

STAKEHOLDER CONSULTATION DOCUMENT

Proposal To Establish Temporary Controlled Airspace For The London 2012 Olympics

NATS

Stobart Air

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1. Executive Summary

In July 2005 the International Olympic Committee announced that the 2012 Olympics would be held in London. The dates for the main games are 27th July – 12th August and the Paralympics 29th August – 9th September 2012.

It has been forecast that the 2012 Olympic Games will generate exceptionally high levels of air traffic (Atkins Report, Ref 1). In order to ensure the smooth operation of Air Traffic Control during this period some temporary airspace changes will be required.

This document explains the temporary changes proposed by NATS and Stobart Air (Southend Airport) to the airspace in Farnborough Area, Boscombe Down Area, West of England Temporary ATS Routes, Southend Area, Thames Estuary Area (OLLEY Hold) and East Anglia Area (HORAM Hold) to handle the increase in flights to and from all airports in the area. NATS is co-ordinating this consultation for and on behalf of itself and NATS Farnborough, NATS Southampton and Southend Airport (Stobart Air).

This document contains information from which stakeholders identified as consultees in this process can gain an understanding of the proposal and hence give informed feedback.

This consultation follows a process agreed by the CAA (CAP 724 Appendix F, Ref.2) which gives consideration to the nature of this proposed temporary airspace change. In accordance with the guidance (Ref.2), NATS and Stobart Air are consulting with National Air Traffic Management Advisory Committee (NATMAC) (see Appendix A).

The Civil Aviation Authority has given guidance that due to the temporary nature of the proposed change it does not require consultation with environmental stakeholders.

The period of consultation commences **28th March and closes on 26th May 2011, a period of 8 weeks** (CAA Information Notice 2011/02, Ref 3). If this proposal is approved by the CAA, NATS and Stobart Air will implement the temporary airspace change on **Monday 16th July 2012** in order to meet the increased Olympic traffic before the opening ceremony on 27th July 2012. Any matters raised during the consultation period that have not been adequately considered during the development of the proposed design may require NATS to make changes to the temporary proposals. Any such changes may require further consultation, depending on the impact of the changes to the original proposal. Please send feedback on the temporary airspace change proposal to:

London 2012 Olympics Consultation Co-ordinator
NATS, Corporate & Technical Centre
Mailbox 9A
4000 Parkway,
Whiteley,
Fareham,
Hampshire, PO15 7FL

Or via email to AirspaceConsultation@nats.co.uk as per the format described in section 4 of the consultation document.

Promulgation of any temporary controlled airspace will be through normal AIRAC cycles.

This consultation document contains the collective and intrinsically linked proposals from NATS EN Route Ltd (NERL), NATS Farnborough, NATS Southampton and Southend Airport (Stobart Air) (as agreed with the CAA).

2. Introduction

Air travel is integral to the success of the UK economy and will play a vital role in the 2012 Olympics. The majority of competitors and a large number of spectators will arrive by air, and the efficiency of the air travel experience will be one of the first impressions that visitors have of the UK. More flights mean busier skies, and how we use and manage our airspace is a matter of great responsibility.

This consultation document relates to the proposal for temporary controlled airspace [CAS(T)] to the airspace in the Farnborough Area, Boscombe Down Area, West of England Temporary ATS Routes, Southend Area, Thames Estuary Area (OLLEY Hold) and East Anglia Area (HORAM Hold). NATS has also been requested to act on behalf of Stobart Air to assist in the development of their proposal for CAS(T) in the vicinity of Southend Airport. NATS has extensive experience of managing Airspace Change Proposals (ACPs) in the UK. This ACP is exceptional however since it is required due to a major international event hosted in the UK, and all changes proposed are temporary. As the sponsor of the change, NATS is seeking feedback on the proposal before submitting it to the UK airspace regulator, the Civil Aviation Authority (CAA), for consideration.

The proposal is known as "Temporary Controlled Airspace for the London 2012 Olympics". It relates to the portions of airspace described above and also to ATS routes between 16,000ft and 46,000ft in the West of England, details of which are set out herein. The airspace will be temporary and is proposed to be in place from one week before the opening ceremony of the Olympic Games, until 3 days after the closing ceremony of the main Games, from **0800 local Monday 16th July until 20.00 local on Wednesday 15th August 2012**. It has been assessed that there is no requirement for CAS(T) during the Paralympic Games.

What is NATS?

NATS provides air traffic control services to aircraft flying through UK airspace and over the eastern part of the North Atlantic, and at 15 UK airports. Our responsibility is for the safe efficient management of some of the most complex airspace in the world.

Air traffic control services for aircraft travelling between airports are known as 'en route' air traffic control services. NATS provides en route services under licence to the CAA. This licence requires us to ensure the provision of a safe service, make the most efficient use of airspace and be capable of meeting reasonable levels of future demand.

Whilst NATS is responsible for providing a safe and efficient air traffic control service, we do not control the demand placed upon the UK airspace, the numbers of flights or the times of flights. These are determined by the demand for air travel from business and the general public, and coordinated by EuroControl's Central Flow Management Unit (CFMU¹).

To find out more about NATS go to www.nats.co.uk

What is Stobart Air?

Stobart Air (a division of Stobart Group plc) is the airport operator and provides air traffic control services to aircraft arriving and departing at Southend and Carlisle Airports and to aircraft operating in the vicinity. To find out more about the Stobart Group go to: <http://www.stobartgroup.co.uk/>

¹ CFMU is an operational unit of Eurocontrol whose mission is to enhance safety through co-ordinated management of the air traffic in Europe and to ensure congestion in the air does not occur and that available capacity is used effectively.

3. The purpose of consultation

The proposals set out in this document represents, in our view, the optimum balance between the many (and often competing) needs and requirements of the various stakeholder groups affected by the operation of the temporary airspace change for the 2012 Olympics.

The primary purpose of the consultation exercise is to allow stakeholders to consider the proposal and provide feedback upon it.

At the end of this consultation NATS must demonstrate to the CAA that the best balance possible has been achieved between conflicting demands and objectives. The CAA requires that changes are made only "after consultation". It is on this basis that the CAA will decide whether or not to approve the proposed temporary changes. NATS' first priority is safety, and the establishment of CAS(T) will provide a higher degree of safety assurance to the additional flight volumes within the volumes of temporary airspace.

The details of this consultation exercise have been agreed in principle with the CAA and meet the requirements of their airspace change process (Ref 2). This includes the rationale for whom should be involved in the consultation on this temporary proposal. Appendix A: List of Stakeholders lists the identified stakeholders to be involved in this consultation, although feedback will also be welcomed from all other interested parties.

Any matters raised during the consultation period that have not been adequately considered during the development of the proposed design may require changes to be made to the proposals. Any such changes may require further consultation, depending on the impact of the changes to the original proposal.

The scope of consultation

Environmental stakeholders

NATS recognises the impact of aviation on the environment and would usually consider a range of environmental objectives alongside operational objectives when developing airspace. For the Olympics however, it has been agreed with the CAA that since these are exceptional circumstances and all airspace changes are temporary, that this proposal does not require consultation with environmental stakeholders.

Aviation stakeholders

The scope of consultation as agreed with the CAA is primarily aimed at National Air Traffic Management Advisory Committee (NATMAC) members. A list of NATMAC members is included at Appendix A.

Other stakeholders

Relevant feedback is also welcome from other interested organisations and individuals.

4. What happens now? How do I respond?

What happens now?

The period of consultation commenced on **28th March and closes on 26th May 2011, a period of 8 weeks.**

When responding, consultees must specify the grounds for supporting or objecting to the proposal. Feedback in favour of, or objecting to, the proposal without supporting reasons will be reported to the CAA but NATS will not be in a position to consider the merits of the feedback.

NATS will analyse the feedback and produce a post-consultation report. This report will be made available via the NATS website and notification will be sent to the consultees identified in Appendix A: List of Stakeholders. This report will also update stakeholders on subsequent phases of the development process such as any further consultation that may be required, the submission of a formal proposal to the CAA and its consideration of that proposal.

Details of the consultation exercise will form part of the airspace change proposal that NATS will submit to the CAA for consideration and decision. Copies of all responses will be provided to the CAA, including any personal information contained in them, except where the respondent requests otherwise. If the proposal is accepted by the CAA, NATS will implement the airspace change **Monday 16th July 2012.**

See also paragraph 11 later in this document.

How do I respond? Email (preferred) and Postal System

Please note that more than one airspace consultation may be in progress at any time. It is important to ensure that you respond separately to each consultation in the correct format, in order to avoid confusion.

This consultation will be primarily managed by email as NATS' preferred medium, however postal responses will be accorded identical status and processed in the same way. If you wish to respond via the postal system, please compose your response as per the email format on the next page, & post it to:

London 2012 Olympics Consultation Co-ordinator
NATS, Corporate & Technical Centre
Mailbox 9A
4000 Parkway,
Whiteley,
Fareham,
Hampshire, PO15 7FL

If you wish to receive an acknowledgment of your postal response, please enclose a stamped self-addressed envelope.

Responding via email (preferred)

Please compose your response in the following format:

To: AirspaceConsultation@nats.co.uk

Subject: London 2012 Olympics Temporary Controlled Airspace Consultation Response

First line of text: I am responding on behalf of [name of organisation]

Or: I am responding personally, as an individual

Second line: *Agreement to pass on personal details to the CAA (Data Protection Act compliance)*

We agree / do not agree that any personal details contained within this response may be sent to the CAA as part of the Airspace Change Proposal

Third line : *Your formal response, one of the following:*

We support the Olympics Airspace proposal

Or: We object to the Olympics Airspace proposal

Or: We have no objection to the Olympics Airspace proposal

Subsequent text: *Text supporting your response is required, to allow NATS to evaluate its merits*

The grounds behind my formal response are:

5. Development Objectives

Safety

Safety is always NATS' first priority. Three areas have been identified where it is forecast that traffic levels will increase dramatically for the Olympic period. Providing augmented controlled airspace in these three areas will mean that the highest levels of safety can be maintained, without the need to resort to excessive regulation.

Delay

If the number of flights (air traffic demand) intending to pass through a particular air traffic control sector is predicted to exceed the safe capacity of the sector, aircraft are delayed. This can result in aircraft being delayed on the ground (prevented from taking off), re-routed to avoid the airspace, or delayed (in a holding pattern) in the air. This is to ensure that an excessive number of aircraft do not converge on a sector at one time, and that all flights can be safely accommodated in the airspace through which they intend to travel.

Traffic levels are forecast to exceed the currently available capacity during peak periods in two areas: surrounding Farnborough and surrounding Southend airports. The increase in demand will come primarily from the extraordinary increase in traffic due to the Olympic Games, but also from the forecast growth in base traffic levels². Unless the airspace is temporarily modified to accommodate this anticipated traffic, the demand will exceed capacity within these sectors during the Olympics period, which could result in widespread delays.

Temporarily introducing controlled airspace will help to reduce the complexity of the air traffic control system, and will increase the airspace capacity. This will hence lessen/prevent delays to aircraft and the travelling public for the period of the Olympics.

It has been assessed in the Atkins Report (Ref 1), that there will be an extra 3,000 business jet flights over the period of the games. Also 150 Heads of State are expected to attend opening and closing ceremonies and other major events; this is supported by the figures from previous Olympic Games and other events such as the 2010 World Cup (see Appendix B). Higher than usual levels of traffic are forecast for flights from/to Europe and the USA. By temporarily changing airspace in the areas where this traffic is planned to arrive and depart, during the busy periods more aircraft will be able to pass through these regions with minimal delay.

Other airspace users

Airspace efficiency means maximising use of the available airspace for the overall benefit of "UK Plc" for the peak traffic demands throughout the Olympic period. The aim for this temporary airspace development is to secure the most efficient use of airspace, and to satisfy the requirements of all airspace users as far as is safe and practical.

Light aircraft/sport aviation would be permitted to fly through the temporary airspace that will be classified as A & D, subject to obeying the rules afforded to that category of airspace. ICAO Airspace classifications are explained in Appendix D. Access requirements are individually detailed in each section.

² Traffic is forecast to increase by 8% from 2009 levels by 2012. (Base case forecast as at January 2010)

6. Proposed airspace change for Farnborough CTA/CTR

Summary

This section explains proposals for establishing temporary controlled airspace [CAS(T)] in the vicinity of Farnborough Airport. The protection afforded by this CAS(T) will enable the aerodrome to handle the increased traffic levels more effectively during the period of the Olympics.

The proposals outlined in this section interface with the changes to en-route airspace as described in section 7.

Farnborough has experience of using temporary airspace to manage the very high levels of activity related to the Farnborough Air Show, which takes place every two years. For the duration of the air show "Restricted Airspace - Temporary" [(RA(T))] is introduced to ensure safe management of the unusually high volumes of air traffic.

The dimensions of the proposed Control Area CTA and Control Zone CTR as detailed in this document will be identical to the air show RA(T), outside show times. This ensures ease of promulgation and understanding with pilots and controllers, and allows for a simplified training requirement for ATC staff. It also minimises the overall impact of the airspace on operations within the Open FIR.

Objectives

The primary objective for the Farnborough CTA/CTR proposal is to enhance the safety of the operation of Air Traffic inbound to/outbound from Farnborough.

Justification

The Farnborough CTA/CTR proposal seeks to reduce delay for aircraft using Farnborough, together with IFR operations at the "Farnborough clutch" airfields³, thus increasing capacity within the TC South airspace. The proposal will also prevent the inherent risk involved in having to avoid Class G traffic with the expected increase in movements. The CAS(T) will thereby reduce complexity, enhance safety and reduce controller workload.

The proposal will also afford partial protection to operations at Blackbushe, Fair Oaks, Dunsfold, Odiham and Lasham, although all airfields have confirmed they do not require specific protection arrangements.

The current airspace design in the vicinity of Farnborough Airport is such that IFR flights must fly through a volume of uncontrolled airspace (Class G). However due to the expected increase in traffic levels and complexity during the Olympic period additional airspace will be required.

Farnborough at present operates an Approach Radar service combined with a Lower Airspace Radar Service (LARS) operation. Together these afford good protection for current usual levels of traffic. However there remains the risk of interaction between Farnborough inbounds/outbounds with transit aircraft, positioning aircraft for "Farnborough clutch" and other General Aviation users. These transit aircraft may be unknown, non-transponding, may not be visible to the primary or secondary radar, or unpredictable (for example aerobatic or training flights).

³ Farnborough Clutch Airfields are: Blackbushe, Fair Oaks, Dunsfold, Odiham and Lasham

Aircraft operating to/from airfields in the vicinity of Farnborough utilise advisory-only Air Traffic Service provision. For example Fair Oaks and Blackbushe are FISO (Flight information service) units; Dunsfold is an Air Ground unit.

As the ATC service provider for the airspace servicing Farnborough Airport, NATS is therefore proposing that portions of the Class G airspace in question are established as CTA/CTR (Class D, as shown in Figure 2) from 0800 local on Monday 16th July until 2000 local on Wednesday 15th August 2012.

Figure 1 overleaf shows the existing airspace. Figure 2 illustrates the proposed temporary airspace, required for the Olympics.

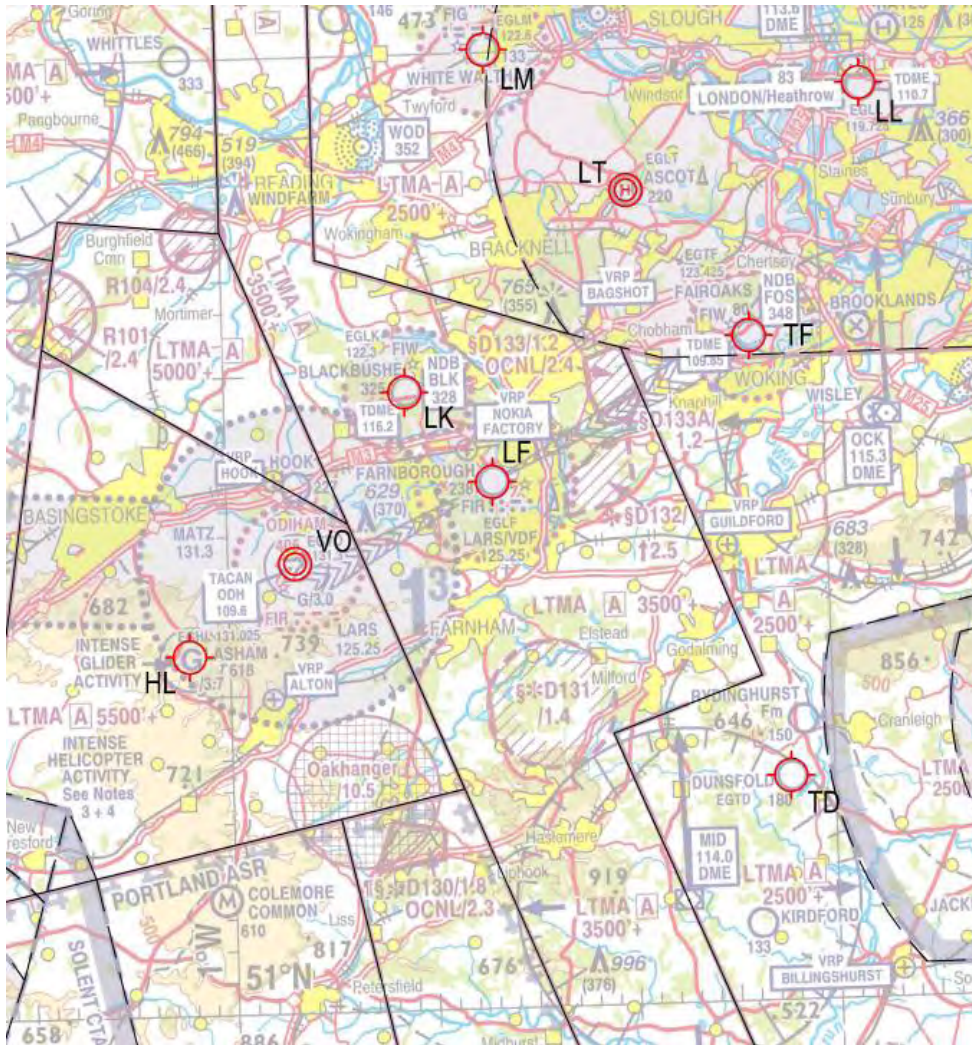


Figure 1 Existing airspace

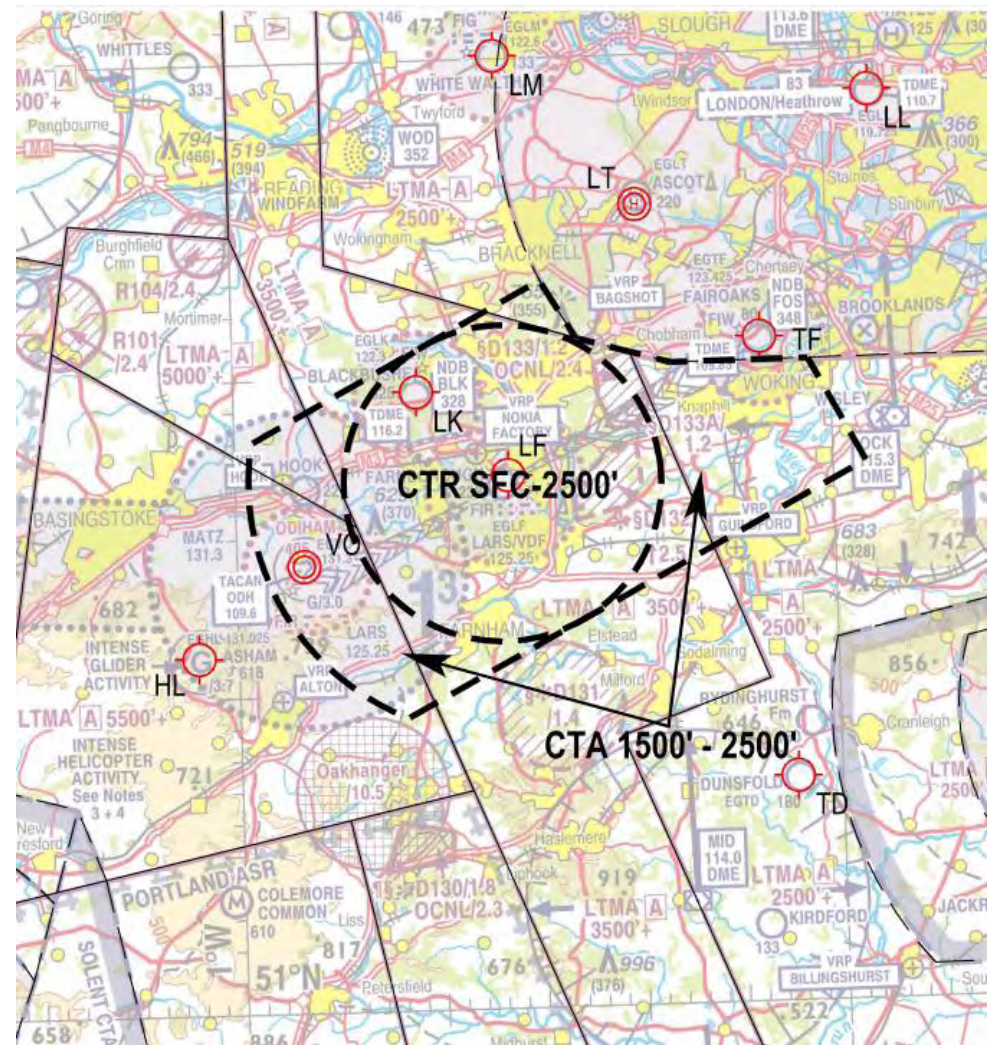


Figure 2 Proposed temporary controlled airspace

Dimensions of the proposed airspace

The dimensions of the CAS(T) requested are identical to the RA(T) which is established for the biennial Farnborough Air Show. This has been chosen to be the minimum area required to afford protection to IFR operations, whilst minimising impact on other users.

The combination of the CTA/CTR and the ATS delegation (as described in section 7) provide sufficient area for vectoring of traffic for all the clutch airfields and Farnborough. The small lateral dimensions are only possible by utilising the NERL ATS delegated area to establish inbound sequences, prior to entry into the CTA/CTR and allowing for interaction of departing aircraft with the inbound stream (described in section 7). The sequence of flights controlled by Farnborough includes inbounds and outbounds to all clutch airfields as well as Farnborough traffic.

Control Zone (CTR)

Class D airspace extending from a Circle radius of 5 nm centred at 511633N 0004635W: Surface to altitude 2500ft.

Control Area (CTA)

Class D airspace extending Anti-clockwise by arc of a circle radius of 12 nm centred at 512812N 0002713W extending from 512255N 0004426W to 512104N 0004242W thence straight lines joining 512104N 0004242W - 512013N 0003800W-512013N 0003106W - 511656N 0002821W - 510913N 0005137W thence clockwise by arc of a circle radius of 8 nm centred at 511633N 0004635W extending from 510913N 0005137W to 511801N 0005906W thence a straight line joining 511801N 0005906W- 512255N 0004426W: Altitude 1500ft to 2500ft.

Access for Transit Traffic

By introducing Class D controlled airspace, General Aviation aircraft flying under visual flight rules (VFR) would be required to contact Farnborough ATC to request permission to transit the CTA/CTR. Historical data from the Farnborough Air Show demonstrates that access was granted to the vast majority of requests. Over the two week period of operation of the 2010 RA(T), 284 transits were accommodated and no transits were refused.

The airspace has been designed to allow for transit through or route around. A request has been put to the Directorate of Airspace Policy to establish a Rule 18 exemption to allow VFR transit within a portion of the existing Heathrow CTR. This mechanism was utilised during the 2010 Air Show with great success, and provides a secondary additional mechanism to allow transit in the vicinity of the proposed CTA/CTR, should integration with IFR traffic levels not be possible.

Traffic Mix and Volumes

The IFR traffic mix operating into and out of Farnborough is predominantly made up of Challenger 60 to Gulfstream 5 sized aircraft, with a significant number of B737 sized airframes. The percentage of larger aircraft is anticipated to increase significantly for the Olympic period.

General Aviation in the vicinity of Farnborough is relatively used to interacting with Farnborough traffic. However during the Olympic period with the expected increase in numbers, average airframe size and relative speed of Farnborough traffic would create further unacceptable risk to the GA community, if it continues to operate within an uncontrolled environment.

Farnborough traditionally handles approximately 100-125 movements per day. This is likely to increase to 300 per day during the Olympic period.

Blackbushe and Fair Oaks operations are also expected to increase, particularly with IFR flights. Blackbushe operations will benefit from the proposed CTA/CTR.

Table 1 illustrates the estimated traffic volume of Farnborough Clutch airfields during the Olympic Period:

Airport	ATS Service Provided	Hourly rate (Inbound/outbound combined)	Estimated Daily Movements (Current level)
Farnborough	ATC	20	300 (125)
Blackbushe	FISO	12	120 (30)
Fairoaks	FISO	4	40 (10)
Dunsfold	Air/Ground	Unknown	Unknown
Odiham	ATC	Unknown	Unknown
Lasham	ATC	Unknown	(20 per week)

Table 1 "Farnborough Clutch" airports - estimated traffic volumes during the Olympic Period.

Times of Operation of Airspace

The requested airspace would be proposed to operate 0800–2000 local, 7 days a week, from 0800 local on Monday 16th July until 2000 local on Wednesday 15th August 2012, outside of these hours the airspace will revert to Class G. There is no requirement for Farnborough to establish any additional protection for the Paralympics.

In support of the operation of the proposed CTA/CTR, agreements will be obtained from:

- Blackbushe
- Fair Oaks
- Odiham

These will be provided as part of the Airspace Change Proposal document submitted to the CAA.

7. Proposed CAS(T) Boscombe Down, Farnborough, Southampton and Bournemouth Area

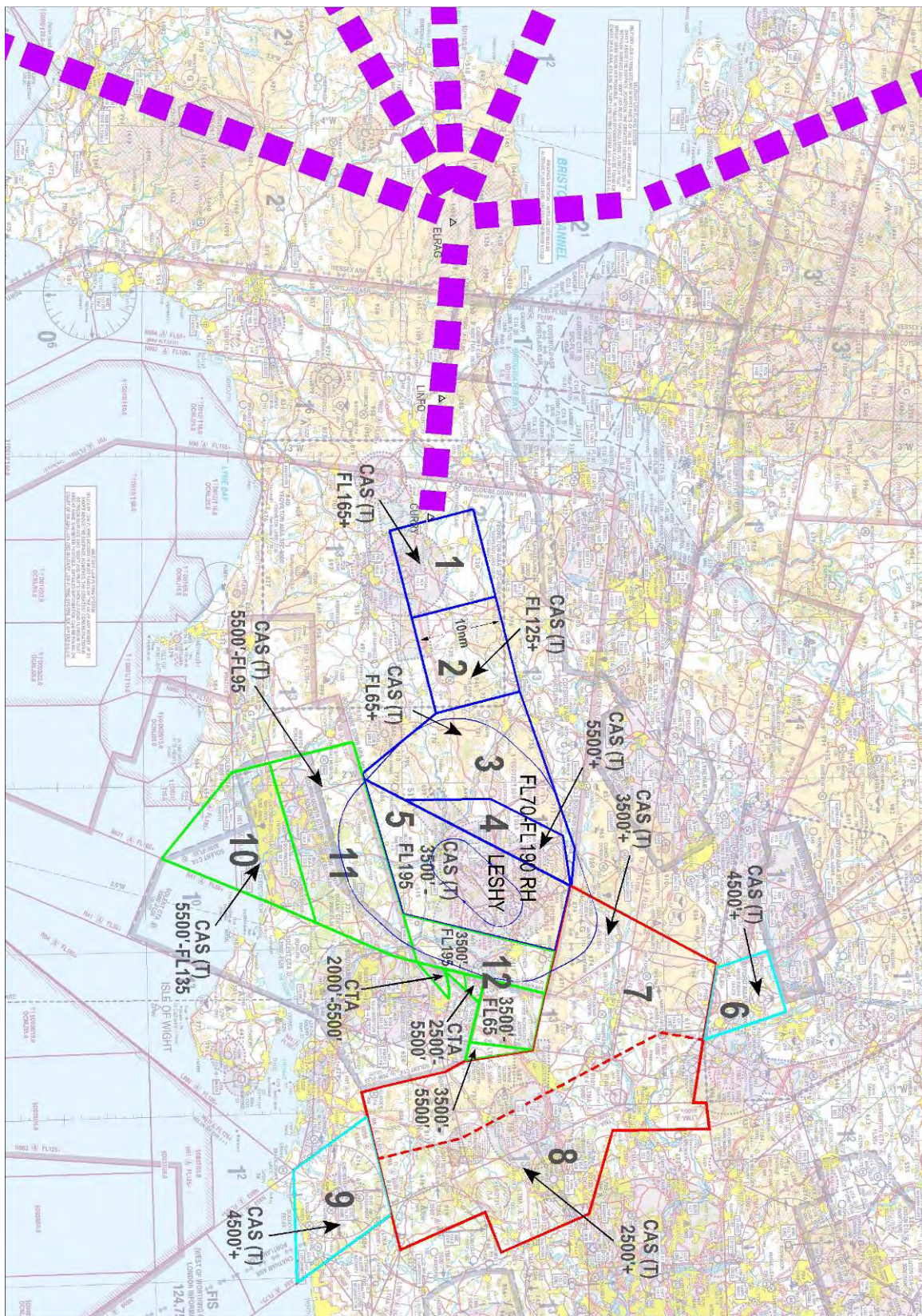


Figure 3 Temporary changes to London Terminal Control airspace⁴

⁴ Reporting Points ELRAG and LINFO are draft positions only

Figure 3 shows the temporary airspace proposed in the vicinity of Boscombe Down, Farnborough, Southampton and Bournemouth including the LESHY hold. This airspace would represent a temporary expansion of the current London TMA, which is managed by NATS Swanwick - London Terminal Control. The area outlined by dark blue is currently Class G airspace from the ground to the base of controlled airspace. It is proposed that this will be re classified Class A divided into areas as follows: Areas 1 and 2, the 10nm wide west stub, have staggered bases to facilitate descending traffic efficiently and safely into the LESHY hold. Area 1 is FL165 to FL195 and Area 2 FL125 to FL195. Area 3, FL65 to FL195 is proposed to contain both the LESHY holding area and protected holding area at all levels. In Areas 4, 5500ft to FL195, and Area 5, 3500ft to FL195, inbound traffic will leave the LESHY hold initially descending to 6000ft once the aircraft enter Area 5 they will descend to 4000ft which will deconflict them with all other LTMA departures.

NATS has undertaken lengthy and in-depth discussions with the MoD regarding both TRA002 and Q41 (Flexible use of Airspace (FUA)) and has reached a mutual agreement. TRA002 will not be active and the Q41 airspace will be active as shown in Figure 3, from 3500ft up to FL195 at the following times:

*0700 local – 2200 local, 7 days a week, **except** the first day of activation at 0800 local on Monday 16th July and the last day when deactivation occurs at 2000 local on Wednesday 15th August 2012.*

If the CAS(T) is approved, the CAA have agreed that, as a specific temporary exception to the carriage equipage requirements, aircraft wishing to transit through the temporary Class A airspace may be either Mode S or Mode A/C. The equipment requirements for the current CAS will remain extant as per Para 5 of UK AIP GEN 1.5 – Aircraft Instruments, Equipment and Flight Documents. The aircraft must also be in receipt of a service from the appropriate ATSU.

The proposed LESHY hold would be a B-RNAV hold, standard right hand turns, and utilising holding levels from FL70 to FL190. This hold will provide safe passage for:

- Traffic inbound to the Farnborough clutch
- Traffic inbound to Oxford

Justification

The CAS(T) proposed in Figure 3 will deconflict traffic inbound and out of the Farnborough Clutch airfields, Southampton and Bournemouth from Heathrow and Gatwick current day operations. It will also enable Solent radar to vector Southampton and Bournemouth traffic into separate streams, increasing capacity within the airspace and decreasing complexity and individual coordination between themselves and TC South.

The current Class G airspace does not have the capacity to be able to safely handle the predicted increases in arrivals to these airports without significant imposition of Air Traffic Management (ATM) flow measures. The introduction of these areas of CAS(T) would provide suitable areas within which to hold the aircraft safely while keeping delays within tolerable limits.

Times of Operation of Airspace

To make provision for flights not subject to flow control regulations the CAS(T) airspace inside the dark blue, light blue and green lines would be proposed to operate at the following times:

*0700 local – 2200 local, 7 days a week, **except** the first day of activation at 0800 local on Monday 16th July and the last day when deactivation occurs at 2000 local on Wednesday 15th August 2012.*

This will support the published hours of Farnborough ATC - outside these hours, the airspace will revert to Class G. It has been assessed that there is no requirement for this airspace during the Paralympics.

Temporary Route Structure

To alleviate pressure on the present route structure; transatlantic traffic inbound to the Farnborough Clutch and Oxford via Shannon Air Traffic Control Centre (SATCC) and traffic from Iberia and SW France via the BREST ACC shall route via the following temporary routes and established waypoints (See Figure 3 purple dotted lines). Traffic will utilise these new routes between 16,000ft and 33,000ft.

At ELRAG traffic will be between 20,000ft and 28,000ft, at LINFO this traffic will be level at 20,000ft. The lower limit of the airspace on this route is 19,500ft

Adjacent ANSPs (BREST and Shannon) have been consulted on the route changes and CAS(T)

COP	ROUTE
BAKUR	BAKUR-UL149-GISOK-ELRAG-T200-LINFO-T200-CURRY-LESHY
NORLA	NORLA-T200-ELRAG- T200-LINFO-T200-CURRY-LESHY
LESLU	LESLU-T201-ELRAG-T200-LINFO-T200-CURRY-LESHY
GAPLI	GAPLI-T202-ELRAG-T200-LINFO-T200-CURRY-LESHY
PEMAK	PEMAK-UT7-LND-UN18-ELRAG-T200-LINFO-T200-CURRY-LESHY
GANTO	GANTO-UM142-LND-UN18-ELRAG-T200-LINFO-T200-CURRY-LESHY

Table 2 Temporary feed routes for flights inbound to Farnborough Clutch & Oxford

Interactions of NERL CAS(T)

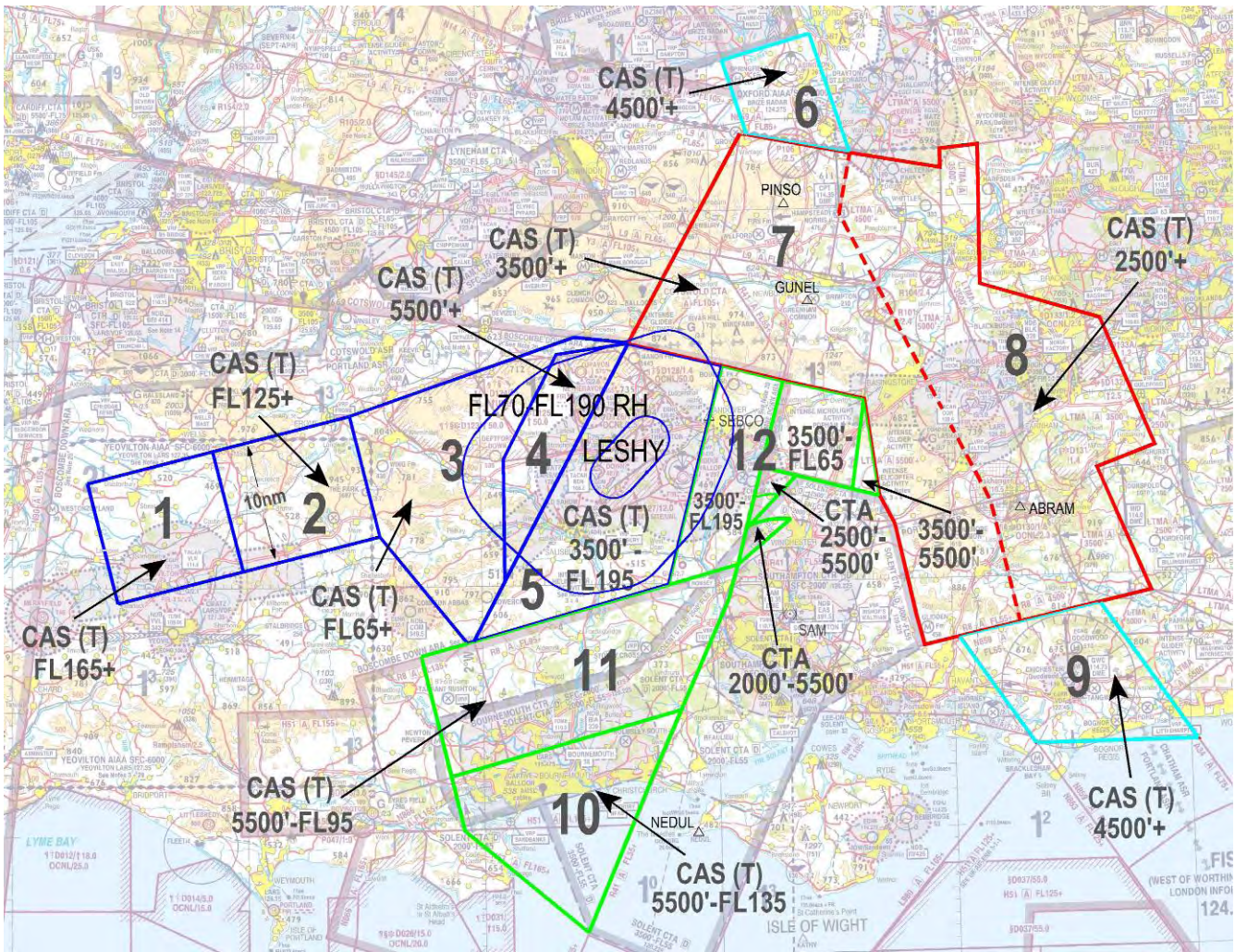


Figure 4 Proposed Terminal Control Airspace Requirement

Classification of proposed airspace

In Figure 4 the areas numbered 6 to 12 are currently classified as Class G, below the currently defined base of CAS. This temporary airspace change proposes they are all reclassified as Class D with lower limits as detailed below. Areas 1 to 5 were clarified in the previous paragraphs.

Dimensions of the proposed airspace

Area 8 – Base 2,500 ft

To provide contiguous protection between the proposed Farnborough CTA/CTR, a portion of CAS(T) is required between the current CAS structure and the CTA/CTR with sufficient lateral dimensions to provide the standard separation requirements for manoeuvring of aircraft.

Currently, LTMA traffic operates utilising all available levels within the LTMA, resulting in traffic being 500ft above LTMA base levels. CAA regulations require Farnborough traffic to be operating at least 500ft beneath the LTMA base levels if operating inside CAS(T) and separated by 3nm. The proposed Area 8 establishes one additional available level beneath the LTMA. Two Farnborough clutch airfields are not protected by the proposed airspace. Farnborough assesses this is acceptable as limited numbers are expected at these airfields (see Table 1).

Farnborough intends to operate a hold at ABRAM on a tactical basis as required following the well established Farnborough Airshow 2010. Area 8 does not encompass the entire ABRAM holding pattern, and therefore the ABRAM hold will only be available at 4000ft, subject to coordination with TC. This will include briefing on the proposed 4000ft hold for the Olympics.

Area 7 – Base 3,500ft

The proposed base of Area 7 has been selected to allow access to higher altitudes inside CAS (than Area 8) specifically to facilitate the flight activities of RAF Odiham, Lasham gliders and transit aircraft between the South coast and Oxford area.

Figure 5 demonstrates the expected levels and tracks of various conflicting traffic flows to be encompassed within the proposed airspace.

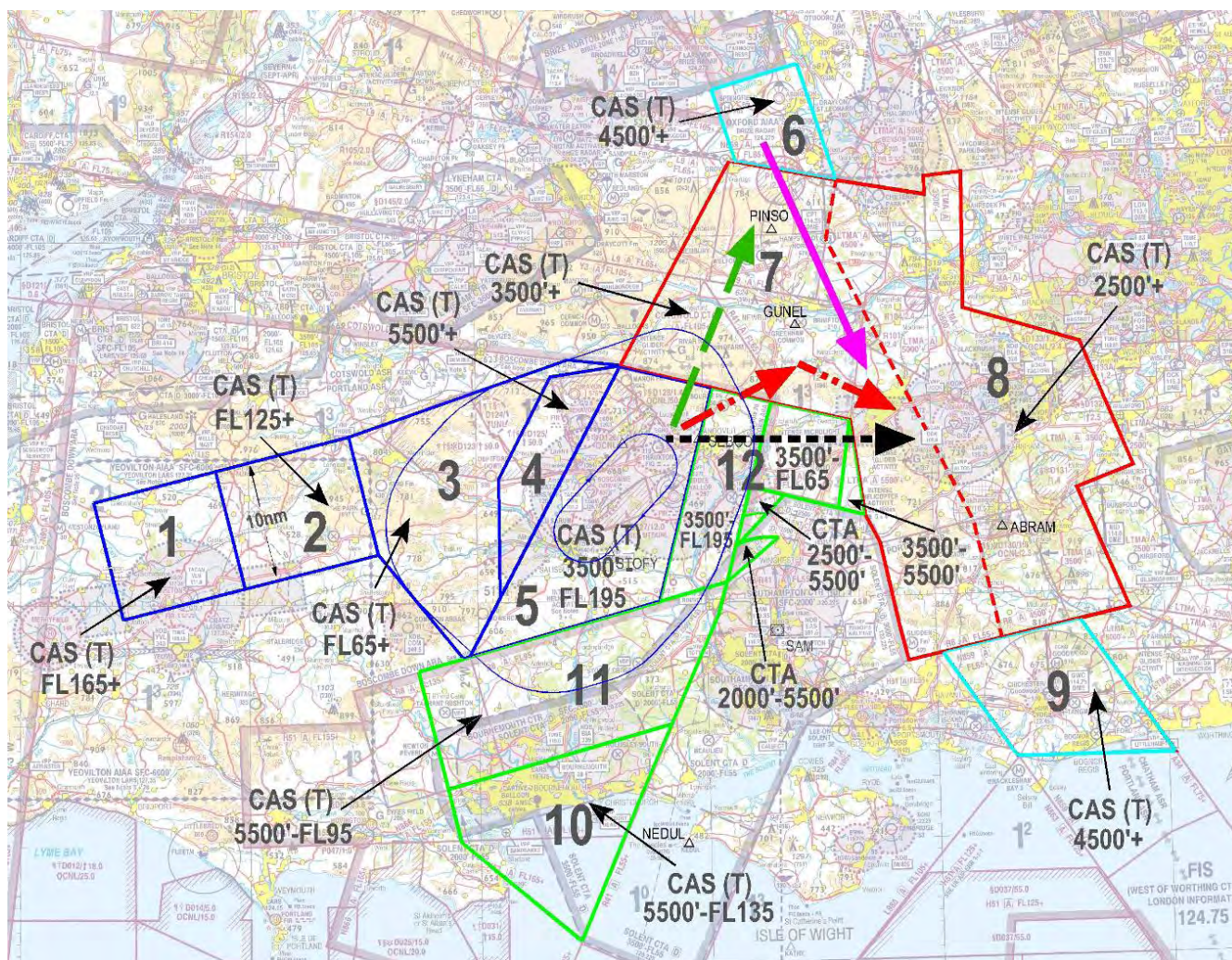


Figure 5 Conflicting Traffic Flows inside Area 7

Farnborough has made every effort to establish the base of the proposed airspace as high as practicable whilst continuing to provide the required vectoring area. In Figure 5 the pink arrow (solid arrow) indicates the existing traffic flow through CPT, which already descends to 5000ft. This level forms part of a silent handover between TC SW Departures and Farnborough, and is required to be retained to ensure continuity and safety of operations. This dictates the available levels below it.

The black arrow (dotted arrow) indicates expected traffic flows from LESHY, to Farnborough clutch airfields, which will route underneath traffic flows into Southampton at 4000ft.

The red arrow (dot/dashed arrow) describes the likely route such inbounds would need to take if co-ordination needs to be effected, or traffic levels are such that sequencing is required. This will be at 4000ft.

The green arrow (dashed arrow) describes the track of Oxford inbounds arriving from the LESHY area. In order to ensure safe separation between them and aircraft on the pink arrow (solid arrow) these will be at 4000ft.

An airspace sharing arrangement may be available between Farnborough and Lasham Airfield within specified areas within Area 7 (see figure 4), subject to traffic predictions and bookings at the various clutch airfields. This could be prepared and the procedures written in advance.

Farnborough intends to operate a tactical hold at GUNEL following the well established procedures used during the Farnborough Airshow 2010. The GUNEL hold will only be available at 4000ft. The airspace users (Brimpton) below the GUNEL hold were extensively consulted during the 2010 Airshow, and it is proposed to repeat that for the 2012 Airshow, this will include briefing on the 4000ft hold during the Olympics.

Within Area 7, a new IFR reporting point is proposed at PINSO (See Figure 4). This facilitates routing into Oxford.

Area 6 – Base 4500ft

TC South intends to use this area of airspace to deconflict inbounds to Farnborough from the north and inbounds to Oxford from the south from the normal flow of Gatwick and Heathrow traffic.

Area 9 – Base 4500ft

TC South intends to use this area of airspace to descend inbound to Farnborough from the south earlier than they do today to deconflict them from the Gatwick and Heathrow outbound flows.

Area 10 – Base 5500 ft

Solent Radar intends to use Area 10 to separate inbounds to Southampton and Bournemouth from the South into two streams. Currently NEDUL is a choke point for these arrivals, therefore the proposed CAS(T) will mean that the expected increase in traffic to both of these airfields over the Olympic period can be safely and efficiently handled.

Area 11 – Base 5500 ft

In busy periods the integration of IFR and VFR traffic within the Solent CTA can be complex, compounded by the airport not having published Standard Instrument Departures (SID) or Standard Arrival Routes (STAR). The lack of contiguous controlled airspace to existing Class A airspace overhead Bournemouth creates additional constraints in two key areas, around SAM and NEDUL. Aircraft are required to operate at lower than desired levels in respect of Bournemouth to remain inside CAS; consequently this traffic then potentially conflicts with Southampton inbound and outbound traffic creating “choke points” at SAM and NEDUL. To ensure capacity for this additional traffic over the Olympic period, the CAS(T) above Bournemouth from 5500ft (Southampton QNH) to FL95 is required.

Area 12– Bases 2000 - 3500Ft (see below)

The airspace proposed under Area 12 (Figure 4) is subdivided as detailed in Figure 6 below.

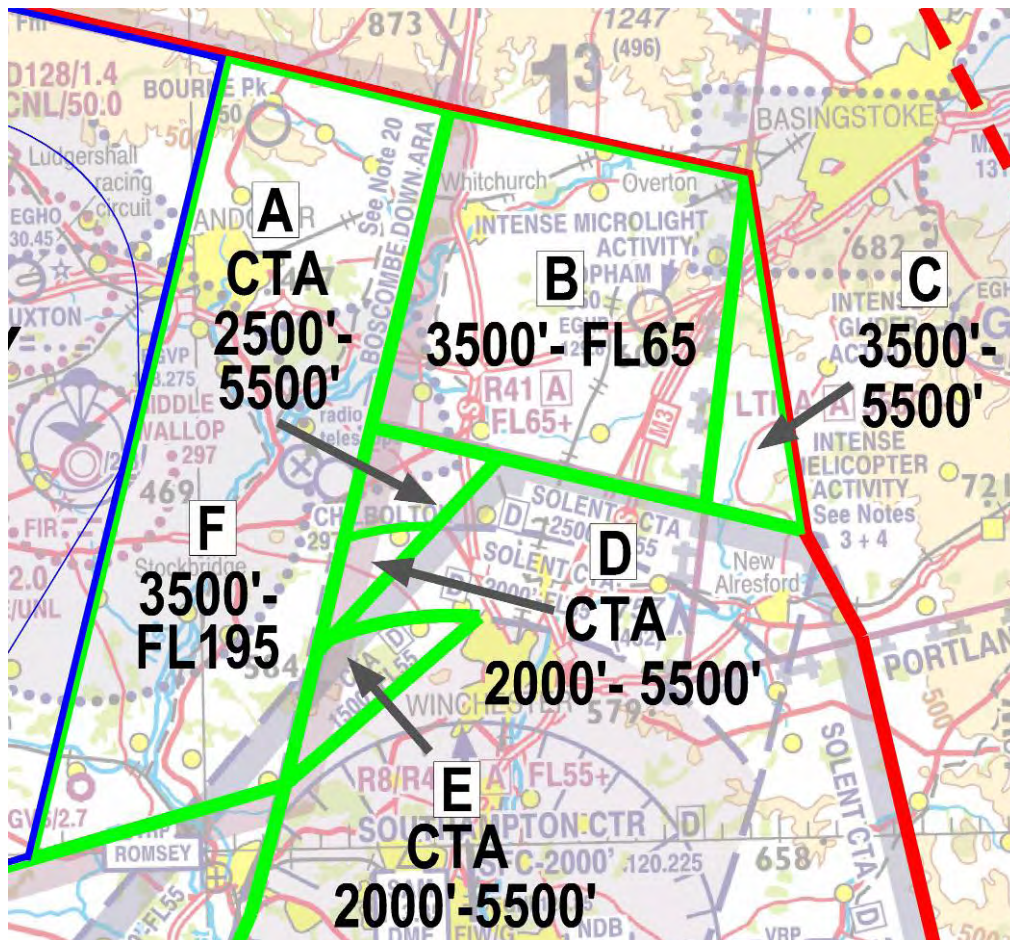


Figure 6 Subdivision of Area 12

From Figure 6, Areas B and C are proposed to operate under a sharing agreement between Farnborough and Southampton. Farnborough will operate within these areas at 4000ft, and Southampton will be descending to not below 5000ft. Direct communications links between the two sectors will be established.

Aircraft inbound to Southampton for RWY 20 do not have an acceptable descent profile for RWY 20 if arriving via PEPIS whilst remaining inside CAS. Arrivals require vectoring to execute a left hand orbit to intercept the ILS, which must be achieved within controlled airspace, typically between 8 and 10 nautical miles from touchdown. The requirement to execute an orbit is predicated by the FL65 lower limit of airway Q41 (Area F) that is contiguous to the northern boundary of the Solent CTA. This procedure is not wholly predictable and can attract a high pilot workload; also the procedure is not conducive to achieving a CDA to the airport. Therefore, for the Olympic period, CAS(T) Class D airspace is required on airway Q41 and also to the north of Southampton (Area 12) to provide Solent Radar with the ability to descend traffic earlier than presently possible, reducing track distance and eliminate the TC requirement to separate traffic laterally, thus reducing the airborne holding and increasing Solent's capacity to handle the projected increase in movements.

Areas A, D and E as depicted in Figure 6, are a re-alignment of the Southampton CTR and Solent CTA and provide continuous controlled airspace protection between the existing CTR/CTA and current Class A airspace. It is also required to provide sufficient lateral dimensions to ensure standard separation requirements for the manoeuvring of additional aircraft numbers expected during the period of the Olympics.

In support of the operation of the proposed CAS(T) Area 12 (A,D & E), agreements will be obtained from:

- Boscombe Down
- Middle Wallop

These will be provided as part of the Airspace Change Proposal document submitted to the CAA.

Area F will be used by all aircraft leaving the LESHY hold at 4,000ft inbound to the Farnborough clutch airfields and Oxford airport. At 4000ft and potentially 5000ft (pressure dependant) this traffic does not conflict with Southampton northbound departures and all Gatwick and Heathrow traffic, thus decreasing complexity in this area for TC South and Southampton ATC.

Access to Areas 7 & 8 for Transit Traffic

Provision for access to transit traffic may be more restrictive than for the separately proposed Farnborough CTR/CTA portion. This is inevitable as a compromise between lower level access and manoeuvring room for IFR sequences has to be reached.

Where possible access will be granted for transit traffic: access for General Aviation users wishing to operate in the airspace for a length of time may be harder to accommodate. Non-radio aircraft are less likely to be afforded access however best endeavours will be made to permit them to transit.

As this is CAS(T), the CAA have agreed that as a specific temporary exception to the carriage equipage requirements aircraft wishing to transit through the temporary Class D airspace may be either Mode S or Mode A/C. The equipment requirements for the current CAS will remain extant as per Para 5 of UK AIP GEN 1.5 – Aircraft Instruments, Equipment and Flight Documents. The aircraft must also be in receipt of a service from the appropriate ATSU.

Part of the current Farnborough LARS West operational area is included within the proposed airspace, and controllers operating this service will be able to permit transit access to General Aviation wherever possible and practicable, utilising co-ordination agreements with the airspace controlling authority (Farnborough Approach). For LARS airspace, timings and frequencies see Ref 4.

Traffic Levels and Routes within Solent CTA/CTR CAS(T)

	2010 Movements	2012 Olympic Movements
Bournemouth Airport	150 ⁵	250*
Southampton Airport	180 - 200	220 - 250
Crossing CTR/CTA	90	180
ATSOCA	150	250

Table 3 Projected Daily Movement Comparison Rates

It has not been possible to determine forecasts for traffic movements at local private landing sites for helicopters or at Lee-on-Solent (MCA Daedalus).

In support of the operation of the proposed CAS(T) an agreement will be obtained from Lee-on-Solent

This will be provided as part of the Airspace Change Proposal document submitted to the CAA.

⁵ Bournemouth 2010 figure excludes training movements

The proposal would not require any changes to local flight plan routes for traffic operating at both units, apart from those published as part of the Olympic proposal.

Access for VFR Transit traffic through Solent CTA/CTR

NATS Southampton (Solent Radar and Southampton Radar) is experienced at providing access to Class D airspace to IFR and VFR traffic as well as the provision of ATSOCAS in Class G airspace.

The CAS(T) extensions to the Solent CTA would be Class D airspace, therefore allowing access to aircraft to either transit or operate within the airspace on an opportunity basis once clearance has been issued by Solent ATC (see table below for potential routes).

This would be done on a safe opportunity basis around the primary ATC and airspace requirement to separate all IFR flights operating within the CAS(T), and to safely integrate any VFR traffic with IFR traffic. When necessary, a mixture of vertical and routing co-ordinations or restrictions would be used by ATC in order to accommodate VFR traffic within the CAS(T). Non transponding aircraft will offer a particular challenge in this regard. Non radio aircraft are even less likely to be afforded access however best endeavours will be made to permit them to transit.

As this is CAS(T), the CAA have agreed that as a specific temporary exception to the carriage equipment requirements aircraft wishing to transit through the temporary Class D airspace may be either Mode S or Mode A/C. The equipment requirements for the current CAS will remain extant as per Para 5 of UK AIP GEN 1.5 – Aircraft Instruments, Equipment and Flight Documents. The aircraft must also be in receipt of a service from the appropriate ATSU.

North /South		
1	2	3
A34 Junction	Basingstoke	Basingstoke
Chilbolton	New Alresford	New Alresford
Romsey	Bishops Waltham	Spinnaker Tower
Totton	Calshot	St Catherine's Point
The Needles	St Catherine's Point	

East/West		
1	2	3
Stoney Cross	Hurst Castle	Romsey
SAM	Calshot	New Alresford
Bishops Waltham	Spinnaker Tower	Alton
Butser Hill		

Table 4 Proposed VFR transit routes

Proposed Helicopter Routes

NATS Southampton proposes to introduce recommended helicopter routes from the London area to the Olympic sailing centre at Weymouth bay and Portland harbour. The routes will interact with adjacent units and permit operators to plan prior to flight and enhance safety by providing a workload reduction and predictability for ATC and pilots.

These have been designed in consultation with NATS Farnborough and Bournemouth ATSU. The British Helicopter Association has been consulted. Figure 7 (overleaf) shows the proposed helicopter routes.

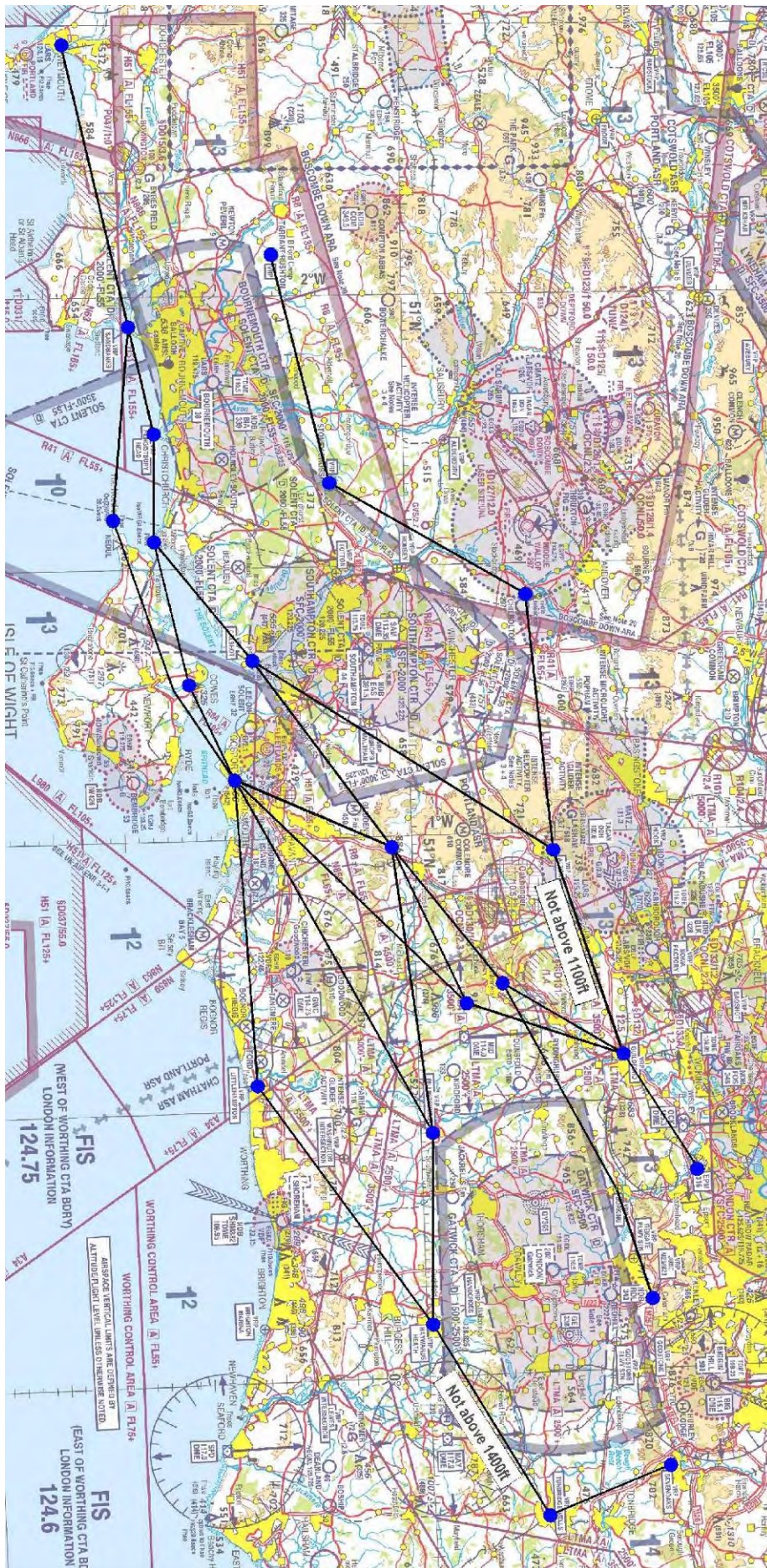


Figure 7 Proposed Bournemouth, Solent and Farnborough area temporary helicopter routes

VFR Map East (Farnborough LARS Area)

1	2	3	4
Tunbridge Wells	Tunbridge Wells	Sevenoaks	VRP J. M25/M23
Haywards Heath	Haywards Heath	Tunbridge Wells	Dorking
Littlehampton	Billingshurst	Haywards Heath	Haslemere
Spinnaker Tower	Butser Hill	Littlehampton	Butser Hill
Cowes	Calshot	Spinnaker Tower	
The Needles	Hurst Castle		
Sandbanks	Sandbanks		

5
Epsom
Guildford
Alton

VFR Map West (Bournemouth/Solent Area)

1	2	3
Ockham	Ockham	Ockham
Guildford	Guildford	Guildford
Alton	Alton	Alton
Butser Hill	Butser Hill	Chilbolton
Spinnaker Tower	Calshot	Stoney Cross
Cowes	Hurst Castle	Tarrant Rushton
The Needles	Sandbanks	
Sandbanks		

8. Southend CTA/CTR and En Route Changes for Olympics

Summary

This section explains proposals for establishment of Temporary Controlled Airspace [CAS-(T)] proposed by Stobart Air, in the vicinity of Southend in order to offer protection to the airfield operation during the period of the Olympics.

Stobart Air (who operates the airport) is expected to play a key role in supporting the Olympics, especially in view of a railway link to Stratford in East London, the main station for the Olympic Park. The airport is situated 32 miles east of the London 2012 Olympic Park venue and 4 miles from the Hadleigh Farm Olympic Venue. Southend airport is due to have new Mode S radar installed and operational before the Olympics.

The dimensions of the proposed Control Area CTA and Control Zone CTR, as detailed in this section ensure ease of promulgation and understanding by pilots and controllers, and allows for a simplified training requirement for ATC staff. It also minimises the overall impact of the airspace on operations within the Open FIR.

The proposals do not detail separate requirements for airspace to be established for NATS En-Route Ltd (NERL) relating to the Olympics period; however, what is proposed does join to the NERL airspace. Southend has been actively involved in the design concept of those proposals. These en route changes will allow aircraft to transition from the airway structure to the Southend CTA/CTR while remaining within the protection of controlled airspace.

Justification

Southend Airport has capacity for, and is expecting up to, 20 IFR movements per hour during the peak hours of the Olympics, a level of traffic significantly above normal levels. Accordingly it has been identified that the current Class G airspace would be unlikely to be capable of maintaining the required safety levels for such traffic loadings. The request for Temporary Controlled Airspace CAS(T) in the form of a CTA/CTR is primarily to facilitate the safe arrival and departure of Olympics-generated IFR flights.

Times of Operation of Airspace

The requested airspace would be proposed to operate

H24, 7 days a week, first activation at 0800 local on Monday 16th July, on the last day deactivation occurs at 2000 local on Wednesday 15th August 2012.

It has been assessed and decided that there is no requirement for Southend to establish any additional protection for the Paralympics.

Proposed airspace change for Southend CTA/CTR

Figure 8 describes the existing airspace in the vicinity of Southend airport. Figure 9 illustrates the proposed temporary airspace required for the Olympics.



Figure 8 Existing airspace in the vicinity of Southend

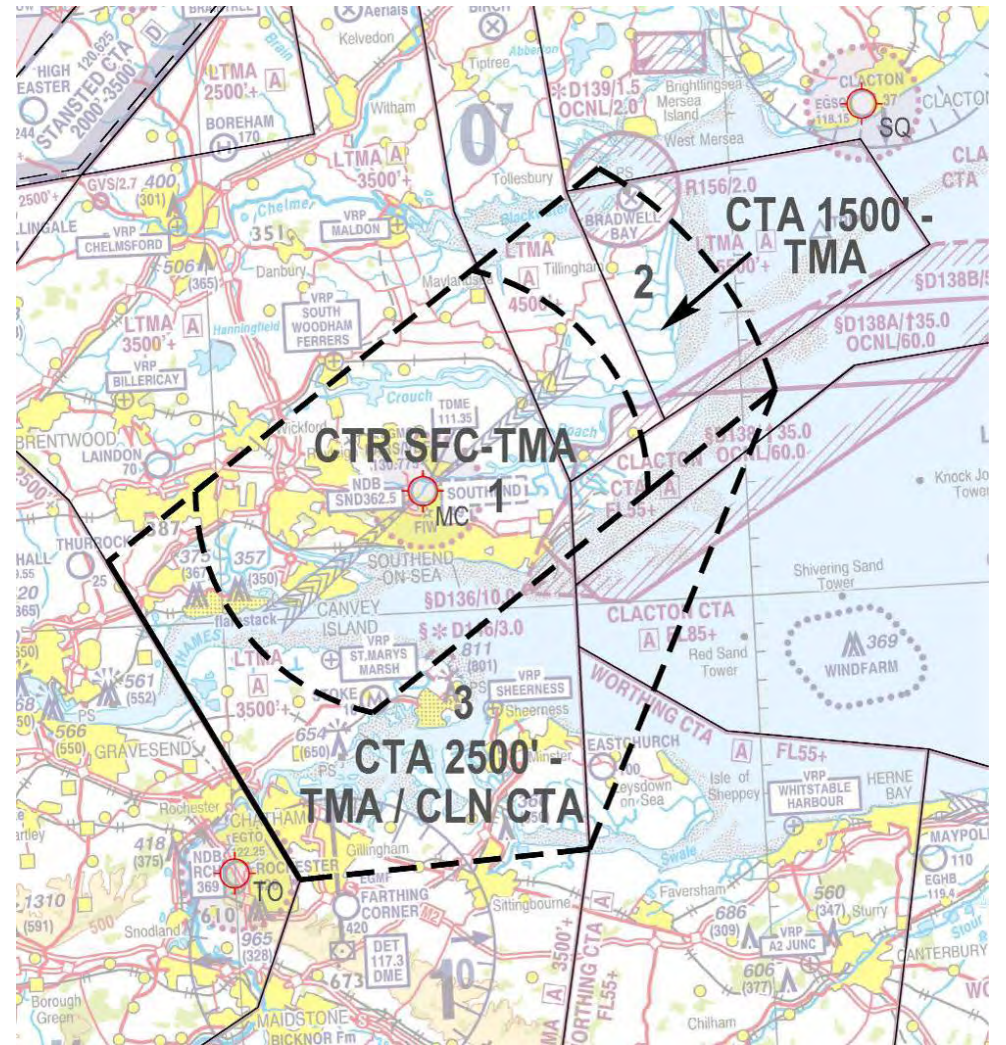


Figure 9 Proposed temporary Southend CTA/CTR.

The CTR/CTA requested by Southend Airport ATC for the duration of the Olympics will be comprised of three sections of CAS(T) (see Figure 9):

Control Zone (CTR)

Class D airspace extending to 5nm either side of the extended runway centreline, linking to arcs of radius 8nm from the Airport ARP. From the surface to the base of the TMA at 3500ft & 4500ft.

This area is requested in order to provide a known traffic environment and therefore high levels of protection to aircraft operating IFR commercial flights for the Olympics. The size of airspace encompasses no more than is necessary to contain the existing Instrument Approach Procedures inside CAS, and to provide protection for departing flights during the high cockpit workload phase. It also provides an area for the initial vectoring of inbound IFR traffic when the Shoeburyness Danger Areas (D138 complex) are active.

North Eastern Control Area (CTA) 1500ft up to base of LTMA

Class D airspace north-east of Southend of width 5nm either side of the extended runway centreline, where it meets arcs of radius 8nm and 13nm respectively.

From 1500ft AMSL to the base of the TMA.

This area is requested by Southend ATC as it is a crucial area for the sequencing of successive flights arriving from the TWEDL or OLLEY directions (see Figure 10).

When the D138 complex of Danger Areas is active, traffic leaving OLLEY hold will be presented to Southend ATC by NATS Thames Radar, level at 3000ft routeing OLLEY – TWEDL- SND (see Figure 10). When RWY 24 is in use at Southend, it will then be vectored abeam the Southend overhead into a downwind right hand circuit pattern for 24. To allow traffic ahead time to approach on the ILS, aircraft will have to be vectored behind by the required separation or Wake Turbulence spacing. Traffic will need to continue downwind to maintain the appropriate spacing; the proximity of the active D138 complex of Danger Areas to the south-east of the final approach track presents significant challenges.

The length of the CTA stub has been kept at the minimum amount feasible to allow routine sequencing of traffic on to the ILS, whilst maintaining the functionality of the airspace overall.

When the D138 complex of Danger Areas is not active and RWY 24 is in use, traffic will typically be presented by NATS Thames Radar routeing OLLEY-RIDLY at 3000ft, and then be sequenced by Southend ATC. This greatly reduces the track miles flown and helps maintain the functionality of the airspace, in that it takes such aircraft away from the Southend overhead, a potentially popular routeing point for transiting traffic from North to South, and South to North.

The base is set at 1500ft as the first aircraft on the ILS will need to descend to be level at 2000ft in order to accommodate subsequent arriving traffic that will be crossing its track level at 3000ft, and then passing downwind abeam the traffic on the ILS.

There is no similar stub provided for RWY 06, as the complication of the D138 complex of Danger Areas is not present, and the number of track miles from OLLEY/TWEDL direction is such that it is sufficient for sequencing successive aircraft onto the RWY 06 ILS.

Southern Control Area (CTA) 2500ft up to base of LTMA

This area is required for the sequencing of successive flights arriving from the TWEDL or OLLEY directions (see Figure 10), and to ensure that departing airways traffic is contained within CAS at all times.

TWEDL is the point used for routeing both outbound and inbound traffic to and from the airways system; the width of the proposed CTA is designed to fulfil the Southend ATC requirement to provide 3/5nm lateral separation between the departing and arriving IFR airways traffic routeing through TWEDL.

When the adjacent D138 complex of Danger Areas is active, traffic will be presented to Southend ATC by Thames Radar level at 3000ft and routing OLLEY – TWEDL- SND. The CTA airspace is required in order to provide an enhanced level of safety and protection to IFR flights from the NATS Olympic CAS(T), around the OLLEY hold, and the start of the Southend Temporary CTR. The proposed base is 2500ft, to allow aircraft to continue to transit this airspace at 2400ft or below, whilst remaining outside CAS(T).

Interface With En-route CAS(T)

Figure 10 shows the interface between the Southend Olympics CAS(T) and the en route Olympic CAS(T) around the OLLEY hold and TWEDL (outlined in blue), as well as how it integrates with the existing LTMA to the southwest of Southend.

For the duration of the Olympics, Southend inbound traffic from airways will be routed initially to the OLLEY hold, and then via TWEDL to Southend Airport.

Southend departures to the south will route outbound through TWEDL; under the present arrangement southerly airways departures route out via Detling VOR. Suitable procedures to allocate division of responsibility between the two units will be in place.

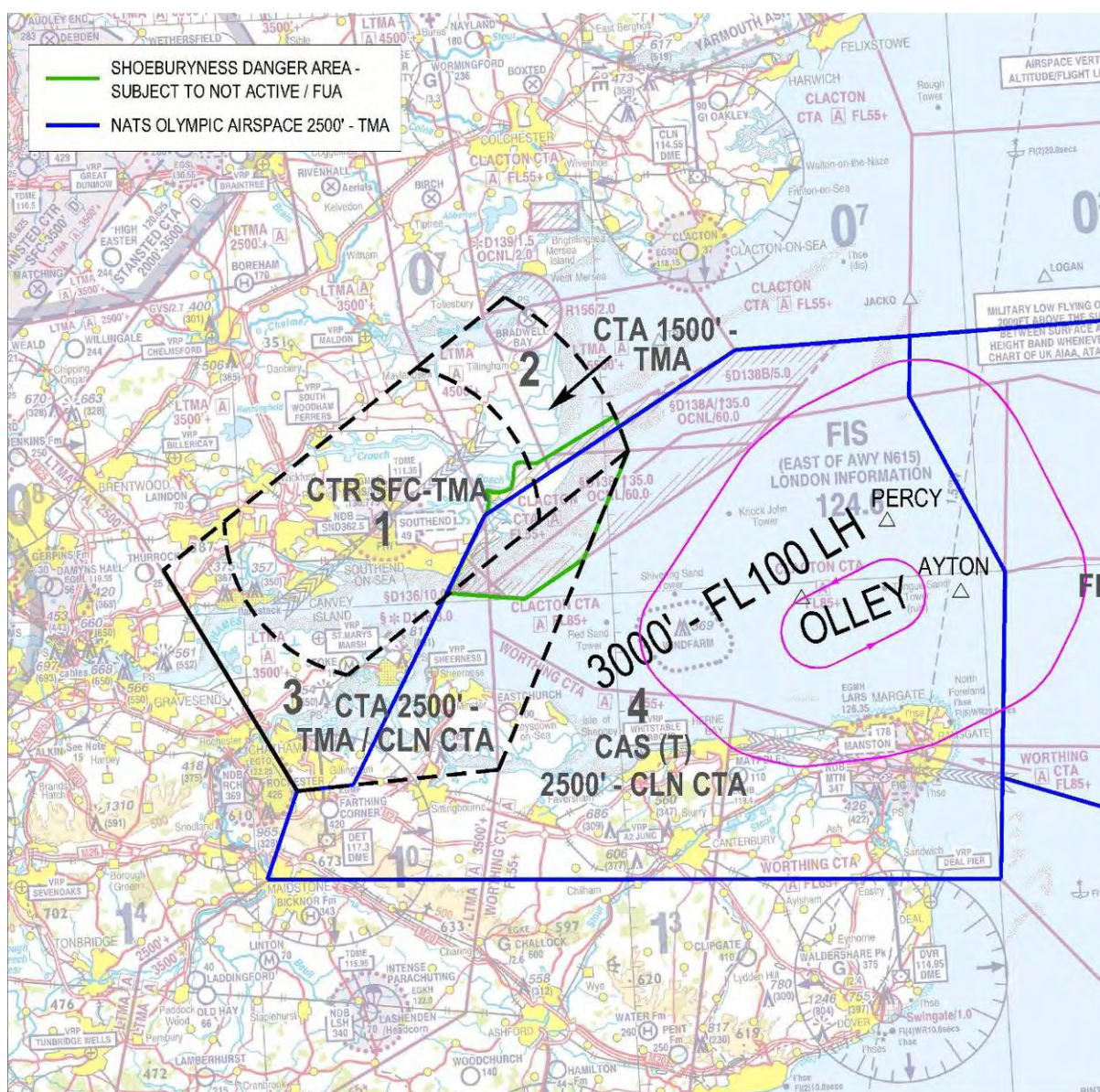


Figure 10 Southend and OLLEY/TWEDL areas⁶

⁶ Caution Thanet and London Array TMZs

Access Arrangements

The CAS(T) applied for by Southend would all be Class D airspace, therefore allowing access to aircraft to either transit or operate within the airspace on an opportunity basis once clearance has been issued by Southend ATC.

Access would be permitted on an opportunity basis only focusing on safety and the primary ATC and airspace requirement to separate all IFR flights operating within the CAS(T), and the safe integration of VFR traffic. When necessary, a mixture of vertical and routing co-ordinations or restrictions would be used by ATC in order to accommodate VFR traffic within the CAS(T).

As this is CAS(T), the CAA have agreed that as a specific temporary exception to the carriage equipment requirements aircraft wishing to transit through the temporary Class D airspace may be either Mode S or Mode A/C. The equipment requirements for the current CAS will remain extant as per Para 5 of UK AIP GEN 1.5 – Aircraft Instruments, Equipment and Flight Documents. The aircraft must also be in receipt of a service from the appropriate ATSU.

Assessment of effects on nearby Aviation users in the region

Possible likely effects on nearby aviation users in the region have been assessed by Southend ATC below.

Andrewsfield - Transit route north to south. Moderate impact if unable to access temporary CTR/CTA, traffic would need to route around to the west.

Barling Farm strip located approx 3nm east of Southend Airport. Access to and from this farm strip (located within temporary CTR and adjacent RWY 24 approach and Danger Area D138 complex), would be by contact with Southend ATC, and establishment of a temporary LOA for the duration of the CAS(T) (16th July – 15th August). Vertical & Routing restriction envisaged due proximity to RWY 24 approach, and Danger Area 138 complex.

Boreham (Essex Air Ambulance & Essex Police ASU) – Some operations within the CAS(T) area and transits to Kent/other areas.

Minimal impact due low altitude operations and aircraft can always operate as CAT B priority.

Burnham Farm strip - located approx 7nm north-east of Southend Airport. Access into the temporary CTR and from this farm strip (located in the CTR, beneath the RWY 24 approach and adjacent Danger Area D138 complex), would be by contact with Southend ATC, and establishment of a temporary LOA for the duration of the CAS(T)(16th July – 15th August) .

Clacton - Transit route north-east to South. Flights used to avoiding D138 complex of Danger Areas contacting Southend for Danger Area Activity Information Service (DAAIS).

Damyns Hall – Sightseeing/Navigation flights in the area. Minor impact.

Eastchurch – Minor impact, little activity. Aircraft would need to stay at 2400ft or below initially. Quite a long detour around the CTR to the west if unable to obtain transit. Transit to the east would be shorter if Danger Area D138 complex not active.

Earls Colne - Transit route north to south. Moderate impact if unable to access CAS(T) as traffic would need to route around Southend CAS(T). Earls Colne flights are used to contacting Southend ATC for transit and Danger Area Activity Information Service (DAAIS).

Headcorn – Limited effect on northbound route, such traffic would already have to be below 2400ft unless in receipt of a clearance from Thames Radar. A straight line route from Headcorn to Billericay VFRP at 2400ft or below would not require to enter the Southend CAS(T)

Laindon - Nearby quiet strip, a few CAS(T) transits may be required. Minimal impact due location and traffic levels, aircraft can still access from CTA direction at below 2500ft. Slight re-routes may be required if unable to transit CTR from south-east. There may be some extra traffic in the Laindon area if displaced further westwards around the Southend CAS(T).

Manston - Existing LOA in place to facilitate handover of traffic between the two units. Manston would need to ensure traffic transferred to Southend in good time in order to obtain a clearance into CAS(T), and also to be aware that there may on occasions, be a requirement for such traffic to orbit outside of the CAS(T) awaiting onward clearance.

Southend traffic inbound traffic to Manston would have to be co-ordinated at 2400ft or below, unless Thames Radar/TC agree otherwise.

North Weald - Transit route northwest to southeast, and General Handling/Aerobatic flights in the area. Minor impact generally, although aerobatic/formation teams may be restricted in areas that are suitable for these activities. Transit route south-eastwards can remain beneath the temporary CTA at 2400ft, or for more direct on opportunity basis, through the west of the Southend CTR. The route from North Weald to DET remains away from both temporary CTA and CTR.

CAS(T) would likely be unattractive for Aerobatics due to the need to 'listen out', and the sometimes lengthy time they remain in a particular area.

Rochester - Transit route southwest to north and northeast, and sightseeing/navigation flights in the area. Moderate impact if unable to access CTR/CTA, traffic would need to route around to the west and north. A straight line route from Rochester to Billericay VRP at 2400ft or below would not require to enter the Southend CAS(T) There may be some extra traffic in the Rochester area if displaced further to the south-west around the Southend CAS(T).

Stapleford - Transit route northwest to southeast, and General Handling flights in the area. Some impact, however most Stapleford aircraft already contact Southend ATC when transiting or operating in the areas. The route from Stapleford/LAM to DET remains away from both temporary CTA and CTR. A straight line route from Stapleford to Sittingbourne at 2400ft or below would not require to enter the Southend CAS(T)

Stoke - Transit route south to north, and General Handling flights in the area. Moderate impact, aircraft would need to contact Southend ATC to gain entry clearance, LOA could be arranged (16th July – 15th August 2012) to allow access from the airfield into and out of the CTR with certain levels restrictions. CTA would restrict operations to below 2500ft to the south of Stoke. Aircraft with radios could be accommodated on opportunity basis within the proposed Southend CTA and CTR.

Stow Maries – Nearby small airfield, occasional transits required. Moderate impact. Low traffic levels at present. Temporary LOA could be signed (16th July – 15th August) to allow access to/from the airfield beneath the CTA and into the CTR from the north/west, with a vertical level restriction.

There may be some extra traffic in the Stow Maries area if displaced further northwards around the Southend CAS(T).

Thurrock - Transit route west to southeast, and sightseeing/navigation flights in the area. Minor impact, aircraft could route around the CTR on a direct track to DVR adding only minor extra distance and remaining at 2400ft or below. There may be some extra traffic in the Thurrock area if displaced from the Southend CAS(T).

VFR Routings adjacent to Southend proposed CAS(T)

Southend has the following Visual Reference Points (VRPs). For aircraft wishing to request a zone entry clearance either inbound to the airfield or to transit through, initially they should route towards one of the VRPs listed below. Similarly ATC will direct outbound VFR traffic to route in relation to these VRPs in order to deconflict from IFR commercial traffic.

Sheerness: This lies just outside the CTR southern boundary located on the south bank of the River Thames.

St. Mary's Marsh: This lies inside the CTR south-western boundary, and is located on the south bank of the River Thames on the north side of the Isle of Grain.

Billericay: Located to the west-northwest of Southend, north of the CTR/CTA boundary.

South Woodham Ferrers: Immediately outside the north-west CTR boundary.

Maldon: Located north of Southend by approximately 10 miles, and to the north of the CTR

Some recommended straight line VFR routes that would avoid Olympics CAS(T) and permanent CAS are listed below (these must also be checked against NOTAM and security restrictions at the time):

Abberton Reservoir/Colchester – Maldon – Billericay – QE2 Bridge (caution proximity of descending bases of LTMA above).

Billericay – Rochester at 2400ft or below (Caution proximity of Southend CTR to east, and Southend CTA and LTMA above).

Billericay – Headcorn at 2400ft or below (Caution proximity of Southend CTR to the immediate east, and Southend CTA and LTMA above).

Brentwood/Lambourne/Stapleford – QE2 – Maidstone at 2400ft or below (Caution proximity of LTMA above).

Brentwood/Lambourne/Stapleford – Sittingbourne – Dover at 2400ft or below (Caution proximity of Southend CTR to east, and Southend CTA and LTMA above).

Clacton – Dover at 2400ft or below, subject to Danger Area being inactive.

Thurrock – Kingsnorth Power Station – Sheerness at 2400ft or below (Caution proximity of Southend CTR to east, and Southend CTA and LTMA above).

Southend ATC shall continue to provide a Lower Airspace Radar Service (LARS) to aircraft flying outside CAS in the area throughout the Olympic period, and would continue to offer navigational assistance to pilots operating in the area.

Areas 4 & 5 OLLEY Hold CAS(T)

Figure 11 below shows the OLLEY hold which will be utilised by aircraft inbound to Southend, Biggin Hill, Manston and Lydd airports. It also displays Area 5 CAS(T) which is required for aircraft to fly through to get to the proposed hold from the east.

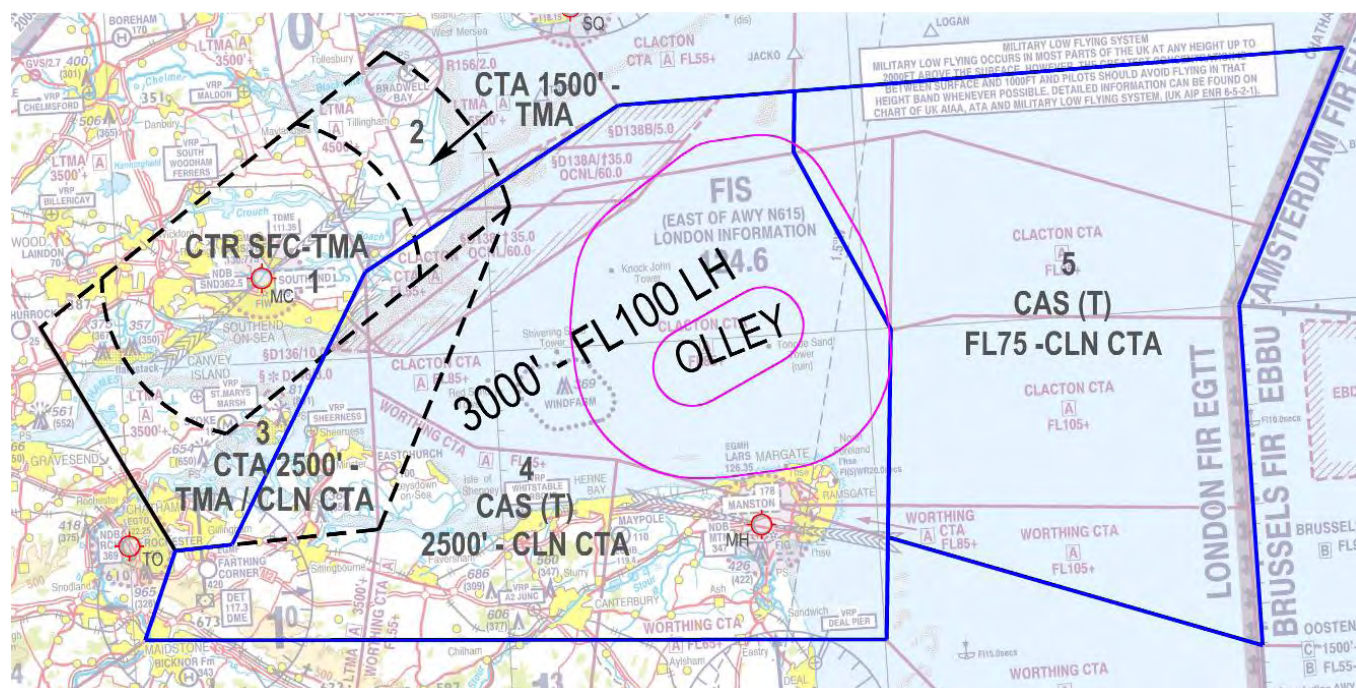


Figure 11 OLLEY Hold⁷

OLLEY is a temporary B-RNAV hold proposed for the duration of the CAS(T). OLLEY will be used for aircraft inbound to Biggin Hill, Southend, Manston, Lydd and Rochester airports. All turns will be left hand, aircraft can be held from 3,000ft up to and including FL80.

NATS has undertaken lengthy and in-depth discussions with the MoD to ensure minimum effect of the proposal on their operations.

The airspace inside the blue line (Area 4 above) is currently Class G airspace from the ground to the base of controlled airspace. The proposed CAS(T) in Area 4 will extend from a base of 2,500ft to 5,500ft. The CAS(T) will be reclassified as Class D. From 5,550ft up to the current base of controlled airspace, the airspace will be reclassified as Class A.

The proposed CAS(T) in area 5 will extend from FL75 up to the current base of controlled airspace and will be reclassified as Class A.

Justification

The CAS(T) airspace proposed in Figure 11 Areas 4 and 5 will be used by traffic into Biggin Hill, Southend, Manston and Lydd. The current Class G airspace does not have the capacity to be able to safely handle the predicted increases in arrivals to these airports without significant imposition of ATM flow measures. The introduction of these areas of CAS(T) would provide suitable areas within which to hold the aircraft safely while keeping delays within tolerable limits.

⁷ Caution Thanet and London Array TMZs

Times of Operation of Airspace

The requested airspace would be proposed to operate

H24, 7 days a week, first activation at 0800 local on Monday 16th July, on the last day deactivation occurs at 2000 local on Wednesday 15th August 2012.

It has been assessed and decided that there is no requirement for Southend to establish any additional protection for the Paralympics.

Access for Transit traffic

The CAS(T), Class D will allow access to appropriately equipped aircraft to either transit through or operate within the airspace on an opportunity basis once clearance has been issued by the appropriate ATSU.

This would be done on a safe opportunity basis around the primary ATC and airspace requirement to separate all IFR flights operating within the CAS(T), and to safely integrate any VFR traffic with IFR traffic at all times. When necessary, a mixture of vertical and routing co-ordinations or restrictions would be used by ATC in order to safely accommodate VFR traffic within the CAS(T).

As this is CAS(T), the CAA have agreed that as a specific temporary exception to the carriage equipment requirements aircraft wishing to transit through the temporary Class A & D airspace may be either Mode S or Mode A/C. The equipment requirements for the current CAS will remain extant as per Para 5 of UK AIP GEN 1.5 – Aircraft Instruments, Equipment and Flight Documents. The aircraft must also be in receipt of a service from the appropriate ATSU.

9. CAS(T) around East Anglia (For Luton, Cranfield and Cambridge)

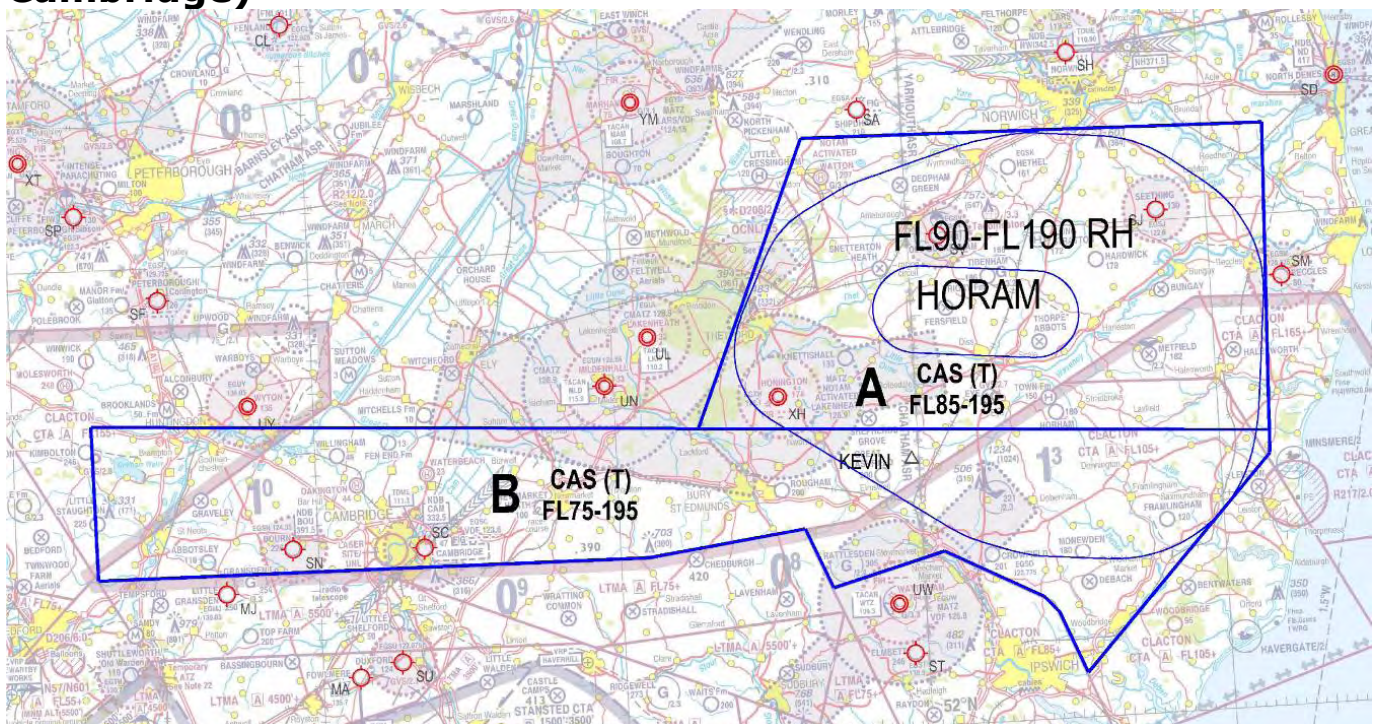


Figure 12 Proposed CAS(T) in the vicinity of Luton, Cranfield and Cambridge

The HORAM B-RNAV hold (right hand turns) is proposed to be used for contingency purposes. Figure 12 shows the temporary airspace over the HORAM area.

The proposed CAS(T) airspace inside the blue line Area A which protects the HORAM hold and surrounding areas, will be Class A from FL85 – FL195. This airspace is currently Class G from the ground to the base of controlled airspace.

Military operations also utilise the airspace, with arrivals and departures from Mildenhall, Lakenheath and Honington. NATS has therefore undertaken lengthy and in-depth discussions with the MoD to ensure minimum effect of the proposal on these operations. As a result, NATS and the MOD have developed airspace sharing arrangements for Area A.

The surrounding airspace, Area B will be Class A from FL75 – FL195. It will be used to vector inbound to Luton, Cranfield, Cambridge and Duxford. By using the proposed temporary airspace, TC Essex controllers can deconflict these arrivals from those inbound to Stansted and thus increase capacity to all of these airfields.

Times of Operation of Airspace

The requested airspace would be proposed to operate

H24, 7 days a week, first activation at 0800 local on Monday 16th July, on the last day deactivation occurs at 2000 local on Wednesday 15th August 2012.

It has been assessed and decided that there is no requirement for Southend to establish any additional protection for the Paralympics.

SSR Compliance

As this is CAS(T), the CAA have agreed that as a specific temporary exception to the carriage equipment requirements aircraft wishing to transit through the temporary Class A airspace may be either Mode S or Mode A/C. The equipment requirements for the current CAS will remain extant as per Para 5 of UK AIP GEN 1.5 – Aircraft Instruments, Equipment and Flight Documents. The aircraft must also be in receipt of a service from the appropriate ATSU.

Justification

It has been assessed in the Atkins Report (Ref 1), that there will be an extra 3000 business jet flights over the period of the games as well as 150 Heads of State expected to attend opening and closing ceremonies as well as some of the major events. The controlled airspace around the London area is complex and already at certain times very busy. Traffic levels are expected to rise and this coupled with the expected increase for the 2012 Olympics will mean that the existing controlled airspace will not be able to cope with the total global demand.

The contingency hold at HORAM will provide the capacity to handle aircraft if there is an incident or weather disruption at any airport in the East of the TMA with the minimum of disruption to other IFR flights.

All of the proposals to change airspace are temporary.

They would be implemented 0800 local on Monday 16th July 2012, and disestablished 2200 local on Wednesday 15th August 2012.

It has been assessed and decided that there is no requirement to establish CAS(T) required to cover the Paralympics.

10. Design options

The design of the temporary airspace as proposed in this document is the result of in excess of 18 workshops held by NATS between ATC experts, CAA, MoD, BBGA representatives and Euro Control CFMU. This did not include local environmental stakeholders due to the proposed airspace being temporary (see section 3 "Scope"). During the design and initial consultation process, several design options were considered.

Initially a "do nothing" option was considered. This was rejected after the results were published from the Atkins study coupled with NATS and CAA visiting many airfields within southeastern England (a full list is provided in Appendix F) showed that, over the Olympic period, forecast air traffic demand in the SE region will be significantly higher than the available capacity of the airspace system.

NATS is presenting one option within this consultation document. However, if feedback suggests feasible alternatives to the NATS proposed temporary design, these will be considered and (if necessary) further design options may be developed. In this event the CAA may also require further consultation to take place.

11. Next steps

Please respond to this consultation even if you have no objection to the proposal. The closing date for replies associated with consultation issues is **26th May 2011**.

See paragraph 4 for details of how to respond.

If more than one consultation is in progress, please ensure you respond separately to each consultation.

Before you compose your response to this consultation, you may wish to consider how your operations may be affected by the proposal (if at all), and whether there are any unintended consequences of the proposal, of which you feel NATS should be made aware.

Responses to this consultation will be collated and analysed. A summary will be circulated to the CAA and to participating stakeholders after the consultation has closed. Any matters raised during the consultation period that have not been adequately considered during the development of the proposed design may require NATS to make changes to the proposal. Any such changes may require further consultation as determined by the CAA.

If and when NATS is satisfied, having considered the consultation responses, that the proposal achieves the appropriate balance between all the stakeholder requirements, a formal airspace change proposal (ACP) will be submitted to the CAA for consideration in line with the airspace change process (Ref 2). This will include a full record of all feedback from this consultation.

Comments regarding NATS' compliance with the consultation process as set out in the CAA's guidelines for the airspace change process should be directed to the CAA at:

Head Airspace Policy Coordination and Consultation
Directorate of Airspace Policy
CAA House
45-59 Kingsway
London
WC2B 6TE

E-mail: BusinessManagement@caa.co.uk

12. References



Atkins Report



1. London 2012 Airport Capacity Study
(PDF file embedded within electronic version of Consultation Document)

2. CAP 724/725, CAA GUIDANCE ON THE APPLICATION OF THE AIRSPACE CHANGE PROCESS, March 2007, CAA Directorate of Airspace Policy
CAP 724
<http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=366>
CAP 725
<http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=395>



IN-2011/02



3. NATMAC IN-2011/02
(PDF file embedded within electronic version of Consultation Document)
<http://www.caa.co.uk/default.aspx?catid=7&pagetype=90&pageid=10181>

4. Farnborough Lower Airspace Radar Service (LARS) operation
UK AIP page ENR 1-6-3-1 *et seq*, especially ENR 1-6-3-4 paragraph 8
http://www.ead.eurocontrol.int/eadbasic/pamslight-3B1C887BB1207E2D1F3DB508935B9A03/7FE5QZZF3FXUS/EN/AIP/ENR/EG_ENR_1_6_en_2011-01-13.pdf

Appendix A: List of Stakeholders

NATMAC (National Air Traffic Management Advisory Committee)

BATA

BPA

Heavy Airlines

European UAV Systems Centre Ltd

Light Airlines

UKAB

PPL/IR

BALPA

GATCO

GAPAN

BHPA

BAA

LAA

GASCo

HCGB

Aviation Environment Federation

UKFSC

BBGA

AOA

BGA

BMFA

British Helicopter Association

AOPA UK

BBAC

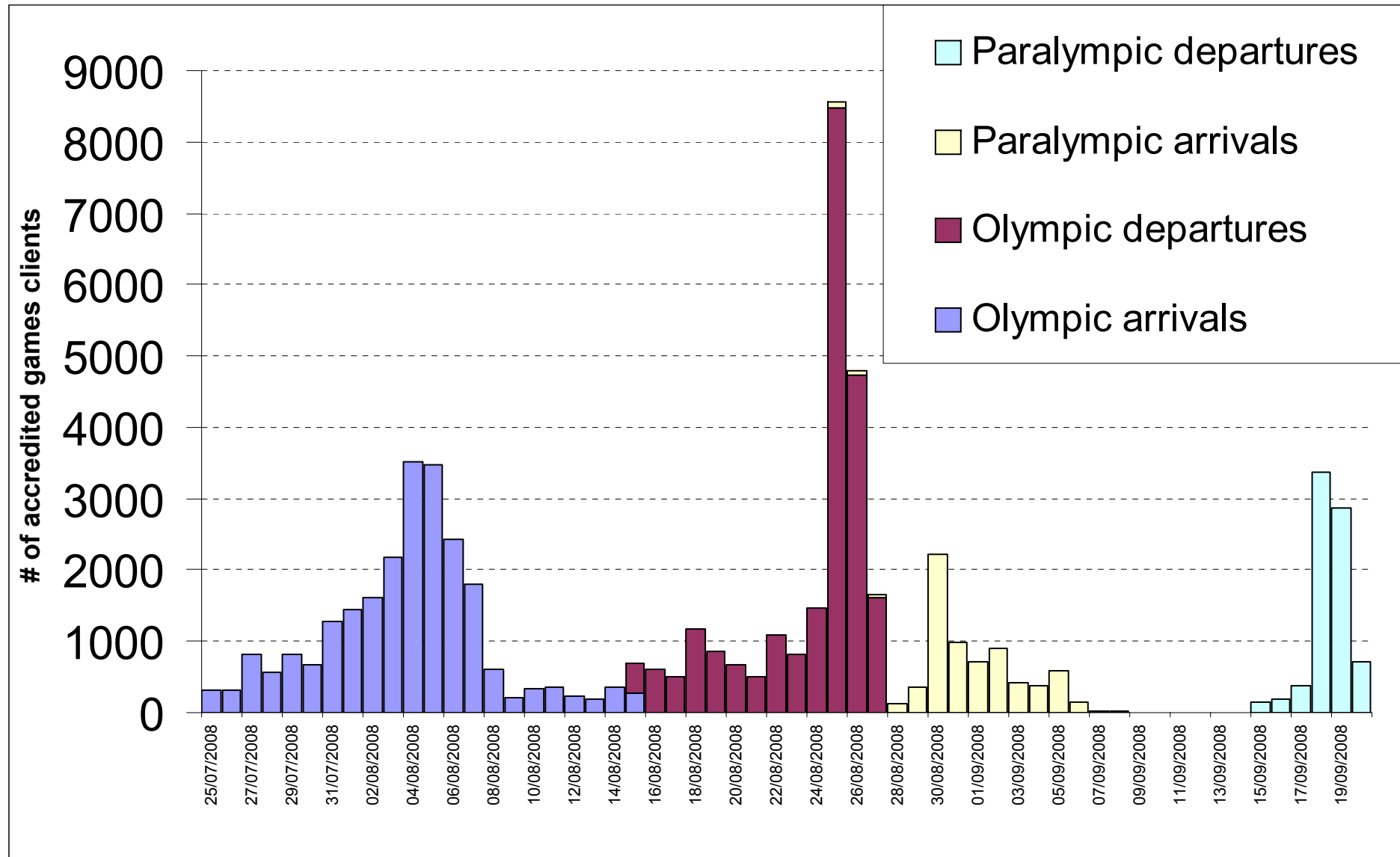
BMAA

BAE Systems

British Airways

easyJet

Appendix B: Beijing Olympics Games



Appendix C: Overview of Structure and Operation of UK Airspace

The airspace over the UK is a national asset and finite resource. The safe and efficient utilisation of our airspace is vital to both the UK economy and national defence. Accordingly, it is essential that UK airspace be provided, as far as possible, for the benefit of all users.

UK airspace, from ground level to approximately 66,000ft, is categorised as being either 'Controlled Airspace' or 'Uncontrolled Airspace':

Controlled airspace is established for the protection of aircraft during the various phases of flight and to facilitate a safe and expeditious flow of air traffic. Any aircraft operating within controlled airspace require an Air Traffic Control (ATC) clearance and must comply with the instructions issued. Controlled airspace is therefore, in most cases, a 'known environment', i.e. all traffic is known to the ATC system.

Commercial, passenger-carrying aircraft operate almost exclusively inside controlled airspace. Controlled airspace can be divided into 5 main types:

- Control Zones, which extend from ground level and surrounding major airports
- Control Areas, which do not extend down to the ground but have base levels between approximately 1500 and 5000ft above the ground
- Airways, which are corridors of controlled airspace that form the main routes connecting major airports and are a form of Control Area
- Terminal Control Areas, which are larger Control Areas established around groups of airports where several airways converge
- Upper Airspace that comprises all UK airspace from FL245 (24,500ft) upwards.

Whilst within controlled airspace standard routes are published as a template for planning purposes, Air Traffic Controllers may use the full lateral and vertical extent of this protective airspace. In fact, the ability for controllers to tactically position aircraft is essential in ensuring the most effective flow of traffic, placing the safe separation and sequencing of aircraft above all other considerations. Consequently, aircraft will not necessarily follow exactly the same flight paths. However, the closer aircraft are to the airport of arrival or departure the less flexibility exists to adapt their flight profiles. For example, an aircraft 5 miles from touchdown needs to be aligned with the runway and therefore is likely to be in exactly the same piece of sky that the aircraft ahead occupied. The further from touchdown, the more variation in positioning is likely to exist because of the requirement to achieve the safe separation in the sequencing of arriving aircraft.

Only the controlled airspace established in the immediate vicinity of major airports extends down to the ground. As indicated previously, most areas of controlled airspace have base levels of several thousand feet above the surface.

Detailed maps and charts depicting the UK's airspace structure can be purchased from several commercial outlets.

Uncontrolled airspace: the airspace outside controlled airspace extends from ground level to 19,500ft or to the base of controlled airspace.

Although 'uncontrolled', pilots can request a range of Air Traffic Services (ATS) within such airspace from a variety of civil and military ATS providers. These services range from the mere provision of information to a radar service in which controllers provide sequencing and separation instructions.

Uncontrolled airspace is airspace within which receipt of an ATS, whilst often available, is not an absolute requirement. Pilots can operate without talking to ATC and without a specific air traffic clearance. They therefore fly on a 'see and avoid' basis such that they can determine their routes according to their own requirements. Such activity is subject to compliance with the basic Rules of the Air Regulations and any weather, airspace, pilot or aircraft licensing limitation. The majority of military, instructional and recreational flying takes place in uncontrolled airspace.

ATC Organisation: Responsibility for the provision of ATC services in the UK lies with both civil and military service providers that will provide a service to both civil and military aircraft within their areas of responsibilities. For the most part and in very general terms, activity inside controlled airspace is managed by NATS (Enroute) plc, whose operation is regulated by the Civil Aviation Authority. Much of NATS activity is conducted from 2 control centres:

- **NATS Swanwick (Area Control and Terminal Control):** from where the flow of traffic in UK airspace south of 55 degrees North (over England and Wales) in the Upper Airspace, along the Airways system and within the high levels of Control Areas is managed; also from where the flow of traffic inbound to and outbound from the major airports in the South East of England is managed.
- **Scottish and Oceanic Area Control Centre (ScOACC) Prestwick:** from where the flow of traffic in UK airspace north of 55 degrees North (over Scotland) in the Upper Airspace, along the Airways system and within the high levels of Control Areas is managed, and the flow of traffic bound to and outbound from the major airports in the Manchester region is managed

Appendix D: A Brief Outline of Air Traffic Control Principles

Introduction

The UK contains many large airports each of which generates significant volumes of air traffic. As a result the UK is recognised as having some of the most complex airspace structures and procedures in order to ensure the safe passage of aircraft flying through its airspace.

Air Traffic Control (ATC) is a service provided to afford a safe, orderly and expeditious flow of air traffic. The vast majority of commercial airliners and other large aircraft plan their routes along Air Traffic Service (ATS) routes. These routes are protected by volumes of controlled airspace in which the position, height and intentions of aircraft are both known and controlled by ATC.

The details of each flight's proposed route form an individual "Flight Plan" that is used by aircraft operators to advise ATC of the proposed route to be flown between departure and destination airports.

Controlled Airspace and ATS Routes

Further out from an airfield aircraft are generally at higher altitudes or levels whilst they climb to, or descend from, their cruising flight levels. This permits the controlled airspace to be arranged in steps thereby allowing other (typically non commercial) aircraft that are not in receipt of an ATC service to operate freely in uncontrolled airspace below or laterally clear of the ATS route.

ATS routes are themselves surrounded by volumes of controlled airspace which must extend a minimum of 5 nautical miles either side of the route centreline. These are established to protect aircraft during the en-route phase of flight. Large Control Areas are established in certain areas that contain many ATS routes.

Aircraft wishing to operate within controlled airspace must submit a flight plan and gain a clearance to enter from an ATC unit. On entering controlled airspace aircraft must obey all ATC instructions and maintain radio contact.

An aircraft flying within controlled airspace will therefore be operating within a known environment in which the Air Traffic Controller can safely separate it from all other aircraft operating within the controlled airspace. So long as an aircraft is flying within controlled airspace, it will also remain safely separated from aircraft flying freely outside of the controlled airspace environment.

Uncontrolled Airspace

Controlled airspace is delineated by a specified boundary and outside of this boundary the airspace is known as uncontrolled airspace. Within uncontrolled airspace aircraft operate with relative freedom without being in receipt of any Air Traffic Control Service and therefore are operating in what is sometimes referred to as an "Unknown" environment, i.e. the intended flight profile of aircraft is unknown. Aircraft routinely operating within uncontrolled airspace include light general aviation aircraft, military aircraft, helicopters, hot air balloons and gliders. Wherever possible, commercial passenger aircraft operate within the confines of controlled airspace for the protection that this environment affords

compared to operating within an uncontrolled and unknown environment. However, some airports, due to the small volumes of commercial air traffic operating from them, are not protected by controlled airspace.

Route Centrelines and 'Vectoring'

The centreline of an ATS route is generally defined by navigational beacons or known positions called fixes. Aircraft navigate between these beacons and fixes when following ATS routes (see Figure D1 depicting an example of a simplified airspace structure).

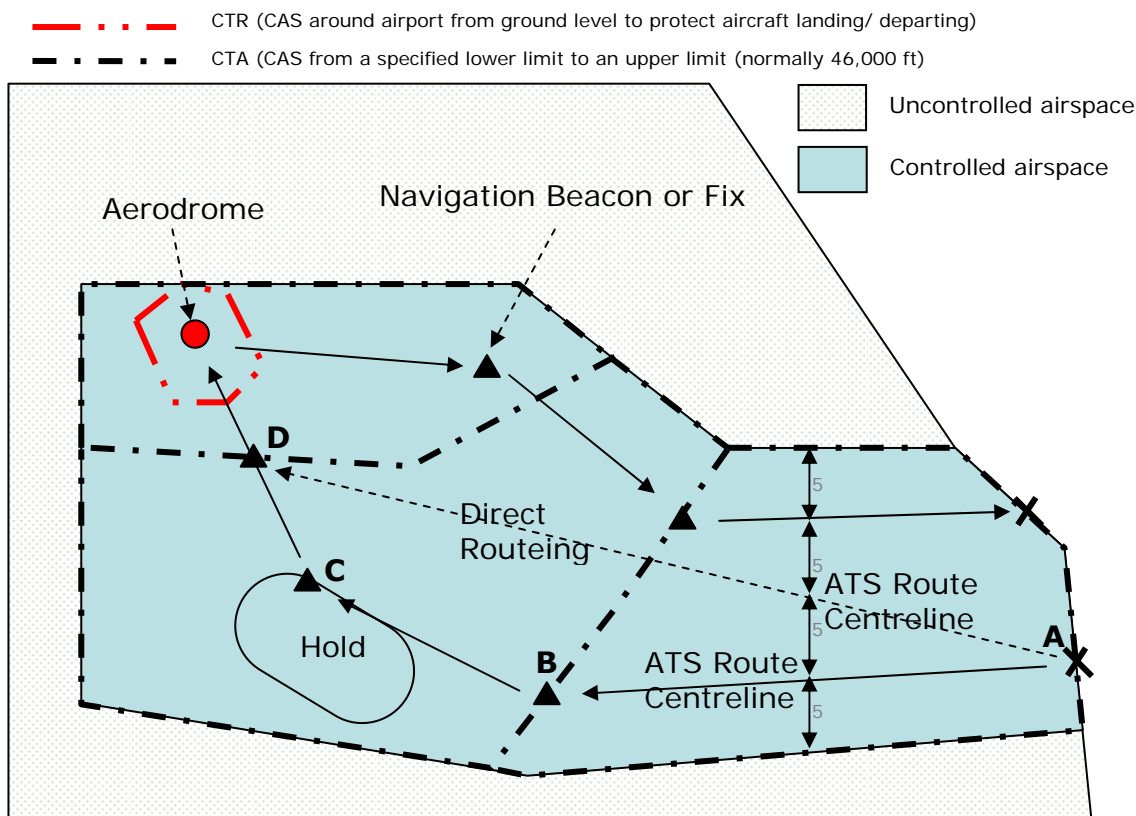


Figure D1 Simplified example airspace structure

Although aircraft flight-plan their routes by reference to these ATS Route centrelines, aircraft are still deemed to be on the route as long as they remain within 5 nautical miles of its centreline. The controlled airspace associated with an ATS route extends a minimum 5 nautical miles either side of the promulgated route centreline. This is to allow for any navigation inaccuracies by the aeroplane and to provide space for ATC to separate any conflicting traffic using radar (i.e. by directing aircraft onto separated tracks within the boundaries of controlled airspace). Each aircraft files a flight plan setting out the route it plans to follow (such as shown in Figure D1 from point A to B to C to D). However, in order to provide a safe and efficient service, ATC may direct aircraft to take a more direct route anywhere within controlled airspace e.g. straight from A to D. This may reduce the distance that has to be flown to reach the destination. ATC may also direct aircraft off a route to ensure separation is maintained from other traffic, by instructing them to fly a magnetic heading (referred to as "vectoring").

ATC separate aircraft both vertically and horizontally. The vertical separation applied between aircraft in controlled airspace is a minimum of 1000ft. The minimum horizontal separation between aircraft separated by less than 1000ft vertically is 3 nautical miles.

Within a large portion of UK airspace this 3nm minimum lateral radar separation is increased to 5 nautical miles due to the radar systems we employ.

Although Airspace Change Proposals define new and revised ATS routes by their centrelines it should be noted that these must be supported by a minimum of 5 nautical miles of controlled airspace either side of the centreline and between specific lower and upper limits. This is because aircraft can be directed anywhere within the full extent of established controlled airspace, and not just along the promulgated ATS route centreline.

Airspace Definitions (Altitudes and Flight Levels)

Volumes of controlled airspace are generally defined by specifying a lateral boundary and vertical extent.

Vertical boundaries may be defined in either altitude (in feet) or Flight Levels (FLs). Note that one FL relates to 100ft, i.e. FL70 equates to 7000ft. Altitudes are generally used to define the height of an aircraft in the lower volumes of airspace (generally operating below 6000ft in controlled airspace in the UK) as it is the most effective unit to use to determine aircraft position relative to the ground, therefore enabling an aircraft to avoid high ground etc. Flight Levels are generally used in higher volumes of airspace (generally operating above 6000ft in controlled airspace in the UK) where the vertical separation of one aircraft relative to another aircraft is more important compared to their heights above ground.

The difference in the units is because altitudes (in feet) are affected by variations in local atmospheric pressure, whereas FLs are based upon a universal unit of pressure (1013 Millibars) that is unrelated to local atmospheric conditions. This means that all aircraft equipment should agree on where FL100 is, as all aircraft flying at Flight Levels will set a common datum of 1013Mbs on their barometric altimeter. This common view of aircraft level enables more efficient and consistent vertical separation.

It should be noted that as Flight Levels do not take into account local atmospheric pressure, they do not represent a fixed reference point above the ground, therefore depending on the actual local pressure in any area an aircraft at a given Flight Level may seem to be slightly higher or lower in the sky (although such variation would not usually be noticeable to an observer viewing from the ground).

Appendix E: ICAO Airspace Classification

The International Civil Aviation Organization (ICAO) airspace classes are fundamentally defined in terms of flight rules and interactions between aircraft and Air Traffic Control (ATC). Some key concepts are:

- Separation: Maintaining a specific minimum distance between an aircraft and another aircraft or terrain to avoid collisions, normally by requiring aircraft to fly at set levels or level bands, on set routes or in certain directions, or by controlling an aircraft's speed.
- Clearance: Permission given by ATC for an aircraft to proceed under certain conditions contained within the clearance.
- Traffic Information: Information given by ATC on the position and, if known, intentions of other aircraft likely to pose a hazard to flight.

The classifications adopted by ICAO are:

Class A: All operations must be conducted under Instrument Flight Rules (IFR) or Special visual flight rules (SVFR) and are subject to ATC clearance. All flights are separated from each other by ATC.

Class B: Operations may be conducted under IFR, SVFR, or Visual flight rules (VFR). All aircraft are subject to ATC clearance. All flights are separated from each other by ATC.

Class C: Operations may be conducted under IFR, SVFR, or VFR. All flights are subject to ATC clearance. Aircraft operating under IFR and SVFR are separated from each other and from flights operating under VFR. Flights operating under VFR are given traffic information in respect of other VFR flights.

Class D: Operations may be conducted under IFR, SVFR, or VFR. All flights are subject to ATC clearance. Aircraft operating under IFR and SVFR are separated from each other, and are given traffic information in respect of VFR flights. Flights operating under VFR are given traffic information in respect of all other flights.

Class E: Operations may be conducted under IFR, SVFR, or VFR. Aircraft operating under IFR and SVFR are separated from each other, and are subject to ATC clearance. Flights under VFR are not subject to ATC clearance. As far as is practical, traffic information is given to all flights in respect of VFR flights.

Class F: Operations may be conducted under IFR or VFR. ATC separation will be provided, so far as practical, to aircraft operating under IFR. Traffic Information may be given as far as is practical in respect of other flights.

Class G: Operations may be conducted under IFR or VFR. ATC separation is not provided. Traffic Information may be given as far as is practical in respect of other flights.

Classes A-E are referred to as controlled airspace. Classes F and G are uncontrolled airspace.

Appendix F: List of Aerodromes Visited

Birmingham Airport
Blackbushe Aerodrome
Bournemouth Airport
Cambridge Aerodrome
Coventry Airport
Cranfield Aerodrome
Damyns Hall Aerodrome
Denham Aerodrome
Duxford Aerodrome
Elstree Airfield
Fairoaks Airfield
Farnborough Airport
London Biggin Hill Airport
London Gatwick Airport
London Heathrow Airport
London Heliport
London Luton Airport
London Oxford Airport
London Southend Airport
London Stansted Airport
Lydd Airport
Manston, Kent's International Airport
Northolt Aerodrome
North Weald Airfield
North Weald Flying Club
Rochester Airport
Shoreham Airport
Southampton Airport
Stapleford Flight Centre
White Waltham Airfield
Wycombe Air Park