK FIS shall be provided in accordance with MATS Part 1 and CAP 774.

5.3   Adjacent ATC Units

The following adjacent units are notified LARS providers:
North: Shawbury Approach –40 NM
Northeast: Brize Radar – 40 NM
East: Boscombe Approach – 30 NM
Southeast: Yeovil Approach – 30 NM
South: Exeter Radar – 30 NM
Southwest: Newquay Radar – 60 NM

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AC West may, subject to workload, provide a service in the absence of the above units.

5.3.1   Coordination with Adjacent Units

Adjacent LARS units should coordinate any traffic deemed necessary for maintaining situational awareness between the unit.

5.3.2   Radar Handover

Whenever possible, aircraft will be handed over from controller to controller in an area of overlapping radar cover and pilot instructed to contact the next unit. A radar handover between adjacent units must be completed prior to transfer of communication.

When this cannot be effected, pilots will be informed of their position and advised which unit to free-call for further service.

5.4   Controller Workload

Significant LARS activity can become workload intensive for the controller, particularly if aircraft are converging from different directions. Controllers can, and should, refuse requests for a service outside controlled airspace or downgrade services as appropriate. Similarly, adjacent ATC units (including AC West) should be used if they could provide a better service.

The provision of LARS/UK FIS shall not adversely affect the primary controlling task of separating and sequencing traffic within controlled airspace.

5.5   Service Limitations

When providing a surveillance derived service, there may be circumstances that prevent controllers from passing timely traffic information and/or deconfliction advice. Examples include high workload, areas of high traffic density, service against aircraft conducting high energy manoeuvres, or when traffic is not displayed to the controller. Controllers shall inform the pilot of reductions in traffic information along with the reason and the probable duration however, it is recognised it may not always be possible to provide these warnings in a timely fashion.

The following paragraphs outline situations that should cause controllers to consider warning of reduced service provision with example phraseology.

In high workload situations, which may not always be apparent from RT loading, it may not be possible for controllers to always provide timely traffic information and/or deconfliction advice. High workload situations may not necessarily be linked to high traffic density.

"… reduced traffic information due to controller workload."

High traffic density can cause difficulty interpreting surveillance system data and may affect RT loading or controller workload to the extent that they are unable to pass timely traffic information and/or deconfliction advice on all traffic.

"… approaching an area of high traffic density, possible late or no warning of traffic for the next X miles."

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Where aircraft are operating close to the lateral and/or vertical limits of solid surveillance system cover, or close to a radar overhead, there is the potential for conflicting traffic to be detected late. When very close to the limits of surveillance cover the service should be downgraded to a Basic Service.

"… reduced traffic information from the left/right for the next X miles due to the limits of surveillance/radar coverage."

"… Basic Service, you are nearing the edge of my surveillance/radar coverage."

"… Basic Service, you are outside my area of surveillance/radar coverage."

5.6   Provision of Warnings and Preventing Controlled Airspace Infringement

Subject to workload controllers should provide warning of airspace hazards to all identified traffic regardless of service type. However, the primary task of providing traffic information and/or deconfliction advice to traffic operating under a radar service should not be compromised by the provision of these warnings.

When warnings involve the provision of routing advice controllers must consider relevant SMAA levels or minimum sector altitudes. Traffic operating below these levels should only be provided generic advice and should not be radar vectored. If a controller deems a situation urgent enough to warrant or a pilot requests a specific radar vector then the controller must provide a terrain warning and, if vectoring is to be continued, a climb to a terrain safe level.

Identified traffic should be radar monitored when operating in close proximity to controlled airspace boundaries. Traffic which is within 2 NM of a controlled airspace boundary and on an observed track that would result in infringement should be informed of the airspace ahead and provided advice on how to remain clear.

Traffic which is observed to infringe controlled airspace (including vertically) must be immediately informed and provided advice on how to leave controlled airspace in the most expeditious manner. Controllers must take care to ensure any advice provided does not result in a course of action that degrades observed separation against traffic operating within controlled airspace. Additionally, controllers must coordinate traffic which has infringed controlled airspace with the controlling unit at the earliest opportunity providing sufficient detail to allow rapid radar identification by the other controller and allow a reduction in the separation minima from those for unknown to those for known traffic. The controlling unit may pass instructions via Cardiff APC or may request the traffic be transferred to their frequency.

Of all the airspace warnings provided by Cardiff APC, warnings relating to infringement of controlled airspace must take the highest priority.

APPENDIX A - CARDIFF STANDING AGREEMENTS DIAGRAM
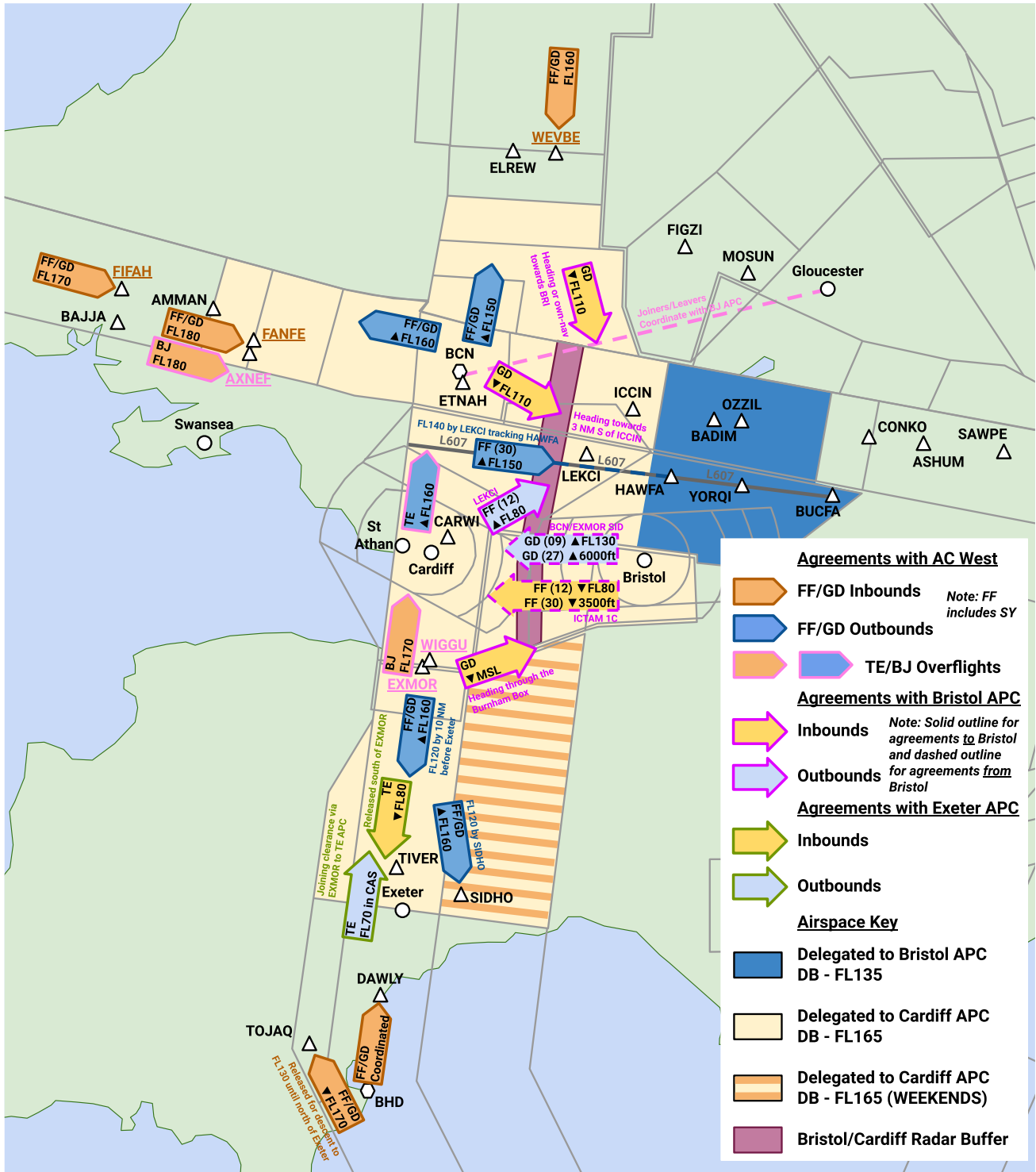
GLOSSARY

Abbreviation	Section
AC	Area Control
ADC	Aerodrome Control
APC	Approach Control
CAS	Controlled Airspace
CTA	Control Area
CTR	Control Zone
DME	Distance Measuring Equipment
EAT	Estimated Approach Time
FIS	Flight Information Service
FL	Flight Level
ft	Foot (feet)
GS	Groundspeed
hPa	Hectopascals
IAS	Indicated Airspeed
ICAO	International Civil Aviation Organisation
ILS	Instrument Landing System
Kts	Knots
MDI	Minimum Departure Interval
MHz	Megahertz
MSL	Minimum Stack Level
NM	Nautical Mile
OCA	Obstacle Clearance Altitude
OCH	Obstacle Clearance Height
RAD 1	Cardiff Radar 1
RAD 2	Cardiff Radar 2
RFC *	Released for Climb
RFD *	Released for Descent
RFT *	Released for Turn
SID	Standard Instrument Departure
SSR	Secondary Surveillance Radar
STAR	Standard Terminal Arrival Route

* Although these acronyms are not used in this document, they may be useful for controllers to be aware of as common notation in text coordination.

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