

**LONDON CITY &
TC THAMES VMATS PART 2
EGLC**

REVISION 2025/01 - EFFECTIVE 23 JANUARY 2025

DISTRIBUTION AND SCOPE

This manual is for controllers of London City Aerodrome and TC Thames positions, containing specific and local procedures relevant to these positions. Controllers must be familiar with controlling procedures in the UK; this manual should be read in conjunction with MATS Part 1 (CAP 493) and guidance on standard UK radiotelephony phraseology, detailed in CAP 413.

EXCLUSION OF LIABILITY

This manual is for use on the VATSIM Network only and should never be adopted for real world use.

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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).

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. **New text is in red.**

AMENDMENT HISTORY

Revision	Effective Date	Notes
2024/01	23 Jan 2025	Updated 25MHz to 8.33 frequency spacing; Renamed references to OCK 'radials' to 'track'; Renamed references to 'the taxiway' to 'taxiway tango'; Removed A220/Embraer E2 restrictions; Removed references to the loop
2023/07	13 Jul 2023	Updated procedure for issuing approach clearances to traffic following the RNAV transitions (APC 4.4.3); Updated procedures for Rochester (EGTO) outbounds joining the ATS route network (APC 7.4.2)
2023/03	23 Mar 2023	Withdrawal of BEDEK1C and replacement with SIRIC 1C (APC 3.2). Updated magnetic variation for various holds (APC 3.3). Olympic VRP replaced by London Stadium (Figure 4 – LOW 2.2)
2022/13	29 Dec 2022	Correction of MSL table and addition of explanatory note (GEN 1.5); Removal of conventional navigation SIDs (ADC 1.3) and updated SID references throughout; Clarifying note for PDCs (ADC 1.4); Amended London TMA flight routes/procedures (ADC 1.5); Amended to VATSIM UK standard speed table (ADC 2.11); Updated responsibility for separation and spacing on final approach (ADC 2.13.3 , APC 4.4.1 , APC 4.4.7 , APC 4.4.8); Addition of Controlled Airspace Containment procedures (APC 2.7); Updated GEGMU holding procedures (APC 3.3.3.1); Updated Thames RMA diagram [delegated CTA-8] (APC 4.1), Amended Southend RMA (APC 4.1.2); Delegation of Southend CTA-8 (APC 4.1.3); Updated standing agreement for GEGMU with Southend APC (APC 4.3.2); Updated Biggin Hill Final Sequencing [descent now to 1800 ft] (APC 4.5.3); Updated Biggin Hill SDR (APC 5.3.1); Removal of references to Stansted LYD departures (APC 7.3); Updated Rochester SDR (APC 7.4.2); Added section on non-standard Farnborough/Wessex Group departures via BIG (APC 7.5); References to 'airways' amended to 'ATS route network' throughout; Minor wording/formatting amendments throughout including additional details for clarity; Updated list of Approved Aircraft Types (Appendix 1).
2021/12	12 Dec 2021	Minor formatting/spelling corrections; Updated PDC restrictions (ADC 1.4); Updated Stand Allocation guidance (ADC 1.10); Updated Terrain and Obstacle Clearance (APC 2.6); Updated Change to MSL Procedure (APC 2.7); Updated London City/Biggin Hill STARs (APC 3.2.1); Corrected coordination for Southend departures via EVNAS (APC 5.4.3); Updated TC SVFR coordination requirements (LOW 1.2); Updated details on NPAS bases (LOW 2.5); Addition of requirement for TC Thames to monitor TC Heathrow go-around alarm and coordination requirements (LOW 3.5.1); Updated Inner Area restrictions (LOW 3.5.3); Updated Farnborough CAS Procedures to align with Farnborough vMATS Part 2 (LOW 3.5.6); Addition of A380 CPT departures to Easterly Helicopter Route Restrictions (LOW 4.4.1); Other minor changes to Section LOW.

2021/02	25 Feb 2021	Updated SID handoff priority following introduction of AC Daventry as a standalone sector (ADC 2.13.2); ATM use guidance incorporated (ADC 2.22); Southend APC frequency and transfer of control point specified (APC 4.3.2.1); TC Thames – London TC outbound agreements amended (APC 5.2.4); Minor correction to LOW 1.1.
2020/14	31 Dec 2020	Updated to new template; “Coordination Area” introduced; Intra-LTMA flight procedures introduced; Thames RMA changes; Southend RMA introduced; Inbound release changes; Holding procedures documented; London City visual approach procedure introduced; Outbound procedure changes; Overflight procedures including Heathrow LAM arrivals and Essex Group/Northolt departures via DET; Low level procedures updated, and harmonised TC SVFR documentation introduced.
2.7	04 Feb 2016	New SIDs & STARs; Point Merge Transition introduced; Thames/City Radar callsigns amended.
2.6	08 Dec 2015	Formatting & R/T updated; Thames RMA & co-ordination with Southend & London TC; Low Level Procedures for London CTR now moved to Heathrow vMATS
2.5	09 Apr 2012	EGLL Helicopter crossing procedure amended; Helimed (HLE) corrected
2.4	14 Dec 2011	SRAV approaches removed; Becton & Three Mills VRPs name change
2.3	02 Nov 2011	Multiple changes
2.2	16 Sep 2011	Southend outbound procedure added; London Heliport procedures updated
2.1	16 Sep 2011	SID designators updated; Wake turbulence sep. applied to 2 DME; 5000ft corrected to 4000ft DET; Departure Instructions amended; Stand usage guide
2	14 Jan 2011	London City and Thames Director vMATS combined and updated
1	06 Jun 2010	First publication

INTRODUCTION AND STRUCTURE

The London City & TC Thames 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 London City and TC Thames ATS staff within VATSIM UK however TC Thames ATS staff shall also familiarise themselves with the procedures contained in the Biggin Hill Airfield Controller Brief and Southend Airfield Controller Brief.

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 Procedures (VFR & SVFR including Helicopter 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 | GENERAL OPERATING INSTRUCTIONS

Chapter 1 Altimeter Setting Procedures

1.1 Departing Aircraft

Departing aircraft should state the QNH on first contact with GMC, otherwise it should be issued by the GMC controller. Aircraft should be informed of any subsequent change to the QNH at the earliest opportunity.

1.2 Arriving / Transiting Aircraft

At or below the Transition Altitude, an aircraft's vertical position will be controlled by reference to the City QNH. Aircraft will be issued the QNH once cleared to descend to an altitude by TC Thames, or with clearance to enter the London or London City Control Zone. Aircraft should be informed of any subsequent change to the QNH at the earliest opportunity.

1.3 QFE Threshold

The QFE for all runway thresholds is 1 hPa less than the City QNH.

1.4 Transition Altitude

The Transition Altitude (in the London TMA) is 6000 feet AMSL.

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

The Transition Level (TL) and Minimum Stack Level (MSL) for the London TMA are determined by reference to the following table:

Heathrow QNH (hPa)	Transition Level (TL)	Minimum Stack Level (MSL)
1050 - 1060	FL60	FL70
1049 - 1032	FL65	FL70
1031 - 1013	FL70	FL70
1012 - 995	FL75	FL80
994 - 977	FL80	FL80
976 - 959	FL85	FL90
958 - 940	FL90	FL90

Note 1: The classification of 1013 hPa as 'high pressure' in the above table differs from MATS Part 1.

*Note 2: To protect against inadvertent descent to an altitude, the **MSL shall never be lower than FL70** even during periods of 'very high pressure' where FL60 would be separated against 6000 ft.*

1.6 Altimeter Setting Region (ASR)

London City is situated within the Chatham ASR however, the LTMA overlies the majority of the Chatham ASR and aircraft operating under the LTMA shall be passed the London (Heathrow) or City QNH.

Chapter 2 Noise Abatement Procedures

Noise abatement procedures for aircraft departing London City and joining controlled airspace are included in the appropriate Standard Instrument Departures (SIDs).

Aircraft departing the London City CTR/CTA into the FIR or departing on training flights within the London City CTR/CTA are to climb straight ahead to a minimum height of 1000 ft AAL before turning on track unless otherwise instructed by ATC.

Aircraft making approaches to London City without assistance from the ILS shall follow a descent path which will not result in its being at any time lower than the approach path that would be followed by an aircraft using the ILS glide path.

Pilots of aircraft carrying out visual approaches to Runway 09 and Runway 27 shall not fly below altitude 1600 ft and 1500 ft respectively until established on the final approach.

Chapter 3 Approved Aircraft Types

Due to restrictions relating to the 5.5° steep approach, available runway length, and manoeuvring area size only the aircraft types listed in Appendix 1 are *formally* approved to operate to or from London City airport.

Any aircraft type not on this list, including all single-engine fixed-wing aircraft and all helicopters, are not *formally* approved to operate to or from London City airport.

On the VATSIM network, controllers shall accept operations by single-engine fixed-wing aircraft and helicopters. Controllers may warn pilots operating multi-engine fixed-wing aircraft not included in the above list of the restrictions however no aircraft shall be denied a service.

Chapter 4 All Weather Operations

4.1 Aerodrome Equipment

Both Runway 09 and 27 are equipped with category I ILS installations only. Neither installation is suitable for lower than standard category I operations.

Authorised operators may conduct low visibility take-off to minimum IRVR of 125 m.

London City airport is not equipped with surface movement radar (SMR).

4.2 Low Visibility Procedures (LVP)

4.2.1 Enforcement

Pilots will be informed when these procedures are in operation by ATIS or by RT. ATC Low Visibility Procedures will be applied when one of the following weather conditions are present:

- The Instrumented Runway Visual Range (IRVR) or Met Visibility is less than 1100 m
- The cloud ceiling is 500 ft or lower ('ceiling' defined as broken or more)

4.2.2 Runway Safeguarding Procedures

Runway safeguarding is to be implemented when LVP are enforced. During safeguarding a maximum of two aircraft may operate on the manoeuvring area at any one time. Additionally, no aircraft may be permitted to line-up or backtrack on the runway when an arriving aircraft is within 6 NM.

4.2.3 Instrumented Runway Visual Range (IRVR)

The IRVR is measured at two points along each runway: at the touchdown zone and the stop-end. The minimum IRVR that can be measured is 50 m and the maximum is 1500 m.

Only the touchdown zone IRVR value is published in METARs, thus the remaining two IRVR values are unknown to VATSIM network controllers. When LVP are in force, pilots should be informed of the reported IRVR and any subsequent updates.

4.2.4 Arrival Spacing

During LVP the minimum spacing between sequential arriving aircraft shall be 10 NM except that 15 NM shall be used as required to allow departing aircraft to backtrack on Runway 27.

4.3 Windshear

Once turbulence or windshear has been reported to London City ATC, AIR (or TC Thames where appropriate) should inform all subsequent landing aircraft that windshear conditions have been reported until confirmation has been received that the conditions no longer exist.

In the event an aircraft initiates a missed approach due to windshear, AIR and TC Thames must be alert to the significant risk of level bust through the missed approach altitude of 2000 ft. Should this occur AIR shall immediately coordinate with either TC Heathrow (if Heathrow is operating westerlies) or the appropriate London TC sector (if Heathrow is operating easterlies) and agree a course of action to resolve any conflicts with other aircraft. AIR shall then inform TC Thames of the agreed course of action before transferring the aircraft.

4.4 Meteorological Information

An ATIS will be available on frequency 136.355 MHz. The ATIS shall be maintained by the AIR controller, though this can be delegated to another controller. Aircraft are expected to confirm the current ATIS information on first contact with a London City station (including TC Thames). When LVP are in force then this should be included in the ATIS broadcast.

Chapter 5 Description of Airfield

5.1 Aerodrome Geographical Data

ICAO Code	EGLC
Aerodrome Reference Point (ARP)	513019N 0000319E Midpoint of Runway 09/27
Elevation	20 ft
Transition Altitude	6000 ft
Safety Altitude	2300 ft (SE)

5.2 ATC Communication Facilities

Aerodrome Control (ADC)

RT Callsign	Logon Callsign	Abbreviation	Coordination Callsign	Frequency (MHz)
City Information	EGLC_ATIS	ATIS	-	136.355
City Ground	EGLC_GND	GMC	(City) GMC	121.830
City Tower	EGLC_TWR	AIR	(City) AIR	118.080

Note: Whilst notified as a GMC position with a ‘Ground’ callsign, LC GMC is **not** responsible for taxi operations after engine start except in the absence of any control position providing the AIR function.

Approach Control (APC)

RT Callsign	Logon Callsign	Abbreviation	Coordination Callsign	Frequency (MHz)
Thames Director	THAMES_APP	TMS DIR	Thames Director	132.700
Thames Director	EGLC_APP	LC DIR	City Director	128.025

Note 1: The combined APC units may be referred to in coordination as ‘TC Thames.’

Note 2: Heathrow Radar (TC SVFR) is permanently banded with LC DIR on VATSIM.

5.3 Radio Navigation and Landing Aids

Type	Identifier	Frequency (MHz)	Remarks
ILS 09	I-LST	111.15	LLZ/DME. 5.5°GP
ILS 27	I-LSR	111.15	LLZ/DME. 5.5°GP

Chapter 6 Use of Runways

6.1 Preferential Runway

Runway 27 is the preferred runway, however, the most into wind runway should always be selected as runway in use since operators of BAe 146/Avro RJ aircraft will not normally

accept any tailwind component. If the surface wind is calm or light and variable, then the wind at 2000 ft should be taken into account.

Selection of the runway in use is independent of London Heathrow operations as Runway 09 arrivals are deconflicted against aircraft arriving London Heathrow Runways 27L/R (detailed in [APC 4.4.6](#)).

When a change of duty runway is predicted, it is the responsibility of AIR to decide on a time based on the traffic situation, at least 15 minutes ahead and inform GMC, TC Thames and London TC sectors ahead of the agreed time. AIR in consultation with TC Thames will tactically decide the last landing and departing aircraft prior to the runway change. This must be planned to be as close as practicable to the agreed time.

6.2 Runway Change Procedures

In case of a change to the active runway, AIR shall initiate coordination with LC DIR to agree a last arrival and time for the runway change. LC DIR will coordinate with TMS DIR as required.

Based on this time, AIR should then coordinate with GMC as to the last departure. GMC will re-clear any previously cleared aircraft that will now depart on the new runway.

AIR must then inform LC DIR of the intended last 3 (if appropriate) departures before, and the first departure after, the runway change (callsign and routing). LC DIR will inform AIR of the first arrival after the runway change at this time.

AIR must obtain a release from LC DIR before the first aircraft departs off the new runway.

6.3 Opposite Direction Departures/Approaches

City AIR will contact LC DIR to request a release for an aircraft intending to depart from the non-duty runway in the opposite direction to the runway in use. Ideally coordination should commence prior to the aircraft being ready for departure.

LC DIR and City AIR will agree a course of action that will ensure that standard vertical separation will be maintained between any departures and any conflicting, or potentially conflicting aircraft.

If the aircraft is an IFR ATS route network departure, LC DIR will then notify the relevant London TC sector, stating the runway to be used together with the aircraft's callsign and clarifying whether a release will be required.

The LC DIR controller must ensure that standard vertical separation will be maintained until the departure is airborne, under positive radar control, and lateral separation has been established between the departure and all other aircraft.

Due to environmental and airspace restrictions, except for reasons of safety, no departing aircraft will be restricted to less than 3000 ft QNH.

LC DIR will contact City AIR to request permission before positioning an aircraft to land on a runway other than the designated runway in use.

LC DIR must ensure that in the event of a go-around of an opposite direction inbound aircraft standard vertical separation is maintained until positive radar control and lateral separation has been established between the go-around aircraft and any other aircraft.

Additionally, LC DIR must ensure that in the event of a go-around of an inbound aircraft on the promulgated runway that standard vertical separation is maintained until positive radar control and lateral separation has been established between the go-around aircraft and an aircraft being vectored to land on the opposite direction runway.

6.4 Runway Vacation Guidelines

The following restrictions exist for runway vacation at London City:

- When landing on Runway 09 pilots should commence back-track as soon as practicable and exit via hold Echo unless otherwise instructed by ATC. Any aircraft that continues landing roll beyond hold Kilo may infringe the ILS critical area.
- Pilots that anticipate requiring the full length should inform TC Thames on first contact.

UK AIP AD EGLC Section 2.20.6 details the above requirements for pilots however controllers should provide instructions as required to ensure they are met. To ensure pilots fully vacate the runway before stopping AIR shall provide initial taxi instructions with a direction of turn on to the taxi-lane before the pilot vacates.

Chapter 7 Coordination Procedures

7.1 General Procedures

When TC Thames operates split into TMS DIR and LC DIR position, London City ADC positions shall coordinate with the relevant split as directed in [GEN 7.3](#). For clarity of writing in subsequent sections coordination is generally referenced to TC Thames however the sector split contacted shall be as per [GEN 7.3](#).

7.2 Coordination Area

To protect standard IFR departures and missed approaches, the north-eastern part of the London City CTR/CTA, bound by lines running east/west through London City and north/south through London Bridge, is designated the 'Coordination Area.' This is depicted in Figure 5 in section [LOW 3.6.2](#).

Any non-standard traffic, including VFR transits, shall be coordinated by TC Thames with ADC before the non-standard traffic enters the 'Coordination Area.' The nature of any coordination will be dependent on the non-standard traffic but for VFR transits sufficient details must be passed to ADC to facilitate effective traffic information, for IFR or SVFR traffic entering the 'Coordination Area' a departure check must be implemented or alternate after-departure instructions passed that will ensure standard separation is maintained.

7.3 Coordination from London City ADC to TC Thames

ADC shall coordinate with:

- TMS DIR for SID departures from Runway 09 except traffic positioning to Heathrow (EGLL) and RAF Northolt (EGWU)

- LC DIR for:
 - SID departures from Runway 27
 - Traffic positioning to Heathrow (EGLL) and RAF Northolt (EGWU)
 - Non-standard IFR departures from either runway
 - VFR flights leaving the London City ATZ
 - SVFR flights departing London City including circuits
 - Missed approaches from either runway.

AIR shall inform LC DIR when the visual circuit is active and when it ceases to be active. Additionally, AIR must inform LC DIR when the downwind leg will extend beyond 4 miles

7.4 **Coordination from TC Thames to London City ADC**

TC Thames shall coordinate with ADC for:

- IFR arrivals conducting a non-ILS approach including a 10 NM range check
- IFR arrivals that are not code-callsign converted including a 10 NM range check
- Missed approach instructions for IFR arrivals conducting a planned missed approach
- Any non-standard traffic that will enter the 'Coordination Area'
- VFR and SVFR arrivals
- VFR and SVFR overflights routing via the ATZ.

ADC | AERODROME CONTROL

Chapter 1 Ground Movement Control (GMC)

1.1 Area of Responsibility

Ground Movement Control (GMC) (“City Ground”) provides full departure clearance to aircraft departing London City and is responsible for passing the QNH and verifying the aircraft type of departing aircraft. The electronic flight strip will be amended to ensure the correct flight rules, temporary altitude, squawk, and voice tag are shown. GMC is also responsible for the issuing of start-up clearance on stand. GMC transfers aircraft to AIR once ready for taxi, and, on specified departure routes, pre-notes TC Thames or London TC sector. Transfer of aircraft to AIR will take place to allow sensible movement and departure sequencing and therefore GMC should retain aircraft on their frequency where necessary to absorb delay.

1.2 Issuing Clearances

It is the responsibility of GMC to issue clearances. 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 City QNH.

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

An IFR clearance should follow the format:

1. Callsign
2. Destination
3. Standard Instrument Departure
4. Squawk Code

Example: “ABC123, cleared to Manchester, Brookmans Park 1 Alpha departure, squawk 0356.”

GMC 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 GMC controller will pass this to the pilot.

Example: “ABC123, correct. Information A, City QNH 1020.”

On transfer to AIR, it is assumed that the aircraft has been informed of any changes to their clearance and has been issued the latest QNH.

1.3 Standard Instrument Departures

London City uses RNAV1 SIDs as detailed below. Conventional SIDs were withdrawn as of AIRAC 2022/13 and any aircraft unable to accept an RNAV1 SID will require individual coordination with TC Thames.

Note: *In the absence of TC Thames, traffic routing via outdated SIDs may be cleared without coordination with London Control.*

RNAV1 SIDs are identifiable by their suffix: 'H' for 09 departures and 'A' for 27 departures.

All London City SIDs have stop altitudes of 3000 ft due to close interaction with LTMA traffic 1000 ft above.

Route	SID	27 SID	09 SID	Remarks
BPK	BPK	1A	1H	Release from TC NE
CPT	SAXBI	1A	1H	Release from TC NE
CLN	ODUKU	1A	1H	Prenote to TC NE
DVR/LYD	SOQQA	1A	1H	-

1.4 Pre-Departure Clearance (PDC)

When both the controller and pilot are suitably equipped, a PDC may be offered in order to clear pilots electronically. The operation of the controller PDC clients is explained in operations guides for the separate options for hosting this facility – the TopSky plugin, vStrips, vSMR and Hoppie's ATC ACARS client host instructions as to how to use their programs on their respective websites.

Alternative methods of PDC may be used unless otherwise notified.

1.4.1 Availability of PDC

PDC clearances will not be available (and should not be issued) in the following circumstances:

1. Up to half an hour before a runway change, to prevent the incorrect issuing of a SID. The actual availability of PDC will be at the GMC controller's discretion.

Note: *Should the GMC controller elect to continue issuing PDC clearances within the 30-minute period before a runway change they shall only issue manual PDC clearances and deactivate auto-PDC. This is to prevent the inadvertent issue of an auto-PDC clearance with an incorrect SID without the GMC controller noticing*

2. When the route of an aircraft's flight plan needs to be changed, or for expedition due to a flow restriction on a certain routing.

In all the above cases, the pilot should be advised by ACARS message to call the controller by voice in order to obtain ATC clearance.

1.5 Flights to London TMA Airfields

1.5.1 Delay Absorption

With the exception of Thames Group flights (Biggin Hill, Southend, and Rochester) a pre-note should be sent to the receiving London TC sector when a clearance to any airport in the London TMA is issued and the TC sector should respond with any delay (a response without specifying a delay may be interpreted as no delay).

Additional prenotes to other controllers may be required (see the relevant section below).

GMC shall take the following actions depending upon the delay:

1. Less than 10 minutes: Inform the pilot of the delay. No further coordination required.
2. 10 to 20 minutes: Inform the pilot of the delay. Send a courtesy message to the receiving TC sector when the delay is absorbed and the pilot is starting (*"GABCD starting for EGLL"*), no response is required from TC.
3. Greater than 20 minutes: TC to specify *"greater than 20 minutes"* or *"delay not determined."* GMC to inform pilot of *"delay not determined, at least 20 minutes"* and ask whether they wish to proceed. GMC to re-coordinate at 20 minutes with TC.

In the event the relevant London TC sector is offline, coordination shall be with the receiving APC unit.

In most situations, this coordination should ideally take place via text communication.

1.5.2 Flights within the Thames Group

Flight Plan Routing:

EGKB: DCT DET DCT GODLU

EGMC/EGTO: DCT DET

Flights positioning to an airport within the Thames Group (Biggin Hill - EGKB, Southend - EGMC, and Rochester - EGTO) shall be cleared on a SOQQA departure and then route SOQQA DCT DET.

Departures positioning to an airport within the Thames Group shall be pre-noted to either LC DIR or TMS DIR dependent on the runway in use as described in [GEN 7.3](#).

The requested flight level (RFL) shall be a maximum of 4000 ft.

1.5.3 Flights to Heathrow/RAF Northolt

Flight Plan Routing: ODUKU DCT CLN DCT LAM

Departures positioning to Heathrow (EGLL) and RAF Northolt (EGWU) shall be pre-noted to TC North East and LC DIR. TC North East shall inform Heathrow INT North. In the absence of TC North East all coordination shall be with TC Thames.

The requested flight level (RFL) shall be MSL or MSL+1.

1.5.4 Flights to Gatwick

Flight Plan Routing: SOQQA M87 EKNIV DCT LARCK (KONAN 2G)

Departures positioning to Gatwick (EGKK) shall be prenoted to TC South East who shall inform Gatwick INT. In the absence of TC South East coordination shall be with TC Thames.

The requested flight level (RFL) shall be MSL.

1.5.5 Flights to the Essex Group

Flight Plan Routing: BPK DCT MATCH DCT LOFFO (DET 2A)

Departures positioning to an airport within the Essex Group (Stansted - EGSS, Luton - EGGW, and Cambridge - EGSC) shall be pre-noted to TC North East who shall inform TC Stansted/TC Luton as appropriate. In the absence of TC North East coordination shall be with TC Thames.

The requested flight level (RFL) shall be MSL.

1.5.6 Flights to Farnborough, the Wessex Group, and the Solent Group

Flight Plan Routing: SOQQA M87 EKNIV DCT LYD M189 WAFFU DCT NOTGI (ELDAX 1S/V)

Departures positioning to Farnborough (EGLF), an airport within the Wessex Group (Blackbushe – EGLK, Dunsfold – EGTD, Fairoaks – EGTF, Lasham – EGHL, and RAF Odiham – EGVO), or an airport within the Solent Group (Southampton – EGHI and Bournemouth – EGGH) shall be pre-noted to TC South East who shall inform TC South West. In the absence of TC South East coordination shall be with TC Thames.

The requested flight level (RFL) for Farnborough and the Wessex Group shall be between MSL+1 and FL120.

The requested flight level (RFL) for the Solent Group shall be MSL+1.

1.6 Flow Restrictions

1.6.1 Calculated Take-off Times (CTOT)

A Calculated Take-Off Time (CTOT), sometimes referred to as a 'slot', is issued to a sequence of departures as a long-term flow management system when there is a significant excess of aircraft wishing to depart the aerodrome. CTOTs will usually only be employed as a method of flow control on VATSIM during particularly busy events.

On VATSIM, the adherence to slot times is clearly not as important as the real world, and a deviance of 5 minutes before or, 10 minutes after is typically required during events. Since CTOTs are generally locally assigned, instead of being based on restrictions in Europe, adherence rules as strict as this do not tend to be employed, although it may be deemed acceptable to delay aircraft who have not met a reasonable CTOT.

GMC should retain aircraft on stand until a reasonable time to facilitate the meeting of a slot time in order to prevent both RT congestion on ground frequencies and the blocking of taxiways. The time for pushback and taxi distance should therefore be considered when determining a suitable time to transfer the aircraft to GMC.

1.6.2 Minimum Departure Intervals (MDI)

During periods of congestion in the London TMA, TC may impose a Minimum Departure Interval (MDI) between specified departures. The maximum validity of this MDI may be 30 minutes, at which point if further restrictions are required, TC will inform London City ADC of a new MDI. The MDI may be removed at any point by TC.

1.7 VFR and SVFR Clearances

When a VFR or SVFR aircraft requests clearance from London City to an airfield outside of the London City ATZ, GMC shall request clearance from LC DIR. Clearance shall be issued on stand.

GMC should obtain the full clearance request which includes the aircraft's type, destination and intended routing. Once LC DIR has issued a full clearance, it is the responsibility of GMC to pass this clearance (in full) to the pilot.

Example: "GVUKA cleared to leave the London City Control Zone to the south, not above altitude 2000 ft, VFR, squawk 7030."

Once clearance has been issued, the aircraft should be handed to AIR once the aircraft has started.

1.8 Starting Aircraft and Transfer to AIR

Start clearance will be provided once the aircraft reports ready. The start clearance must include the stand number of the aircraft being given clearance. This is to bring attention to nearby aircraft of the start. Turboprop aircraft shall be passed the outside air temperature.

Example: "ABC123 stand 24, start approved."

Aircraft positioned on stand such that they require pushback on to taxiway **tango** must be coordinated with AIR. The aircraft should be started on stand but with an instruction to hold position and start only.

Example: "ABC123 stand 24 hold position, start approved only."

1.9 Transfer to AIR

GMC shall transfer aircraft to AIR once they report ready for taxi (or pushback following start for aircraft positioned on stand such that they require pushback). GMC should use the following phraseology when transferring to AIR:

"ABC123, hold position. Contact City Tower 118.080."

1.10 Stand Allocation

Stand allocation will normally be performed automatically by UKCP.

In the event of a UKCP failure it is the responsibility of the GMC controller to assign stands to aircraft based off the following table:

ATR42/72	
B461/2/3/RJ1H/70/85	1 – 10, 12, 13, 14
D/J328	<i>10 not to be used if E190 on 9</i>
DH8A/B/C/D	
E135/170	
E190	1 – 9
A318/BCS1	21 – 24
Corporate/Private	Jet Centre/GA Apron (15)

It is imperative that aircraft are assigned stands in a timely manner to allow AIR to pass appropriate taxi instructions.

Chapter 2 Air Control (AIR)

2.1 Area of Responsibility

Air Control (AIR) (“City Tower”) controls movement of aircraft on the manoeuvring area. Additionally, AIR also has responsibility for providing information to aircraft making an instrument approach and VFR traffic both in the visual circuit and within the vicinity of the ATZ. AIR is responsible for obtaining departure releases from TC controllers where required.

2.1.1 Delegated Responsibilities

AIR is responsible for traffic operating under VFR within and in the vicinity of the ATZ. Traffic in the vicinity of the ATZ should be coordinated with LC DIR and LC DIR shall also be informed of the presence of aircraft within the visual circuit.

2.2 Taxi Procedures

AIR is responsible for taxiing all aircraft. The taxi-lane typically operates as a one-way system dependent on the runway in use.

2.2.1 Non-Direct Taxi Instructions to Stand

When an aircraft cannot be cleared to taxi directly to the assigned stand the phrase “*expect stand*” should be used to inform the aircraft of their parking position.

2.3 Departure Runway Holding Points

For Runway 09 operations departures should be taxied to holds A and B.

For Runway 27 operations departures should be taxied to holds L and M.

2.4 Line Up Procedures

2.4.1 RT Phraseology

All instructions to enter a runway shall include:

1. The relevant runway designator
2. The holding point designator at which the aircraft is to enter the runway, including from full length
3. For backtracking traffic, the holding point designator at which the aircraft is to vacate the runway (except when cleared to line up by 180 degree turn after backtrack).

2.4.2 Multiple Aircraft on the Runway

The AIR controller needs to be aware of the potential effects of jet blast when lining up multiple aircraft on the runway.

2.5 Conditional Clearances

2.5.1 RT Phraseology

To assist flight crew with situational awareness, when issuing conditional clearances, the distance from touchdown of any relevant landing traffic should be included.

Example: “ABC123 behind the landing E190 at 2 miles, line-up Runway 27 behind.”

2.5.2 Runway Safeguarding Phraseology

The word ‘follow’ must not be used in conditionals in the runway holding area. Aircraft should not be instructed to ‘follow’ another one to prevent two aircraft lining up with only one of them having clearance to do so.

Aircraft should not be told their number in the intended departure sequence. Instead, AIR may issue approximate airborne times as either a time past the hour, or an approximate wait in minutes.

2.5.3 Intersection Conditionals

Aircraft at an intersection may only be issued a conditional line up or crossing instruction behind the next departing or arriving aircraft. I.e. The aircraft should be able to perform the intended action behind the next aircraft that passes them.

2.5.4 Maximum Runway Conditionals

It is recommended that a maximum of 2 conditionals shall be active at any one time. I.e. an aircraft may be lining up behind a departure on the runway, and another aircraft may be lining up behind them.

2.6 Runway Clearances

It is accepted that a degree of anticipation is permissible in the issuance of take-off and landing clearances. In all cases 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 and at a minimum shall be passed an instruction to turn left or right on taxiway **tango** as they vacate.

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

2.7 Flights to London TMA Airfields

GMC will have coordinated initially with the relevant controllers – see [ADC 1.5](#).

A release shall be obtained:

Flights within the Thames Group (EGKB/EGMC/EGTO)

From either LC DIR or TMS DIR dependent on the runway in use as described in [GEN 7.3](#).

Flights to Heathrow (EGLL) and RAF Northolt (EGWU)

From LC DIR (who will obtain a release from TC North East).

Flights to Gatwick (EGKK)

From TC South East.

Flights to the Essex Group (EGSS, EGGW, EGSC)

From TC North East.

Flights to Farnborough (EGLF), the Wessex Group (EGLK, EGTD, EGTF, EGHL, EGVO), and the Solent Group (EGHI, EGHH)

From TC South East.

2.8 Wake Separation**2.8.1 Wake Turbulence Separation**

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

2.8.2 Holding Points

The following pairs of holding points for Runways 09/27 are considered to be the same point for the purposes of departure wake turbulence separation:

Runway 09	Runway 27
A and B	K, L, and M

2.9 Speed Limitation on Departure

A speed limit of 250 knots IAS applies to all departures from London City whilst flying below FL100. This limitation will not normally be removed by the London TC sector controller.

If departing aircraft are unable to comply with the standard speed limit, this may impact on the initial time separations applied by ATC. In all such cases, pilots will:

If before take-off:

- Inform GMC when requesting start-up clearance stating the minimum or maximum speed acceptable. GMC is to inform the appropriate London TC sector controller who may specify a high-speed limitation and/or additional take-off separation as necessary, which shall be communicated to AIR. AIR is to advise the pilot, before take-off, of any higher speed limitation imposed.

If after take-off:

- Inform ATC of the minimum speed acceptable.

The onus for removing the speed limitation rests with the appropriate TC sector controller who will advise the aircraft as soon as the traffic situation permits. AIR controllers are not to remove any speed limitation without first obtaining the approval of the appropriate TC sector controller.

2.10 Departure Separation

All departure separations must be considered as **minima** and should not be reduced by City AIR through the use of RSIVA, or by any other means.

To permit the calculation of the correct time interval between departures, aircraft are categorised into groups. London City utilises the VATSIM UK harmonised speed table to

categorise aircraft for departure separation. The table at time of writing is shown below – any subsequent updates to the harmonised table published via Procedure Change will apply to London City.

4	3	2	1
All jet aircraft	BAE146/Avro RJ	ATR variants	BN2P/T
except:	CL35/CL60	DH8A/B/C	C208
- <i>Those in Group 3</i>	CRJ1/2/7/9/X	F50	DA62
- <i>Concorde</i>	D328/J328	JS31/32/41	DHC6
- <i>Military fast jets</i>	DH8D	King Air variants	E110
	E135/145	PC12	
	E50P/55P	SF34	
	P180	SW3/4	
	SB20	TBM7/8/9	
	All Citations except:		
	- C56X/680/68A/700/750		

Aircraft not included in Groups 1 to 4 are to be the subject of a separation to be agreed between London City and TC Thames.

Departure routes are grouped as below:

North/West	BPK, SAXBI
South/East	ODUKU, SOQQA

Note: SAXBI, ODUKU and SOQQA include equivalent non-standard departures via CPT, CLN and DET/EKNIV respectively.

Using the aircraft group table and the route groups controllers shall apply the following departure separation intervals:

		Following aircraft is:		
		Same group or slower	1 group faster	2 groups faster
Route group pairing	Same	2	3	4
	Opposite	2	2	2

When time-based separation is being used as the sole means of applying departure separation, 1 minute shall be not less than 60 seconds and 2 minutes shall be not less than 120 seconds, etc.

Separation between departing aircraft shall be applied so that after one aircraft takes off the next succeeding aircraft does not take-off within less than the number of minutes specified in the table. Such separation criteria are minima and must not be allowed to be eroded.

Where wake turbulence separation is greater than the route separation controllers must not provide less than the wake turbulence separation.

Separation between aircraft not on the speed table or when the following aircraft is 3 groups faster than the leading aircraft shall be determined by TC Thames with these aircraft subject to a radar release.

2.11 Departures Subject to Radar Approval

AIR must obtain a **departure release** from the relevant **TC Thames** controller (see [GEN 7.3](#)) before clearing aircraft in any of the following categories for take-off:

- Aircraft not on the speed table or when the following aircraft is 3 groups faster than the leading aircraft
- Traffic to EGKB/EGMC/EGTO/EGLL/EGWU
- Non-ATS route network IFR departures and SVFR departures
- Whenever AIR requires an aircraft to deviate from the SID
- Any subsequent SID departure following any of the above categories
- Aircraft departing following a missed approach
- Aircraft departing immediately prior to and following a change of runway direction
- VFR departures
- Whenever TC Thames implements a radar check.

AIR must obtain a **departure release** from **TC North East** before clearing aircraft for take-off which are routing on a BPK or SAXBI SID (or equivalent non-standard departure).

AIR must **prenote TC North East** before clearing aircraft for take-off which are routing on a ODUKU SID (or equivalent non-standard departure).

AIR will inform TC Thames if an aircraft is observed to deviate from the SID to the extent that departure separation may be eroded.

Aircraft subject to a release must depart within 5 minutes of the release time.

2.12 Transfer of Control and Communication

2.12.1 Departures

Departures may only be transferred to the appropriate TC frequency once all aerodrome conflicts have been resolved. Ideally transfer shall occur no later than 1500 ft or 2.5 NM from the departure end of the runway, though if required to retain traffic to resolve a conflict, the AIR controller shall look out for pilots climbing to above their initial (cleared) level and take action by reiterating the cleared level.

If the departure time separation applied does not achieve the expected airborne separation, then the AIR controller should intervene to establish positive track separation by the use of an early turn onto a heading. This action is to be retrospectively co-ordinated with the appropriate TC controller.

Flights positioning to Heathrow (EGLL) or RAF Northolt (EGWU) and non-standard IFR, VFR, and SVFR departures are transferred to LC DIR. Flights positioning within the Thames Group (EGKB, EGMC and EGTO) are transferred to the TC Thames controller responsible for departures in accordance with [GEN 7.3](#).

All other SID departures are transferred as described below.

2.12.2 SID Handoff Priority

Departure	1	2	3	4
Runway 27 - BPK/SAXBI	LC DIR	TMS DIR	TC NE*	TC SE*
Runway 27 - ODUKU/SOQQA	LC DIR	TMS DIR	TC SE*	
Runway 09 - BPK/SAXBI	TC NE*	TMS DIR		
Runway 09 - ODUKU/SOQQA	TMS DIR	TC SE*		

Note 1: Except flights positioning to EGLL/EGWU and EGKB/EGMC/EGTO (see above).

Note 2: For those sectors marked * transfer to the appropriate top-down controller (see below) before moving along the handoff priority table.

TC NE top-down:	TC N	TC	TC E	LE	LC	LSC	L
TC SE top-down:	TC S	TC	LD	LS	LSC	L	

- LC DIR - City Director
- TMS DIR - Thames Director
- TC SE - TC South East
- TC NE - TC North East
- TC S - TC South
- TC N - TC North
- TC - TC Bandbox
- TC E - TC East
- LD - AC Dover
- LS - AC South
- LE - AC Clacton
- LC - AC Central
- LSC - AC South Central
- L - AC Bandbox

In the absence of any controller in the departure handoff priority table, **all northbound** SIDs (BPK/SAXBI and ODUKU) shall be transferred to TC North East or the relevant top-down area control position as above. Additionally, BPK and SAXBI SIDs shall be transferred to TC North West or AC Daventry (LM) in the absence of any other appropriate controller.

2.12.3 Aircraft on Approach

The transfer of communications of an aircraft from LC DIR to AIR should occur no later than 4 NM from touchdown which is prior to the transfer of control.

TC Thames will remain responsible for maintaining wake turbulence separation and/or radar separation until touchdown. As such, any instruction which AIR wishes to issue prior to touchdown which may erode separation must be co-ordinated with LC DIR before it is given.

2.13 Landing Clearance

2.13.1 Runway Designator

The runway designator should be included in all landing clearances.

2.13.2 Land After Procedures

Land after procedures must not be used at London City.

2.14 Cancelling Approach Clearance

It is the responsibility of the AIR 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.

2.15 Arrival Spacing

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

LC DIR shall coordinate with City AIR to agree the required spacing taking into account the spacing required for pending departures and the number of inbounds and any delay.

Typical spacing would be 8 NM on Runway 09 (to allow backtrack of the landing aircraft and 1 departure) or sequential 8/6/6 NM on Runway 27 (to allow a group of 3 aircraft to be backtracked in the 8 NM gap with 1 departing and with the following 2 aircraft departing in the 6 NM gaps).

Further details regarding arrival spacing restrictions are available in [APC 4.4.7](#).

2.16 Minimum Radar Separation

A minimum radar separation of 3 NM applies between IFR/SVFR aircraft.

2.17 Missed Approaches

The standard missed approach procedures are as published on approach charts and are described in the table below.

Runway	Missed Approach Procedure
09	Climb straight ahead to 2000 ft. At I-LST DME 5 turn left to return to NDB LCY at 2000 ft or as directed.
27	Climb straight ahead to 2000 ft. At I-LSR DME 5 turn right to return to NDB LCY at 2000 ft or as directed.

2.18 Go-Around Procedure

On becoming aware of, or after initiating a go-around, the AIR controller is to:

1. Establish separation between the go-around and any departing traffic, issuing tactical headings if necessary:
 - a. Go-arounds should not be climbed above altitude 2000 ft
 - b. Departures must not be climbed above altitude 3000 ft
 - c. On Runway 27 operations departures should be turned right in the direction of the SID track and go-arounds left towards a downwind position. Any traffic turned left must not be climbed above altitude 2000 ft to ensure separation against Heathrow traffic
 - d. On Runway 09 operations aircraft must not be turned right to ensure separation against the arrival stream. Departures should be turned left in the direction of the SID track and go-arounds climbed straight ahead
2. Ensure separation is maintained and monitor aircraft visually or with the ATM. After separation is assured, coordinate with LC DIR and the appropriate TC outbound sector
3. Pass details of the callsign, heading and all action taken above to LC DIR. LC DIR will issue a frequency for the aircraft to contact and any revised heading and/or altitude.

Following a missed approach AIR must obtain a release from LC DIR before resuming departures.

2.19 Circuit Procedures

Circuits may take place to the north of the Aerodrome at an altitude of 1500 ft QNH at the discretion of the AIR controller. LC DIR shall be informed when the circuit is active and ceases to be active, and whenever the downwind leg for traffic extends beyond 4 NM.

SVFR circuits require the approval of LC DIR and shall be coordinated to ensure standard separation is maintained against other IFR or SVFR traffic unless AIR is able to provide reduced separation in the vicinity of the aerodrome (RSIVA).

Aircraft remaining within the visual circuit should be instructed to squawk the London City conspicuity SSR code 7057.

2.19.1 Integrating Circuit Traffic with IFR Approaches

VFR traffic may be instructed to orbit at the start or end of the downwind leg, to 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.

Except when AIR is able to apply RSIVA 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.

2.19.2 Re-join Procedures

Aircraft shall typically be cleared to join a base leg appropriate to the direction of arrival, however AIR may integrate traffic however necessary. Overhead joins are not normally to be permitted.

2.20 Helicopter Procedures

Helicopters shall follow the same procedures as fixed-wing traffic and land/depart from the runway in use. Helicopters may not carry out direct approaches to or take-off from apron areas or taxiways. Standard wake turbulence separation requirements must be applied between a helicopter movement and the traffic which precedes it.

The apron is less than 760 metres from the runway; therefore, care should be taken when air taxiing helicopters. Wake turbulence separation must be applied between air taxiing helicopters and departing traffic and if entering the runway, the helicopter should be considered as if it is departing from an intermediate point of the runway.

While helicopters are operating on the manoeuvring area extreme caution must be exercised regarding wingtip/rotor blade clearance and turbulence. After landing, helicopters will ground taxi or air taxi to the GA apron.

2.21 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 | THAMES APPROACH CONTROL

Chapter 1 Area of Responsibility and Sector Organisation

1.1 General

In this section, the following convention for the naming of the Thames Group sector positions is adopted:

TMS DIR	- Thames Director
LC DIR	- City Director
TC Thames	- Collective TMS DIR and LC DIR functions

1.2 Area of Responsibility

The area of responsibility for TC Thames is the London City CTR and CTA, the Thames RMA and TC airspace as delegated to TC Thames within 60 NM of London City.

TC Thames is additionally responsible for the provision of radar services to non-IFR traffic operating within the London CTR.

TC Thames shall provide approach/approach radar control services to aircraft from the time and place at which:

- Arriving aircraft are released by the relevant London TC sector until:
 - Control is transferred to ADC, or
 - They are clear of controlled airspace and/or transferred to the appropriate agency
- Aircraft approaching from outside controlled airspace place themselves under the control of TC Thames until control is transferred to ADC
- Overflying aircraft are within the relevant controlled airspace
- Departing aircraft on specified routes are transferred from ADC until:
 - Control is transferred to the relevant London TC sector, or
 - They are clear of controlled airspace and are transferred to the appropriate agency.

1.3 Function

TC Thames shall provide services appropriate for the Approach and Approach Radar control functions, as specified in MATS Part 1, for aircraft departing and arriving London City airport, and for non-IFR traffic within the London CTR.

TC Thames shall also provide service appropriate for the Approach Radar control function for aircraft departing and arriving Biggin Hill airport via controlled airspace or those aircraft outside controlled airspace that request a radar service, and for aircraft departing and arriving Southend airport via specified routes within controlled airspace.

Specific functions are:

1.3.1 Thames Director (TMS DIR)

- Acceptance of releases and control of aircraft inbound to London City from the release point until control is transferred to either LC DIR, or London City ADC
- Acceptance of releases and control of aircraft inbound to Biggin Hill from the release point until control is transferred to either LC DIR, or Biggin Hill APC/ADC
- Acceptance of releases and control of aircraft inbound to Southend routing via GEGMU until control is transferred to Southend APC
- Coordination and control of overflying aircraft within the Thames RMA and delegated TC airspace
- Initial sequencing by RNAV point merge or radar vectoring for ILS, VOR, and/or visual approaches
- Control of aircraft departing London City Runway 09 on ODUKU and SOQQA standard instrument departures until control is transferred to the relevant TC sector
- Control of aircraft departing Biggin Hill joining controlled airspace via DET until control is transferred to the relevant TC sector
- Control of aircraft departing Southend routing via DET until control is transferred to the relevant TC sector
- Provision of a radar service to non-ATS route network IFR departures/arrivals from/to Biggin Hill
- Coordination with London City ADC on issues pertinent to the TMS DIR function
- Executive coordination with other units, excepting with Biggin Hill APC/ADC for range checks, final approach spacing, and landing or go around clearances, and excepting with London Heathrow ADC for operations within the London CTR
- Coordination with LC DIR to provide service and clearance to aircraft entering the London City CTR/CTA from outside controlled airspace
- Coordination with LC DIR to provide service and clearance to non-IFR aircraft entering the London CTR from outside controlled airspace
- Provision of UK Flight Information Services (subject to workload) to aircraft operating outside controlled airspace within the vicinity of London City
- Assumes responsibility for LC DIR functions outside its period of operation
- Assumes responsibility for Biggin Hill APC and Southend APC functions outside their periods of operation.

1.3.2 City Director (LC DIR)

- The control of aircraft landing at London City from the time they are transferred by TMS DIR until they are transferred to London City ADC
- The control of aircraft landing at Biggin Hill from the time they are transferred by TMS DIR until they are transferred to Biggin Hill APC/ADC
- Final sequencing by RNAV point merge or radar vectoring for ILS, VOR, and/or visual approaches
- The control of aircraft departing London City Runway 27 on BPK, ODUKU, SAXBI and SOQQA standard instrument departures until control is transferred to the relevant TC sector
- Provision of a radar service to non-ATS route network IFR departures/arrivals from/to London City
- Coordinating planned and unplanned missed approaches and control of such traffic
- Coordination with London City ADC on issues pertinent to the LC DIR function
- Coordination with Biggin Hill APC/ADC for range checks, final approach spacing, and landing or go around clearances
- Coordination with London Heathrow ADC and TC Heathrow for operations within the London CTR
- Control of traffic entering, operating in, or leaving the London City CTR/CTA
- Control of non-IFR traffic entering, operating in, or leaving the London CTR
- Assumes responsibility for London City ADC functions outside its period of operation.

1.4 TC Thames Bandbox/Splitting Procedures

1.4.1 Opening Order

TMS is the master director and must be opened first.

LC DIR shall normally only be opened when:

- Operating Runway 09 due to the restricted airspace available on final approach, or
- There are significant volumes of low level traffic within the London City or London CTRs, or
- Traffic is required to hold at JACKO or GODLU.

1.4.2 Procedure for Bandboxing/Splitting

- Inform London City ADC
- Inform London Heathrow ADC and TC Heathrow INT North
- Inform Biggin Hill APC/ADC
- Inform Southend APC.

Chapter 2 Radar Director – General Operational Procedures

2.1 General Procedures

TMS DIR is responsible for acceptance of inbound releases to the two holding stacks – JACKO and GODLU – and the initial sequencing of inbounds to London City or Biggin Hill by point merge or radar vectors, the arrival order is derived from the stack ATA or EAT subject to tactical considerations. TMS DIR is also responsible for initial sequencing of Southend inbounds routing via GEGMU before transfer to Southend APC. TMS DIR is responsible for ATS route network outbounds from Biggin Hill and outbounds from Southend routing via DET.

LC DIR is responsible for final sequencing of inbounds to London City or Biggin Hill by point merge or radar vectors following transfer from TMS DIR.

Responsibility for outbounds from London City is dependent on the runway in use:

- During Runway 09 operations:
 - TMS DIR shall be responsible for SID departures **except** those routing via BPK and SAXBI (transferred directly to London TC) and flights positioning to EGLL/EGWU
 - LC DIR shall be responsible for all non-SID departures and flights positioning to EGLL/EGWU
- During Runway 27 operations LC DIR shall be responsible for all departures.

TMS DIR is the master director and is responsible for executive coordination and overall flow of traffic through the Thames RMA and delegated TC airspace. This does not preclude LC DIR from coordinating with other agencies as required. Both directors will manage their own electronic flight progress strip display.

2.2 Inbound Releases

All inbound releases will be to TMS DIR. London City and Biggin Hill inbounds routing via JACKO or GODLU will be released in level order in accordance with the abbreviated release procedures detailed in [APC 3.4.1](#). Southend inbounds routing via GEGMU will be released in accordance with the silent release procedures detailed in [APC 3.4.2](#). It is the responsibility of TC Thames to cancel the silent release procedures with London TC, 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 TC Thames may request, and London TC 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 TC Thames 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.

TC Thames 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 Thames RMA, it shall not be instructed to leave it.

2.2.1 Procedures for Abbreviated Releases

An abbreviated release is a method of reducing coordination between APC units and London TC, as compared to a full release, since only the release point and level is communicated with the rest of the release being implied by standard local procedures.

2.2.1.1 Electronic Abbreviated Releases

Provided the correct cleared level is displayed in the aircraft track data-block, London TC is not, on VATSIM, required to coordinate an abbreviated release verbally with TC Thames. This procedure is referred to as an electronic abbreviated release.

London TC may opt to use verbal abbreviated releases whilst holding is taking place – workload permitting – or where it might be deemed useful for clarity.

2.2.1.2 Verbal Abbreviated Releases

If London TC sector controllers opt to use a verbal abbreviated release, it shall be in the following format:

- Hold Name
- Callsign
- Release Level

Example: "JACKO release, ABC123 at 9."

Note: The Release Level may be abbreviated to either one or two digits – for example, FL90 may be passed as '9', FL100 as '10' ('ten').

2.3 Transfer of Data and Control between Directors

Transfer of data and control to LC DIR will be by electronic transfer of the aircraft track data-block coincident with the transfer of communication.

TMS DIR is to ensure that all information on the electronic flight progress strip is accurate before transfer to LC DIR. 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.

On transfer of control from TMS DIR to LC DIR, controllers should use the phrase:

"Contact Thames Director 128.025 with callsign only."

2.4 Identification and SSR Validation and Verification Procedures

All aircraft under the control of TC Thames 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 London City 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 Biggin Hill, Rochester or any other unit outside controlled airspace, which has been passed a CCAMS SSR code or a TC Thames local SSR code allocated by TC Thames prior to departure, shall be instructed to IDENT or identified by another method regardless of whether automatic code-callsign conversion has taken place.

2.5 Separation Requirements for TC Thames

TC Thames 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: All London TC sectors, TC approach units (including RAF Northolt), Farnborough APC, and Southend APC are authorised to apply 3 NM radar separation.

2.6 Terrain and Obstacle Clearance

Within the Surveillance Minimum Altitude Area (SMAA) the lowest level that can be assigned in the sector north of OCK track 078 is 1800 ft except for within the defined area around Crystal Palace Mast and the Shard where it is 2000 ft and within the defined area around Portal West where it is 1900 ft. In the sector south of OCK track 078 it is 2000 ft except for the defined area around Biggin Hill where it is 2100 ft and the defined area around Wrotham Mast where it is 2300 ft.

Aircraft within the Final Approach Vectoring Areas (FAVAs) for London City, 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 for Runway 27 and 1600 ft for Runway 09.

The Minimum Sector Altitude (MSA) within 25 NM of London City is:

NW	NE	SW	SE
2100 ft	2100 ft	2100 ft	2300 ft

London City ATC SMAA chart: **AD 2.EGLC-5-1**.

2.7 Controlled Airspace Containment

TC Thames is authorised to vector IFR traffic within the London City CTR/CTA to within 1 NM of the airspace boundary. When aircraft are vectored inside of 2 NM from the airspace boundary controllers must both radar monitor the operation of any aircraft in adjacent uncontrolled airspace and provide traffic information to the IFR flight on any observed aircraft in adjacent uncontrolled airspace.

2.8 Change to MSL Procedure

When a change to the London QNH results in a new MSL, the first controller to note the change shall coordinate with TC Heathrow (INT North), TC Thames (TMS DIR), TC North and TC South to agree an effective time that is at least 5 minutes from the time the pressure change was noticed. Aircraft operating at the old MSL are deemed separated from aircraft operating at altitude 6000 ft until the new MSL is agreed to be in effect.

Chapter 3 Inbound Procedures

3.1 Information to Arriving Aircraft

After an arriving aircraft has made its initial call to TMS DIR, 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 if in operation, if not already received from the ATIS
- Any delay to be expected

TMS DIR is to confirm the cleared level of an aircraft transferred from London TC sectors 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, TMS DIR 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 turbulence 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)

3.2.1 London City and Biggin Hill STARs

Designator	Arrival Via	Route
AVANT 1C	L89	AVANT – BIG – UMTUM – GODLU
HON 1C	UL612, L10	HON – ROGBI – TIXEX – ODVOD – ROPMU – NUDNA – INLIM – JACKO
KATHY 1C	L980	KATHY – BIDVA – EVEXU – SOXUX – OKVAP – GODLU
KONAN 1C	L9	KONAN – GODLU
LISTO 1C	(U)Q4, Z197	LISTO – PEDIG – ROGBI – TIXEX – ODVOD – ROPMU – NUDNA – INLIM – JACKO
NEVIL 1C	M189	NEVIL – OSPOL – NEVTU – SOXUX – OKVAP – GODLU
SAM 1C	L620	SAM – BIDVA – EVEXU – SOXUX – OKVAP – GODLU
SILVA 1C	-	SILVA – BOMBO – BKY – BRAIN – CLN – JACKO
SIRIC 1C	P2	SIRIC – BIG – UMTUM – GODLU
SOVAT 1C	L613	SOVAT – ERKEX – OKVAP – GODLU
SUMUM 1C	L608, Q63	SUMUM – LOGAN – JACKO
XAMAN 1C	L980	XAMAN – LOGAN – JACKO

3.2.2 London City and Biggin Hill Stack Switching STARs

Designator	Routing	Stack Switching
SUMUM 1X	SUMUM – TEVMO – GODLU	From SUMUM/JACKO to GODLU stack
XAMAN 1X	XAMAN – TEVMO – GODLU	From XAMAN/JACKO to GODLU stack

3.2.3 Southend STARs

TC Thames is responsible for the initial sequencing of Southend inbounds routing via the STARs listed below terminating at GEGMU. Southend has further STARs which terminate at SPEAR, details for these are in Southend Airfield Controller Brief.

Designator	Arrival Via	Route
KATHY 1S	L980	KATHY – BIDVA – EVEXU – SOXUX – OKVAP – ATSAP – ADVAS – GEGMU
NEVIL 1S	M189	NEVIL – OSPOL – NEVTU – SOXUX – OKVAP – ATSAP – ADVAS – GEGMU
SAM 1S	L620	SAM – BIDVA – EVEXU – SOXUX – OKVAP – ATSAP – ADVAS – GEGMU
SOVAT 1S	L613	SOVAT – ERKEX – OKVAP – ATSAP – ADVAS – GEGMU
SUMUM 1S	L908, Q63	SUMUM – LOGAN – JACKO – GEGMU
XAMAN 1S	L980	XAMAN – LOGAN – JACKO – GEGMU

3.3 Holding Procedures

The table below indicates the holding areas available for Thames Group traffic:

Hold	Inbound Course	Direction	Holding Levels	Holding Speed	Notes
JACKO	264°	Left	FL80 – FL140	Max 210 knots	
GODLU	309°	Right	FL80 – FL120	Max 210 knots	FL80/90 only by coordination with TC South East.
ATPEV	273°	See note	4000 ft – 6000 ft	Max 185 knots	Contingency hold (see APC 4.2.8). 4000 – 5000 ft Left. 6000 ft Right.
LCY	272°	Right	2000 ft only	Max 180 knots	
ALKIN	240°	Right	1800 ft – 4000 ft	Max 180 knots	Established outside controlled airspace below 2500 ft. Not normally used below 2000 ft.

GEGMU	263°	Right	4000 ft – 6000 ft	Max 195 knots	Southend arrivals. Use by Southend APC at 6000 ft only by coordination with TC Thames.
SPEAR	193°	Right	4000 ft – FL70	Max 195 knots	Southend arrivals. Not normally available for holding, use only by coordination with TC Thames and TC North East.
SND	053°	Left	2000 ft – 3000 ft	Max 185 knots	Southend IAP hold. Not normally used below 2500 ft, category D aircraft to hold at 3000 ft.

TC Thames is not required to inform London TC sectors when holding London City and Biggin Hill inbound at JACKO or GODLU at levels TC Thames is responsible for.

3.3.1 Holding Pattern Separation

The following table indicates separation between holding patterns (green = separated, red = not separated).

	JACKO	GODLU	ATPEV	LCY	ALKIN	GEGMU	SPEAR/SND
JACKO							
GODLU							
ATPEV							
LCY							
ALKIN							
GEGMU							
SPEAR/SND							

Note: Traffic holding at ALKIN below 2500 ft is outside of controlled airspace and deemed separated from traffic holding inside controlled airspace.

3.3.2 Level Allocation at JACKO/GODLU

The lowest flight level available for holding at JACKO and GODLU is FL80. At JACKO TC Thames shall work holding traffic at FL80 through FL110 and TC East retains aircraft holding at and above FL120. At GODLU TC Thames shall work holding traffic at FL100 through FL110 and TC South East will retain aircraft holding above FL110. Because TC South East owns the airspace at GODLU in its entirety, holding below FL100 is subject to coordination with TC South East.

3.3.3 Holding Southend Inbounds

3.3.3.1 Inbounds via GEGMU

Southend APC is responsible for the GEGMU hold between 4000 ft and 6000 ft and may hold traffic at **4000 ft and 5000 ft** without coordination.

The use of GEGMU at 6000 ft is subject to coordination with TMS DIR.

When Southend APC requires the use of the GEGMU hold above 5000 ft then coordination is to be effected with TMS DIR as soon as practicable after the decision is made to hold. TC Thames may deny permission to hold at GEGMU but should offer alternative action to Southend if required including retaining the aircraft within TC Thames airspace.

Subsequent Southend inbounds must be held at either JACKO or GODLU and await 'call on' from Southend APC. TC Thames may use the JACKO hold at FL80 and above without coordination (but must suspend inbound releases as required) however holding at GODLU below FL100 is subject to coordination with TC South East (and again, TC Thames must suspend inbound releases as required).

When the GEGMU hold is active at 6000 ft TC Thames shall ensure traffic under its control is separated from the holding traffic.

3.3.3.2 Inbounds via SPEAR

The SPEAR hold is designated between 4000 ft – FL70. The hold is within the Thames RMA at all levels and conflicts with TC Thames inbound and outbound routes, therefore its use is restricted to exceptional circumstances.

If traffic routing via SPEAR is required to hold then Southend APC shall inform TC North East at the earliest opportunity and this traffic shall normally be re-routed by TC North East via JACKO – GEGMU. TC North East shall coordinate with TC East. Traffic can only be accepted by TC East at or above FL80 and traffic must not enter the Thames RMA without the agreement of TMS DIR. This traffic is not known traffic to TC Thames and TC East will inform TC Thames of the additional inbounds via JACKO – GEGMU. The traffic will be integrated into the JACKO – GEGMU stream and held at JACKO or GEGMU as appropriate.

If Southend APC requires the use of the SPEAR hold then approval is required by both TC Thames and TC North East. A maximum holding level will be agreed and TC Thames and TC North East are responsible for ensuring separation for traffic under their control against any traffic holding at SPEAR. Aircraft held at SPEAR shall be at 4000 ft before leaving the hold and must do so on radar vector towards SABER to enter the Southend RMA. Ideally, descent to 3000 ft or below shall be issued at this point. Aircraft must not be turned away from SABER until fully within the Southend RMA. This procedure is to assist TC Thames and TC North East in separating against the SPEAR traffic.

3.4 Inbound Releases

3.4.1 London City and Biggin Hill Inbounds

Aircraft inbound London City and Biggin Hill on the published STARs will be transferred from London TC sectors by means of an abbreviated release. Traffic to each holding pattern shall be level separated and transferred in level order, as follows:

From	Release Point	Standing Agreement
TC East	JACKO	FL90, or next available level up to and including FL120
TC SE	GODLU	FL100, or next available level up to and including FL120

3.4.2 Southend Inbounds

Aircraft inbound Southend on the published STARs terminating at GEGMU will be transferred from London TC sectors by means of a silent release, at least 10NM in trail constant or increasing, as follows:

From	Release Point	Standing Agreement
TC East	GEGMU	Descending FL80
TC SE	GEGMU	FL80 level abeam GODLU or level 19 NM before ATSAP

If Southend inbounds commence holding then TC Thames must notify both London TC sectors to suspend the silent release procedure and resume individual coordination. As all arrivals transferred via JACKO/GODLU are known to London TC, TC Thames does not have to suspend the abbreviated release procedures for City/Biggin inbounds. However close coordination is required to prevent delay to City/Biggin arrivals due to Southend holding traffic.

3.5 Transfer of Communication Procedures

Transfer of communication should occur in the correct level order for each holding facility.

Aircraft will be transferred to TMS DIR in sufficient time for contact to be established before reaching the facility so that RNAV transition, heading or holding instructions may be passed. If this is not possible, the aircraft will be instructed by the releasing London TC sector to hold on reaching the facility.

3.6 Expected Approach Times (EATs)

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 RNAV1 transition approaches.

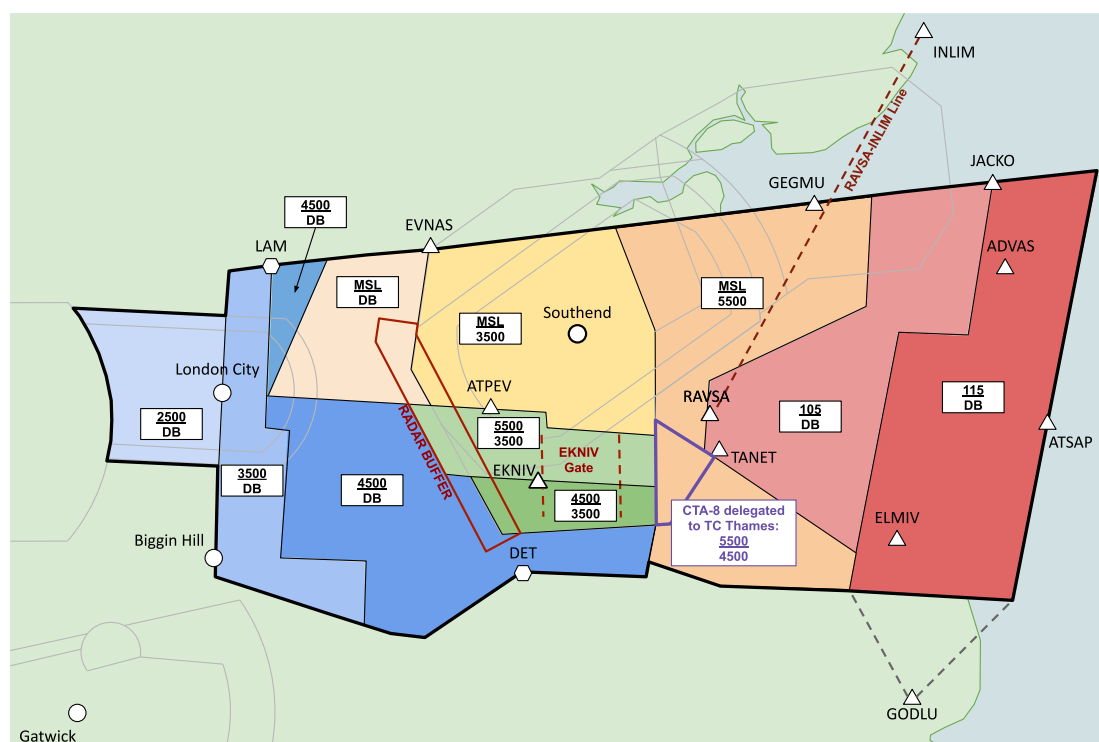
TC Thames shall only issue an EAT alongside a specific additional instruction to hold.

Chapter 4 Procedures for Intermediate and Final Approach

4.1 Radar Manoeuvring Area (RMA)

The Thames RMA is pictured below; it does not vary with runway in use. Within the RMA TC Thames is responsible for providing separation between Thames Group departures and arrivals and any conflicting overflights coordinated through the RMA by London TC sectors. Aircraft under the control of TC Thames must enter and remain within the confines of the RMA unless transferred in accordance with a standing agreement or coordination has been effected with the appropriate London TC sector.

Figure 1 - Thames RMA



4.1.1 Restrictions within the Thames RMA

Aircraft under the control of TC Thames shall remain within the vertical confines of the RMA except that London City departures from Runway 27 shall climb to 3000 ft within the DB-2500 ft segment. They shall not be climbed above 3000 ft until east of a line parallel to and 3 NM east of the BIG – London City track as detailed in [APC 5.2.3](#).

The EKNIV Gate is a radar gate positioned east of the fix EKNIV – it is used to position London City and Southend outbounds on defined routes before transfer to TC South East as detailed in [APC 5.2.4](#) and [APC 5.4.2](#).

The RAVSA-INLIM line is a straight line between the fixes RAVSA and INLIM – it is used to define the western extremity of airspace in which TMS DIR may vector JACKO inbounds prior to release as detailed in [APC 4.2.1](#).

A radar buffer exists between the Thames RMA and the Southend RMA as described below.

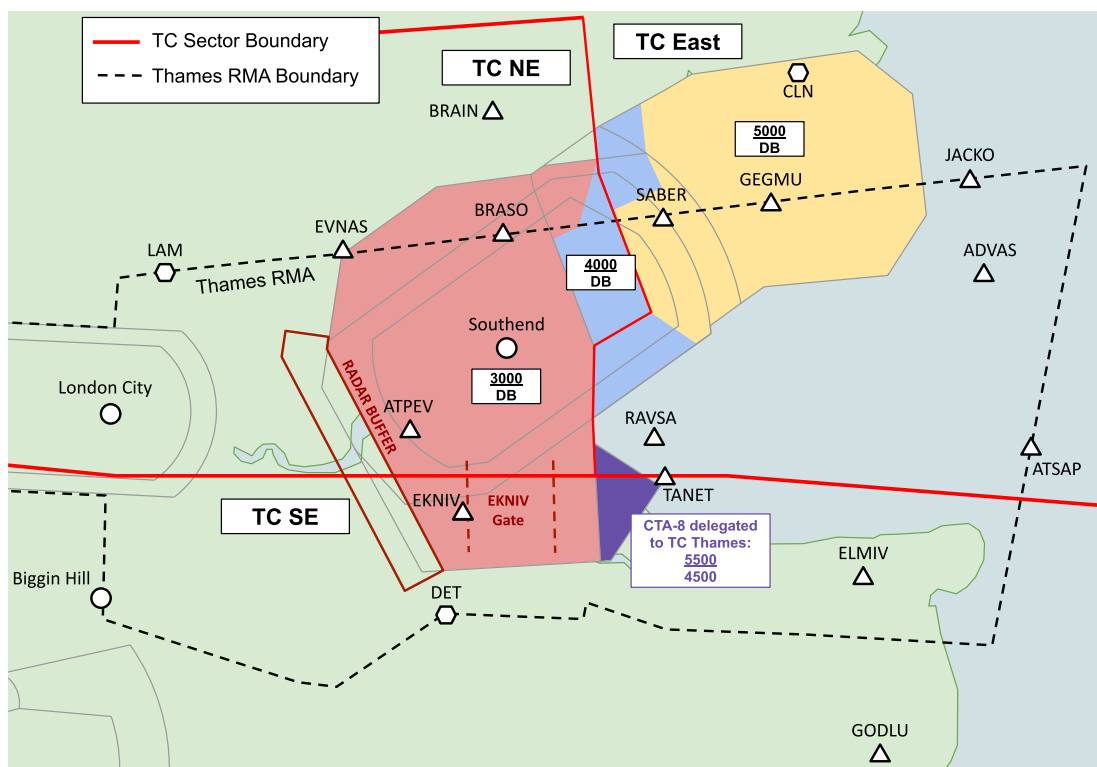
The above features of the RMA should be selected for display on the situation display when controlling either TC Thames position.

4.1.2 Southend RMA and Radar Buffer

An RMA is established for Southend APC to vector inbound and outbounds. Its lateral boundaries are coincident with the Southend CTR and CTAs. However, its vertical extent differs from the CTR and CTAs. The Southend RMA sits beneath the Thames RMA and Southend APC must not allow any aircraft to enter the Thames RMA except when coordinated with TC Thames.

A radar buffer exists alongside the western Southend CTA boundary (as depicted on the RMA diagrams) to maximise autonomous radar operation by Southend and Thames whilst minimising coordination requirements. It is 3 NM wide and exists between the declared base of controlled airspace and 3500 ft. This allows TC Thames to route aircraft over the buffer at 4000 ft. Aircraft operating between these levels must not be allowed to penetrate the buffer without coordination with the other unit. In the exceptional circumstance that an aircraft enters the buffer zone without prior notification to the other unit, coordination is to be effected as soon as possible.

Figure 2 - Southend RMA



4.1.3 Southend CTA-8

Southend CTA-8 is Class D airspace established beneath the overlying LTMA from 3500 ft to 5500 ft. Southend APC delegates CTA-8 from 4500 ft to 5500 ft to TC Thames (as depicted in Figures 1 and 2) to aid in the tactical vectoring of inbounds from the south, enabling descent to 5000 ft in the airspace south of RAVSA and ensuring aircraft remain within the Thames RMA in the vicinity of EKNIV.

Southend APC retains control of the entirety of CTA-8 for transiting VFR traffic and shall coordinate with TMS DIR whenever VFR traffic wishes to operate within CTA-8. Additionally, Southend APC may ‘un-delegate’ the CTA when it is required for their own traffic and they shall notify TMS DIR whenever this is required.

4.1.4 Shoeburyness Danger Area Complex

The Shoeburyness danger area complex consists of D136 and D138 A – D. They are activated by NOTAM from the surface to between 5000 ft – 13000 ft (occasionally 60000 ft) dependent on the specific danger area. When any danger area is notified as active controllers shall radar monitor flight operating in the vicinity and ensure they remain clear of any active danger area by 1 NM or 1000 ft.

4.2 Intermediate Approach Procedures – London City and Biggin Hill

4.2.1 Vectoring and Descent before Release Point

For traffic released with an abbreviated release, TMS DIR may issue vectors and further descent clearance to London City and Biggin Hill inbounds in accordance with the following conditions:

Release Point	Vectoring before Release Point	Descent before Release Point
JACKO (from N/W)	Released for right turns below FL120 to remain east of the RAVSA – INLIM line until inside the Thames RMA.	Descent to FL80 subject to Southend inbounds. Further descent when inside the Thames RMA.
JACKO (from E)	Released for left turns below FL120.	Descent to FL80 subject to Southend inbounds. Further descent when inside the Thames RMA.
GODLU	At GODLU, must enter the DB-110 RMA segment.	Descent to FL100. Further descent when inside the Thames RMA.

4.2.2 RNAV Point Merge Transition General Principles

A set of RNAV1 ‘Point Merge’ transitions is established for the sequencing of aircraft inbound London City and Biggin Hill from the STAR terminal holds of JACKO and GODLU. Each transition comprises a common point merge structure to integrate traffic from the holds followed by a runway specific final portion. There are six transitions in total:

Hold	City Runway 09	City Runway 27	Biggin Runway 21
JACKO	ODLEG 1J	LAVNO 1J	OSVEV 1J
GODLU	ODLEG 1G	LAVNO 1G	OSVEV 1G

RNAV1 capable aircraft are to be cleared via the transition from the terminal hold as allowed by the overall traffic flow, the clearance shall indicate the specific transition and the landing runway:

“ABC123 cleared ODLEG 1G transition Runway 09.”

Aircraft that cannot be cleared via the transition on first contact shall be instructed to hold at JACKO or GODLU and informed of the expected transition:

“ABC123 hold at JACKO, delay 5 to 10 minutes, expect the LAVNO 1J transition Runway 27.”

The transitions from JACKO and GODLU route to a pair of point merge arcs established around the common merge point RAVSA. The GODLU arc sits 15 NM from RAVSA and the JACKO arc sits 16.5 NM from RAVSA. The arcs are 1.5 NM apart and are not laterally separated.

The point merge arcs provide delaying legs and need only be flown to the extent required to achieve the necessary separation. When traffic levels are light the arcs may be skipped entirely and aircraft routed direct to RAVSA as allowed by the release point restrictions detailed in [APC 4.2.1](#).

The arc from JACKO is usually to be flown at FL90. The arc from GODLU is usually to be flown at FL100. To handle situations where the traffic loading at one stack is heavier than the other, TMS DIR may use either arc at both FL90 and FL100. However, because the arcs are not laterally separated from each other, aircraft must not be cleared to enter transitions in opposite directions at the same level until the conflicting aircraft has turned inbound RAVSA.

4.2.3 Altitude Control

The RNAV1 transitions have published altitudes to allow pilots to plan their descent however these altitudes do not ensure separation from the Southend RMA and radar buffer. Because of this, and to ensure separation from other traffic under the control of TC Thames, controllers must **not** issue instruction to *“descend with the procedure”* or any similar phraseology. Altitude instructions shall only be to a specific cleared level.

4.2.4 Speed Control

Point merge is dependent on standard speed control being applied to all aircraft and, whilst the RNAV transitions include published maximum speed restrictions, TC Thames controllers shall issue speed control instructions as required to achieve and maintain separation and final approach spacing.

The speeds to be flown during the approach phase will depend on the traffic situation at the time, however the transitions are designed for an initial approach speed of 210 knots, reducing to 180 knots and 160 knots as required. If utilising speed control, these standard speeds should be adhered to whenever possible.

If traffic conditions permit, a pilot may be requested to maintain a higher-than-normal speed or be advised that there is *“no ATC speed restriction”* however due regard shall be given to the capability of aircraft to accurately track the RNAV transitions at speeds above 210 knots and controllers may need to radar vector traffic operating at speeds in excess of 210 knots.

4.2.5 Initial Sequencing via Point Merge

Aircraft flying the point merge arcs are to be instructed to “turn (left/right) direct RAVSA” at the appropriate time to achieve the required spacing. Aircraft should be merged on the transition to achieve the required final approach spacing at RAVSA plus:

- 2 NM for inbounds to London City Runway 27
- 4 NM for inbounds to London City Runway 09
- 2 NM for inbounds to Biggin Hill Runway 21

This additional distance is absorbed by speed reductions and turns later in the transition.

Biggin Hill inbounds may be merged in between a pair of successive London City inbounds, or at the total required spacing from another Biggin Hill inbound.

In the same way as aircraft intercepting a localiser, aircraft will typically lose 1.5-2 NM in the turn from the arc to RAVSA, which should therefore be planned into spacing.

Distances before the merge point:

- JACKO - BABKU arc delay - 16.2 NM
 - shortest distance from hold 26.2 NM (JACKO - BABKU - RAVSA)
 - longest distance from hold 42.4 NM (JACKO – BABKU - arc - RAVSA)
- GODLU - ELMIV arc delay - 14.7 NM
 - shortest distance from hold 25.6 NM (GODLU - ELMIV - RAVSA)
 - longest distance from hold 40.3 NM (GODLU - ELMIV - arc - RAVSA)

If a longer delay is required, the aircraft must hold at JACKO/GODLU rather than entering the transition.

Aircraft must not be descended below FL90 until tracking inbound to RAVSA. Traffic shall be 6000 ft by RAVSA to ensure separation against departures at MSL. If an aircraft is unable to make 6000 ft by RAVSA, TMS DIR must coordinate with LC DIR.

Once aircraft have passed GAPGI they shall be descended to 4000 ft subject to outbounds from Southend routing via DET.

4.2.6 Transfer of Traffic to LC DIR

Traffic shall normally be transferred to LC DIR descending to 4000 ft on the appropriate RNAV transition at an airspeed of 210 knots, clean of outbounds and other traffic under the control of TMS DIR, and transferred no later than ATPEV.

4.2.7 Descent of London City and Biggin Hill Inbounds Below 4000 ft

LC DIR may descend aircraft below 4000 ft once they have passed the western boundary of the Thames/Southend radar buffer. Aircraft descended below 4000 ft must then remain west of the buffer unless coordination is affected with Southend APC or they are climbed back to 4000 ft or above.

4.2.8 Contingency Holding

A contingency hold is available at ATPEV (after the common merge point RAVSA) for use in case of missed approaches or other incidents requiring last-minute delaying action. This hold is right hand at 6000 ft but left hand at 4000 ft and 5000 ft. Aircraft must be instructed to

hold “ATPEV right hand” or “ATPEV left hand”. The maximum holding speed at ATPEV is 185 knots IAS, this is below the transition speed for airspace containment.

The preferred holding facilities are JACKO and GODLU. Should LC DIR need to commence holding at ATPEV then they shall notify TMS DIR. TMS DIR shall retain subsequent aircraft at 5000 ft and 6000 ft in the hold until LC DIR indicates they are able to accept them.

4.2.9 Vectoring of Inbounds

Aircraft not equipped for RNAV1 procedures or which are unable to fly the transitions for other reasons shall be vectored by controllers. In periods of heavy traffic, it is likely beneficial to vector the approximate transition structure to integrate with RNAV1 capable traffic. Controllers may also vector any aircraft when tactically required or for reasons of expedition. When operating TMS DIR and LC DIR split, TMS DIR shall coordinate inbounds not conforming to the RNAV1 transitions with LC DIR as required.

4.3 Intermediate Approach Procedures – Southend

4.3.1 Vectoring and Descent before Release Point

TMS DIR may issue vectors and further descent clearance to Southend inbounds in accordance with the following conditions:

Release Point	Released for Vectoring	Released for Descent
GEGMU (from E)	When inside the Thames RMA.	Descent to FL80. Further descent when inside the Thames RMA.
GEGMU (from S)	When north of GODLU, must enter the DB-110 RMA segment.	Descent to FL80. Further descent when inside the Thames RMA.

4.3.2 Transfer of Traffic to Southend APC

Southend inbounds via GEGMU are to be transferred via silent handover, descending to 6000 ft, at least 10 NM in trail constant or increasing. TMS DIR may transfer aircraft on own navigation to GEGMU or on a radar heading towards GEGMU unless Southend APC coordinates otherwise. Aircraft shall be transferred to Southend APC in good time such that Southend APC is able to provide onward instructions before the aircraft reaches GEGMU.

Traffic is released for descent but shall remain either on the STAR or, if transferred on a radar heading, on the TC Thames assigned radar heading until it has entered the Southend RMA. Traffic must be coordinated with TC Thames if Southend APC are unable to issue descent below 6000 ft prior to GEGMU.

It is the responsibility of Southend APC to cancel the standing agreement in good time if it is unable to accept inbound traffic (for example if it anticipates holding traffic at GEGMU at 6000 ft).

When traffic levels are light, and subject to Shoeburyness danger area complex activity, TMS DIR may coordinate an alternative release with Southend APC to expedite the inbound traffic through the Thames RMA.

4.3.2.1 Transfer of Communication and Control

IFR aircraft shall be transferred to Southend APC on 128.965 MHz, callsign “*Southend Director*”. Transfer of control is coincident with transfer of communication.

4.3.3 Traffic Routing via SPEAR

TC Thames is not responsible for working traffic via SPEAR and this traffic will not enter the Thames RMA without coordination.

Southend inbounds via SPEAR are transferred from TC North East to Southend APC via silent handover, on a radar heading towards SABER descending to 4000 ft to be level abeam BRAIN, at least 10 NM in trail constant or increasing. TC North East will position traffic to ensure it remains inside controlled airspace, tracking into the Southend RMA at 4000 ft whilst avoiding the Thames RMA.

Traffic below 5000ft is released for right turn and descent provided it will be at or below 3000ft before the SABER-LAM line (i.e. below the Thames RMA). This may require the flight to temporarily leave controlled airspace under the control of Southend APC. Otherwise, traffic is released upon entering the Southend RMA.

4.4 Final Approach Procedures – London City

4.4.1 Responsibility

LC DIR shall retain responsibility for **separation** of inbound aircraft until touchdown as described in [APC 4.4.8](#).

Although it is the responsibility of LC DIR for establishing and maintaining the necessary separation between inbound aircraft, City AIR is to monitor the ATM and check that the required separation between inbound aircraft does not degrade. City AIR will not issue any instructions which may erode separation on final approach without first obtaining the approval of LC DIR.

The minimum **spacing** between aircraft on final approach to Runway 27 is 3 NM, and to Runway 09 it is 6 NM, however controllers will typically apply increased spacing to facilitate departures as described in [APC 4.4.7](#). It is the responsibility of City AIR to monitor runway arrival spacing and to notify any required increases in arrival spacing to LC DIR.

4.4.2 Coordination with City AIR

LC DIR shall provide City AIR with a 10 NM range check with regards to:

- Traffic conducting other than an ILS approach (type of approach must be specified)
- Traffic which is not code-callsign converted
- Traffic which is conducting a training approach or not intending to land.

4.4.3 Final Sequencing on the RNAV Transitions

Aircraft following the RNAV transitions will fly a specified track after the final RNAV fix, this track will position aircraft towards the localiser however aircraft are not cleared to establish the localiser/glidepath without specific ATC clearance. To ensure pilots fly the RNAV procedure in full LC DIR shall issue approach clearances in line with the following restrictions:

4.4.3.1 Runway 27

The LAVNO transitions are aligned with the Runway 27 final approach track and aircraft will fly a track of 274° after LAVNO. Aircraft shall be issued descent to 3000 ft once past the radar buffer in accordance with [APC 4.2.7](#).

Aircraft shall be cleared for the ILS approach after TOPDU.

***Note:** If descent below 4000 ft prior to the radar buffer is coordinated with Southend APC then aircraft may be cleared for the ILS approach once inside I-LSR 17 DME.*

4.4.3.2 Runway 09

The ODLEG transitions route via OSVEV-TODBI on a right-hand downwind and aircraft will fly a track of 050° after ODLEG. Aircraft shall be issued descent to 2000 ft once past the London City CTA boundary in accordance with [APC 4.4.5](#).

Aircraft shall be cleared for the ILS approach once on a base leg after TODBI.

4.4.4 Speed Control on Final Approach

Controllers shall apply speed control as required to achieve and maintain final approach spacing. Additionally, when vectoring to Runway 09 controllers should consider the use of speed control to aid vectoring within the limited airspace available.

When applying speed control, controllers shall apply a maximum of 185 knots within 10 NM to touchdown and, due to the approach angle, allow aircraft to slow to a maximum of 160 knots by 6 NM to touch down.

Speed control shall only be applied until 6 DME for Runway 27 and 5 DME for Runway 09 and controllers should note that the AIP permits pilots to begin slowing 1 NM prior to these distances without reference to ATC.

Aircraft routing via the RNAV transitions which have not been assigned an ATC speed restriction will slow to a maximum of 185 knots passing:

- LAVNO transitions - TOPDU
- ODLEG transitions - OSVEV.

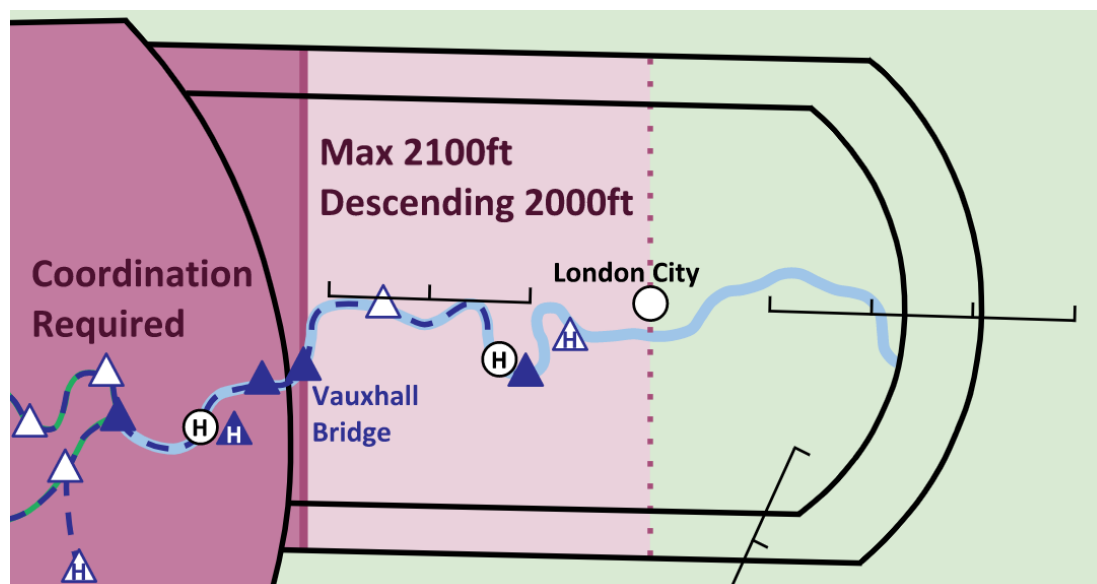
4.4.5 Runway 09 Downwind Restrictions

TC Thames may position aircraft downwind inbound to Runway 09 subject to the following conditions:

- Aircraft must descend to an altitude of not above 2100 ft QNH, to be level before passing west of a line passing north/south through London City Airport
- Aircraft must then descend to 2000 ft QNH as soon as possible

- Aircraft must not pass west of a north/south line through Vauxhall Bridge (6.4 NM west of London City) without prior coordination with TC Heathrow FIN.

Figure 3 - Runway 09 Downwind Restrictions



4.4.6 Heathrow Inbound Descent Profiles

To ensure separation from London City traffic, TC Heathrow must apply the following descent restrictions to inbound Heathrow traffic unless coordinated with TC Thames:

- Traffic in the northern part of the Heathrow RMA on approach to Runways 27L/R may not descend below 5000 ft when east of the extended BIG – London City track
- When Heathrow is on westerlies, descent clearance below 4000 ft is not to be given:
 - Until the aircraft is 13 NM track distance from touchdown; or
 - Unless the aircraft will remain west of a line north/south through a point 10 NM from 27L/R touchdown.

During periods when London City is quiet, TC Thames may permit TC Heathrow INT/FIN directors to descend traffic early to 3000 ft. If this delegation of the Thames RMA is agreed, it is the responsibility of the TC Thames controller to cancel the delegation as necessary.

4.4.7 Final Approach Spacing

LC DIR is responsible for ensuring the agreed final approach **spacing** is maintained until the lead aircraft reaches 5 NM from touchdown for Runway 09 or 6 NM from touchdown for Runway 27.

Final approach spacing should reflect the wake turbulence categories of flights involved and spacing restrictions relating to the runway backtrack operations at London City. Due to the required backtrack spacing shall not be less than 7 NM between two consecutive landing aircraft on Runway 09. Controllers should note that:

- 7 NM spacing will allow for a backtrack on Runway 09 after landing only, it will not also allow a departure

- 6 NM spacing will allow for an aircraft held at the far end of Runway 27 to make an immediate departure
- 8 NM spacing will allow a landing aircraft to backtrack followed by 1 departure on Runway 09
- 8 NM spacing will allow for 3 aircraft to backtrack and 1 to depart on Runway 27

LC DIR shall coordinate with City AIR to agree the required spacing taking into account the spacing required for pending departures and the number of inbounds and any delay.

Typical spacing would be 8 NM on Runway 09 (to allow backtrack of the landing aircraft and 1 departure) or sequential 8/6/6 NM on Runway 27 (to allow a group of 3 aircraft to be backtracked in the 8 NM gap with 1 departing and with the following 2 aircraft departing in the 6 NM gaps).

4.4.8 Final Approach Separation

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

The radar separation minima are described in [APC 2.5](#) and 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 5/6 NM from touchdown must be factored into the spacing provided to ensure that radar and wake turbulence separation are provided until touchdown. In most cases, adding 1 NM to the required **separation** between aircraft and maintaining this until 5/6 NM from touchdown will act as a sufficient buffer.

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

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

4.4.9 Non-Precision Approaches

Aircraft requesting a non-precision approach should typically be radar vectored to final.

Full procedural approaches shall be coordinated with AIR with a radar check implemented until the aircraft reports or is observed to be beacon outbound.

Procedural approaches to Runway 09 shall be radar monitored to ensure the restrictions in [APC 4.4.5](#) are adhered to. If an aircraft conducting a procedural approach appears likely to route further west than a north/south line through Vauxhall Bridge then the aircraft should be vectored to final.

The City QNH must be included in the approach clearance for non-precision approaches.

4.4.10 Visual Approaches (IFR Traffic)

Due to the 5.5° steep approach controllers shall apply the following procedure for visual approaches to London City:

- Aircraft shall be radar vectored to establish the final approach track at 2000 ft
- Once established on the final approach track and within the ATC SMAA final approach vectoring area (FAVA) the aircraft shall be descended to the relevant FAVA altitude – 1600 ft for Runway 09, 1500 ft for Runway 27
- Aircraft should be positioned to allow a period of level flight within the FAVA for 2 NM before the visual descent point
- When the pilot reports visual with the airfield the controller shall clear them for the visual approach with the phraseology “*cleared visual approach runway [...] not below altitude 1500 ft until passing 2.5 miles*” – this is to ensure the correct final approach descent profile.

Note: *These instructions are in addition to the Visual Approach procedures detailed in MATS Part 1, Section 3, Chapter 1, Part 12.*

4.4.11 Transfer of Communication

Aircraft shall be transferred to City AIR in the intended landing order using the phraseology “*Contact City Tower with callsign only, 118.075.*”

Aircraft should be transferred before reaching 4 NM on final approach.

4.5 Final Approach Procedures – Biggin Hill

4.5.1 Responsibility

LC DIR shall retain responsibility for separation of inbound aircraft until such time as they are clear of controlled airspace and transferred to Biggin APC or AIR. At this point aircraft will no longer be under a radar service and will be subject to procedural separation by Biggin Hill ATC.

However, both LC DIR and Biggin Hill ATC shall endeavour to ensure that they do not issue instructions to aircraft that would reduce the agreed final approach spacing and either party shall inform the other if they give any instructions that would degrade the agreed separation. Additionally, Biggin Hill ATC shall monitor the ATM and check that any agreed spacing does not degrade.

The minimum spacing between aircraft on final approach to Runway 21 is 3 NM, however controllers will typically apply increased spacing to facilitate departures. It is the responsibility of Biggin Hill ATC to monitor runway arrival spacing and to notify any required increases in arrival spacing to LC DIR.

Wake turbulence spacing between aircraft on final approach shall be applied in accordance with MATS Part 1.

4.5.2 Coordination with Biggin Hill ATC

LC DIR shall provide Biggin APC (or AIR in the absence of APC) with a 10 NM range check for all IFR inbounds. This will include the approach type and if the aircraft has requested to circle to land Runway 03.

4.5.3 Final Sequencing

Aircraft are radar vectored to final and are to be instructed to leave OSVEV on an appropriate radar heading to parallel the London City Runway 27 extended centreline and track into the London City CTR/CTA. Once within confines of the London City CTR/CTA the aircraft shall be descended to 1800 ft, turned left on a closing heading, and cleared ILS/VOR approach Runway 21.

4.5.4 Speed Control on Final Approach

Controllers shall apply speed control as required to achieve and maintain final approach spacing. When applying speed control, controllers shall apply a maximum of 185 knots within 10 NM to touchdown and speed control shall only be applied until 4 DME for Runway 21 approaches including when circling to land Runway 03.

Aircraft routing via the OSVEV RNAV transitions which have not been assigned an ATC speed restriction will slow to a maximum of 185 knots passing LCE07.

4.5.5 Final Approach Spacing

The minimum spacing between aircraft on final approach is 3 NM however increased spacing will typically be agreed with Biggin APC to facilitate IFR departures. LC DIR shall provide the agreed spacing or wake turbulence separation, whichever is the greater, between successive inbound aircraft.

4.5.6 Non-Precision and Procedural Approaches

Aircraft requesting a non-precision approach should typically be radar vectored to final.

Should an aircraft request a full procedural approach (including ILS approach) then the following procedures shall be applied:

Aircraft arriving from controlled airspace

- TC Thames shall sequence via RNAV1 transition or radar vectors as appropriate, creating an appropriate gap in the arrival sequence to allow time for the approach from ALKIN
- At the appropriate time the aircraft shall be routed to ALKIN and cleared for the approach.

Aircraft arriving from outside controlled airspace

- The aircraft shall be cleared to hold at ALKIN outside controlled airspace
- The aircraft shall hold at ALKIN for the equivalent delay to any traffic at JACKO/GODLU for London City or Biggin Hill
- TC Thames shall create an appropriate gap in the arrival sequence to allow time for the approach from ALKIN
- At the appropriate time the aircraft shall be cleared for the approach.

Aircraft arriving from outside controlled airspace may be worked initially by Biggin APC. Biggin APC shall clear them to enter the hold at ALKIN (outside controlled airspace) and coordinate with LC DIR. LC DIR will allocate a TC Thames SSR code for identification and an expected approach time (EAT), which Biggin APC shall pass to the aircraft. LC DIR may need to coordinate with TMS DIR a gap in the arrival sequence.

At the EAT LC DIR shall either pass an approach clearance to Biggin APC who shall clear the aircraft for the approach or pass an amended EAT if unable to clear the aircraft. If the traffic situation requires, LC DIR may instruct Biggin APC to transfer the aircraft to LC DIR for approach clearance.

Biggin Hill APC shall not clear aircraft for procedural approaches without coordination with TC Thames because all approaches enter London City controlled airspace.

Aircraft conducting Biggin Hill procedural approaches are deemed separated from London City departures, and arrivals established on the localiser, for both runways so long as both aircraft are radar monitored and are conforming to the expected tracks.

Aircraft conducting Biggin Hill procedural approaches are not deemed separated from London City arrivals downwind to Runway 09 and controllers must ensure separation by either:

- Creating an appropriately sized gap in the arrival sequence
- Radar vectoring Runway 09 inbounds via a left hand downwind
- Coordinating Runway 09 inbounds with TC Heathrow to remain at 3000 ft until clear of the Biggin Hill procedural approach.

The Biggin QNH must be included in the approach clearance for non-precision approaches.

4.5.7 Visual and Circling Approaches (IFR Traffic)

Biggin APC shall be informed at the 10 NM range check if an aircraft requests to circle to land. Aircraft shall not be cleared for a visual approach until coordination has been affected with Biggin APC.

Due to airspace restrictions to the south of Biggin Hill (the Gatwick RMA) aircraft requesting a visual approach to either runway shall be radar vectored to join the Runway 21 extended centreline. Aircraft that are landing on Runway 03 shall then route via a left hand downwind.

4.5.8 Transfer of Communication and Control

IFR aircraft shall be transferred to Biggin APC in the intended landing order with the instruction *“Radar service terminated, contact Biggin Approach 129.405.”*

In the absence of Biggin APC or if Biggin AIR and APC are operating split, IFR arrivals should be transferred directly to Biggin AIR on 134.805 MHz.

Aircraft for Runway 21 should be transferred before reaching 5 NM on final approach.

4.6 Missed Approach Procedures – London City

The standard missed approaches are as published on approach charts and are described in section [ADC 2.18](#).

In the event of a go-around:

- City AIR is responsible for ensuring that separation between aircraft under their control is maintained or restored using the procedures outlined in [ADC 2.19](#)
- City AIR will coordinate with LC DIR as soon as possible
- LC DIR shall issue a heading, altitude, and frequency for the aircraft to contact

- City AIR will request release from LC DIR for the next departure following a missed approach.

IFR aircraft carrying out low approaches shall remain with LC DIR who will obtain the relevant clearance from City AIR. Until any such clearance is obtained the aircraft must not overfly the runway below 1000 ft.

4.7 Missed Approach Procedures – Biggin Hill

The standard missed approach procedures are as published on approach charts and are described in the table below.

Runway	Missed Approach Procedure
21	<p>Climb straight ahead to not above 2000 ft. At I-BGH / VOR BIG DME 2 turn right to VOR BIG continuing climb as necessary to 2000 ft. Leave VOR BIG on R048 to TUNEL to enter hold or as directed.</p> <p>Note: Remain within I-BGH DME 4.2 or BIG DME 4 during right turn to VOR DME BIG. Max 160 knots IAS until established outbound R048 to TUNEL.</p>

In the event of a go-around:

- Biggin APC (or AIR in the absence of APC) will inform LC DIR of the missed approach
- LC DIR shall issue missed approach instructions, either standard missed approach, or if required a heading to fly once the aircraft has passed the overhead and an altitude to climb to, and a frequency for the aircraft to contact
- LC DIR shall coordinate with TMS DIR as required with regards to conflicting traffic, for example Biggin Hill outbounds under the control of TMS DIR.

Chapter 5 Outbound Procedures

5.1 General

5.1.1 Identification of Departing Traffic and SSR Validation/Verification

TC Thames is responsible for identification, and SSR validation and verification of all London City and Biggin Hill outbounds under its control in accordance with [APC 2.4](#). Southend outbounds are deemed identified, validated, and verified by Southend APC unless TC Thames has been otherwise informed.

5.1.2 Departure Speed Limits

In order to improve departure flow and assist TC controllers to maintain separation between aircraft a speed limit of 250 knots IAS applies to all outbound aircraft below FL100. TC Thames must not remove the 250 knots below FL100 speed restriction unless this is coordinated in advance with London TC. Additionally, SIDs include an initial speed limit of 200/210 knots IAS to ensure track keeping on initial turns. This restriction must not be removed by TC Thames.

5.2 London City Outbounds

With the exception of BPK and SAXBI departures off Runway 09 which are transferred to TC North East, TC Thames is responsible for the initial control of all departing traffic from London City.

Initial separation between departing aircraft is the responsibility of City AIR and is normally achieved by the application of timed intervals between successive departures. City AIR will inform TC Thames if an aircraft is observed to deviate from the SID to the extent that departure separation may be eroded.

5.2.1 Responsibility for SID Departures

During Runway 09 operations TMS DIR shall be responsible for all SID departures except those routing via BPK or SAXBI for which TC North East is responsible.

During Runway 27 operations LC DIR shall be responsible for all SID departures.

5.2.2 Departures Subject to Radar Approval

City AIR must obtain a **departure release** from the relevant TC Thames controller (see [GEN 7.3](#)) before clearing aircraft in any of the following categories for take-off:

- Aircraft not on the speed table or when the following aircraft is 3 groups faster than the leading aircraft
- Traffic to EGKB/EGMC/EGTO/EGLL/EGWU
- Non-ATS route network IFR departures and SVFR departures
- Whenever AIR requires an aircraft to deviate from the SID
- Any subsequent SID departure following any of the above categories
- Aircraft departing following a missed approach
- Aircraft departing immediately prior to and following a change of runway direction
- VFR departures
- Whenever TC Thames implements a radar check

City AIR must obtain a **departure release** from **TC North East** before clearing aircraft for take-off which are routing on a BPK or SAXBI SID (or equivalent non-standard departure).

City AIR must **prenote TC North East** before clearing aircraft for take-off which are routing on a ODUKU SID (or equivalent non-standard departure).

Aircraft subject to a release must depart within 5 minutes of the release time.

5.2.3 Vectoring and Climbing Departures

All London City SIDs have stop altitudes of 3000 ft to ensure separation from Heathrow inbounds descending to 4000 ft above London City. All departures must be instructed to *“maintain altitude 3000 ft on reaching”* on initial contact to minimise the risk of level bust.

Except when required for reasons of safety (including but not limited to emergencies, ensuring separation, weather avoidance), aircraft are not to be vectored off the SID track until level at 3000 ft. This restriction does not apply to propeller driven aircraft of 5700 kg or less.

Departures must not be climbed above altitude 3000 ft until they are established on an easterly track and have passed through a line parallel to and 3 NM east of the BIG – London City track. Aircraft may then be climbed subject to the Thames RMA without reference to London TC. Aircraft must not penetrate the Southend RMA or radar buffer without coordination.

5.2.4 Agreements with London Terminal Control

All outbound traffic on SIDs may be transferred to the appropriate London TC sector on a silent handover in accordance with the following conditions:

SID	To	Level	Condition
BPK/SAXBI (RWY 27)	TC NE	3000 ft	Confirmed level at 3000 ft to prevent level bust into Heathrow inbounds at 4000 ft
ODUKU	TC NE	4000 ft	Clean of any notified Southend outbounds routing via EVNAS
SOQQA	TC SE	MSL level by/abeam SODVU	Routing SOQQA M84 EKNIV or on own navigation direct EKNIV

Note: *Non-RNAV1 traffic may be transferred in accordance with the above agreements if it is following an equivalent route (for example, an outdated SID via BPK/CLN/CPT). For flights via DET/EKNIV traffic shall be positioned on an appropriate radar heading to track through the EKNIV Gate.*

When LC DIR is split from TMS DIR and responsible for outbounds, it must ensure separation against inbounds crossing RAVSA at 6000 ft under the control of TMS DIR. Therefore, departures routing via SOQQA shall not be turned southbound until level at MSL unless otherwise coordinated between TMS and LC DIR. TC SE may assume that any traffic transferred to it is clean of Thames inbound traffic.

Successive departures shall be separated by 3 NM constant or increasing when transferred to London TC and clean of inbounds/overflights. TC Thames may apply tactical headings to ensure minimum separation in which case the aircraft shall be instructed to *“report heading to London Control, [frequency].”*

Aircraft which cannot be transferred in accordance with the above conditions shall be coordinated with the London TC sector appropriate for the direction of flight.

5.2.5 Non-ATS Route Network Departures

LC DIR is responsible for providing a radar service to non-ATS route network departures until they are clear of controlled airspace. TMS DIR is (subject to workload) responsible for providing UK FIS within the vicinity of London City and LC DIR shall coordinate with and transfer to TMS DIR any departures leaving controlled airspace which require a service.

LC DIR is responsible for the issuing of departure clearances for all departures which are not filed to fly a SID. The clearances given by LC DIR must not modify any instructions given by London TC and must consider noise abatement and terrain clearance where applicable.

City GMC will request clearance from LC DIR for any non-standard IFR, VFR or SVFR departure. It is City GMC’s responsibility to pass the instructions to the pilot and obtain a suitable readback. City AIR will request release from LC DIR when the departure is ready to depart and will also request release for any subsequent SID departure following any non-standard IFR or SVFR departure.

5.3 Biggin Hill Outbounds

TMS DIR is responsible for all Biggin Hill departures joining controlled airspace and (subject to workload) for any non-ATS route network departures which require a radar service outside of controlled airspace within the vicinity of Biggin Hill.

5.3.1 Standard Departure Routes (SDRs)

The following SDRs are established for flights departing Biggin Hill joining the ATS route network. Note they are not SIDs and have not been assessed for terrain clearance.

Departure to	Designator	Via	Route
North	BPK 2	L10, N601	DET – N601 – BPK
Northeast	DAGGA 2	M604	DET – M604 – DAGGA
Southeast	DVR 2	L9, L10, Q70	DET – L6 – DVR <i>or</i> DET – Q70 – VABIK
South & Southwest	LYD 2	M189	DET – LYD
West	SAXBI 2	Q63	DET – N601 – BPK – SAXBI

Departures from Runway 21 follow a noise abatement procedure with an initial right-hand turn to track 220° followed by a right-hand turn at BIG DME 1 NM to route through the BIG overhead at 2400 ft (max 185 knots during the turn) before establishing inbound DET.

Departures from Runway 03 follow a noise abatement procedure with an initial climb straight ahead (max 185 knots until at or above 2100 ft) followed by a right-hand turn at BIG DME 1 NM to intercept DET radial 275° inbound to DET.

5.3.2 Departure Clearances and Releases

Biggin AIR/APC will prenote TMS DIR when departing ATS route network traffic starts.

Biggin Hill ADC/APC shall then, at a point convenient for both controllers, coordinate the pending departure with TMS DIR who shall:

- Confirm the SDR clearance, and
- Pass the allocated CCAMS SSR code.

Biggin Hill will then pass this clearance to the departing aircraft.

All Biggin Hill ATS route network departures are subject to release from TMS DIR. When the release is issued TMS DIR shall confirm the initial cleared level of either 2400 ft to remain outside controlled airspace, or 3000 ft to join controlled airspace inbound to DET. TMS DIR may also issue a heading to fly after the noise abatement procedure.

If there is IFR traffic inbound to Biggin within 10 NM, TMS DIR shall only issue a *“released subject [callsign of inbound aircraft].”* Biggin Hill may then depart the aircraft by application of RSIVA subject to the inbound traffic; the outbound traffic must be clean before transfer to TMS DIR.

All Biggin Hill departures shall be prenoted to TC South East by TMS DIR when the release is issued.

5.3.3 ATS Route Network Departures

Biggin Hill ADC/APC will transfer ATS route network departures to TMS DIR clean of any traffic known to them and established inbound to DET either level at 2400 ft or climbing to 3000 ft.

For aircraft that have been cleared to 3000 ft on release from TMS DIR, Biggin Hill ADC/APC shall climb the aircraft initially to 2400 ft with further climb to 3000 ft once established inbound to DET. This is to ensure the aircraft enters controlled airspace within the Thames RMA.

TMS DIR shall, once the departing aircraft is identified, provide a Traffic or Deconfliction Service whilst the departing aircraft is outside of controlled airspace and, if initially cleared to 2400 ft, shall clear the aircraft to join controlled airspace at the earliest opportunity.

Once the ATS route network departure has entered controlled airspace it shall be positioned on a radar heading towards DET and climbed to 4000 ft within the confines of the Thames RMA. The aircraft shall then be transferred to TC South East on a silent handover.

TMS DIR is responsible for separating Biggin Hill departures from other traffic at DET prior to transfer to TC South East and shall effect coordination as required to ensure this.

Northbound traffic is to be climbed above Thames RMA levels by TC South East before turning north and transfer to TC North East. Northbound traffic must not re-enter the Thames RMA without coordination. TMS DIR may (for example, for slow-climbing traffic) coordinate with TC South East and TC North East to retain northbound traffic and route it via the Thames RMA before transfer to TC North East.

5.3.4 Non-ATS Route Network Departures

TMS DIR is (subject to workload) responsible for providing a radar service to non-ATS route network departures within the vicinity of Biggin Hill.

Biggin APC shall coordinate with TMS DIR any non-ATS route network departures requesting a radar service. TMS DIR shall issue a departure clearance and TC Thames SSR code. Any clearance must consider noise abatement and terrain clearance where applicable.

5.4 Southend Outbounds

TMS DIR is responsible for Southend outbounds routing via DET and for approving climb of Southend outbounds via EVNAS above 3000 ft.

5.4.1 Preferred Departure Routes (PDRs)

The following PDRs are established for flights departing Southend joining the ATS route network. Note they are not SIDs, are not wholly contained within controlled airspace, and have not been assessed for terrain clearance.

Departure to	Designator	Via	Route
Northeast	CLN	L608, L620	CLN
Southeast	DVR	L9, L10, Q70	DET – DVR
South & Southwest	LYD	M189	DET – LYD
West	CPT	Q63	EVNAS – LAM – BPK – HEN – CPT
North	BPK	L10, N601	EVNAS – LAM – BPK

5.4.2 Departures via DET

Southend departures via DET are subject to release from TMS DIR. When issuing a release TMS DIR shall prenote TC South East.

Southend APC shall position the aircraft on a radar heading through the EKNIV Gate at 3000 ft and transfer to TMS DIR on a silent handover clean of any aircraft under the control of Southend APC.

TMS DIR shall climb the aircraft to 5000 ft, subject to any London City/Biggin Hill inbounds, and then transfer to TC South East on a silent handover.

TMS DIR is responsible for separating Southend departures from other traffic at DET prior to transfer to TC South East and shall effect coordination as required to ensure this.

5.4.3 Departures via EVNAS

Southend departures via EVNAS are subject to release from TC North East and climb initially to 3000 ft under the control of Southend APC.

Southend APC must coordinate with the TC Thames controller responsible for *London City departures* (per [GEN 7.3](#)) before the aircraft is climbed above 3000 ft.

TC Thames is responsible for ensuring separation for all Thames traffic against the Southend departure and shall agree the point at which Southend APC may climb the departure to 4000 ft. If this is not possible due to conflicting traffic, TC Thames may elect to work the Southend departure and climb it to 4000 ft. TC Thames shall specify if the aircraft is to contact TMS DIR or LC DIR.

The Southend departure may temporarily leave controlled airspace at EVNAS if climb to 4000 ft cannot be issued prior to this point.

The Southend departure shall then be transferred to TC North East, by either Southend APC or TC Thames, climbing to 4000 ft inside controlled airspace and released for further climb.

5.4.4 Departures via CLN

Southend departures via CLN are subject to release from TC East and climb initially to 3000 ft under the control of Southend APC.

Southend APC will further climb these aircraft within the Southend RMA and then to 6000 ft only when clear of both the Thames RMA and TC North East airspace prior to transfer to TC East.

Departures via CLN shall not enter the Thames RMA under the control of either Southend APC or TC East without prior coordination having been effected with TMS DIR.

Chapter 6 Flights to and from London TMA Airfields

6.1 Flights within the Thames Group

Flights within Thames Group (London City, Biggin Hill, Southend, Rochester) are to remain within the Thames RMA and do not require coordination with London TC.

London City departures will be worked by either LC DIR or TMS DIR initially dependent on the runway in use.

Biggin Hill departures will be worked by TMS DIR initially.

Southend/Rochester departures will be coordinated with TMS DIR who shall specify the frequency for the aircraft to contact.

All intra-Thames Group flights are subject to release from the appropriate TC Thames position.

6.2 Flights to Heathrow/RAF Northolt

6.2.1 From London City

Flights to Heathrow and RAF Northolt from London City will be worked by LC DIR initially.

City AIR will request a release from LC DIR. LC DIR will, prior to issuing the release, coordinate with TC North East and:

- Obtain release from TC North East
- Agree the presentation of traffic to TC North East – on the ODUKU SID routing to CLN or otherwise

TC North East will coordinate with TC Heathrow. In the absence of TC North East, LC DIR will coordinate the above details with TC Heathrow INT North.

6.2.2 From Biggin Hill

Flight Plan Routing: DET DCT BIG **RFL:** Max MSL

Flights to Heathrow and RAF Northolt from Biggin Hill will be worked by TMS DIR initially.

Biggin Hill ATC will request a release from TMS DIR. TMS DIR will, prior to issuing the release, coordinate with TC South East and:

- Obtain release from London TC
- Agree the presentation of traffic to TC South East or TC Heathrow INT South

TC South East will coordinate with TC Heathrow. In the absence of TC South East, TMS DIR will coordinate the above details with TC Heathrow INT South.

6.3 Flights to other London TMA Airfields

Flights to other London TMA airfields from London City require no additional action from TC Thames. City AIR will obtain the appropriate release as detail in [ADC 2.8](#).

Flight to other London TMA airfields from Biggin Hill require TMS DIR to obtain release from TC South East, except for flights to the Essex Group which require release from TC North East.

6.4 Flights from Heathrow and Gatwick

TC South East will prenote TMS DIR. Flights route via DET and will be subject to individual coordination between TC South East and TMS DIR, typically a heading into the RMA at 4000 ft.

If TMS DIR is unable to accept directly into the RMA then traffic will continue to GODLU to hold or join the RNAV1 transition.

6.5 Flights from the Essex Group

TC North East will prenote TMS DIR. Flights route via CLN and will be subject to individual coordination between TC North East and TMS DIR, typically a heading into the RMA at 6000 ft.

If TMS DIR is unable to accept directly into the RMA then TC North East is responsible for coordinating a level with TC East to allow traffic to continue to JACKO to hold or join the RNAV1 transition.

Traffic to Southend will be coordinated by TC North East directly with Southend APC via normal procedures for SPEAR arrivals – see [APC 4.3.3](#).

6.6 Flights from other London TMA Airfields

Flights from all other London TMA airfields route as per normal procedures.

Chapter 7 Overflight Procedures and Procedures for Aircraft Joining or Leaving Controlled Airspace via the Thames RMA

7.1 General Procedures

On occasions overflying aircraft will be routed through the Thames RMA and associated holding stacks. Overflights are to be coordinated with TMS DIR by the relevant London TC sector. Where overflights conflict with Thames Group inbounds and outbounds then the overflying traffic will typically be transferred to TC Thames. Inbound aircraft may be released at levels above the overflying traffic by means of a radar release in accordance with the procedures detailed in MATS Part 1. When overflights are not transferred TMS DIR is to receive sufficient information in respect of the overflying traffic to ensure radar identification. Having identified the overflying traffic TMS DIR may issue descent instructions to inbound aircraft subject to the overflying traffic.

7.2 Heathrow LAM Arrivals

Heathrow LAM arrivals route along the northern boundary of the Thames RMA descending to MSL+1 with a standard release from TC North East to TC Heathrow at MSL+1. Lowest holding at LAM is MSL+1 and TC Heathrow is not permitted to descend below this level until the aircraft has passed either LAM (to MSL on westerlies) or the western edge of N57 (to MSL on easterlies or below MSL on westerlies). This ensures separation from London City outbounds climbing to MSL within the Thames RMA.

During periods of low traffic on westerly operations it can be expeditious for Heathrow traffic to be provided early descent and vectoring before the LAM release point to position for straight in approaches. Similarly, for tactical reasons during westerly operations all aircraft types inbound to Northolt Airport and low performance propeller driven aircraft inbound to Heathrow may be preferentially released to TC Heathrow at a level below MSL at LAM.

If TC North East is able to provide an early release to TC Heathrow, they will provide any such release with the restriction of descent subject TC Thames. TC Heathrow shall then coordinate with TC Thames as to available levels within the Thames RMA. If there is no conflicting traffic it is recommended that TC Thames only approve descent to 4000 ft until within the Heathrow RMA so that London City departures can remain free-flow. Descent may be approved below 4000 ft but this provides little tactical advantage to TC Heathrow and requires the implementation of a departure check for London City.

During periods of low traffic at London City TC Thames may, at their discretion, agree a permanent delegation of the Thames RMA to TC Heathrow. TC Thames is responsible for ensuring separation against Heathrow traffic for all traffic under its control. TC Thames is also responsible for cancelling the delegation when required.

7.3 Essex Group and Northolt Departures Routing via the Thames RMA

Stansted, Luton and Northolt DET departures route through the Thames RMA at levels which conflict with London City traffic, therefore they require close coordination.

With the exception of intra-LTMA flights routing to Gatwick, Stansted DET departures are only permitted at night (2300-0600 Local). Similarly, Luton and Northolt DET departures are

restricted to intra-TMA flights routing to Gatwick and low level traffic leaving the FIR via RINTI at FL110 and below.

For all Stansted DET departures, the following sequence of coordination should occur:

- Stansted AIR shall pre-note TMS DIR (regardless of London City runway in use) before the departure enters the runway.
- Stansted AIR shall obtain release from TC North East.
- TC North East shall coordinate with TMS DIR (regardless of London City runway in use) as soon as practical. This does not have to be prior to issuing the release but must be before issuing climb above 5000 ft or deviating traffic from the SID track.
- Coordination between TC North East and TMS DIR shall be to resolve conflict with London City departures and arrivals to London City and Biggin Hill in accordance with the following principles:
 - TC North East is not permitted to climb the traffic above 5000 ft or deviate from the SID route unless coordination has occurred.
 - TMS DIR is responsible for ensuring separation for all TC Thames traffic against the Stansted departure and shall agree the point at which the Stansted departure may be climbed to MSL.
 - If this is not possible due to conflicting traffic, TMS DIR may elect to work the Stansted departure and climb it to MSL within the RMA. TMS shall specify if the aircraft is to contact TMS DIR or LC DIR.
 - TC North East shall specify whether the traffic is to return to TC North East, be transferred to TC South East or another course of action.
- TC South East shall not vector the traffic east of the SID track until it has reached MSL+1 or higher. This is to protect London City departures transferred on the standing agreement at MSL in the vicinity of EKNIV.

Whilst the standing agreement for Luton and Northolt DET departures between TC North East and TC South East is MSL routing via the Thames RMA, they typically have sufficient track miles to climb above MSL and TC North East will attempt to route these outbounds clear of the Thames RMA. Should this not be possible then TC North East shall coordinate with TC Thames in accordance with the above procedure.

7.4 Rochester Procedures

TC Thames is responsible for control of IFR flights joining/leaving controlled airspace outbound/inbound Rochester. A number of standard inbound and outbound routes are established however there are no standing agreements between TC Thames and the relevant London TC sectors and each aircraft will be subject to individual coordination.

TC Thames is not responsible for providing an aerodrome flight information service in the absence of Rochester Information and shall only work traffic clear of the Rochester ATZ. The exception is pending IFR departures which may be passed an SSR code whilst on the ground before transfer back to Unicom with the instruction to remain outside controlled airspace and re-contact Thames once airborne.

7.4.1 Rochester Inbounds

The following standard routes are established for Rochester inbounds.

Approach from	Via	Route
North	N859	HON – LAM
West	Q63	CPT – GWC – SFD – LYD – DET
Southwest	L620	GIBSO – SAM – GWC – SFD – LYD – DET
South	L980	KATHY – GWC – SFD – LYD – DET
	M189	NEVIL – LYD – DET
	L613	SOVAT – SANDY – DET
Southeast	L9	KONAN – DVR – DET
East	L980	LOGAN – JACKO – TANET – DET
	L179	LOGAN – JACKO – TANET – DET

London TC sectors shall coordinate inbounds individually with TMS DIR and shall attempt to position Rochester inbounds beneath London City/Biggin Hill/Southend inbounds.

TMS DIR shall pass Rochester Information the inbound estimate and clear the inbounds to leave controlled airspace by descent. TMS DIR may provide UK FIS subject to workload and shall transfer the inbound to Rochester Information once clear of controlled airspace.

7.4.2 Rochester Outbounds

Rochester outbounds should flight plan in accordance with the routes published in the UK Standard Route Document (SRD). These routes are not SIDs and have not been assessed for terrain clearance. The table below lists the most common routes sorted by direction of flight.

Departure to	Joining Via	Route	APC unit
North	BPK (RFL 115+)	BPK (U)N601	TMS DIR
	DET (RFL 105-)	DET N57	
Northeast	DET	DET M604 SPEAR DCT CLN L620	Southend
		DET M604 PAAVO Q295	APC
Southeast	DET	DET L6 DVR	
South	DET	DET M604 LYD	TMS DIR
Southwest	DET	DET M604 LYD M189 WAFFU Y8 SAM	
West	BPK	BPK DCT SAXBI N27	

Note: This table is not a comprehensive list, controllers may check outbound routes using the UKCP SRD search function and shall accept any valid SRD routing.

Once the aircraft starts Rochester Information shall inform the receiving APC unit of the pending ATS route network departure and confirm the joining fix and ETD. The receiving APC unit is TMS DIR for all outbounds except for traffic routing northeast via M604 which shall be worked initially by Southend APC. The receiving APC unit shall pass Rochester Information the allocated CCAMS SSR code and the instruction to remain outside controlled airspace. The receiving APC unit shall then prenote the receiving London TC sector.

Departure is subject to release from TMS DIR/Southend APC who shall obtain a release from the receiving London TC sector. When the aircraft is released the receiving APC unit shall also confirm the next frequency for Rochester Information to give the departure, either TMS DIR (132.700 MHz) or Southend APC (128.965 MHz).

The receiving APC unit shall identify/validate/verify the departure in accordance with [APC 2.4](#) and provide an appropriate UK FIS before clearing the departure to join controlled airspace. The receiving APC unit shall then coordinate transfer of control with the receiving London TC sector.

Rochester departures worked by TMS DIR must remain clear of the Southend RMA unless coordinated, and vice versa.

7.5 Farnborough/Wessex Group Non-Standard Departures via BIG Joining the ATS Route Network

Departures from Farnborough/Wessex Group routing to the southeast via BIG L9/Q70 may file DCT BIG as a non-standard departure. Farnborough APC will attempt to coordinate this traffic with TC South West however, if TC South West is unable to approve a join prior to BIG then the departure will route outside controlled airspace below the LTMA and be coordinated with TC Thames to facilitate a join via the Thames RMA at BIG/DET.

7.6 Other Aircraft Joining or Leaving Controlled Airspace via the Thames RMA

Dependent on the direction of flight, flights to and from other airfields below the London TMA may join or leave controlled airspace via the Thames RMA. Aircraft may free call TC Thames or be transferred by TC North East or TC South East. TC Thames shall obtain relevant details, allocate a CCAMS SSR code, and identify/validate/verify the flight. An ATS route clearance should be obtained from the appropriate London TC sector before clearing aircraft to enter controlled airspace.

LOW | LOW LEVEL OPERATIONS

Chapter 1 General Principles

1.1 Provision of Air Traffic Services

Responsibility for low level traffic within the London and London City CTRs falls under TC Thames on VATSIM. Heathrow Radar (TC SVFR) is permanently bandboxed with LC DIR.

Outside the hours of operation of TC Thames, TC Heathrow INT North will take responsibility for traffic operating within the London CTR, at London Heliport, or on any of the published helicopter routes within the London CTR. The top-down responsibility for the London City CTR/CTA is that of the top-down order for TC Thames services and TC Heathrow shall not assume responsibility for traffic operating within the London City CTR/CTA unless coordinated.

For clarity in the following section TC SVFR shall be used to refer to the controller providing TC SVFR functions be it a TC Thames position or TC Heathrow INT North.

TC SVFR is not responsible for providing an aerodrome flight information service (AFIS) for Brooklands, Denham, Fair Oaks and White Waltham aerodromes in the absence of the relevant AFIS position and shall not provide clearances to enter the local flying areas. When an AFIS position is open TC SVFR shall ensure aircraft are afforded sufficient time to contact the AFIS position before entering the relevant local flying area.

1.2 Coordination

TC SVFR shall effect coordination with TC Heathrow FIN whenever low level traffic may affect typical vectoring for Heathrow inbounds, or when traffic is routing via the landing-end or the inner area (except when on the published helicopter routes). Traffic routing within the inner area is to also be coordinated with Heathrow AIR Arrivals.

Traffic that may conflict with departing aircraft is to be coordinated with Heathrow AIR Departures or Heathrow FIN as appropriate.

Chapter 2 Airspace

2.1 Classification

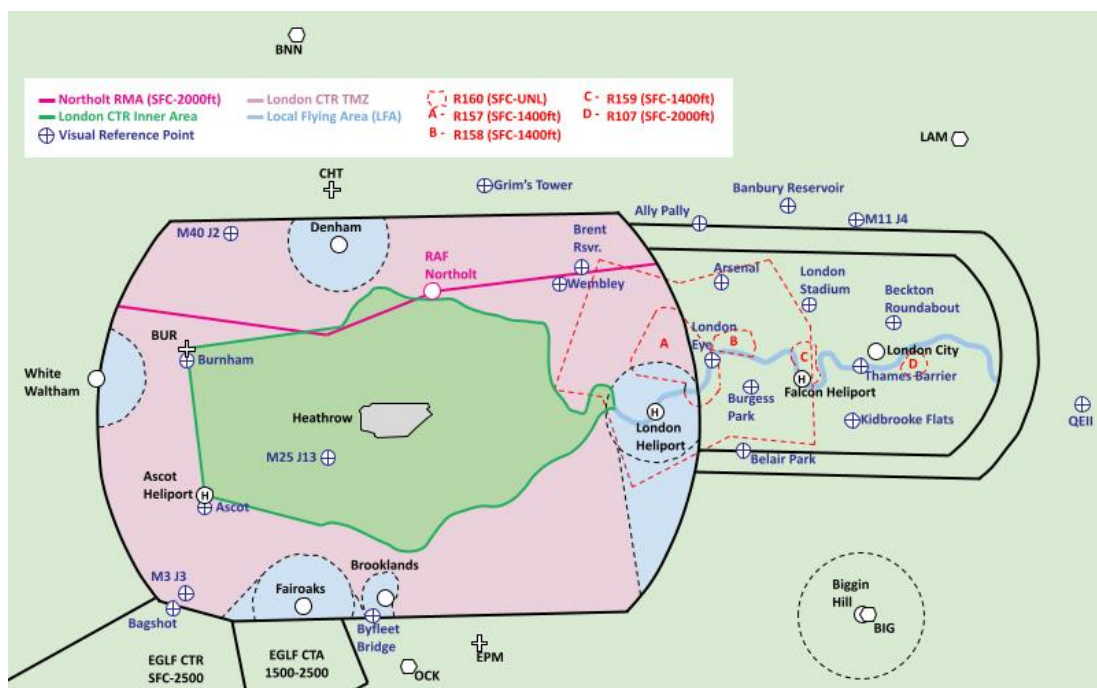
The London and London City Control Zones (CTR) are classified Class D airspace from surface to 2500 ft. The London City CTR is bordered by the London City Control Area (CTA) which is classified Class D airspace with a vertical extent of 1500 ft to 2500 ft. The London CTR is subdivided into an outer area and inner area which has associated restrictions. Aircraft are permitted to operate in both CTRs and the London City CTA in VMC and IMC conditions under either VFR or SVFR as appropriate.

The Northolt RMA is the northern portion of the London CTR as demonstrated in Figure 4 with a vertical extent of the surface to 2000 ft. This portion of the London CTR is delegated to Northolt APC during its hours of operation. It retains its Class D classification however Northolt APC is authorised to apply reduced vertical separation of 500 ft between IFR/SVFR aircraft under its control operating within the Northolt RMA.

2.2 Transponder Mandatory Zone

The entirety of the London CTR, excepting the published local flying areas for Brooklands, Denham, Fairoaks, and White Waltham, is designated a Transponder Mandatory Zone (TMZ). All traffic regardless of flight rules is required to operate a transponder at all times. Military and state aircraft operating within the Northolt RMA or that airspace overlying the Northolt RMA up to 2500 ft are exempt from the requirements of the TMZ.

Figure 4 - London CTR and London City CTR/CTA with airspace details



2.3 Local Flying Areas

Local Flying Areas (LFAs) are established around airfields surrounding Heathrow within the London CTR as follows:

Airfield	Maximum Altitude	Remarks
Brooklands	1500 ft	Amended SVFR rules (<i>see note</i>)
Denham	1000 ft	Amended SVFR rules (<i>see note</i>), such flights deemed separated from Northolt RMA traffic operating at 1500 ft or above
Fairoaks	1500 ft	Amended SVFR rules (<i>see note</i>)
London Heliport	1300 ft	ATC clearance required for entry (see LOW 4.6)
White Waltham	1500 ft	Amended SVFR rules (<i>see note</i>)

Note: Within these areas, traffic is permitted to designate itself SVFR subject to flight conditions detailed below. TC SVFR is not responsible for separation of traffic within the local flying area and cannot provide separation between traffic within the local flying area and traffic outside beyond ensuring traffic under its control does not enter the local flying area.

VFR flights may take place within the LFAs in compliance with the Class D VMC minima detailed in UK AIP ENR 1.2. With the exception of the London Heliport LFA no ATC clearance is required for entry.

Aircraft unable to operate VFR may operate SVFR within the LFAs subject to the following conditions:

- Remain clear of cloud and with the surface in sight
- Fly at a speed of 140 knots IAS or less
- A minimum cloud ceiling of 600 ft
- A minimum flight visibility of 3 km
- In compliance with the requirements for SVFR flights detailed in UK AIP ENR 1.2.

2.3.1 Brooklands

Brooklands is a disused aerodrome, aviation museum and motor circuit situated 1.5 NM south of Weybridge. There is no AFIS or A/G radio service.

2.3.2 Denham Aerodrome

Denham is a licensed aerodrome situated 1.5 NM east of Gerrards Cross. Denham Radio provides an A/G radio service on 130.730 MHz. RAF Northolt traffic operating at and above 1500 ft overhead the Denham LFA is deemed separated from Denham traffic operating SVFR.

2.3.3 Fair Oaks Airport

Fair Oaks is a licensed aerodrome situated 2 NM north of Woking. Fair Oaks Information provides an AFIS on 123.430 MHz.

2.3.4 London Heliport

London Heliport is a licensed heliport situated in Battersea on the southern bank of the River Thames. Battersea Tower provides an aerodrome control service within the London Heliport LFA on 134.280 MHz and ATC clearance is required for all operations within the London Heliport LFA. Procedures for London Heliport and the associated LFA are detailed in [LOW 4.6](#).

2.3.5 White Waltham Airfield

White Waltham is a licensed aerodrome situated 2 NM southwest of Maidenhead. Waltham Radio provides an A/G radio service on 122.605 MHz.

2.4 Visual Reference Points (VRPs)

Visual reference points are established in both the London CTR and London CTR/CTA along transit routes that deconflict against IFR traffic flows. They are depicted in Figure 4.

2.5 Other Aerodromes in the Vicinity

Ascot Racecourse (EGLT) is an unlicensed heliport situated at Ascot Racecourse; it is only operational during racing events.

Biggin Hill (EGKB) is a licensed aerodrome situated 12 NM south east of London. Biggin Approach provides a non-surveillance approach control service on 129.405 MHz. TC Thames is responsible for the provision of an approach radar service.

Blackbushe (EGLK) is a licensed aerodrome situated 8.5 NM south east of Reading. Blackbushe Information provides an AFIS on 122.305 MHz. The Blackbushe ATZ is partly situated in Farnborough controlled airspace.

Damyns Hall (EGML) is an unlicensed grass aerodrome situated 1 NM east of the London City CTA boundary.

Elstree (EGTR) is a licensed aerodrome situated 2.6 NM west of Watford. Elstree Information provides an AFIS on 122.405 MHz.

Farnborough (EGLF) is a licensed aerodrome situated 1 NM north west of Aldershot. Farnborough Radar provides a surveillance approach control on 134.355 MHz and a Lower Airspace Radar Service (LARS) on 125.250 MHz. Farnborough controlled airspace directly abuts the south western boundary of the London CTR.

Gerpins Farm is a private grass airstrip situated on the eastern boundary of the London City CTA, 1 NM west of EGML.

Kenley (EGKN) is a notified winch launch glider site situated 5NM west of Biggin Hill, adjacent to the M23/M25 junction. Intense gliding activity can be expected within 2NM of Kenley up to and altitude of 2000ft. The site should be considered active seven days a week during daylight hours. Controllers should avoid routing any flight below 2500ft within 2NM of Kenley.

Lippitts Hill is a helipad situated 9 NM north of London City. It is the operational base of the Metropolitan Police Air Support Unit.

North Weald (EGSX) is an unlicensed aerodrome situated 2 NM south east from Junction 7 of the M11 motorway. It is a base of operations for the National Police Air Service (NPAS). North Weald Radio provides an A/G radio service on 123.530 MHz.

Redhill (EGKR) is a licensed grass aerodrome situated 1.5 NM south east of the town of Redhill. Redhill Tower provides an aerodrome control service on 119.605 MHz. The Redhill ATZ sits partly within the Gatwick CTR. It is an NPAS operational base.

Rochester (EGTO) is a licensed grass aerodrome situated 1.5 NM south of the town of Rochester. Rochester Information provides an AFIS on 122.255 MHz. TC Thames is responsible for IFR flights joining/leaving controlled airspace.

Stapleford (EGSG) is a licensed aerodrome situated 4.5 NM north of Romford. Stapleford Radio provides an A/G radio service on 122.805 MHz.

Wycombe/Booker (EGTB) is a licensed aerodrome situated 2.4 NM south west of High Wycombe. Wycombe Tower provides an aerodrome control service on 126.555 MHz.

Chapter 3 VFR and SVFR Operations

3.1 VFR and Special VFR Minima

VFR and SVFR flights within the London and London City CTRs are permitted in accordance with the criteria detailed in SERA 5001. For flights not entering an ATZ the VMC minima relate to in-flight conditions as opposed to airport reported weather.

VFR flight within the Heathrow ATZ, including helicopter overflight of Heathrow, and the London City ATZ is only permitted when the Heathrow or London City reported visibility is 5 km or greater and the reported cloud ceiling 1500 ft or greater.

Below these minima SVFR flight may take place subject to SERA 5001 and the following additional criteria:

- SVFR helicopter arrival to/departure from/overflight of Heathrow – Heathrow reported visibility is 2 km or greater and reported cloud ceiling 600 ft or greater
- SVFR helicopter flight on published helicopter routes – in-flight visibility of 1 km or greater
- SVFR fixed wing arrival to/departure from Heathrow is not authorised below VMC minima

Criteria relating to the LFAs and London Heliport are detailed in [LOW 2.3](#) and [LOW 4.6](#) respectively.

In marginal weather conditions, when the reported meteorological visibility falls below 5 km or the reported cloud ceiling falls below 1500 ft, TC SVFR 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.

3.2 SSR Code Allocations

TC Heathrow and TC Thames have a joint allocation of SSR codes.

TC Thames shall allocate codes in the range 7030 – 7046 (LC DIR) and 7050-7056 (TMS DIR). TC Heathrow shall allocate codes in the range 7070 – 7076.

Code 7047 is assigned to Biggin Hill APC as a conspicuity code.

Code 7057 is assigned to TC Thames as a conspicuity code for London City.

Code 7077 is assigned to London Heliport ADC as a conspicuity code.

Code 0012 is the designated frequency monitoring code ('listening squawk'), aircraft squawking this code in the vicinity of the London CTR and London City CTR/CTA should be maintaining a listening watch on the Thames Director frequency 132.700 MHz, however the Mode A and C readout displayed must be considered unvalidated and unverified, respectively.

TC Heathrow and TC Thames controllers shall be familiar with the following special purpose codes used by aircraft operating in the vicinity of London:

HLE60 Surrey/Sussex Air Ambulance	0003
HLE21 Kent Air Ambulance	0014
HLE07 Essex Air Ambulance	0015
HLE24 Thames Valley Air Ambulance	0016
HLE27 London Air Ambulance	0017
HLE55 Hertfordshire Air Ambulance	0031
UKP251 NPAS 61 (North Weald)	0043
UKP252 NPAS 62 (North Weald)	0044
UKP37 NPAS 15 (Redhill)	0045
The Queen's Helicopter Flight	0037
British Transport Police ASU	0006
Other Air Ambulance Helicopter Medivac	0020
Other Police ASU	0032

With the exception of codes 0020 and 0032, helicopter flights which are correctly displaying the appropriate special purpose code may be retained on the special purpose code and identified by means of the IDENT function.

As they are not unit specific, helicopters operating on codes 0020 and 0032 shall be allocated a unique TC Heathrow/TC Thames code for identification.

In the event that an aircraft displays an incorrect special purpose code, or the appropriate special purpose code invokes a squawk error (DUPE) indicator the aircraft shall be allocated a TC Heathrow/TC Thames code.

3.3 Single-Engine and Airspace Restrictions

3.3.1 Single-Engine Helicopters and the Specified Area (R160)

Single-engine helicopters shall not overfly the Specified Area of Central London (R160), which excludes the River Thames and the area between the high water marks on each of its banks, below a height that would enable them to land clear of the area in the event of an engine failure.

Single-engine helicopters are also not able to route along the following helicopter routes at night:

- H7
- H9 (Hayes to Gutteridge)
- H10 (Gutteridge to Kew Bridge).

3.3.2 Single-Engine Fixed Wing Aircraft

With the exception of aircraft departing or arriving Heathrow or London City, aircraft operating within the Northolt RMA (see [LOW 2.1](#)), and aircraft within the LFAs at Denham and Brooklands (see [LOW 2.3](#)), clearance shall not be routinely issued to single-engine fixed wing aircraft requesting to operate within those parts of the London and London City CTRs between a north/south line extending through the LON VOR and a north/south line extending through the LCY NDB.

This is due to the inability of aircraft operating at typical low level altitudes to alight clear of the built up area of central London in accordance with SERA 3105 Minimum Heights.

3.3.3 Other Airspace Restrictions within the London and London City CTRs

R107 – Belmarsh

A restricted area is established around HMP Belmarsh from the surface to 2000 ft. It applies only to helicopters except those operated by UK Police Forces and those making an IFR approach (including cloud break procedure) to London City.

R157 – Hyde Park / R158 – City of London / R159 – Isle of Dogs

Restricted areas are established around the above sites from the surface to 1400 ft. Flight is prohibited by all aircraft except:

- Any aircraft in the service of the Metropolitan Police Service
- Any helicopter flying on Helicopter Route H4
- For R159 only – any aircraft approaching or departing London City

Controllers must not issue clearances that are likely to compromise a pilot's ability to remain clear of any of the above airspace restrictions.

3.4 Geographical Deemed Separations

3.4.1 Use of the River Thames

Within London City CTR and the London CTR between Kew Bridge and Vauxhall Bridge, separation exists between traffic instructed to remain north of the River Thames and traffic which has been instructed to remain south of the river provided that:

- Appropriate traffic information has been passed to the pilots concerned
- The pilots can comply with the instruction.

Note 1: *It should be noted that single engine helicopters may not be able to accept this form of separation within the R160 Specified Area. Single engine helicopters are normally required to fly between the high-water marks of the River Thames whilst within R160. They may deviate slightly right of the river in order to increase lateral separation from opposite direction traffic, provided they remain close enough to the river to be able to reach it in the event of an engine failure.*

Note 2: *Caution should be exercised when applying this form of separation in the vicinity of the Isle of Dogs, as the river curves tightly back on itself and could lead to an inadvertent loss of separation.*

Note 3: *Helicopters may not be able to accept this form of separation in the vicinity of Belmarsh Prison.*

Note 4: *Controllers shall note the restrictions in [LOW 4.1.3](#) relating to helicopters operating on H4 on the south bank of the River Thames below 1300 ft.*

3.4.2 Right Side Separation

Right side separation may be used on the route H3 between Bagshot Mast and Thorpe, and on the route H4 between Kew Bridge and Vauxhall Bridge. This form of separation is applied by instructing traffic following the line feature of the route (either the M3 Motorway or the River Thames respectively) to remain to the right of the line feature (ie. to keep the line feature to the pilot's left).

Right side separation shall only be used for traffic routing along the relevant line feature, it shall not be used for traffic orbiting or holding in the vicinity of the line feature and any such traffic should be separated by other means.

3.5 London CTR Procedures

3.5.1 General Procedures

Aircraft may be cleared to enter the London CTR by TC SVFR either VFR or SVFR without reference to TC Heathrow FIN, however controllers shall note the coordination requirements listed in [LOW 1.2](#). Low level traffic wishing to operate IFR within the London CTR shall be subject to coordination with TC Heathrow FIN before clearance is issued to enter the control zone. TC SVFR may delay issuing a clearance to transit until such time as the traffic situation permits. In such situations TC SVFR will advise the pilot when to expect a clearance and will typically require the pilot to remain outside of controlled airspace.

TC SVFR is to provide standard separation between IFR and SVFR traffic, and between SVFR and other SVFR traffic, except where a deemed separation standard is applicable. However, no separation can be provided between SVFR flights operating within the LFAs for Brooklands, Denham, Fair Oaks and White Waltham aerodromes and between SVFR flights operating within these LFAs and other IFR/SVFR flights in the London CTR. For procedures in the London Heliport LFA see [LOW 4.6](#).

Fixed wing traffic wishing to transit the London CTR shall typically be routed either overhead London Heliport or via a route Ascot (EGLT) – Burnham (BUR).

Helicopter traffic shall typically route via the published helicopter routes or the Bovingdon (BNN) – Brent Reservoir – London Heliport route detailed in [LOW 4.1](#) and [LOW 4.2](#) respectively, however they may also operate off-route if required or requested.

The TC SVFR controller shall monitor the UKCP TC Heathrow go-around alarm and, in the event of a missed approach, coordinate with Heathrow AIR and/or TC Heathrow INT North/South as required to deconflict/separate low level traffic from missed approach traffic.

3.5.2 Fixed Wing Low Level Inbounds to Heathrow

Fixed wing low level inbounds to Heathrow (VFR, SVFR and IFR) shall be initially worked by TC SVFR who shall coordinate with TC Heathrow FIN to transfer traffic no later than the downwind position; either orbiting or on an agreed heading/altitude depending on flight rules.

TC Heathrow FIN is responsible for the final positioning and coordination with Heathrow AIR Arrivals for fixed wing low level inbounds to Heathrow.

3.5.3 Inner Area

The London CTR is subdivided into an outer and inner area as depicted in Figure 4. The inner area is established to provide additional protection to Heathrow IFR operations and it has a number of associated operating restrictions. There are no additional restrictions associated with the outer area.

The following restrictions apply within the inner area:

- All traffic entering the inner area must be coordinated with the Heathrow AIR controller(s) and, except for helicopter traffic routing via the published helicopter routes, with TC Heathrow FIN.
- Within the inner area VFR and SVFR fixed wing operations are not permitted except when inbound/outbound Heathrow or to complete specific operational tasks within the inner area.
- Within the inner area all VFR and SVFR helicopter traffic shall be routed via the published helicopter routes except when operationally necessary (ie. traffic landing at private sites within the inner area or category A flights).

3.5.4 Altitude Restrictions and Separation from Heathrow IFR Traffic

Within the London CTR VFR and SVFR traffic may operate at a maximum altitude of 2400 ft, however traffic should not routinely be cleared to operate above levels which provide either 1000 ft vertical clearance from Heathrow IFR traffic or have been notified as providing deemed separation. To assist TC SVFR controllers in separating low level traffic from Heathrow IFR traffic the following sections outline the normal inbound and outbound profiles.

Heathrow inbound IFR aircraft are not to be cleared below 3000 ft until 11 NM track distance from touchdown, below 2500 ft until 9 NM, or below 2000 ft until 7 NM; except when established on the ILS glidepath. Procedure altitudes may be higher than these profiles.

IFR departures from Heathrow operating on a SID are required to maintain a minimum climb-out profile that guarantees at least 2000 ft altitude by 7 NM track distance from the upwind end of the departure runway. If any aircraft notifies Heathrow ADC that it cannot maintain this minimum climb-out profile, it will be coordinated with TC SVFR.

As an additional guide, controllers may wish to use the standard operating altitudes for the published helicopter routes detailed in [LOW 4.1](#) as maximum altitudes for aircraft operating in the vicinity of a helicopter route segment.

To provide separation from Heathrow IFR traffic the following altitude restrictions are to be applied to aircraft transiting the CTR routing north/south:

- Via London Heliport – not above 1500 ft
- Via Ascot/Burnham – not above 1200 ft VFR or 1000 ft SVFR while adjacent to and passing under the final approach path

Where possible, aircraft should not be instructed to fly at a specific altitude and clearances should normally instruct pilots not following a published helicopter route to fly "*not above*" the maximum altitude which maintains separation from relevant traffic, allowing the pilot to fly lower if necessary to maintain visual contact with the surface. It is the pilot's responsibility to comply with the low flying rules applicable to VFR and SVFR flights.

3.5.5 Northolt RMA Procedures

The Northolt RMA is active during the hours of operation of Northolt APC (126.450 MHz). Northolt APC operates autonomously within the Northolt RMA and TC SVFR must not issue any clearance to transit the Northolt RMA except when:

- Prior coordination has been effected with Northolt APC, or
- Control of the Northolt RMA has been transferred back to TC SVFR, or
- Northolt APC is closed.

When Northolt transfer control of the Northolt RMA to TC SVFR it will include the Northolt ATZ.

TC SVFR is responsible for ensuring separation for traffic under its control against any traffic under the control of Northolt APC within the Northolt RMA. Northolt may position this traffic up to the Northolt RMA boundary without coordination. TC SVFR shall ensure standard separation is maintained against traffic within the Northolt RMA until coordination has been effected to confirm the flight rules of the traffic involved. When flight rules allow (ie. either aircraft is operating VFR) then separation can be reduced and appropriate traffic information passed. Northolt APC may apply reduced vertical separation of 500 ft but only for traffic under its control, reduced vertical separation must not be applied against traffic under the control of TC Heathrow/TC Thames.

Requests for clearance to cross the Northolt RMA are to be made with Northolt APC. Transit aircraft will either remain in communication with TC SVFR or be transferred to Northolt APC at the discretion of the Northolt controller. When Northolt have conflicting traffic then they will typically take control of the transit aircraft as they are able to apply reduced vertical separation with the pilot's agreement and expedite traffic.

Heathrow crossing traffic routing H9 northbound shall be coordinated by TC SVFR with Northolt APC and once coordination is effected TC SVFR shall instruct Heathrow AIR to transfer the helicopter directly to Northolt APC at Airport Spur.

Northolt APC may deem SVFR helicopters holding at Gutteridge separated from Northolt IFR departures and arrivals when both the Heathrow reported visibility and the pilot reported in-flight visibility is greater than 6 km.

When Northolt APC is closed, the Northolt RMA is closed and the airspace reverts to TC SVFR control. If TC Heathrow INT North is vectoring an out-of-hours Northolt inbound or is made aware of a pending departure they must coordinate with TC SVFR before the inbound enters the Northolt RMA or the outbound traffic's departure is approved.

3.5.6 Procedures Relating to Farnborough Controlled Airspace

The Farnborough CTR and CTA-1 directly abut the southern boundary of the London CTR. Farnborough APC is the controlling authority for this airspace and is also delegated a portion of the overlying LTMA as the Farnborough RMA for vectoring Farnborough inbounds.

Farnborough APC is authorised to vector inbounds to Runway 24 within 3 NM of the common boundary/the Heathrow RMA and whilst doing so Farnborough APC is responsible for ensuring separation against all observed traffic within the London CTR.

Farnborough APC is responsible for coordinating with TC SVFR with respect to any low level traffic operating within the London CTR within 3 NM of the common boundary west of the Brooklands LFA. TC SVFR shall confirm the flight rules of any such traffic and provide sufficient information to allow Farnborough APC to provide traffic information with respect to VFR flights or to maintain separation with respect to SVFR and IFR flights.

It is the responsibility of Farnborough APC to maintain separation unless coordinated otherwise with TC SVFR.

Note: TC SVFR should endeavour to proactively coordinate with Farnborough APC if they anticipate low level traffic could conflict with Farnborough inbounds.

Unless coordination has been affected with Farnborough APC, traffic entering or leaving the London CTR to the south-west shall be instructed to remain outside Farnborough controlled airspace. Traffic routing via H3 shall be instructed to route west of Bagshot at the CTR boundary.

3.6 London City CTR Procedures

3.6.1 General Procedures

Aircraft may be cleared to enter the London City CTR by LC DIR either VFR or SVFR or IFR subject to other traffic and appropriate coordination as required. LC DIR may delay issuing a clearance to transit aircraft for traffic reasons. In such situations LC DIR will advise the pilot when to expect a clearance.

LC DIR is to provide standard separation between IFR and SVFR traffic, and between SVFR and other SVFR traffic, except where a deemed separation standard is applicable. Traffic information will be provided to VFR transit aircraft to enable them to avoid IFR/SVFR traffic and arriving/departing aircraft. If necessary, routing instructions or altitude instructions may be issued to the VFR traffic.

Multi-engine transit traffic shall typically be routed between Vauxhall Bridge and London Bridge. Single-engine transit traffic shall typically be cleared to route via a compass-point direction with the instruction “to remain east of London City airport at all times.”

Transit traffic unable to accept the above routes shall be routed through the London City overhead in accordance with the procedures used for inbounds and outbounds.

London City VFR and SVFR inbounds shall normally be routed:

- From the north during Runway 27 operations – routing M11 Junction 4 to Beckton Roundabout to hold overhead the roundabout
- From the north during Runway 09 operations – routing Banbury Reservoir to Olympic to hold overhead the VRP
- From the south – routing towards the Thames Barrier to hold south of the barrier.

Details of inbound VFR traffic must be passed to London City AIR and transfer of control and communication shall take place when the pilot reports visual with the airfield. Aircraft may only penetrate the London City ATZ with the prior approval of London City AIR.

SVFR inbounds will be retained by LC DIR until such time as they can be safely integrated into the inbound stream maintaining standard separation and the aircraft has become number

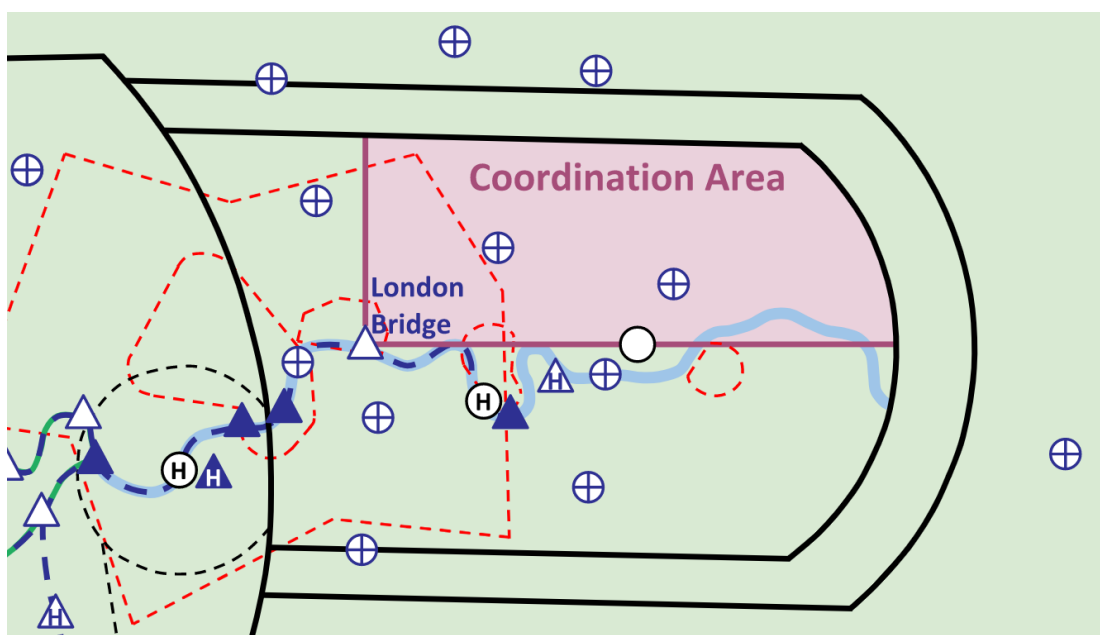
one to land (in order to ensure that it cannot execute any manoeuvre which will erode the separation against the aircraft ahead). This is unless London City AIR is able to provide RSIVA and has co-ordinated with LC DIR and agreed to provide reduced separation. Subject to this, the responsibility for separating the aircraft from IFR and/or other SVFR flights will remain with TC SVFR until London City AIR is visual with the relevant traffic.

London City VFR and SVFR outbounds shall typically be cleared via a compass-point direction. Clearance will be requested from LC DIR by London City GMC when the aircraft starts, and departure is subject to release from TC SVFR. Outbounds and aircraft transiting via the overhead shall be transferred from London City AIR to TC SVFR when all local conflicts have been resolved and the aircraft is clear of the London City ATZ.

3.6.2 Coordination Area

To protect standard IFR departures and missed approaches, the north-eastern part of the London City CTR/CTA, bound by lines running east/west through London City and north/south through London Bridge, is designated the 'Coordination Area.' Any low level traffic, including VFR transits, which intends to route via the 'Coordination Area' must be coordinated with London City AIR before it enters the 'Coordination Area.'

Figure 5 - London City 'Coordination Area'



The following details must be passed to London City AIR:

- Callsign (and SSR code if not code-callsign converted)
- Aircraft type
- Flight rules
- Departure and/or Destination (if applicable)
- Route and/or Heading
- Level restriction.

Example: "G-ABCD, squawking 7031, a Cessna C152, VFR, routing north to south, remaining east of the ATZ, not above 2000 ft."

3.6.3 Altitude Restrictions and Separation from Heathrow IFR Traffic

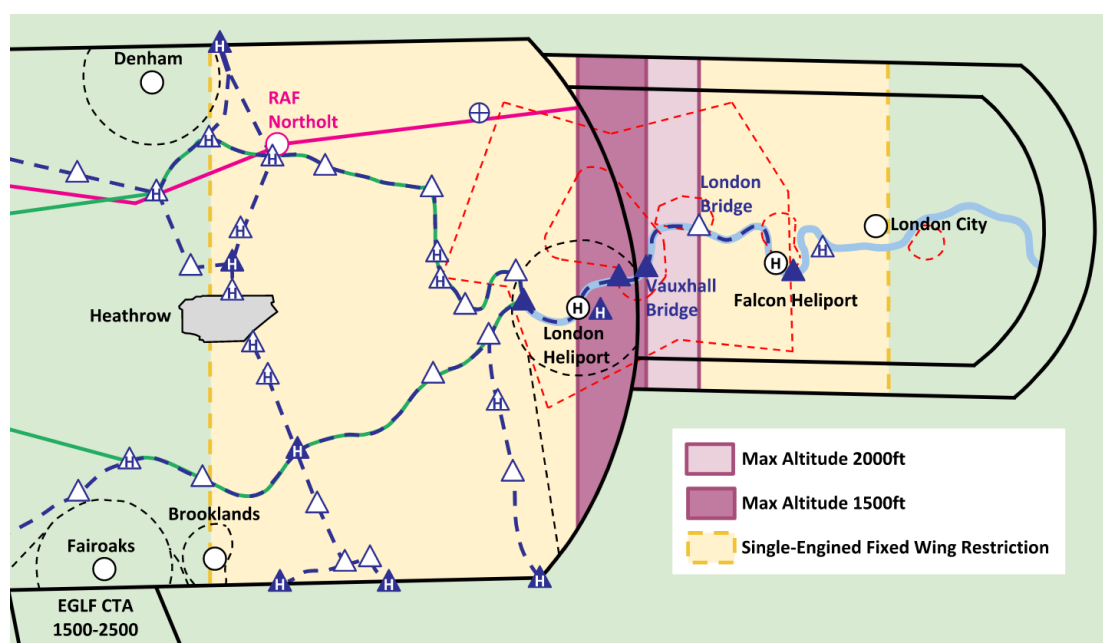
In order to provide separation between low level traffic and traffic inbound to Heathrow on the ILS, the maximum altitudes issued to low level traffic will be as follows:

- Between a line north/south through London Heliport and a line north/south through Vauxhall Bridge – not above 1500 ft
- Between a line north/south through Vauxhall Bridge and a line north/south through London Bridge – not above 2000 ft
- East of a line north/south through London Bridge – not above 2400 ft.

When altitudes above these levels are required LC DIR shall coordinate with:

- Heathrow on Westerlies – TC Heathrow FIN
- Heathrow on Easterlies – the relevant London TC sector

Figure 6 - Altitude and Single-Engine Fixed Wing Restrictions



Where possible, aircraft should not be instructed to fly at a specific altitude and clearances should normally instruct pilots not following a published helicopter route to fly "not above" the maximum altitude which maintains separation from IFR traffic, allowing the pilot to fly lower if necessary to maintain visual contact with the surface. It is the pilot's responsibility to comply with the low flying rules applicable to VFR and SVFR flights.

3.6.4 Procedures Relating to Biggin Hill Airport

Biggin Hill APC is responsible for the provision of UK FIS to traffic outside of controlled airspace that does not require a surveillance service and is inbound/outbound/overflying Biggin Hill within 10 NM.

It is not necessary to prenote VFR traffic to Biggin Hill APC. Traffic will be transferred to Biggin Hill APC at least 10 NM away from Biggin Hill if outside controlled airspace, or as soon as possible if leaving controlled airspace. VFR traffic in communication with TC Thames/TC

SVFR approaching from a direction ranging between north-west through to north-east of Biggin Hill must be coordinated with Biggin Hill APC whilst any aircraft is making an instrument approach to Runway 21.

In the event of an aircraft leaving the London City CTR to the south, the pilot should be requested to remain west of the Biggin Hill Runway 21 final approach track if there is traffic joining the approach track for Runway 21. The pilot should be given the reason for the request.

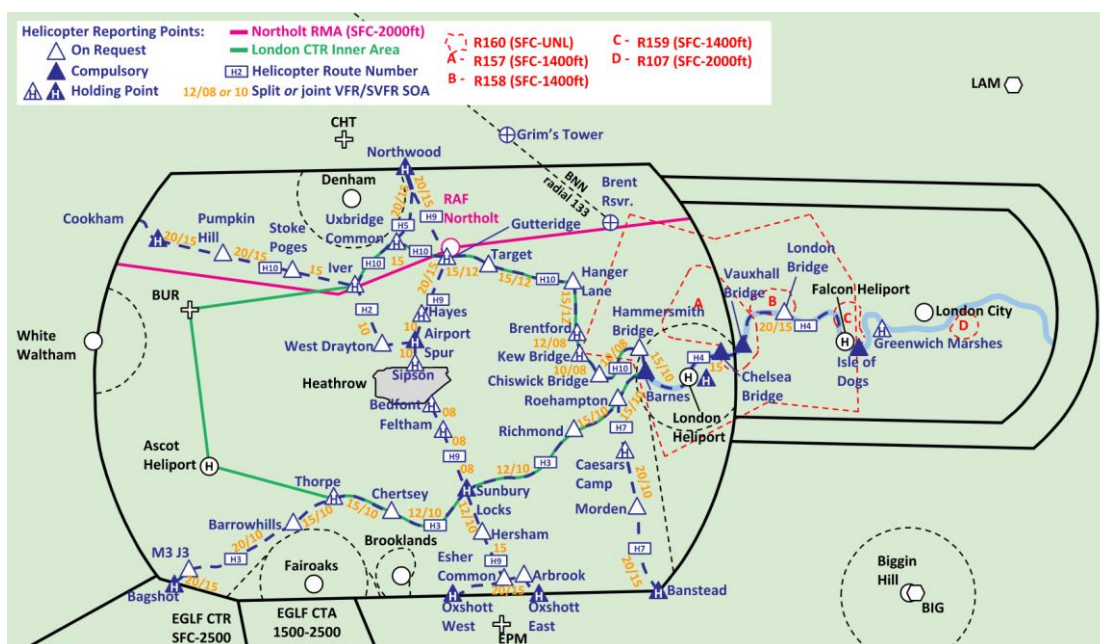
Chapter 4 Helicopter Operations

4.1 Helicopter Routes

4.1.1 Routes

There are seven published helicopter routes, designated by the letter ‘H’ followed by a number (eg. route ‘H10’, spoken as either “Aich Ten” or “Hotel Ten”). The routes with published standard operating altitudes are depicted below:

Figure 7 - Helicopter Routes and Standard Operating Altitudes



4.1.2 Standard Operating Altitudes

Helicopters following published routes should be cleared to fly at “Standard Operating Altitudes” and controllers should enter ‘SOA’ into the scratchpad to indicate this clearance to other radar controllers.

This clearance allows pilots to fly below the published altitudes as required to maintain VMC on a VFR clearance or remain clear of cloud and with the surface in sight on a SVFR clearance. The exception to this is on H10 between Perivale and Chiswick Bridge where the published altitudes must be maintained exactly.

The standard operating altitudes very dependent on whether the aircraft is cleared VFR or SVFR. Higher altitudes are designated for VFR traffic to improve terrain clearance and visual acquisition of route landmarks, lower altitudes are designated for SVFR traffic to ensure separation against Heathrow IFR traffic. In Figure 7 the standard operating altitudes for each route segment are depicted in orange in the format XX/YY where the first number represents the VFR standard operating altitude in hundreds of feet and the second number the SVFR standard operating altitude in hundreds of feet. Where the VFR and SVFR standard operating altitudes are identical then only a single number is depicted.

Example: 12/08 – VFR standard operating altitude is 1200 ft, SVFR standard operating altitude is 800 ft.

The AIP also details advisory minimum altitudes for each route segment.

Pilots who are unaware of the correct altitudes should be informed of them when the clearance is given or instructed to report approaching the appropriate reporting point for the next altitude instruction. Pilots are to be at the lower altitude on arrival at the point at which the lower altitude applies.

4.1.3 H4 Restrictions

Between London Heliport and London Bridge, helicopters operating on H4 must not be instructed to fly on the south bank of the River Thames whilst simultaneously restricted to altitudes below 1300 ft. Additionally, should a pilot report, or a controller suspect (ie. cloud base at Heathrow or London City reported below 2300 ft), that a helicopter restricted to the south bank of the river is unable to comply with SERA 3105 Minimum Heights then the helicopter's route must not be restricted to the south bank of the river.

Additionally, no helicopters are to hold on the portion of H4 between Vauxhall Bridge and Westminster Bridge (which is located halfway between Vauxhall Bridge and London Bridge).

4.2 Off-Route Operations and Uncontrolled Sites

Other than the airspace restrictions and the restrictions for single-engine helicopters described in [LOW 3.3](#) there are no additional restrictions to helicopter traffic wishing to operate off-route in the London or London City CTRs. TC SVFR controllers shall apply the procedures and restrictions for the London and London City CTRs detailed in [LOW 3.5](#) and [LOW 3.6](#) when formulating clearances for helicopters operating off-route.

An unpublished route exists for multi-engine helicopters routeing Bovingdon (BNN) – Brent Reservoir – London Heliport. Helicopters shall route on or north of the BNN radial 133 to Brent Reservoir (located at the north-western corner of R160) then direct to London Heliport. The BNN radial 133 restriction assists Northolt APC in separating SVFR traffic on this route against Northolt IFR inbounds. Helicopters on this route shall be cleared not above 1500 ft.

Helicopters departing from uncontrolled sites should contact TC SVFR for route clearance prior to take-off. Clearance for take-off and landing cannot be given, but the pilot should be informed of the surface wind at the nearest airport and instructed to report “*lifting*” or “*setting down.*” TC SVFR will coordinate as described in [LOW 3.5.3](#) regarding helicopters using sites within the London CTR Inner Area, and with City AIR regarding helicopters using sites within the London City ATZ.

4.3 Separation from Heathrow IFR Traffic

With the exception of the restrictions outlined in [LOW 4.4](#), helicopter traffic operating VFR or SVFR at standard operating altitudes on the published helicopter routes is separated from normal Heathrow IFR traffic. As such, there is no mandatory requirement for traffic information to be passed between normal Heathrow IFR inbound or outbound traffic and VFR or SVFR traffic operating on the published helicopter routes.

Traffic operating on H10 between Kew Bridge and Barnes is subject to additional criteria to ensure separation from Heathrow inbound traffic. The separation criteria to be applied to helicopters operating on H10 with respect to Heathrow inbound traffic landing on 27L/R are as follows:

Type of Approach	H10 between Kew Bridge and Barnes
ILS/RNAV	Separated
Localiser only/Visual	Separated, provided that the aircraft is on the localiser/final approach track and is not cleared to descend below 2000 ft QNH until 6 NM from touchdown

Responsibility for initiating coordination with respect to the above restrictions rests with TC Heathrow FIN.

4.4 Restrictions during Heathrow Easterly Operations

During Heathrow Easterly operations certain routes have operating restrictions to ensure separation from outbound Heathrow IFR traffic on SIDs. Responsibility for initiating coordination with respect to these restrictions rests with TC SVFR who shall effect coordination with Heathrow AIR Departures before helicopter traffic enters the restricted route portions.

Restrictions exist on:

- H3 between Richmond and Thorpe
- H9 between Oxshott West/East and Bedfont
- H10 between Gutteridge and Kew Bridge

4.4.1 H3, H9 and H10 VFR Operations

The restricted portions of H3, H9 and H10 may be used by VFR helicopters independently of Heathrow outbound traffic subject to the following restrictions:

- Heathrow reported cloud ceiling is 2000ft or greater
- No A340-200/300 departures (all routes) or A380 departures (on CPT departure)

In the event of a pending A340-200/300 or A380 CPT departure the VFR helicopter traffic must be held outside the restricted portion pending the outbound IFR traffic.

4.4.2 H10 SVFR Operations

SVFR helicopter traffic operating on the restricted portion of H10 is deemed separated from all northbound narrow-body departures. SVFR helicopter traffic is not separated from northbound Heavy or Super category departures and will be held at either Gutteridge or Kew Bridge to await a suitable gap in the departure sequence. TC SVFR shall coordinate with

Heathrow AIR Departures and Heathrow AIR Departures shall identify a suitable gap in the departure sequence.

4.4.3 H3 and H9 SVFR Operations

SVFR helicopter traffic operating on the restricted portions of H3 and H9 is not separated from CPT, GASGU, MAY, or MODMI SIDs. In order to provide adequate separation, the following procedures shall be used:

Between 0800 and 2100 Local

When there is helicopter traffic on H3 between Richmond and Thorpe and/or on H9 between Oxshott West/East and Bedfont, aircraft on CPT, GASGU, MAY, or MODMI SIDs must be instructed to climb straight ahead through 1500 ft and pass the LON DME 2 NM before turning right.

Between 2100 and 0800 Local or at the Discretion of Heathrow AIR or TC SVFR

The straight ahead to 1500 ft requirement is not to be used, therefore no helicopter traffic is permitted to operate on H3 between Richmond and Thorpe and/or H9 between Oxshott West/East and Bedfont when aircraft are departing on CPT, GASGU, MAY or MODMI SIDs. TC SVFR may, at its discretion, implement a departure check however this must not be allowed to cause excessive delay to Heathrow departures. A departure check should only be used when absolutely necessary and the helicopter traffic should be transferred to Heathrow AIR Departures as soon as visual contact is established to allow use of RSIVA to minimise delay.

4.5 Heathrow Crossing Procedures

4.5.1 General Procedures

Heathrow ADC shall coordinate all outbound helicopters with TC SVFR prior to departure.

TC SVFR shall provide Heathrow AIR Arrivals the following details for all inbound or crossing helicopters:

- Callsign (and SSR code if not code-callsign converted)
- Aircraft Type
- Flight rules
- Transfer holding point and ETA
- Whether inbound or crossing

Helicopter arrivals and departures will be routed via the holding areas at Sipson or Bedfont/Feltham as appropriate and as detailed below.

4.5.2 Transfer Holding Points

Helicopter operations at Heathrow commence and terminate at Sipson to the north and Bedfont or Feltham to the south. Helicopters must hold at these points unless instructed otherwise by ATC.

Whilst holding at Sipson or Feltham, helicopters are separated for both ATC and wake turbulence purposes from fixed wing aircraft landing on, departing from, or executing missed approaches to all runways.

When the meteorological conditions exist for VFR flight, helicopters approaching from the south will be held at Bedfont. These helicopters will be separated for wake turbulence, but pilots must remain in visual contact with aircraft on approach to 27L. The missed approach turns left at 1000 ft above aerodrome level, and pilots should be warned as such when a missed approach occurs.

When the meteorological conditions do not exist for VFR flight, helicopters require separation from IFR traffic and will be held at Feltham to the south. Integration of this traffic will require an increased gap in the IFR arrival stream, and the helicopter may incur significant delay. Responsibility for coordinating a gap in the IFR arrival stream rests with Heathrow AIR Arrivals.

4.5.3 Tactical Enhanced Arrival Mode (TEAM) Delays

There are occasions when the departing runway is used for landing traffic. This will incur extra delay as the helicopter crossing procedures cannot be carried out with aircraft inbound to both runways simultaneously. During TEAM Heathrow AIR Arrivals shall inform TC Thames of the likely delay and TC Thames shall inform the helicopter traffic of the delay and offer an alternate route clear of the inner area.

4.6 London Heliport Procedures

4.6.1 Area of Responsibility and General Procedures

During its hours of operation Battersea Tower (134.280 MHz) is responsible for the provision of air traffic services within the London Heliport ATZ and LFA. Outside the hours of operation of Battersea Tower, service is provided to airborne traffic by the TC SVFR controller.

Battersea Tower is responsible for maintaining separation between traffic within its AOR and additionally, when delegated, between traffic within its AOR and traffic inbound to and outbound from Kensington Palace and Buckingham Palace.

TC SVFR is responsible for maintaining separation between traffic that is under the control of Battersea Tower and other traffic operating under the control of TC SVFR that is outside the London Heliport AOR.

London Heliport does not publish a METAR and so weather information is not available on VATSIM, as such traffic shall be passed the surface wind at London City. The QNH to be passed is the London (Heathrow) QNH.

4.6.2 Weather Minima

For inbound and outbound helicopters, the weather minima for the London Heliport are a reported meteorological visibility of 1 km or greater and a cloud ceiling of 600 ft AGL or greater.

Inbounds and outbounds routing via the LFA require a minimum flight visibility of 3 km.

When the flight visibility is less than 3 km, helicopters may access the Heliport via the helicopter routes provided that the flight visibility and reported meteorological visibility are at least 1 km.

4.6.3 London Heliport ATZ and LFA Procedures

The London Heliport ATZ is the airspace within 2 NM of London Heliport from the surface to 2000 ft AAL, it is wholly contained within the London and London City CTRs and as such assumes Class D classification. That part of the ATZ above 1300 ft AMSL is delegated to TC SVFR.

The London Heliport LFA is the airspace formed by the ATZ and the southern extension depicted in Figure 4 with the vertical extent of the surface to 1300 ft AMSL.

Flight within the LFA is subject to ATC clearance which pilots must obtain before entering the LFA. Within the LFA Battersea ATC may control traffic without reference to TC SVFR in accordance with the following procedures:

- Traffic under the control of Battersea ATC shall be instructed to squawk the conspicuity SSR code of 7077
- Flight within the LFA is limited to multi-engine helicopters
- Traffic must remain below cloud with the surface in sight
- VFR traffic:
 - Maximum altitude 1300 ft
 - In compliance with Class D VMC minima detailed in UK AIP ENR 1.2
- SVFR traffic
 - Maximum altitude 1000 ft
 - Minimum flight visibility 3 km
 - In compliance with the requirements for SVFR flights detailed in UK AIP ENR 1.2.

Battersea ATC does not have access to an ATM and must instruct traffic to pass position reports as required and to also report entering and leaving controlled airspace.

Battersea ATC may clear helicopters to operate SVFR within the LFA not above 1000 ft. Traffic operating SVFR within the London Heliport LFA is deemed separated from traffic operating outside the lateral confines of the LFA within the London CTR and from Heathrow IFR traffic on standard routes. TC SVFR traffic operating SVFR overhead the LFA is not deemed separated and must be coordinated in accordance with [LOW 4.6.4](#).

Battersea ATC may use geographical separation with the River Thames per [LOW 3.4.1](#) and RSIVA as outlined in MATS Part 1 to facilitate SVFR movements within the LFA.

4.6.4 Arrival and Overflight Coordination

Coordination is to be effected with London Heliport in respect of flights under the control of TC SVFR which shall pass within or overhead the lateral confines of the Battersea AOR; this includes SVFR traffic routing above the ATZ/LFA and helicopter traffic routing on the helicopter routes through the ATZ.

TC SVFR will pass details of all inbound and overflying traffic to Battersea Tower before such traffic passes Kew Bridge, Teddington, Caesar's Camp to the west, or London Bridge to the east, or Brent Reservoir to the north. If coordination has not been effected, or if Battersea Tower cannot accept or has conflicting traffic then any inbound or overflying traffic must be held at the relevant reporting point pending onward routing.

4.6.5 Outbound Coordination

Battersea Tower will telephone TC SVFR to pass the type, destination, requested routing and to request release for any traffic which intends to route outside the Battersea AOR.

Outbound traffic should remain in the circuit until accepted by TC SVFR.

Once released traffic should be passed any clearance limit imposed by TC SVFR and then instructed to contact TC SVFR before leaving the Battersea AOR.

4.6.6 Landing Sites Within Battersea Circuit Area and Kensington Palace/Buckingham Palace

A letter of agreement exists between TC SVFR and London Heliport regarding the control of helicopter traffic at sites within the Battersea AOR, and additionally at Kensington and Buckingham Palaces.

During its operating hours, Battersea Tower will normally be delegated control of helicopter traffic inbound to and outbound from the following landing sites:

- Battersea Power Station, the former Chelsea Barracks, St George's Hospital Helipad, and any other landing site within the Battersea AOR, and additionally
- Kensington and Buckingham Palaces.

Departures from any of these sites which intend to route outside the Battersea AOR will be coordinated by Battersea ATC with TC SVFR prior to lift.

TC SVFR is responsible for ensuring separation of traffic outside the Battersea AOR including helicopters departing from or landing at Kensington Palace and Buckingham Palace. However, this responsibility for helicopters departing from or landing at Kensington Palace and Buckingham Palace may be delegated to Battersea ATC.

This procedure assists with problems of poor RT coverage at low levels in the vicinity of the Battersea circuit area.

4.7 SVFR Procedures and Separations

Helicopters on a SVFR clearance require standard separation against IFR traffic and other SVFR traffic. Procedures for separating traffic routing via the helicopter routes against Heathrow IFR traffic are described in [LOW 4.3](#) and [LOW 4.4](#). Traffic that is off route will require a clearance that assures separation against Heathrow IFR traffic taking into account the restrictions in [LOW 3.5.4](#).

Between SVFR traffic controllers shall apply either:

- Standard horizontal or vertical separation
- Geographical separation as described in [LOW 3.4](#)
- Visual separation between on-route SVFR helicopter traffic in accordance with the procedure below.

Controllers may apply deemed separation between SVFR helicopter traffic operating on the published helicopter routes by asking the pilots to maintain visual separation provided that:

- The Heathrow reported visibility is 5 km or greater, and the helicopters can operate clear of cloud and in sight of the surface and remain in a flight visibility of 5 km or greater
- There is agreement between the helicopter pilots concerned
- The helicopters are operating on the published helicopter routes at standard operating altitudes
- Appropriate traffic information is passed to the helicopter pilots (normally for this purpose it will only be necessary for the controller to pass general traffic information eg. *“Two helicopters westbound along H10 at 1000 ft in the vicinity of Perivale – acknowledge”*).

This deemed separation can only be applied between helicopter traffic operating on the helicopter routes, it cannot be applied between off-route traffic or between off-route traffic and traffic operating on a published route. Additionally, if a pilot refuses or considers that the conditions are such that he is unable to maintain visual separation, then the helicopter traffic will be provided with another SVFR separation standard.

4.8 IFR Clearances to Helicopters

TC SVFR must not issue IFR clearances to helicopters wishing to depart or land at sites within the London CTR other than Heathrow or Northolt. Helicopters wishing to route IFR to Heathrow or Northolt shall be coordinated with TC Heathrow FIN or Northolt APC to integrate this traffic into the fixed wing IFR arrival flow.

IFR helicopter may use the London City ILS as a cloud break procedure to assist them in landing at sites in the vicinity such as London Heliport, Falcon Heliport or the Royal London Hospital.

Chapter 5 UK Flight Information Services (FIS)

MATS Part 1 details the services which may be provided outside controlled airspace. The provision of UK FIS is to be limited so that it does not adversely affect the service provided to aircraft inside controlled airspace.

Outside the hours of operation and/or boundaries of responsibility of adjacent units tasked with providing the Lower Airspace Radar Service (LARS), TC SVFR may provide UK FIS to traffic flying outside controlled airspace, but normally only within the confines of the M25 motorway or 10 NM of the London CTR and London City CTR/CTA boundaries.

The adjacent units tasked with providing LARS are Farnborough APC and Southend APC and consideration should be given to transferring UK FIS traffic which is not seeking to transit the London or London City CTRs to these units.

Controllers must not give a Deconfliction Service or radar vectors under a Traffic Service to aircraft below SMAA levels or minimum sector altitudes.

A radar service outside of 40 NM of Heathrow/London City must not be given.

GLOSSARY

Abbreviation	Definition
AC	Area Control
ADC	Aerodrome Control
AIR	Air Control (i.e. Tower Controller)
APC	Approach Control
ATS	Air Traffic Service
CTA	Control Area
CTR	Control Zone
DME	Distance Measuring Equipment
EAT	Estimated Approach Time
FIN	Final Director
FIS	Flight Information Service
FL	Flight Level
ft	Foot (feet)
GMC	Ground Movement Control
GS	Groundspeed
hPa	Hectopascal
IAS	Indicated Airspeed
ICAO	International Civil Aviation Organisation
ILS	Instrument Landing System
INT	Intermediate Director
Kts	Knots
LTMA	London TMA
MDI	Minimum Departure Interval
MHz	Megahertz
MSL	Minimum Stack Level
NM	Nautical Mile
RFC *	Released for Climb
RFD *	Released for Descent
RFT *	Released for Turn
RSIVA	Reduced separation in the vicinity of an aerodrome
SID	Standard Instrument Departure
SSR	Secondary Surveillance Radar
STAR	Standard Terminal Arrival Route
TC	Terminal Control

* 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.

APPENDIX 1 - APPROVED AIRCRAFT TYPES

Commercial Aircraft

Airbus A220-100
Airbus A318
BAe 146/Avro RJ family
BAe 4100 Jetstream
ATR 42
ATR 72
DHC Dash 7
DHC Dash 8/Bombardier Q Series
Dornier Fairchild 228
Dornier Fairchild Do328
Dornier Fairchild Do328 Jet
Embraer 135
Embraer E170
Embraer E190
Embraer E190-E2
Embraer E195-E2
Fokker 50
Fokker 70
Saab 340
Saab 2000
Shorts 360-300

Business Aircraft

Beechcraft King Air family
Bombardier Challenger 350 & 604/605/650
Bombardier Global Express family
Bombardier Learjet 40X/45
Cessna Citation I
Cessna Citation II
Cessna Citation V
Cessna Citation Bravo
Cessna Citation CJ1-4/M2 family
Cessna Citation Excel/XLS
Cessna Citation Mustang
Cessna Citation Sovereign (680) & Latitude (680A)
Dassault Falcon 10
Dassault Falcon 2000 family
Dassault Falcon 50 family
Dassault Falcon 7X and 8X
Dassault Falcon 900 family
Embraer Legacy family
Embraer Phenom 300
Gulfstream G280
Gulfstream G500/G600 (GVII series)
Gulfstream G650/G650ER
Piaggio P.180
Raytheon Beechjet/Hawker 400 family
Raytheon Hawker 800/900 family
All multi-engine piston aircraft
