

**Directorate of Airspace Policy**



## Report of the London CTR Review Group

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## **Report by the London CTR Group**

### **Executive Summary**

A wide variety of issues associated with the operation and use of the London and London/City Control Zones have highlighted a significant number of anomalies that exist in the current arrangements. Furthermore, many of these anomalies have an environmental or efficiency disbenefit, while some others pre-date current safety management requirements. Most of these anomalies are associated with helicopter operations within the 2 CTRs and in some cases with fixed-wing general aviation activity. Consequently, the Directorate of Airspace Policy (DAP) determined that it would be timely to initiate a review of the current procedures. The Terms of Reference for this review are at Appendix 'A' to this report and from the outset it was agreed that any review would not consider any issues that might have an adverse effect on fixed-wing procedures associated with London (Heathrow) or London (City) airports.

In order to address these issues, a Working Group (WG) was formed that consisted of representatives from the CAA (DAP and SRG), NATS, the MoD (Northolt ATC) and the user community, plus minor airfields on the periphery of the London CTR. The WG examined, in some detail, the existing rules and procedures governing the operation of light aircraft and helicopters in the 2 CTRs, with a view to simplifying the operation and improving the efficiency of the traffic flow while having regard for the environmental implications of any change in procedures.

The WG identified a number of areas where there is clear scope for improvements to current arrangements, including a common airspace classification and a significant simplification of the met visibility criteria. There would appear to be some scope for amendment to some existing helicopter routes and the creation of a limited number of new routes that will provide efficiency and environmental benefits. The lateral dimensions of the Restricted Area R160 (known as the Specified Area) need to be reviewed and clarification should be provided in regard to the ability of the Lea Valley to be used as an acceptable route for single-engined fixed-wing aircraft. An extension of H4 to the east of the Isle of Dogs reporting point would remove the requirement to hold at Greenwich/Blackheath World Heritage site. Furthermore, there may be scope to reduce the lateral dimensions of the Heathrow CTR to the advantage of GA activity to the south and west of London Heathrow airport without any adverse impact on the safety of Commercial Air Traffic (CAT) using Heathrow. There is also some potential for standardising civil and military operating procedures in the area delegated to RAF Northolt.

Any proposals that result from the Working Group's report will need to be developed and implemented by the ANSP concerned, working in close co-ordination with CAA staff. Any changes to operating arrangements will need to be subject to an appropriate safety assessment, in accordance with current safety management systems, and, in some cases, to an environmental assessment. The timescale for taking this work forward will be largely dependent upon the resources available to the relevant ANSP.

Any comments or questions regarding this report should be directed to the Directorate of Airspace Policy – Terminal Airspace Section.

## Report by the London CTR Group

### 1. Introduction

- 1.1 A meeting was held between DAP and SRG on 10 May 2004 to discuss the creation of a new CAA Group to review the current procedures for helicopter and fixed wing low level traffic operating within the London and London/City CTRs. Additionally, the meeting agreed appropriate Terms of Reference (TORs) for the Group and examined other relevant factors.
- 1.2 An initial meeting had already been undertaken between DAP and NATS, as it would be NATS's responsibility to initiate and implement any proposals arising from the review. It was noted that NATS showed a positive response to examine existing procedures and consider any appropriate changes that could be made.
- 1.3 A number of anomalies with operating procedures had arisen over the years as a result of increased security requirements and the development of London/City airport. Additionally, there were a number of 'local' agreements with airfields within/adjacent to the London CTR that were in conflict with the restriction of VFR flights within Class 'A' airspace. Having identified these anomalies, it was important for the CAA to address these issues.
- 1.4 During discussion on the purpose of this Review Group being formed, it was noted that there was no evidence of any significant incidents. However, during the final years of operation of the SVFR and Thames Radar functions from London/Heathrow there had been considerable airspace user and CAA dissatisfaction of the availability of service due to NATS resourcing difficulties. Transfer of the function to the London Terminal Control Centre (LTCC) and resolution of the staffing issue, together with scrutiny of the operation coming under the LTCC Safety Management regime, provided the impetus to conduct a grass roots review of the operation.
- 1.5 It was questioned whether a definitive safety risk had been identified and whether any review would affect current operations to the detriment of existing users. However, it was agreed that a review might make procedures more permissive than restrictive. Additionally, the justification for some of the existing procedures was not sufficiently documented and a review was needed, if only to determine that the current procedures were operationally efficient and safe. NATS supported this proposal.
- 1.6 There was an evaluation of the current procedures (especially the interaction of the designated helicopter routes and fixed wing traffic within the CTRs), the delineation and operation of the Restricted Area R160 (known as the Specified Area<sup>1</sup>) and procedures for additional CTR access and transit.
- 1.7 The TORs were finalised and suitable representatives from industry groups identified to participate in the Review Group. It was also agreed that Phil Roberts, as ADAP1, would chair the Review Group.

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<sup>1</sup> With effect from 4 August 2005, the nomenclature of the Specified Area was changed to a Restricted Area (R160) to coincide with changes to Rule 5, of the Rules of the Air and Air Traffic Control.

1.8 The first meeting of the Review Group took place on 7 September 2004 and the following work items were identified and collated for discussion at subsequent meetings:

- a) Rules and Weather Minima (discussed at meeting on 28 Oct 04)
  - Review existing deemed separation procedures in use, in relation to light aircraft and helicopter operations.
  - Review the various weather criteria for operations within the London CTR that are used by the agencies involved and determine what weather minima is realistic and achievable.
  - Review Northolt operations, particularly the use of their Radar Manoeuvring Area (RMA).
  - Review separation standards for Emergency Services operations.
  - Review the use of reduced separation in the vicinity of an aerodrome.
  
- b) Operational Requirements (discussed at meeting on 14 December 04)
  - Review London CTR 'Rules', particularly where safety is not the prime consideration.
  - Review the application of 'deemed separations'.
  - Review VFR access routes to/from aerodromes on the periphery of the London CTR.
  - Review operational requirements for fixed wing and helicopter operations.
  - Review Special Flight Notification (SFN) requirements for Emergency Services' operations, with particular emphasis on flight priority categories.
  - Review the distraction impact of TCAS and Traffic Information to London/Heathrow and London/City ATM operations.
  - Review single engine helicopter operations in the London and London/City CTRs and the associated dimensions of the Restricted Area R160.
  
- c) Routes / Classification & Other (discussed at meeting on 25 January 05)
  - Review the conflict points identified within the London CTR with a view to removing the conflict point and improving the traffic flow without adversely impacting on safety.
  - Review options for additional notified routes, including "free lanes".
  - Consider the depiction of the Northolt RMA on appropriate Aeronautical Charts.
  - Review the dimensions and classification of the London and London/City CTRs.

- 1.9 It was emphasised at the first meeting of the Group that the focus of the Group would be activity within the London and London/City CTRs. It was explained that existing operations and procedures pre-date current Safety Management Systems (SMS) and other technology, such as TCAS. There would be no consideration or recommendations to change London/Heathrow or London/City departures or arrivals, but consideration would be given to resolve conflict issues with other traffic.
- 1.10 Additionally, while the safety issues would remain paramount, the environmental issues could not be overlooked and were almost as important as any security implications. The environmental impact of existing and any modified helicopter operations, related to transit tracks over the ground, would need to be considered.
- 1.11 It was also stressed that the Group had the opportunity, with an open mind, to look at all issues and address any anomalies it could. There was no preconceived CAA view, however, the following issues needed to be considered by the group and addressed:
- Safety;
  - Security requirements;
  - Environmental impacts;
  - Efficient use of airspace.
- 1.12 Having discussed and agreed the TORs for the Group, representatives were invited to make presentations on their operations and address their own individual concerns or specific requirements. The intent was to enable the members of the Group to identify various issues and recommend possible solutions for change.
- 1.13 It was noted that the creation of sub-groups might be required in order to undertake the work within the given timescale. The Chairman indicated that any significant matters could be forwarded to existing NATMAC sub-groups.
- 1.14 It was noted that the ATS Manager at Farnborough had an interest but would act as a corresponding member with Farnborough input being covered by NATS (LTCC Ops).
- 1.15 Capt. Brian Baldwin, Met. Police ASU indicated that he would also coordinate issues with HEMS. Capt. Rod Wood, BHAB, confirmed he would do the same for Royal Helicopter Flight input. Ms Eva Paul, AOA, indicated that, as a member of AOPA, she would also represent an AOPA viewpoint for fixed wing operations.
- 1.16 The Chairman indicated that he would like to maintain regular meetings to keep the impetus going and, in order to complete by early 2005, 4/5 meetings would be required. Communications would be by letter and/or email and notes of meetings and relevant action points would be published.

## 2. Discussion

### 2.1 NATS overview:

2.1.1 As sponsor of any changes that may arise from the review, NATS provided a detailed presentation that covered many of the major issues facing the Group.

2.1.2 The London CTR was originally created to protect London/Heathrow traffic. However, local procedures had been developed over the years and helicopter routes established around London/Heathrow SIDs and arrival routes. Historical evidence to support existing procedures was not available in all cases.

2.1.3 Helicopter routes did not always follow line features (examples are H7, or H10 west of Northolt) and deviations from the routes could cause a loss of separation. The separation standards attracted interest, particularly as head to head helicopter traffic was “deemed” separated on the routes, but traffic on the routes needed standard separation (3 nm horizontal and/or 1000 ft vertical) from off-route traffic, regardless of in-flight conditions.

2.1.4 One area of concern was that helicopter traffic operating off a notified route could see traffic on the notified route, but standard ‘separation’ had to be applied. However, one way round this was to place both aircraft on the route, and thus much closer together, so that ‘deemed’ separation could be applied. Geographical separation could also be used along the river Thames.

2.1.5 NATS described their locally documented methodology for the management of off-route SVFR helicopter traffic. The London CTR was divided into 3 sectors, known as “A - N -T” sectors, in which:

- A - all helicopter categories were permitted off-route;
- N - no helicopters permitted off-route;
- T - only twin-engined helicopters permitted off-route.

However, there were additional problems in enabling helicopter access to/from London/Heathrow airport.

2.1.6 There were potential problems separating some helicopter routes from London/Heathrow traffic, particularly when London/Heathrow was on Easterly runways. Although “deemed” separation was used against London/Heathrow approach and departure traffic, SIDs with stepped climbs did not guarantee separation. It was noted that there was no definition of what “deemed” separation actually involved.<sup>2</sup>

2.1.7 The interaction between London CTR class ‘A’ airspace and London/City CTR class ‘D’ airspace caused problems not only with differing aircraft flight rules and operating procedures, but there were also separation problems related to agreed IFR separation requirements between London/Heathrow and London/City operations.

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<sup>2</sup> “Deemed separation” describes locally applicable special separation standards detailed in MATS Pt 2 and approved by the appropriate authority. Deemed separations normally enable reduced separation values to those that would normally be required by MATS Pt 1 or cover special local circumstances that are not embraced by national procedures.

- 2.1.8 There were various ATS interactions either side of a 3 nm radar buffer area centred over Battersea, between London/Heathrow and London/City operations. London/Heathrow Radar handles “special VFR” traffic west of the buffer, Thames Radar handles London/City traffic (including transits) east of the buffer, and when London/City is on the Easterly runway, another operating position “City Radar” is opened up to handle London/City arrivals. However, these positions are now adjacent to one another in the LTCC Ops room.
- 2.1.9 The varying meteorological criteria for helicopter and fixed wing operations within the London CTR was also highlighted and discussed. The fact that helicopter traffic could be operating on the same route with no forward visibility requirements (clear of cloud in sight of the ground) gave cause for concern, especially with regard to the IFR requirements of the airspace.
- 2.1.10 It was noted that although the existing procedures predated current NATS SMS philosophy, it did not necessarily mean that existing procedures were unsafe. The procedures had been developed with use and had been subject to operational review and assessment over time and, historically, had been subject to external scrutiny.
- 2.1.11 NATS had considered the following options for change:
- Change London CTR airspace dimensions (perhaps release some airspace to the West and South);
  - Change London CTR airspace classification from ‘A’ to, perhaps, ‘C’ (but, must consider the intensity of operations at London/Heathrow – around the airport and on approach);
  - Change published helicopter routes (but, the environmental impact has to be taken into account);
  - Exemption to the Rules (keep London CTR Class ‘A’, but devise specific Special VFR rules and procedures).

## **2.2 Other Operators Perspectives:**

- 2.2.1 AOA commented on fixed wing operations to the west/north west of London/Heathrow and the difficulties for aircraft sighting Denham aerodrome in good time because of limitations placed on their altitude. This was a particular problem for those pilots unfamiliar with Denham and could lead to infringements of the London CTR, as well as noise abatement issues in the local area. Additionally, depending on meteorological conditions, restrictions on operations could lead to greater coordination and operational impact with Northolt and London/Heathrow.
- 2.2.2 NATS confirmed that infringements often occurred with traffic operating to/from the ‘embedded’ aerodromes – White Waltham, Fair Oaks and Denham. Improved Letters of Agreement had been implemented to address matters and enhance local operations, including aircraft transiting across the northwest area of the London CTR towards Elstree, etc. However, because of altitude limitations, such transit traffic often conflicted with the Denham circuit and RT communication was essential.



- 2.2.3 Northolt explained their operations and highlighted the availability and use of the portion of London CTR delegated to them, known as the Northolt Radar Manoeuvring Area (RMA), and the variable 'control' responsibility for Special VFR traffic operating in the Northolt area of the London CTR by NATS (LTCC) and Northolt Approach. There could be options to change the dimensions of this RMA, which would assist Northolt ATC, but it was known that this would require the involvement of HQ 3 Group. When Northolt has the airspace, they coordinate helicopter operations through the RMA part of the London CTR. However, there are alternative separation standards within this same piece of airspace, depending on whether LTCC or Northolt are the 'controlling' authority. It was noted that military procedures permitted reduced vertical separation in the Northolt area and this provided some additional flexibility.
- 2.2.4 It was questioned whether the central segment of the 'ANT' could be used for off-route traffic. NATS believed the restriction on traffic in this area might be related to environmental factors. However, DAP were not aware of any specific environmental issues and considered it more likely to be an ATC operational requirement as it was not documented outside NATS local operating instructions. It was agreed that the Group should consider the environmental impact and operational requirements, as well as options for fixed wing and helicopter operations in similar sectors of the 'ANT'.
- 2.2.5 Weston Aviation indicated that there were no real issues at Battersea and they are able to assist helicopter operations, in some cases. There was some interaction between Battersea traffic and other helicopter and fixed wing traffic transiting the CTRs but they had a good working relationship with the other controlling authorities. However, Battersea operations were constrained by procedures, especially access routes.
- 2.2.6 It was noted that west of Battersea, Special VFR criteria had to be applied to all flights. ATSSD had applied separation requirements to specific circumstances where it was considered not appropriate to just pass "traffic information". However, when following a notified Helicopter Route, there was no requirement to see the other aircraft when only traffic information was passed.
- 2.2.7 The Met. Police, described their operations. Of particular interest was the fact they could not predict when or where they will operate. They were presently undertaking some 10,000 tasks per year and all flights within the London or London/City CTRs would be a minimum flight priority CAT B requirement in order to get the job done. Some tasks did not necessarily justify CAT B, but the way the Special Flight Notification (SFN) rules are applied there was no option. Previously, routine operations did not need a flight priority category, but the operating rules for flight notification and approval had been changed. It was noted, however, that the new rule had been subject to consultation and agreement between the CAA, helicopter operators and NATS.
- 2.2.8 Comment was made on the separation standards applied to Emergency Services operations. HEMS and Police operations did not require the same separation standards to be applied (they could effectively use 1 nm horizontal separation) and it was preferred to apply visual separation rules so that they could stay on task whilst other traffic flew by. It was noted that deemed separation was established by the CAA and NATS when the HEMS and Police operations were introduced.

- 2.2.9 The Met. Police confirmed that it was not their intention to disrupt London/Heathrow traffic, unless the particular task made it absolutely essential to do so. However, they considered that there was no reason why visual separation could not be applied by ATC (Reduced Separation in the Vicinity of an Aerodrome as detailed in MATS Pt 1) when they were operating close to London/Heathrow, in order that both types of operation could continue.
- 2.2.10 Finally, comment was made on the restrictive use of the London/City CTR at night and the effect this had on Met. Police operations. Even though London/City airport was closed, the class 'D' airspace requirements were still applied. It was noted, however, that security considerations had led to this change being implemented in 2001. Management of the Class 'D' CTR rested with NATS (Thames Radar or London/Heathrow) and clearances were available in accordance with standard practices and would be unlikely to be withheld for traffic reasons.
- 2.2.11 BHAB/QHF, reported that, historically, they had experienced good access to the London CTR and were appreciative to ATS for their assistance and flexible access. As regards, Police helicopter operations, it was more a matter of frustration than a major problem. The interaction of (effectively) VFR flights in IFR airspace, and the need to have a more flexible approach to the integration of these flights, was emphasised. Changing the classification of the airspace would be an important issue to consider.
- 2.2.12 There was concern for the new Restricted Areas and the Enhanced Non Standard Flight requirements (ENSF). The 28-day application period for ENSF was impractical and not commercially viable. It was considered this could have an effect on industry and would affect operations at Battersea. However, this was a security requirement outwith the control of the CAA.
- 2.2.13 Comment was also made on the revised low flying rule - Rule 5 (i) (c).<sup>3</sup> Although consultation had been undertaken 8 months previously to adopt the ICAO (Annex 2) Standard for Low Flying, which permits flight 1000 feet above a congested area, this would not allow single engine helicopters to fly direct routes. (Helicopters would still be constrained along designated routes to provide "separation" from London/Heathrow traffic). Whilst aircraft on Special VFR clearances are exempt from the (currently) 1500ft / (future) 1000ft minimum height element of the Rule, the "alight clear" element of the Rule would still apply.
- 2.2.14 As far as existing routes were concerned, BHAB/QHF indicated that no alterations were considered necessary. However, new routes could usefully be specified which were in regular day to day use and could justifiably become formal designated routes. Examples could be Hendon – Brent – Battersea – Crystal Palace and Crystal Palace – Battersea. The latter might be operated as a "free lane" with traffic in contact with Battersea, although NATS had some concerns over the terminology "free-lane" and a concise definition of the operating Rules would be necessary. A discrete direct route from Perivale to Buckingham Palace would be preferred by QHF to reduce RTF workload and provide operating priority. Additionally, making these 'standard' routes 'notified' routes would reduce

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<sup>3</sup> Came into force on 1 April 2005. Although flight is now permissible to 1,000 feet above the highest fixed object over congested areas, the requirements to glide clear and to alight without danger to persons or property on the surface remain in place. Therefore, for the majority of flights in light aeroplanes and helicopters, there will be no significant change to the way these flights have to be planned and conducted in relation to congested areas.

separation criteria and enhance flexibility. However, it is likely that any formal proposal to make them 'notified' routes will be resisted by environmental groups.

- 2.2.15 It was noted that DAP had tried very hard to reduce the Restricted Area (RA) and acknowledged that the RA might penalise those with a legitimate reason for access. However, access to H4 had been achieved and the RA was the minimum acceptable to the security services and Government.
- 2.2.16 BALPA indicated that their policy did not support the Class 'D' airspace classification. It was not a question of exclusion, but full separation for ATMs. There was a preference that Class 'D' airspace at London/City should be changed to Class 'C'. It was an important issue that the 'see and be seen' principle was not acceptable in a complex ATS environment around busy airports where aircrew relied on ATS to provide the separation.
- 2.2.17 Any proposed reduction in CAS could have implications associated with aircraft performance, especially 'heavy' aircraft. It was important that IFR aircraft were separated from all other traffic and any "deemed" separations needed to be clearly defined.
- 2.2.18 BALPA also drew attention to TCAS interactions and that Traffic Advisories (TAs) at low levels could cause distractions to airliner type operations. BALPA recommended that the Group considered any chain of events resulting from the application of more flexible or reduced levels of separation.
- 2.2.19 SRG FOD (H) remarked that consideration was needed to review the appropriate procedures that are necessary to handle single engine helicopters experiencing in-flight emergencies or difficulties over congested areas.
- 2.2.20 In summary, it was clear that there appeared to be a diversity of operating rules, separation requirements and weather minima options depending on individual operators and the routes flown. It would be important to identify these rules and record them with the intent to determine what impact they had on individual operations. One of the advantages of this Group was the wide spectrum of interest and opinion and, it was anticipated that all relevant issues could be identified.

### **2.3 Operating rules and general Separation Standards:**

- 2.3.1 It was known that there were a number of areas within the London CTR where "deemed separation" was applied and it was apparent that over the years such deemed separations had been developed and were now very much "custom and practice". ATSSD indicated that deemed separation was, effectively, when standard separation minima was not applied because of a specified set of circumstances. For example, helicopters not above a specified level on a specified route are deemed separated from London/Heathrow inbounds. The separation provided does not necessarily imply standard 1000ft vertical separation, but could be a mix of horizontal and vertical elements.
- 2.3.2 It was generally accepted that deemed separation was a 'safe' operational concept, although there were operational concerns in some areas. However, given that London/Heathrow, was covered by Safety Management Systems (SMS), the responsibility for reviewing the application of deemed separation in the

- light of 'changing circumstances' was questioned. It was considered appropriate to review the deemed separations that are being applied and consider whether they continue to be appropriate in today's operating environment.
- 2.3.3 A list of the deemed separations used by NATS within the London CTR is shown in Attachment 4 to this Report.
- 2.3.4 A Memorandum of Understanding exists between Northolt and Denham that enables Northolt radar to deem separation from Denham traffic. This is based on primary radar contact only. Requiring Denham traffic to use conspicuity SSR codes would cause SSR clutter in the NW corner of the London CTR and possible TCAS interventions.
- 2.3.5 Northolt routinely applies 500 ft (rather than 1000 ft) vertical separation in accordance with military procedures.<sup>4</sup>
- 2.3.6 A similar interaction occurs in the vicinity of Fair Oaks and White Waltham aerodromes. NATS accept that primary radar returns from traffic in these designated areas indicates that traffic will not be above 1500ft (1000ft for Denham) and operating in a flight visibility of at least 3 km in accordance with the notified rules for the Local Flying Areas.
- 2.3.7 The matter of 'geographical separation' was raised and the fact that this was not always clearly defined. However, it could be an essential element for deemed separation criteria as an assessment of agreed separation between specific points.
- 2.3.8 The Manual of Air Traffic Services Part 1 states that geographical separation must be positively indicated by position reports over different geographical locations which have been specified in MATS Part 2 as being separated, and, must be constant or increasing.
- 2.3.9 It was noted that Class 'A' airspace requires standard separation to be provided between IFR/IFR, IFR/SVFR and SVFR/SVFR traffic. A change of classification (to Class 'C') would permit VFR flight and enable more appropriate separation requirements to be applied.
- 2.3.10 BALPA policy did not support Class 'D' airspace as it did not provide positive separation (as applied by ATC) between IFR/VFR flights. VFR flights could not be given the specified type of clearances that would assure separation, unless they were actively controlled. It was argued that VFR flights could be given specified routes to fly that would enable separation, but BALPA indicated that it had policy that Class 'D' was not acceptable to protect public transport ATMs. Class 'C' would be more acceptable.
- 2.3.11 In response it was suggested that there was an option for Class 'D' with additional rules dependent on specific airspace and traffic requirements. Other airfields with similar traffic as London/Heathrow, (Manchester, Gatwick, etc), did not have major

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<sup>4</sup> There is some doubt with respect to the non-ICAO separation standards being applied to civil flights by military controllers. The UK has not registered a Difference to the ICAO Standards and this will need to be investigated outside the auspices of this Review Group. Any reduction of ICAO standard separation applied by military controllers to civil flights should be with the agreement of the pilots concerned.

- problems with Class 'D' airspace. However, AOPA had already raised the matter within NATMAC that some Class 'D' airspace was being managed like Class 'C' in order to positively control VFR flights
- 2.3.12 Another option open to controllers, providing an air traffic service within CAS, was the application of 'reduced separation in the vicinity of an aerodrome' as detailed in MATS Part 1 and the flexibility that could be applied to integrating traffic operating on different flight rules.
- 2.3.13 ATSSD explained the development of the policy for reduced separation in the vicinity of an aerodrome. Historically, it was designed for visual separation of IFR flights within an Aerodrome Traffic Zone, but it could now apply over a much larger, although undefined, area. ATSSD stated that an ATSIN would be published in order to develop a Policy Paper.<sup>5</sup> It was noted that, for the purposes of reduced separation, the whole of the Aberdeen CTR had been deemed "in the vicinity" to enable visual separation of IFR flights to be applied by the TWR controller.
- 2.3.14 It was agreed that the purpose of operating rules within CAS should be to facilitate different types of flight operations and to provide adequate (not necessarily "standard") separation between flights to the extent necessary to ensure safety. It was noted that the main areas of concern expressed during discussions appeared to be centred on the difficulties associated with the separation of SVFR and IFR traffic, particularly the integration of helicopter flights. It was already clear that re-classifying the CTR to enable VFR traffic to operate under visual separation rules, would resolve a number of concerns.
- 2.3.15 Consideration was given to the application and interpretation of VFR 'minima', especially the provision of traffic information, and whether 'own separation' (pilots responsible for separation) could be applied. The Met. Police opined that 'own separation' was useful, but on many occasions, and despite appropriate traffic information being provided, they did not see the other traffic. It might work if more designated routes were adopted, but operating off-route was still a problem.
- 2.3.16 It was noted that many of the routes were originally designed for single engine helicopters, linking what may then have been adequate open spaces. Present day helicopter operations were probably 60% twins and 40% single engine.
- 2.3.17 The matter of Visual Reference Points (VRPs) was discussed and the opportunity to designate routes in Class 'C' airspace. There is often a need for assurance of tracks flown and the use of specified VRPs would enable VFR traffic to fly 'off route', but 'on track'. Designated routes presently restrict flexibility for off-route operations, although they do ensure safety can be managed, especially with deemed separations.

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<sup>5</sup> Some years ago (circa late 1980s) ATSSD initiated draft criteria for geographical separation for flights operating with visual reference to the surface. However, the project was abandoned as being, in reality, counter-productive to the effective management of airspace.

## 2.4 Review application of specific Separation Standards including 'deemed separations':

- 2.4.1 The individual separation criteria detailed in the NATS list of the deemed separations within the London CTR (as shown in Attachment 4 to this Report) was evaluated. This list had been prepared from ATC local instructions and included all references to "Deemed Separations".
- 2.4.2 The interaction between H10 affects both westerly approaches to London/Heathrow (27L and 27R), although only runway 27L is specified in ATC instructions. Generally, helicopter traffic operates in a flight visibility of 2 nm<sup>6</sup> or greater, at 750 ft, against London/Heathrow traffic descending from 2500 ft. However, the use of SSR can generate TCAS TAs.<sup>7</sup>
- 2.4.3 With regard to separation from London/Heathrow IFR traffic (Attachment 4 to this Report - NATS list of deemed separations, paragraph 11.8.1), it might be appropriate that responsibility for ensuring separation rested with the Heathrow SVFR controller. However, NATS TC Management would not permit this and existing instructions may give TC Sector controllers the belief that there was a 'guarantee' of separation that, in practice, may not exist.
- 2.4.4 With regard to London/Heathrow departures minimum climb gradient; there can be problems between H10 and London/Heathrow SIDs via Burnham. LTCC Sector controllers (who immediately control such departures) have the helicopter SSR squawks (locally and specifically allocated to London/Heathrow) filtered out. Thus, there is no immediate awareness of any need to pass traffic information if SVFR helicopters and slow climbing London/Heathrow departures get close together. In such cases, vertical separation is not always guaranteed. (Controllers must "presume" that aircraft will achieve the minimum climb gradient specified for Noise Abatement Purposes)
- 2.4.5 Formal level achievements in respect of separation from Helicopter Routes are not built into SIDs and, in most cases, would be impracticable to define. This begs the question what action aircrew will take if they receive a TCAS RA against helicopter traffic, after take-off. However, it was noted that the alerting parameters for TCAS were inhibited at very low altitudes.
- 2.4.6 Heathrow Airport Ltd (HAL) noise and track (NTK) monitoring of initial climb performance of aircraft (in respect of the 1000 ft noise abatement requirement) indicates that, in general, more than 100 aircraft per month fail to achieve the 1000 ft requirement.
- 2.4.7 With regard to separation between helicopters on published routes, this appeared to be a 'grey' area with regard to who was accepting responsibility for the separation, even though it was, effectively, a pilot – pilot separation in accordance with Rule 17 of the Rules of the Air. This type of separation was applied frequently when the visibility was greater than 6 km. In practice, this 'separation'

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<sup>6</sup> Under certain specific conditions, helicopters can operate with a flight visibility of 1000 metres. See Attachment 6 of the Report.

<sup>7</sup> If Battersea departures climb quickly, these may also generate TCAS RAs against London/Heathrow inbound traffic overflying at 3000 ft to the westerly runways at Heathrow.

worked and allowed the necessary flexibility for helicopter operations within the London CTR.

2.4.8 The restrictions on the use of H3 and H9 during London/Heathrow easterly operations was discussed and identified the possible need to modify some NPRs/SIDs to accommodate SVFR traffic.

2.4.9 The rationale for the use of deemed separation between London/Heathrow easterly arrivals and H2 was questioned, particularly the separation requirements against missed approach procedures.

## **2.5 Consideration of specific conflict points between London/Heathrow departures and other operations within the London CTR, with a view to removing the conflict points and improving the traffic flow without adversely impacting on safety:**

### **2.5.1 London/Heathrow Easterly departures versus H10**

2.5.1.1 There was a historical restriction problem between Perivale and Kew that had been extended to include Gutteridge and Kew. NATS controllers had tried to use radar to resolve conflicts with departures and hybrid procedures had developed with the Heathrow SVFR controller coordinating their traffic against any slow climbing London/Heathrow departures. There was no guarantee of separation in this scenario.

2.5.1.2 No helicopters are permitted between Gutteridge and Kew when there are northbound departures from London/Heathrow. Coordination is attempted to identify 'gaps' between London/Heathrow departures to enable SVFR transits. However, this is a very difficult area to manage.

2.5.1.3 There had been a review of different procedures, but climb gradients and the environmental impact are a problem. Previous studies had shown that it was not feasible for London/Heathrow departures to be vertically separated above H10 at Perivale to ensure adequate vertical separation. The climb gradient would be too steep and it was also necessary to take into account the potential track dispersion of the SID, and a 3 nm buffer from H10, to guarantee vertical IFR separation.

2.5.1.4 It was considered appropriate for NATS to review HAL NTK data to determine the point where aircraft reach 2000 ft on northbound departures from London/Heathrow. Short of changing the helicopter route, or changing levels on the route, there were no options for change. The helicopter transit level of 1200 ft may be a minimum against ground effects and obstacles, but there should not be an upper level restriction if there was no London/Heathrow traffic to consider.

2.5.1.5 An option to use a route along the M4 for single engined helicopters was raised, but it was considered that lower levels would have to be flown and, due to the nature of close proximity to London/Heathrow traffic, deemed separations would have to be determined. Additionally, there would be TCAS issues against London/Heathrow arriving traffic on the westerly runways. A route had existed along the M4 in the past, but had been withdrawn some years ago due to numerous occurrence reports, including TCAS RAs.

- 2.5.1.6 The Group therefore considered that there were no suitable procedural solutions to this particular conflict point.

## **2.5.2 London/Heathrow Easterly departures to the South v H3**

- 2.5.2.1 London/Heathrow Midhurst and Southampton SIDs are affected and no helicopter access is generally available between Thorpe and Teddington along H3. The possibility of an additional reporting point at Richmond (junction of H3 / H7) was proposed. It was noted that the operating restriction detailed in the UK AIP did not accurately reflect the ATC restriction in use.

- 2.5.2.2 Consideration was given to restricting levels on H3, similar to that applied to H9 from Esher to Sunbury. This could provide a 'specific' area with control over all known traffic and this could offer the potential to improve the overall integration of traffic. Again, there was the possible issue of TCAS interaction and London/Heathrow departures climbing towards SVFR traffic would have to be taken into account.

## **2.5.3 London/Heathrow Easterly departures v H9**

- 2.5.3.1 London/Heathrow departures could be given a non-standard clearance to climb straight ahead to 1500 ft before turning right on the SID, but this could cause delays to subsequent departures. This option is not available between 2100/0800 hrs local because of environmental issues. Additionally, whilst the straight-ahead leg gave the controller a better opportunity to achieve separation, there was no guaranteed separation (1000 ft vertical) between these departures and helicopters. However, it was suggested that climbing straight ahead could provide the flexibility NATS controllers need to monitor and achieve separation.

## **2.5.4 London/Heathrow Westerly arrivals v Kew**

- 2.5.4.1 There is a technical loss of standard vertical separation against helicopter traffic when London/Heathrow arrivals descend through 1800 ft. This route interaction has been reviewed and has been considered 'safe'. Additionally, this is one area where information about possible TCAS interactions would benefit London/Heathrow and helicopter traffic.

- 2.5.4.2 Some alternative routes were considered, but the potential environmental impact of possible solutions could be considerable. It was questioned why the route structure was as it was now and whether the routes attracted aircraft, especially single-engined helicopters, simply because the routes were 'there'. However, it was noted that the routes were originally needed to access Battersea, but other commercial activities had developed such as sightseeing operations over London.<sup>8</sup>

## **2.5.5 London/Heathrow Westerly departures and Easterly arrivals v Burnham - Ascot**

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<sup>8</sup> An explanation is provided within the London/Heathrow AIP entry to justify these routes. The emphasis is on safety, as well as the environmental benefit.



2.5.5.1 Burnham – Ascot was identified as the most frequently used CTR transit routeing to the west of London/Heathrow. Approximately 50% of the traffic was fixed-wing. However, it was noted that there was no line feature to the west of London/Heathrow to enable aircraft to judge their routeing Burnham – Ascot. London/Heathrow arrivals descend on the ILS from 2200 ft at 7 nm and then conflict with helicopter and fixed wing traffic. The London/Heathrow departure scenario was similar with Compton and Burnham SIDs. The Burnham – Ascot routeing was continually being reviewed and was a sensitive conflict issue, especially for new controllers. The effect on London/Heathrow arrival traffic was seen as the most significant issue. As far as non-precision approaches (NPAs) were concerned (including surveillance radar approaches), step down fixes on the relevant procedures could assist the provision of vertical separation against SVFR traffic. It was suggested that DAP could consider the use of cross step down fixes for London/Heathrow NPAs on easterly arrivals.<sup>9</sup> It was generally felt that the designation of a formal north-south transit route to the west would be of benefit, subject to the review of the western boundary of the CTR.

## 2.6 Emergency Services (ES) operations:

- 2.6.1 The Met. Police confirmed they were content to operate with 1 nm horizontal separation from other ES operations and were also happy for this separation to be applied to all other traffic. Current operations between ES traffic was subject to a NATS Safety Case and allowed for traffic to 'break away' if not visual with other traffic at 1 nm. This procedure could be applied to all rotary wing operations. However, it was noted that the procedure for the separation of HEMS/Police helicopters was another aspect where alternative procedures were being employed within Class 'A' airspace to enable flexibility of 'IFR' operations.
- 2.6.2 NATS are authorised to apply reduced separation (i.e. under visual flight conditions) between multiple CAT B flights, but not between CAT B flights and others.
- 2.6.3 There was a potential problem if categorised (priority) flights need to operate close to London/Heathrow and required separation from Heathrow traffic. This could lead to delays to Heathrow traffic due to the priority requirements of the helicopter operation.
- 2.6.4 Additionally, If SFN traffic was operating close to designated helicopter routes the helicopter route may need to be closed. If there was an option to use reduced separation in the vicinity of an aerodrome, this might resolve any 'separation' problems.
- 2.6.5 BHAB indicated it would their preference that the CAT B flights avoided notified traffic on the helicopter routes, rather than the other way around. Regardless of which, requiring the CAT B flights to move onto the helicopter routes, and thus closer to the other traffic in order to achieve separation, was quite illogical, especially when each aircraft was operating in similar flight conditions.

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<sup>9</sup> London/Heathrow already has cross step down fixes on their published NPAs. NATS were requested to examine existing charts and determine whether existing step down fixes are adequate.

**2.7 Northolt operations including their Radar Manoeuvring Area (RMA):**

- 2.7.1 Northolt effectively applied the rules pertaining to Class 'A' airspace, plus some dispensations. The airspace delegated to Northolt (Northolt RMA) was provided on request, when Northolt had IFR arrivals and/or departures. The airspace was then handed back to LTCC Heathrow SVFR. Northolt usually had two busy periods during the day – early morning and late afternoon and there was good cooperation between Heathrow SVFR and Thames radar controllers. Additionally, there were options for NATS controllers to delegate the airspace if they feel that Northolt would be better placed to handle the traffic.
- 2.7.2 As a military unit, Northolt applied 500 ft vertical separation against traffic under their control. This provided additional flexibility for the separation of crossing traffic on H9/H10 against any northbound Northolt departures from runway 25. The alternative was to delay traffic on H9 until the Northolt departure is airborne.
- 2.7.3 It was suggested that it was inappropriate to have varying applications of separation standards that depended on who was in control of any designated airspace at any particular time. The main issue facing this Group was to promote standardisation of operating procedures and separation requirements was one part of that remit. It was considered that it may be that the MOD interpretation of separation standards needs to be reviewed with regard to the separation of civil aircraft under their control. There was a view that application of reduced separation to civil IFR flights should only be undertaken with the pilot's agreement (as specified for the Lyneham and Brize Norton CTRs).
- 2.7.4 Northolt believed that the MOD had dispensation from NATS, but this was disputed as it was not considered that it was within NATS's remit to give such dispensation. The origin of this particular 'dispensation' may have been a 'historical' procedure that was adopted when NATS HQ was a regulatory part of CAA. Nevertheless, Northolt were asked to investigate the impact of applying standard civil separation standards at Northolt.
- 2.7.5 Comment was made on the matter of en-route delays and it was stated that helicopters were often held at Gutteridge whilst Northolt traffic was still on the ground. Effectively, it would only take a few minutes for the helicopter to pass and be on its way. However, Northolt representatives disputed the suggestion that they were not flexible enough to permit traffic to continue along H9/H10. Dispensation had been agreed with NATS/MOD to permit deemed separation if SVFR traffic was visual with IFR traffic. Additionally, Northolt agreed to consider whether any opportunities existed for crossing traffic to overfly Northolt, behind the departure, even if the departure was not airborne.
- 2.7.6 It was also questioned whether helicopters could route direct Iver – Gutteridge, as this could provide flexibility to aircraft operators and Northolt. It was considered that this was acceptable, although there may be an environmental impact that would need to be addressed.
- 2.7.7 All Battersea arrivals and departures were coordinated through LTCC (Heathrow SVFR) who decided whether traffic should be handed directly to Northolt. Single engined helicopters from Battersea were required to follow H4 until clear of the

Restricted Area R160 (to the East), but there was no flexibility to the west, as single engined helicopters must follow designated routes <sup>10</sup>.

- 2.7.8 With regard to depicting the Northolt RMA on aeronautical charts, Northolt did not believe this would have much of a benefit. Northolt were not in continual control over this airspace and responsibility changed between LTCC Heathrow and themselves. This was a fluid airspace arrangement and any depiction of a designated area of airspace might give pilots a wrong interpretation as to who manages the airspace.

## **2.8 Weather Minima:**

- 2.8.1 The meteorological criteria used in the London CTR was primarily based on the London/Heathrow actual reported weather, including cloud ceiling and visibility. This had been slightly confused by the recent introduction of the “prevailing visibility” reports and highlighted the difficulties in basing meteorological criteria on reports from an airport some distance away from the area of operation of the aircraft.
- 2.8.2 Northolt meteorological criteria was based on the London/Heathrow reported visibility but in-flight visibility was assessed by the pilot.
- 2.8.3 It was known that Battersea had separate SVFR flight visibility minima based on their aerodrome actual weather report, which equated to a cloud base/reported visibility of 600ft/1000m or better.
- 2.8.4 For helicopters crossing the London CTR, or inbound to London/Heathrow, the minima was 2000m with no prescribed cloud base/ceiling requirement.
- 2.8.5 The Met Police used in-flight visibility minima of 1500m on and off-route and 1000m for take-off and landing.
- 2.8.6 A list of weather minima used within the London and London/City CTRs was distributed within the Group and is shown in Attachment 6 to this Report.
- 2.8.7 During discussion, the Group identified the varying meteorological criteria that were being applied to enable deemed separation. In some cases, the in-flight visibility criteria appeared to be minimal to permit safe separation and there were often varying applications of in-flight visibility and surface reported visibility. There could be a problem, and/or an anomaly, with regard to how a pilot actually interprets in-flight visibility, inasmuch as different pilots may determine similar flight conditions differently. With respect to Class ‘B’ / ‘C’ / ‘D’ airspace, the pilot is required to use the reported meteorological visibility as the flight visibility (Rule 24 [3]).
- 2.8.8 It was noted that the VFR minima for helicopters was “clear of cloud and in sight of surface” with no specified minimum flight visibility. However, CAA SRG were consulting on a change to the Rules of the Air, which would introduce a common in-flight visibility minima for helicopters of 800m regardless of airspace classification. The proposed Rule changes also related to fixed wing operations

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<sup>10</sup> An attempt was made to determine the historical background for this requirement. AIP pages from 1973 state that “The helicopter routes have been specially selected in order to provide maximum safety in avoiding most built up areas” (para 1.3, page RAC 69, date 31.8.73)

and could establish weather minima as being a licensing privilege, not an airspace requirement. As far as rotary operations are concerned, the intention was that this will not apply differently to different applications of SVFR, but would be an absolute minima for all helicopter operations flown visually. A pilot must terminate the flight if unable to maintain the required minima.<sup>11</sup>

- 2.8.9 Comment was made that there was an apparent attempt to apply VFR rules to IFR flights. However, to manage safety, some application of visibility criteria is required regardless of whether the flights are VFR or SVFR. Fixed wing aircraft operations appear to be adequately covered and it was questioned whether helicopters should not be addressed in a similar manner.
- 2.8.10 It was accepted that helicopters can stop or hold enroute, but they could also become IMC and the latter situation had resulted in a number of reported incidents. It was suggested that a 4-way criterion be established, based on whether the flight was single or multi-engined, and whether fixed wing or rotary.
- 2.8.11 The Group also discussed the use of “cloud ceiling”, rather than “cloud base”. It was considered that the MOD should adopt cloud ceiling as the standard reporting criteria and that Northolt should be instructed to use cloud ceiling, given the number of civil aircraft that were operating through Northolt (80% of movements) and the fact they were also providing an ATS within a defined “civil” CTR.<sup>12</sup>
- 2.8.12 It was noted that the MOD would adopt the ICAO application of prevailing visibility with effect 1 October 2005.
- 2.8.13 The NATS list of weather minima clearly identified the problems highlighted in discussion. This is further complicated by the fact that the reasons for some of the criteria being applied could not be explained or validated by any authoritative reference, so as to determine the origin of these minimas. It was not clear which minima were established for airspace management purposes and which were for the safe operation of aircraft.

## **2.9 VFR access routes to/from aerodromes on the periphery of the London CTR:**

- 2.9.1 The operational aspects affecting Denham, White Waltham and Fair Oaks aerodromes were discussed.
- 2.9.2 AOA reiterated their concerns for the visual sighting of the respective aerodromes because of altitude restrictions placed upon arriving flights. This could lead to infringements of the London CTR. Northolt indicated that they could provide navigational assistance to Denham traffic, if required, and it was suggested that an AIP entry could encourage inbound aircraft to Denham to contact Northolt Approach.

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<sup>11</sup> The proposal to modify the Rules of the Air was presented to the CAA SRG Executive Committee in February 2005. As a result of deliberations in this Committee, a consultation document was placed on the CAA website. Although 800m was quoted in the CTR Review Group discussions, 3 km has also been proposed as an option, according to pilot’s licensing, within the consultation document. The consultation period closed on 27 May 2005. Revised proposals will be made in a second Letter of Consultation, expected November 2005.

<sup>12</sup> The “national” limitations on the availability of SVFR clearance (UK AIP and MATS Pt 1) relates to cloud ceiling.

- 2.9.3 It was considered that rolling back the London CTR past Denham would have no effect on Heathrow SVFR traffic, but would affect Northolt departures. Northolt identified the difficulties of their departures achieving the required SID levels and the interaction with unknown traffic outside the London CTR. It was suggested that the outer boundaries of the London CTR could be made CTAs with the airspace classified as Class 'C' or 'D'. However, the resulting Class 'G' airspace below such a CTA stub may prove unusable by aircraft because of Rule 5 implications.
- 2.9.4 It was noted that circuit traffic at White Waltham could conflict with the (unpublished) Burnham – Ascot routeing and vice versa.
- 2.9.5 With regard to the latter scenario, as helicopter traffic was subject to SVFR clearance from LTCC Heathrow, improved coordination or transfer to the (White Waltham) aerodrome frequency would enable traffic information to be shared and, hopefully, would assist the resolution of conflicts within the White Waltham ATZ. Alternatively, a modified routeing could be considered.
- 2.9.6 It was suggested that the Local Flying Areas (LFAs) could be marked on the Heathrow SVFR controllers' radar video maps. This could assist the identification of any London CTR infringements and stem the number of MORs being filed. However, in discussion, it was felt that this might not provide any operational benefit to Heathrow SVFR controllers, but might increase the number of MORs being filed. The video mapping requirement was a matter for NATS to determine.
- 2.9.7 Northolt suggested the need to review the London/Heathrow imposed 'on-route' limitations in the 'Central' area of the "ANT" division of the CTR, particularly as a means of assisting direct flights from Bentley Priory to Northolt.

## **2.10 Operational requirements for Fixed Wing and Helicopter operations:**

- 2.10.1 Fixed wing flights tended to follow "standard" routes along the motorways M3/M40 and were tactically managed against helicopters. However, a set of criteria could be established to enable both types of operations to be managed.
- 2.10.2 Helicopter traffic departing from, or arriving at, random sites in the central area of London normally contacted Battersea for clearance, even though they might not be actually operating into Battersea. This was often due to such traffic being unable to communicate with LTCC due to communication problems often associated with low altitude operations. Regular operators were normally given 'standard clearances'.
- 2.10.3 Additional helicopter routes from the North and South would benefit traffic to and from Battersea. Effectively, "standard" routes were in routine use and consideration should be given to formal designation.
- 2.10.4 Fixed wing flights operating on SFNs were not normally a CTR problem as they tended to operate at higher altitudes.

## **2.11 Impact of TCAS and Traffic Information to London/Heathrow and London/City ATM operations:**

- 2.11.1 It was agreed that any TCAS TAs/RAs caused by the interaction of transit traffic with London/Heathrow or London/City traffic were not just a distraction, but could

- cause inappropriate safety related responses and financial penalties to Aircraft Operators.
- 2.11.2 The present operational procedures to integrate low-level traffic were, effectively, trying to apply VFR-type procedures to SVFR traffic. In practice, what was required was the integration and separation of IFR and SVFR traffic because of the existing airspace classification.
- 2.11.3 DAP had investigated recorded incidents related to TCAS TAs/RAs in the London CTR and had determined this was not a significant factor.
- 2.11.4 Only one RA had been reported under the MOR scheme during the past 5 years and this related to an inbound London/City flight against a departing helicopter from Battersea. Six other incidents had been reported, but these were related to a loss of separation.<sup>13</sup>
- 2.11.5 NATS maintain their own record of TCAS “encounters” within the London CTR and a brief summary is shown in Attachment 10 to this Report. NATS do not request or record reports on TCAS TA encounters. Therefore, the information supplied refers to RA encounters only. It was noted that there were 7 reported TCAS RA encounters within the London CTR between January 2003 and December 2004. Of these, 5 encounters occurred between an aircraft on approach, to either London/Heathrow or London/City, and helicopters.
- 2.11.6 DAP had also attempted to determine what information was provided to aircrew at US airports, with regard to possible TCAS ‘nuisance reports’. None was apparent on several airfield/instrument approach charts that were sampled.<sup>14</sup>
- 2.11.7 DAP had contacted the US FAA and had been provided with a copy of a relevant AIC (US AIC 120-55B) that included “TCAS good operating practices”. However, the underlying message was that it was left to individual Aircraft Operators to determine how they managed their TCAS systems in mixed traffic environments around airports. Specifically, how they might choose to inhibit RAs at selected airports where ‘traffic’ problems were known.<sup>15</sup> The AIC also included reference to the term “Fly thru’ RAs” which seemed to indicate that aircrew could choose to ignore TCAS RA instructions and made interesting reading.<sup>16</sup>
- 2.11.8 Further comment on nuisance TA/RAs in TMAs had been received from a FAA consultant and is included as Attachment 9 to this Report.

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<sup>13</sup> It is known that TCAS systems are inhibited to prevent unnecessary alerts. The form of inhibition varies according to aircraft type/TCAS system, but usually below 1400 ft only TAs are presented and below 1000 ft no alerts at all are presented. SIDD has provided some data but do not record TAs and only record RAs where hazardous conditions result.

<sup>14</sup> A review of approach, landing and aerodrome charts was undertaken for a number of US airfields (Houston, Mobile, Sanford and Orlando). No reference to TCAS alerts could be found. It may be that some reference is given within the individual aerodrome AIP entries. At San Francisco, where close parallel approaches are flown, reference is made to possible wake turbulence but no comment is made as regards TCAS alerts.

<sup>15</sup> The FAA was contacted to determine what, if any, guidelines have been published addressing possible TCAS ‘nuisance’ alerts. The FAA confirmed the inhibition shown in footnote 13, above.

<sup>16</sup> Under current arrangements, it is considered that any options to ignore TCAS TA/RAs would not be acceptable within the UK.

**2.12 Single engine Helicopter operations in London and London/City CTRs and the associated dimensions of the Restricted Area R160:**

- 2.12.1 No commercial flights can be conducted at night in single engined helicopters. Additionally, no single engined helicopter flights can be conducted within the Restricted Area R160 at any time, because of the need to alight clear of the Area in the event of a power failure (this is the intent of the Restricted Area R160 designation and extends the fixed wing “alight clear Rules” to helicopters).
- 2.12.2 The designation of the “Restricted Area R160” was believed to be a Government decision rather than an operational requirement. The revision of Rule 5 takes the Restricted Area R160 requirements out of the Rules of the Air Regulations and relocates them in the Restriction of Flying Regulations.
- 2.12.3 It was considered that the Rules of the Air matter as much as any security restrictions. Therefore, it was considered that there was a need to review the Restricted Area R160 and determine whether existing boundaries were still appropriate in respect of the operation of single-engined helicopters over built up areas.
- 2.12.4 Additionally, there was a strong opinion that some formal airspace restriction to prevent the operation of single-engined fixed wing aircraft over extensive built up areas might now be required. It was the opinion of the Group that the application and interpretation of the Rule 5 “alight clear” rules were being misused.
- 2.12.5 Detailed discussion on any proposals to modify or remove the Restricted Area R160 would be needed within the CAA and also with the DfT.

**2.13 Considerations to modify the dimensions of the London and London/City CTRs and Airspace Classifications:**

- 2.13.1 Originally, the London CTR had been much larger in size and the boundaries had been reviewed from time to time. Regardless of any approved design, it remained incumbent upon any Air Navigation Service Provider (ANSP) and/or Aerodrome Authority to continually review their need for CAS and to consider modifications to CTR design and procedures to facilitate all users. Therefore, a review of the London CTR by NATS was an ongoing requirement.
- 2.13.2 Although the reduction of CAS might remove a number of ‘rules’ associated with adjacent airfield operations, there was also the fact that the London CTR was actually having the effect of ‘protecting’ traffic at these airfields. Unrestricted transit operations in the vicinity of airfields adjacent to the boundary of CAS might increase the risk to operations at those aerodromes.
- 2.13.3 It was noted that the A340-300 performance at the 6.5 km point (noise measuring point from start of roll), might now be a significant factor to the dimensions of the London CTR given the numbers of movements now being handled with this type of aircraft at London/Heathrow. The London/Heathrow Noise Preferential Routes (NPRs) require an approximate 12% climb gradient to 1000 ft aal and it is known many A340 departures are below 900 ft, when they should be above 1000 ft. A review of Noise and Track data would assist an analysis of achieved performance and would be needed to validate any proposed changes.

- 2.13.4 NATS had provided some early proposals to reduce the London CTR to the west and the south. It would be difficult to change the CTR to the east, because of London/City airport, or to the north, because of interaction with Northolt. As regards the CTR to the west, it might be possible to step up the airspace to 2000 ft, approximately 8 nm west of London/Heathrow, at the point where easterly arrivals would be 2500 ft on the ILS. However, it would also be necessary to consider London/Heathrow westerly departures on Compton SIDs to ensure they remained within CAS.
- 2.13.5 It was noted that there had been a consideration in the past to raise the base of the London CTR to the west, but the Concorde performance had stalled this proposal. Now, the A340-300 was the significant 'poor-performing' aircraft to be accommodated.
- 2.13.6 BHAB indicated that the area to the southwest of London/Heathrow was a busy route and they would prefer 1500 ft as the base for any stepped airspace, rather than 2000 ft. There was considerable discussion on the Burnham – Ascot routing and the impact of helicopter operations. Maidenhead was a significant geographical point and, if the airspace was stepped at 2000 ft, there may be a risk of CTR infringements as GA fixed wing pilots try to avoid the adjacent built up areas. Helicopters would be more flexible and the use of 1500 ft would be more appropriate.
- 2.13.7 The boundary of the London CTR to the south was discussed and it was considered that this could be brought up to the edge of the Fair Oaks ATZ, about 2 nm north of the existing CTR boundary. NATS indicated that although there would be no problems with arrivals at London/Heathrow, there could be interaction with Midhurst, Southampton and Compton departures when London/Heathrow was on easterlies.
- 2.13.8 It was questioned whether stepped airspace was needed and whether the boundary could not just stop there. However, stepped airspace with a 2000 ft base would be preferred in order to contain London/Heathrow departures. A traffic analysis of achieved performance would be needed to validate any proposed change.
- 2.13.9 There was discussion about a reduction of the London CTR to the northwest of London/Heathrow to assist Denham. However, there was a reluctance to reduce the CTR because Northolt departures need to make 3000 ft by the CTR boundary, which equates to a 7% climb gradient. Any proposals to reduce the CTR to the north of Northolt would have a significant impact on their existing departure procedures.
- 2.13.10 It was considered important to recognise the ability of pilots to navigate accurately around CAS and stepped airspace could focus a pilot's attention to navigate more carefully. It was suggested that pilots could use Beaconsfield as a visual reference to avoid the existing London CTR (remaining north of the motorway there) and stepped airspace might assist, say at 2000 ft.
- 2.13.11 A reduction of the London CTR to the southeast was resisted as airspace was already limited for existing London/Heathrow Dover departures. It was also known that NATS would shortly issue an airspace change proposal that would attempt to justify the need for additional stepped airspace to contain London/City traffic.



- 2.13.12 It was considered that the size of the London CTR should be related to its airspace classification. Class 'A' could be smaller because no access to VFR is allowed, whereas Class 'C' might need a larger area because of the ability to allow VFR flights. It was noted, however, that Class 'C' airspace was not 'free' airspace for VFR traffic and that more airspace management workload would be needed to handle and control VFR traffic in Class 'C' airspace. In consideration of changing the existing airspace classification, it might be simply replacing relatively straightforward Class 'A' airspace with complex "access rules" for Class 'C'.
- 2.13.13 An alternative proposal considered that a re-design of the London CTR could include a core area of Class 'A' airspace surrounded by an area of Class 'C'. This would identify an IFR only area and pilots could be suitably informed that clearance through the core area would be restricted or unavailable. GA pilots could then plan around this airspace in the knowledge that access, subject to controller workload, would be permitted within the Class 'C' area.
- 2.13.14 ATSSD considered that, initially, GA pilots would see Class 'C' as an opportunity for increased availability of transit and there could be considerable demand that would need to be balanced by the ability of controllers to enable such clearances to be issued. Eventually, a compromise would be reached as pilots realise that it is not free access. Planning around might be the quicker option than waiting for a clearance. It was emphasised that SVFR flights needed to be separated from other SVFR/IFR traffic (ICAO PANS-OPS).
- 2.13.15 It was concluded that the London/City CTR could not get any smaller, but NATS were asked to prepare a paper proposal for reductions in the dimensions of the London CTR. The appropriate "pros and cons" would be needed to identify the salient issues.
- 2.13.16 There was considerable discussion on the desirability of the existing Class 'A' and adjoining Class 'D' CTR arrangements for the London and London/City CTRs. There were operating and airspace management concerns about the differing rules and practices applying either side of the common boundary. It was widely felt that, whatever the final structure of the CTRs, their airspace classification should be harmonised.

## **2.14 Options for additional notified routes, including "free lanes":**

- 2.14.1 The introduction of free lanes was considered, particularly to Battersea. It was questioned whether a free lane would require environmental consideration and impact assessment. DAP indicated that a free lane would be identified as a line on a map and, therefore, likely to attract comment. Therefore, an environmental impact assessment is needed for anything that is specified as a route.
- 2.14.2 A free lane to the south of Battersea, not above 1000 ft south of Battersea to the intersection of the boundary between the London CTR and London/City CTR, was proposed. The purpose of this lane would be to enable improved access to Battersea without imposing a delay awaiting clearance from LTCC Heathrow or London/City. The present clearances received were often a simple acknowledgement of the flight's intention and then the aircraft was directed to call Battersea direct, anyway.
- 2.14.3 To cater for the situation where London/City were on easterlies and London/Heathrow were on westerlies the requirement for independent traffic flows

dictated the use of 2000ft ALT for City arrivals with 3000ft for London/Heathrow arrivals. If helicopters were operating at 1000 ft, this should not cause a problem and a simple letter of agreement (LOA) would enable the delegation of this airspace without the need for a wider consultation. There would be issues to determine procedures and separation requirements to integrate the free lane against unknown traffic and with other known helicopter traffic in contact with LTCC Heathrow SVFR or London/City.

2.14.4 It was suggested that better access to H3 could be considered in the Bagshot area for single engined helicopters, in order to avoid the built up areas and enhance safety considerations. This airspace was already delegated to Farnborough during airshow week and was not a problem and, therefore, this option could be considered further.

2.14.5 Temporary Helicopter Routes for Ascot were introduced for special events, but there were no designated reporting points on these routes that could also assist access from outside the London CTR.

2.14.6 2.14.6 There was also a suggestion to change the existing Bovingdon R133 Brent - Battersea twin helicopter route to a new London CTR VRP entry point at the A1/M1 Hendon junction (approximately the Bovingdon R124) in order to provide better deconfliction from Northolt traffic. This new route would result in the crossing of the Northolt runway 25 extended centreline from 8 nm to about 9.5 nm. From Hendon, the route would follow the previous Brent - Battersea direct route. In introducing this proposal, it would be necessary to reflect that the route needs to be flown at 2400 ft to overfly the Elstree ATZ (or radio contact with Elstree would need to be made), with descent after Elstree to 1500 ft for CTR entry and to deconflict from Northolt traffic.

## **2.15 Other issues:**

### **2.15.1 Helicopter landing sites adjacent to London/Heathrow (e.g. Runnymede) and Police Helicopter operations in the close vicinity of London/Heathrow**

2.15.1.1 This is an ongoing issue that is causing NATS some concern especially with regard to integration with London/Heathrow traffic. It was suggested that London/Heathrow Tower could use reduced separation in the vicinity of an aerodrome to resolve these issues, as no other solutions seemed viable. NATS understood that this might provide a solution, but drew attention to the physical limitations of ensuring sufficient visibility from the tower and the need to apply appropriate separation. ATCOs were finding it difficult to apply appropriate rules to enable flexible use of airspace and there may be associated controller licensing issues for NATS to consider.

2.15.1.2 The CAA would expect NATS to facilitate both operations effectively with a balanced view on possible disruption to London/Heathrow operations.

### **2.15.2 Fixed wing flights over the Lea Valley**

2.15.2.1 The CAA was minded to extend the current ban on single-engined fixed-wing NSFs in the London CTR and London/City CTR (that had been put in place for 3 months from January 2005 ) until further notice<sup>17</sup> and for the following reasons:

- a) There had been no objection from operators of the NSFs and the evidence shows that a significant proportion of the extant NSFs were for rotary rather than fixed-wing types.
- b) The way to resolve the problem for the long term might be to amend the dimensions of the Restricted Area R160 and to establish a prohibition of single-engined fixed wing aircraft.

2.15.2.2 The CAA intended to review specifically the operation of single-engined fixed wing aircraft along the Lea Valley as it was considered inappropriate in respect of the Rule 5 alight clear requirements. There may be a significant impact on GA operations as the Lea Valley was a recognised transit route for the London/City CTR at low level and there was a clear requirement to remove the ambiguity between Rule 5 requirements on Pilots and the issuing of ATC clearances based on traffic integration. There may be a consequent need to designate a Helicopter Route via the Lea Valley

### 2.15.3 Helicopter operations over the Thames

2.15.3.1 A recent “special event” (the Boat Race) had given some cause for concern with regard to helicopter operations over the Thames. Specifically, the use of the river as a landing area in the event of an engine failure. With the increased number of boats using the river (involved with the race), it could be argued that options were reduced to enable a helicopter to alight without causing danger to persons or property on the surface.

2.15.3.2 The CAA presently gives permission for events such as this and may apply such conditions it sees fit for associated helicopter operations. Any helicopter intending to use the helicopter routes during the course of an event, such as the boat race, requires the written permission of the CAA under Rule 5(2)(e)<sup>18</sup>. The application also needs to be supported with written consent from the organisers of the event and permission is granted subject to the condition that the aircraft will fly only in accordance with the AIP procedures for flight along the helicopter routes, that is, normally over that part of the river bed between the high and low water marks.

2.15.3.3 Additionally, since people would also gather on the bridges over the river, a condition is added to ensure that the aircraft would not loiter over any bridge. Further, and to reinforce the intent of Rule 5(2)(d) and Rule 5(3)(d)5(1)(b) (explained in 2.15.3.4 below), the operator will also be advised by covering letter of the need to apply data from the Performance section of the helicopter flight manual, to take account of the height required to achieve a successful transition to autorotation in order to be able to comply with the Rule. It is also specified in the permission that the helicopter must not loiter over any part of the river occupied by boats.

2.15.3.4 At high tide the only generally available areas to alight in an emergency would be in the water. As regards the Rules of the Air Regulations, the requirement in Rule

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<sup>17</sup> In the first instance the ban has been extended to September 2005.

<sup>18</sup> Previously Rule 5(1)(d)(i).

5(2)(d) is to fly at a height sufficient to enable the helicopter to alight without endangering persons or property on the surface. The term 'safe forced landing' is defined in ICAO documentation as an "unavoidable landing or ditching with a reasonable expectancy of no injuries to persons in the aircraft or on the surface" and this is of particular relevance for commercial air transport operations. (The floatation equipment requirements for UK public transport helicopters are in ANO Article 45, but these would not apply to flights, such as this, as they would be engaged in "aerial work").

2.15.3.5 The changes to Rule 5 from 1 April 2005 mean that CAA SRG action is no longer required for flights on the designated helicopter routes. CAA permission will only be required where it is intended to actually fly over an organised open-air assembly of more than 1000 persons below the heights prescribed.

2.15.3.6 The River Thames is part of the 'congested area' of London, as defined, and the helicopter routes have been established presumably on the basis that the river is a relatively uncongested part of the congested area. However, it remains a consideration that closure of the relevant section(s) of the helicopter routes to single-engine helicopters should be enforced if a significant event is taking place on the River Thames. It was noted that the intent of the designated helicopter routes was only ever to define agreed transit routes. It was never intended for these routes to be used for aerial work that involved hovering over a specific site or location.

#### 2.15.4 **Helicopter holding over the Isle of Dogs**

2.15.4.1 Another issue to be considered was the practice of holding helicopters waiting to join the Helicopter Route structure to the south and east of the Isle of Dogs a reporting point that marks the end of Route H4.

2.15.4.2 This practice had been identified as a possible cause of some of the over-flights of Greenwich and Blackheath. Consequently, the CAA has taken measures to instruct NATS to ensure that in future all holding is performed over the River Thames. This would not adversely affect flight safety but may provide some relief from over-flight of Greenwich Park and the northern part of Blackheath.

2.15.4.3 The UK AIP specifies that there are no helicopter holding points between Vauxhall Bridge and Greenwich Marshes. However this constraint is no longer appropriate to current operations. The AIP should be reviewed and consideration should be given to extending H4 to the vicinity of London/City Airport (Thames Barrier) and establishing routeing and holding conventions. However, consideration will be needed to ensure deconfliction of VFR traffic on the route and London/City IFR traffic.

### **3. Conclusions:**

- 3.1 This review of the London and London/City CTRs has been an extremely useful activity. It has highlighted a significant number of issues that need to be addressed in order to resolve issues that may have an impact on flight safety, flight efficiency and the environment. It is considered that substantial improvements can be made to the airspace arrangements without prejudice to the safe operation of London/Heathrow and London/City Commercial Air Traffic (CAT) traffic.
- 3.2 There is a plethora of meteorological criteria applications that cannot always be substantiated and contribute to a confusing and complex interpretations for flight within the London CTR.
- 3.3 The existing airspace classification of the London CTR does not permit the flexibility of operation that rotary operations permit. This is particularly important with regard to route selection and the application of separation standards.
- 3.4 The application of individual “deemed separation” procedures within the London CTR pre-date current safety management systems and require a new assessment under existing NATS SMS and CAA regulatory frameworks.
- 3.5 The different application of separation standards by military controllers requires further consideration by the Regulatory authorities and, wherever possible, these should be standardised.
- 3.6 Changes to separation criteria could negate the requirement to hold helicopters, without any adverse impact on safety, thereby improving efficiency and negating adverse environmental impacts.
- 3.7 Reduced environmental impact could be achieved by more efficient routeing and less holding. However, the re-routeing of helicopters will require environmental assessment on any new designated routes and may require consultation to be conducted.
- 3.8 Re-classification of the airspace would permit the introduction of revised rules and operating procedures, including VFR clearances and reduced separation criteria. Improved airspace efficiency is likely to result in concomitant enroute benefits through reduced holding and reduced emissions.
- 3.9 A change in airspace classification may permit a change in applied weather minima without having an adverse effect on flight safety.
- 3.10 A review of the boundaries of the CTR, possibly associated with stepped CTAs, could provide improved access to adjacent aerodromes. The possible increased exposure to aerodrome operations on the periphery of the current CTR, to itinerant traffic, should be taken into account.
- 3.11 The general consensus of the Group was that Class ‘C’ airspace classification might be more appropriate to the effective management of the airspace and traffic demand. However, the full implications of change would require a detailed study.

- 3.12 Consideration should be given to the closure of the relevant section of the helicopter routes to single-engine helicopters when a major sporting or commercial event is taking place on the River Thames.

**4. Recommendations:**

- 4.1 NATS, in conjunction with the CAA, should consider the re-classification of the London CTR and London/City CTR with a view to a common airspace classification. NATS should consider the use of Class 'C' airspace with the addition of specific rules to limit access for GA VFR fixed-wing flight.
- 4.2 NATS should include a review of the separation criteria applied within the entire volume of both London and London/City CTRs to ensure that consistent rules apply irrespective of the service provider and that adequate documentation exists for the application of "deemed" separation. Additionally, NATS should review the current separation deeming arrangements within the London CTR, in the context of current safety management requirements.
- 4.3 NATS, in conjunction with the peripheral aerodrome operators, should review the overall lateral dimensions of the London CTR with a view to reducing the dimensions, or providing appropriate stepped CTAs, to facilitate VFR flights to these aerodromes.
- 4.4 The CAA should review the meteorological criteria applied within the London and London/City CTRs with a view to simplifying the criteria and identifying which minima are required for the operation of aircraft and which are required for the management of the airspace. The use of pilot determined flight visibility or ATC reported visibility, should be reviewed and clarified.
- 4.5 NATS should conduct an assessment to determine the maximum operating altitude on that portion of H4, east of Battersea, which would provide standard separation with traffic inbound to London/City. This should include an environmental assessment.
- 4.6 NATS should assess the feasibility of extending H4 eastwards to the vicinity of London/City airport, in order to minimise overflight of Greenwich Park and Blackheath, or holding in these areas.
- 4.7 The CAA should review the dimensions and applicability of the Restricted Area R160. In addition, the CAA should consider the measures required to exclude access to the Lea Valley by single engined fixed-wing aircraft.
- 4.8 NATS, in conjunction with Battersea Heliport and the CAA, should consider revised arrival and departure routes to expedite the flow of traffic to London Battersea Heliport from the north (twin-engined only) and south-east (single and multi-engined), including the use of appropriate Visual Reference Points. This should include an environmental assessment.
- 4.9 NATS should develop proposals to formalise arrangements for the use of a Cookham - Burnham - Ascot routeing (similar to the special events route "H11") within the London CTR, subject to the review of the dimensions of the London CTR.

- 4.10 The operation of Northolt ATC should be reviewed to ensure consistent application of separation standards and meteorological criteria within the portion of the London CTR airspace delegated to it.
- 4.11 The CAA should review the AIP entry to ensure that the operating restrictions on H3 are compatible with operational practice.
- 4.12 The NATS airspace management arrangements and operating practice for approval of off-route operations within the London CTR should be reviewed and clarified.
- 4.13 The CAA should review the compulsory classification of all SFN Police flights as Category B and consider the possibility of using the flight priority as a callsign suffix .
- 4.14 NATS should review the requirement for the “All/Nothing/Twin” procedures within the London CTR.
- 4.15 NATS should develop standard operating arrangements to restrict or enable airspace activity in connection with special events or security requirements within the London and London/City CTRs, subject to the requirements placed upon them by the CAA, the DfT or the Security Services.
- 4.16 The CAA should consider that a warning is depicted on the relevant instrument approach charts in order to provide awareness to pilots inbound to London/Heathrow of helicopter routes passing beneath the final approach paths.
- 4.17 Consideration should be given to the closure of the relevant section of the helicopter routes to single-engine helicopters when a major sporting or commercial event is taking place on the River Thames.

**5. Terms of Reference:**

- 5.1 The Terms of Reference for the London CTR Review Group is shown in Appendix A to this report.

**6. List of Members of Review Group:**

- 6.1 The list of organisations participating in the London CTR Review Group and their individual representatives is shown in Appendix B to this Report.

**7 References and Additional Information:**

- 7.1 The following Appendices are included at the end of this Report:

- Appendix A - Terms of Reference for a review of light aircraft and helicopter operations in the London (London/Heathrow) and London (City) CTRs.
- Appendix B - List of organisations participating in the London CTR Review Group and individual representatives.

- 7.2 The following Attachments are included at the end of this Report:

- Attachment 1 - Map depicting the London CTR and London/City CTR
- Attachment 2 - Map depicting the "ANT" within the London CTR
- Attachment 3 - Map depicting the Restricted Area R160
- Attachment 4 - List of deemed separations within London CTR (information provided by NATS)
- Attachment 5 - London CTR usage (data provided by NATS)
- Attachment 6 - List of weather conditions/minima that are used by NATS within the London and London/City CTRs (data provided by NATS)
- Attachment 7 - Northolt weather criteria and separation "Rules" (data provided by RAF Northolt)
- Attachment 8 - Dispensation for RAF Northolt to use reduced vertical separation of 500 ft within the Northolt radar manoeuvring area (information provided by RAF Northolt)
- Attachment 9 - Nuisance TA/RAs in TMAs (additional comments from Bill Petruzel, Aviation Safety Inspector)
- Attachment 10 - TCAS RA Encounters within London CTR (NATS additional response)
- Attachment 11 - Landing Sites within Battersea circuit area (NATS ATC Instruction, February 2005)



## TERMS OF REFERENCE FOR A REVIEW OF LIGHT AIRCRAFT AND HELICOPTER OPERATIONS IN THE LONDON (HEATHROW) AND LONDON (CITY) CTRs

### 1 Composition

The Review Team is to consist of representatives from the following areas:

- DAP (Chairman ADAP1)
- DAP (Terminal Airspace). Also to provide Secretary
- SRG (ATSSD)
- SRG (FOD(H))
- Chief Pilot – Metropolitan Police Air Support unit
- BALPA
- BHAB Representative
- NATS (TC Ops)
- MOD (Helicopter operations/ATC aspects)
- Battersea Heliport
- Minor Aerodromes Representative

### 2 Purpose

- 2.1 The purpose of the review is to determine what changes, if any, are required to the structure of the London (London/Heathrow) and London (City) CTRs, with particular regard to the operation of the Special VFR procedures on the Helicopter Route Network and elsewhere. No changes are to be made that will impinge on, or adversely affect the arrival and departure of fixed-wing movements at the two airports.
- 2.2 The review is also to consider low altitude operations by fixed-wing aircraft including Non-Standard Flights (NSF), Special Flights (SFN) and other GA activity.
- 2.3 The Review is to pay particular attention to the following issues:
- a) The classification of the airspace and the impact of that classification on helicopter, Special Flights and other GA operations.
  - b) The nature of the helicopter route system with particular reference to:
    - The location and operating altitudes of the routes,
    - The impact of those altitudes on IFR activity within the 2 CTRs and,
    - The off-route operation of multi-engined helicopters.
  - c) Possible changes that could be made to improve the efficiency of Air Traffic Management.
  - d) Any potential enhancements that might have an impact on the security arrangements that pertain to operations over the Central London Area.

- e) The separation criteria that are required and applied between participating helicopters and in respect of other low-level aircraft activity.
- f) The environmental impact of the current operation and the consequences of any possible changes that might be recommended.
- g) Potential new routes for helicopters and possible withdrawal of existing routes.
- h) Review the requirements for the Restricted Area R160 and propose changes to legislation if necessary.
- i) Accommodation of fixed-wing GA traffic within the London CTR and the interactions between them.
- j) Review relevant documentation and reconcile inconsistencies.

### **3 Recommendations:**

- 3.1 The Review Team is to make recommendations for change that will be assessed by the CAA before any change to existing arrangements is required. In some cases, under the terms of the Government Directions to the CAA, the approval of the Secretary of State may be required before any changes can be implemented.

### **4 Timescales:**

- 4.1 The Review is to be completed by the end of the first quarter of 2005.
- 4.2 The Review Team is to make recommendations on the likely timescales for implementing any change(s).\*

\* Any changes to the Restricted Area R160 will require changes to Rule 5 and therefore an RIA will be required with the resultant effect on implementation timescales.

**LIST OF ORGANISATIONS PARTICIPATING IN THE  
LONDON CTR REVIEW GROUP AND INDIVIDUAL REPRESENTATIVES**

***Civil Aviation Authority:***

<b>Mr Phil Roberts</b>	Assistant Director Airspace Policy 1, Directorate of Airspace Policy.
<b>Mr Bert Hayes</b>	Regional Manager ATS (Inspection/Approval) Southern England, Aerodrome, Air Traffic & Licensing Standards Division (AALSD), Safety Regulation Group.
<b>Mr Bob Jones</b>	Flight Ops Inspectorate (Helicopters), Flight Operations Department, Safety Regulation Group.
<b>Mr Paul Sparkes</b>	Flight Ops Inspectorate (Helicopters), Flight Operations Department, Safety Regulation Group.
<b>Mr David Beaven</b>	General Aviation Division, Safety Regulation Group.
<b>Mr Rob McGregor</b>	General Aviation Division, Safety Regulation Group.
<b>Mr Nic Smith</b>	Terminal Airspace, Directorate of Airspace Policy.
<b>Mr Martyn Cooper</b>	Terminal Airspace, Directorate of Airspace Policy. (Secretary)

***National Air Traffic Services:***

<b>Mr Rob Eckett</b>	NATS Terminal Control Operation.
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***MOD:***

<b>Sqn Ldr Simon Brook</b>	SATCO, RAF Northolt
<b>Flt Lt Dave Johnstone</b>	RAF Northolt

***Metropolitan Police Air Support Unit:***

<b>Captain Brian Baldwin</b>	Chief Pilot.
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***British Helicopter Advisory Board and representatives from the Queen's  
Helicopter Flight:***

<b>Captain Rod Wood</b>	Chief Pilot Cabair Helicopters Limited
<b>Mr David Allen</b>	
<b>Mr Chris Forrest</b>	

***BALPA:***

**Mr Tim Williamson**

***AOA:***

**Miss Eva Paul**                      Denham Aerodrome, AOA Small Airports Representative

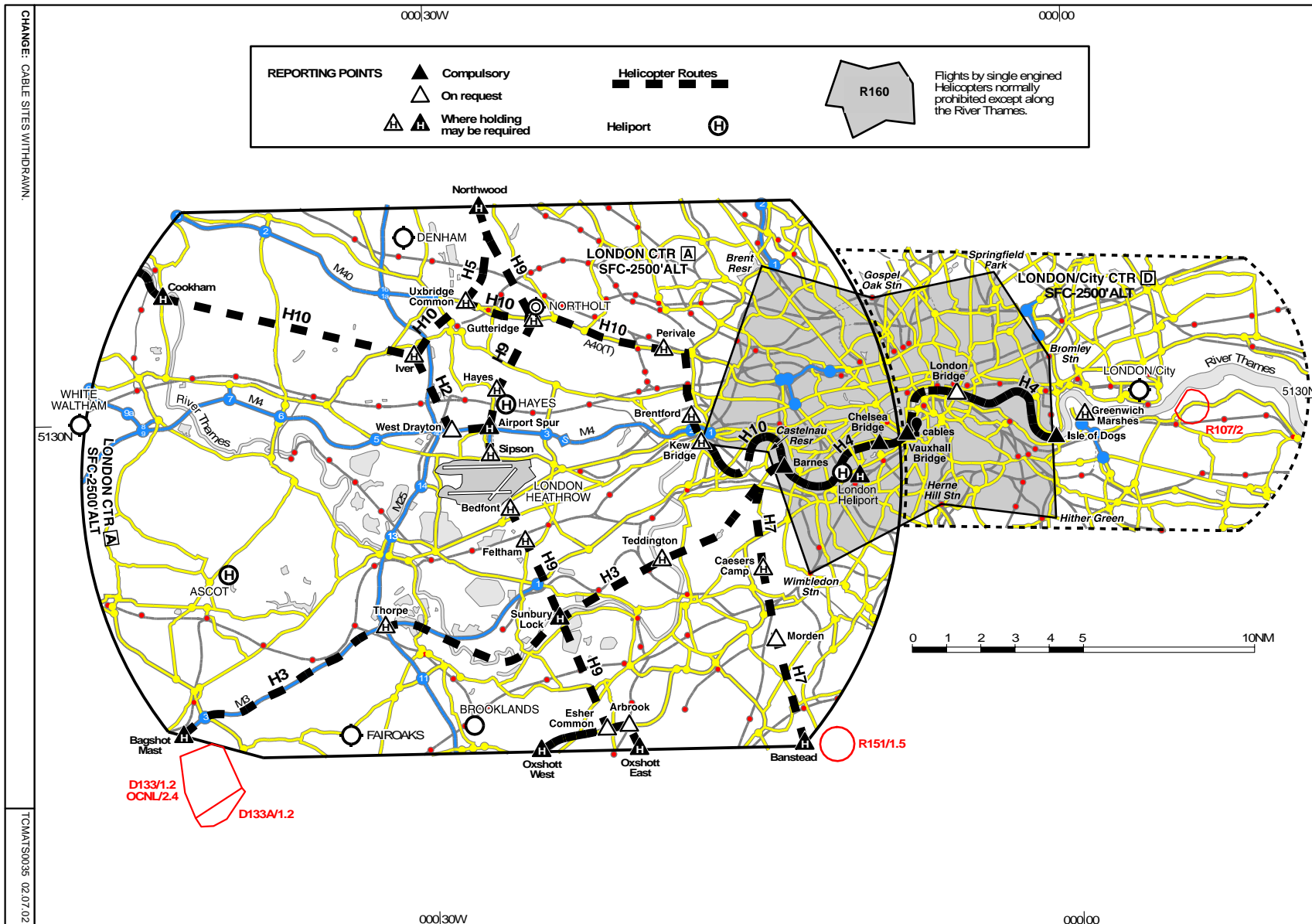
***Metro Aviation:***

**Mr John Rowley**                      SATCO, London Heliport

***Corresponding Member :***

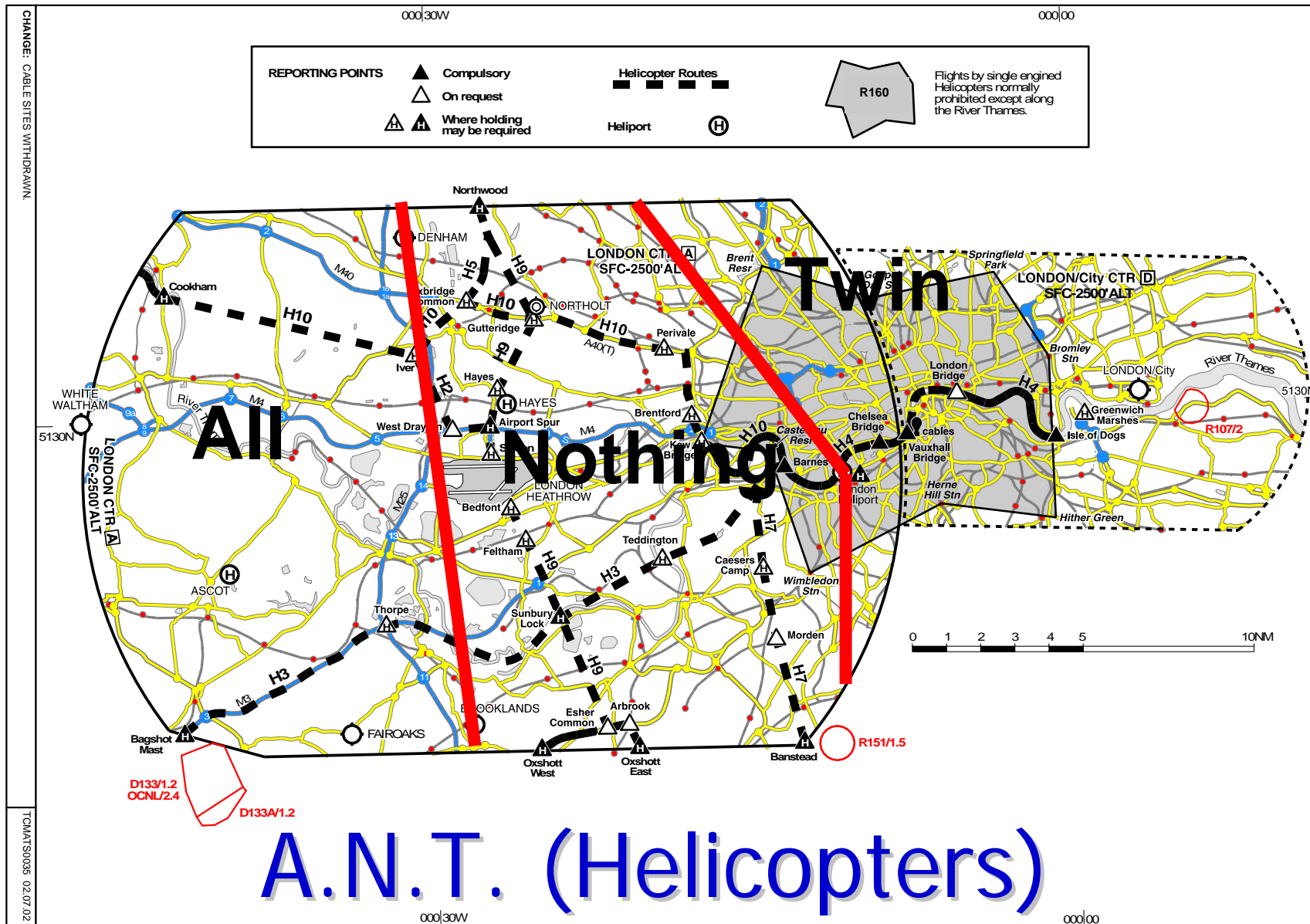
**Mr Alex Bristow**                      Manager ATS, NATS, Farnborough Airport

LONDON CTR AND LONDON/CITY CTR

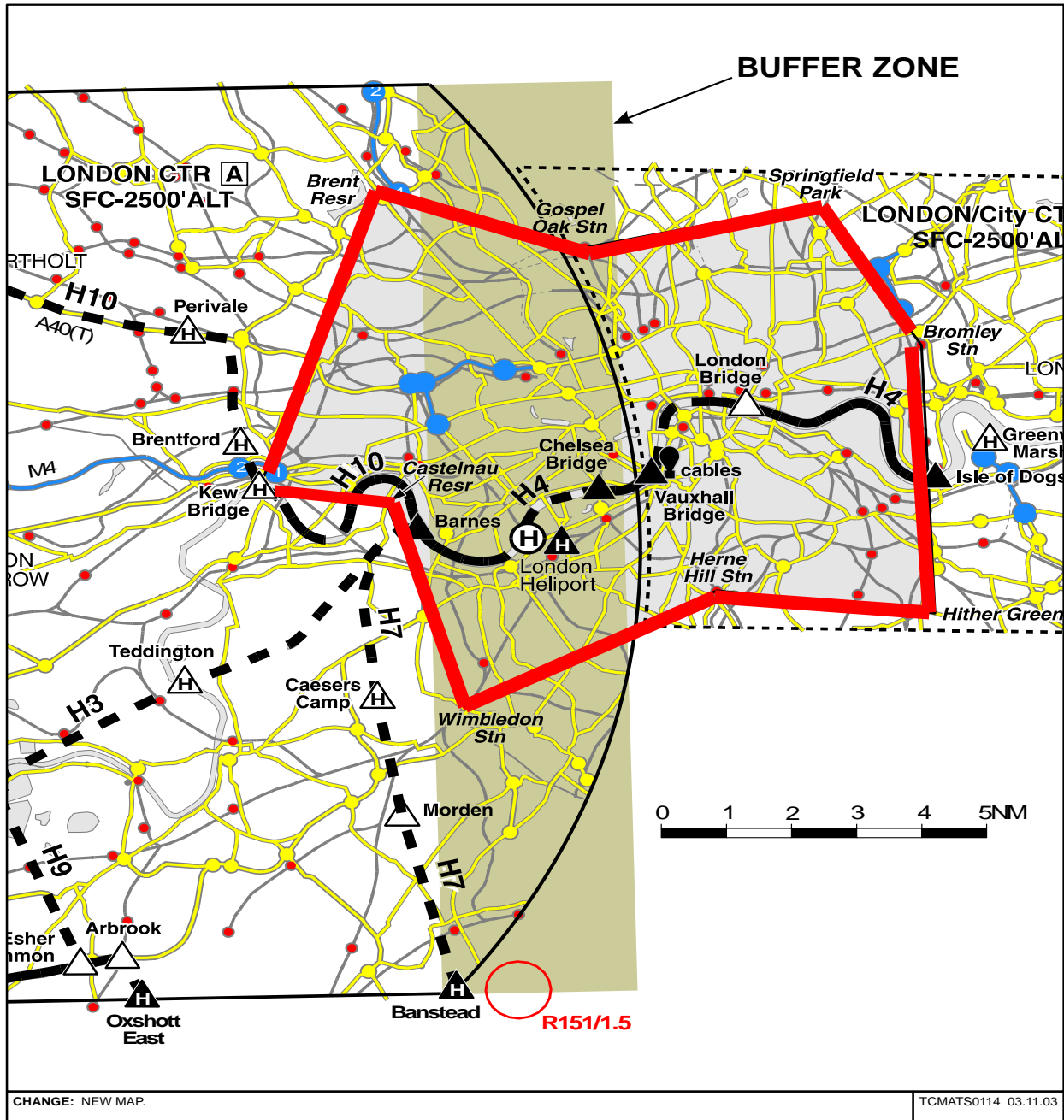


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# Restricted Area R160 (the "Specified Area")



## **ROUTE (DEEMED) SEPARATION REQUIREMENTS FROM HEATHROW RUNWAYS**

The separation criteria to be applied to helicopters operating on Helicopter Route H10 with respect to London/Heathrow inbound traffic on 27R are as follows:

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

<b>Type of Approach</b>	<b>H10 between Kew Bridge and Barnes</b>
ILS	Separated.
ILS Localiser Only	Separated, provided that the aircraft is on the localiser and is not cleared to descend below 2000ft QNH until 6nm from touchdown.
SRA	Separated.
Visual	Separated, provided that the aircraft is on the Final Approach Track and is not cleared to descend below 2000ft until 6nm from touchdown.

Helicopter Route H10 is deemed separated from ILS approaches to Runway 27L.

Visual approaches to Runway 27L are separated provided that aircraft are not cleared to descend below 2000ft QNH until 6nm from touchdown.

## **SEPARATION FROM HEATHROW IFR TRAFFIC**

### **London/Heathrow Inbound Descent Profiles:**

To provide separation from London/Heathrow inbound traffic the following altitude restrictions are to be applied:

- when London/Heathrow is on westerly operations, aircraft transiting the zone routing north/south via London Heliport should be at 1500ft;
- when London/Heathrow is on easterly operations, aircraft transiting the zone via Ascot/Burnham should be not above 1000ft while adjacent to and passing under the final approach path.

For the normal descent profiles of London/Heathrow inbound traffic see HRW 5.6.4 to HRW 5.6.6.

### **London/Heathrow Outbound Minimum Climb-Out Gradient**

To assist controllers in providing standard separation between London/Heathrow departures and low level flights operating within the London Control Zone, all departing aircraft operating on a SID are required to comply with a minimum climb-out profile.



This profile requires the aircraft to cross the relevant noise monitoring point at 1000ft or above, and thereafter, maintain a climb gradient of 4% or better.

Aircraft that comply with this requirement will achieve an altitude of at least 2000ft at a track distance of 7nm from the upwind end of their departure runway. This climb gradient equates to a climb rate of 243ft per nm.

Unverified Mode C readings may not be used for separation purposes. On occasion, departing aircraft may not be able to comply with the minimum climb-out gradient, although they may be able in other respects to comply with the SID. Any aircraft that is unable to comply with the required climb-out gradient will notify ADC, and this information will be relayed to the TC London/Heathrow, giving the aircraft's callsign and ETD.

### **Altitude Restrictions**

Clearances should normally instruct pilots not following a published route to fly "not above" the maximum altitude which maintains separation from London/Heathrow in- and outbounds, 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 SVFR flights. However, within the sector 020 degrees to 140 degrees true from London/Heathrow clearances should instruct pilots to "maintain 1500 feet", unless the pilot has authorisation from the CAA to fly below this level, or is following a published helicopter route.

The ATC clearance to helicopters following published routes should instruct pilots to fly at the "standard operating altitudes". This allows the helicopter to fly "not above" the published altitudes, except for H10 between Perivale and Chiswick Bridge, where the published altitudes must be maintained.

### **Separation between Helicopters on Published Routes**

Separation may be reduced between helicopters following published routes on the basis that pilots of helicopters may be asked by ATC to maintain visual separation from other helicopter traffic provided that:

- the reported Met visibility at London/Heathrow is 6 km or more and the helicopters can maintain an in flight visibility of 6 km or more;
- there is agreement between the helicopter pilots concerned;
- the current route structure, the altitudes applicable and communication procedures are adhered to;
- appropriate traffic information is passed to the helicopter pilots.

### **Geographical Separation Within the London CTR - Use of the River Thames**

Between Kew Bridge and Vauxhall Bridge, separation exists between traffic (rotary, fixed wing or airship) instructed to remain north side of the River Thames and traffic which has been instructed to remain south side of the River provided that:

- appropriate traffic information has been passed to the pilots concerned; and
- there is agreement between the pilots concerned.

Helicopters (or airships) following the north and south banks of the River Thames are subject to the usual conditions for the separation of helicopters on published routes.

## 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.

### Restrictions on the Use of Helicopter Routes H3 and H9 During Easterly Operations

Whenever Runway 09R and/or 09L are in use Helicopter Route H3 will not normally be available. The UK AIP details the above restriction. Special arrangements for the use of H3 in connection with special events will be published in TOIs.

In order to provide vertical separation between London/Heathrow easterly departures and Helicopters routeing along Helicopter routes H3 and H9 the following procedures are to be carried out:

#### Between 0800 and 2100 Local

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

#### Between 2100 and 0800 Local

The straight ahead to 1500ft requirement is not to be used, therefore no helicopter traffic is permitted to operate on H3 between Teddington and Thorpe and/or H9 between Oxshott and Bedfont when aircraft are departing on CPT - MAY - MID - SAM SIDs.

#### Maximum Altitude

In order to provide separation between aircraft on a SVFR clearance and traffic inbound to London/Heathrow on the ILS, the maximum altitudes issued to SVFR traffic will be as follows:

- West of a line north/south through London Bridge - not above 2000ft;
- otherwise, not above 2400ft.

#### Minimum Altitudes

A minimum altitude of 1500ft will apply to all SVFR traffic operating within the London/City CTR west of a line north/south through the Isle of Dogs (the edge of The Restricted Area R160) except:

- Helicopters following H4;
- aircraft, fixed wing or rotary, having obtained permission from NATS HQ and subject to a NSF authorisation. Where possible, aircraft fixed wing or rotary, should not be instructed to fly at a specific altitude.

## MULTIPLE CATEGORY A FLIGHTS

There may be occasions when the Ambulance helicopters and the Police helicopter(s) are responding to the same or adjacent incidents (such as major road traffic accidents) and may warrant ATS Category A Status as detailed in MATS Part 1, Section 1.

Under these circumstances CAA DAP has authorised a reduction of standard separation to be applied within the London CTR by SVFR/LL INT (and by Northolt APC in those parts of

the London CTR delegated to Northolt APC, and by Thames Radar in those parts of the London CTR delegated to Thames Radar) between the participating helicopters, subject to the conditions specified below.

### **Conditions and Procedures**

#### **Operations in VMC by Day:**

*Note: The helicopter pilots are responsible for determining their flight conditions in accordance with the "inside Controlled Airspace" criteria.*

ATC is not required to provide IFR separation criteria between the participating helicopters. ATC will pass traffic information - radar derived whenever possible - until the pilots of the participating helicopters have each other in sight.

The helicopter pilots are responsible for maintaining their own separation from each other.

#### **Operations in IMC or at Night**

Helicopters will at all times remain clear of cloud and in sight of the surface, and in a flight visibility which will permit navigation with visual reference to the surface. ATC is not required to provide IFR separation criteria between participating helicopters.

ATC will pass traffic information - radar derived whenever possible - until the pilots of the participating helicopters have each other in sight. If the pilots of the helicopters do not have each other in sight before the helicopters are within 1 nm of each other, then ATC will intervene and re-establish 3nm separation as quickly as possible until such time as one of the helicopters has landed at the incident site. This is to be considered the primary ATC task. When the pilots of the helicopters have each other in sight they will be responsible for maintaining their own separation from each other.

## **MULTIPLE NON-CAT A OPERATIONS IN THE LONDON AND LONDON CITY CONTROL ZONES**

There are occasions when Virgin London HEMS and the Metropolitan Police ASU need to operate in close proximity to each other when a high flight priority category is not appropriate. Outside the hours of operation of Thames Radar, TC London/Heathrow is authorised to apply a reduction of standard separation between participating helicopters, subject to the conditions specified below.

### **Conditions and Procedures**

These procedures apply only to Virgin London HEMS and Met ASU. They **do not** apply to other Police or Medical helicopter flights. Special Flight Notifications will be amended accordingly.

Helicopters will at all times remain clear of cloud and in sight of the surface, and in a flight visibility which will permit navigation with visual reference to the surface. Confirmation must be obtained that the pilots are willing to provide visual separation.

ATC will pass traffic information until the pilots of the participating helicopters have each other in sight. From this point ATC is not required to provide IFR separation between the participating helicopters, the pilots will be responsible for maintaining their own separation

from each other. If the pilots of the helicopters do not have each other in sight (and vertical separation is not being provided) before the helicopters are within 3nm of each other, then ATC will intervene and maintain 3nm separation.

## LONDON CONTROL ZONE USAGE

Statistics compiled using data from December 2004 and January 2005.

***Data sampling used, therefore usage reflects "Good Weather" dates. This allows for a good overview of true usage, and prevents skew statistics from IFR zone usage.***

ON Route Traffic : 18%

OFF Route Traffic : 82%

Fixed Wing : 18%

Rotary : 82%

Single Engined : 21%

Twin Engined : 79%

Predominantly, Single Engined Rotary used the routes, and twin engined rotary were off route.

Twin engined Rotary primarily used the eastern portion of the London CTR

Both single and twin engined fixed wing predominantly use the western portion thereof.

Statistics include use of the zone by Helimed and Police flights. Of the statistics, these flights account for 60% of usage for dates sampled.

**MET. MINIMA FOR SVFR/VFR OPERATIONS IN THE  
LONDON/LONDON/HEATHROW/CITY CTRS**

<b><u>Visibility</u></b>	<b><u>Cloud Base / Ceiling</u></b>	<b><u>Traffic / Routes</u></b>	<b><u>Reference</u></b>
10km	1200 ft	SVFR fixed wing inbound	MATS pt 1
1900 m	600 ft	SVFR fixed wing outbound	MATS pt 1
2000m		SVFR rotary in/out/overflights London/Heathrow	AIP
6 km	1000 ft ceiling	Visual separation permitted at London/Heathrow	
6 km		Visual separation on designated helicopter routes	AIP
6 km	1000 ft	Met Police Helicopters security checks	
1000 m		SVFR helicopters on designated routes	AIP
	1200 ft	H10 traffic (not mandated, but due to altitudes involved, required)	
	1500 ft	SVFR traffic 020 to 140 degrees (not mandated, but due to altitudes involved, required)	MATS pt 2
5km		VFR flights in/out of an Adme in Class 'D', based on reported Met. Visibility	AIP
3000 m		Denham, Fair Oaks, White Waltham and Brooklands LFA	
1000 m	600 ft	Battersea. No SVFR clearance if less than	MATS pt 2
6 km		Hold at Gutteridge if IFR (flight visibility and London/Heathrow METAR)	Northolt
6 km	1200 ft	Visual Approaches	Northolt
800 m		Visual Approaches (military traffic)	Northolt
1000 m		RVR for IAPs	Northolt

## NORTHOLT WEATHER CRITERIA AND SEPARATION 'RULES'

1. ATC at RAF Northolt employ the following weather criteria in relation to aircraft operations at RAF Northolt.
  - a. **Gutteridge hold.** To allow helicopter traffic holding at Gutteridge against Northolt departures and arrivals to be deemed separated:  
  
*London/Heathrow reported vis = 6kms + and in-flight vis = 6kms +*
  - b. **Visual approaches to Northolt.** To allow aircraft to make visual approaches to Northolt:  
  
*NHT reported vis 6kms + and cloudbase 1200ft +*
  - c. **SVFR departures.** To allow fixed wing SVFR departures from Northolt:  
  
*1nm vis and 600ft cloudbase*
  - d. **Northolt radar failure contingency plan.** Subject to a number of conditions, aircraft can make a procedural visual approach to Northolt. The weather **minima** are:  
  
*NHT vis 10kms+ and cloudbase 2000ft +*
  - e. **London/Heathrow Rwy 23 operations.** Subject to a number of conditions, when Rwy 23 is in use at London/Heathrow, ac can make visual approaches to NHT. The weather **minima** are:  
  
*NHT vis 6kms + and cloudbase 1200ft +*

NH/180/1/1/ATC

28 Apr 05

Members of the London CTR Review Group

**DISPENSATION FOR RAF NORTHOLT TO USE REDUCED VERTICAL SEPARATION OF 500FT WITHIN THE NORTHOLT RADAR MANOEUVRING AREA**

References:

- A. 8MR/180/02 dated 30 June 1988
- B. MATO/11282/1/1/Ops dated 2 October 1996

1. JSP 552 Military Air Traffic Services provides regulations for military controllers to provide reduced vertical separation of 500ft between military aircraft and under certain circumstances, between military and civilian aircraft. References A and B provide the dispensation for RAF Northolt to apply reduced vertical separation within the Northolt Radar Manoeuvring Area (NRMA) and north of the RW 07 dogleg centreline.
2. During the London CTR Review Group meeting held on 25 January 2005, I was asked to provide details of the impact that removing the dispensation would have on operations at Northolt, and SVFR traffic on routes within the NRMA. Additionally, after a meeting held on 27 April 05 I was asked to update the review following some discussion. Those details are as follows:

**RW25 Operations.**

Non-airway arrivals to RW25 position at 10 nms finals at 2000ft QNH. Traffic that can accept RVS of 500ft is able to continue inbound/outbound of Battersea on the BNN 133R at 1500ft QNH. If dispensation was removed then this traffic would have to hold on the ground at Battersea, or outside the CTR as there are no designated holding points on this track and SVFR traffic is to give way to IFR traffic. Raising the Northolt pattern to 2500ft QNH would place the glidepath interception point at 6.5 nms finals, and therefore, still preclude Battersea departure and arrivals as 3 nms lateral separation would not be achievable before Northolt inbound traffic commenced descent. Raising the pattern height would also require the NRMA to be extended from its current level of 2000ft London QNH, to 2500ft QNH. This in turn would require dispensation for Northolt controllers to be permitted to climb non-flight planned aircraft into the TMA and limiting London/Heathrow TC North arrivals to 4000ft QNH to a point 3 nms south of Alexander Palace. A possible solution would be to limit Battersea / Brent traffic to 1000ft QNH and for traffic to enter /exit towards Brent from the North. This would provide the necessary 1000ft and 3 nms separation required although we are aware that regulations governing ac off route in this area and environmental issues would have to be investigated.

**RW07 Operations.**

Non-airway arrivals to RW 07 position at 10 nms finals at 1500ft QNH. Traffic that can accept RVS of 500ft can continue northbound from Burnham on the Ascot – Burnham route. Raising the RW 07 pattern height to 2000ft QNH would place the glidepath interception point at 6 nms finals. Burnham – Ascot traffic would have to route via Beaconsfield to achieve 3 nms lateral separation against Northolt inbounds.



**Visual Circuit.**

Northolt visual circuits are flown at 1000ft QNH. Route altitudes would preclude the over flight of Northolt under control of radar when the circuit is active on both H9 and H10 if separation of 1000ft is imposed. A solution would be the use of reduced separation in the vicinity of an aerodrome (RSVA) where control of the traffic is transferred to Northolt Tower for crossing. This method would have to be subject to meteorological restrictions and also, to approval from HQ 3Gp to allow Mil controllers to utilise this rule. Additionally, the H9 traffic would have to be separated from arrival traffic and the possibility of MAP. H10 westbound traffic would have to achieve some form of separation from Northolt RW25 inbound traffic before the H10 traffic reached Perivale from Kew Bridge.

**Northolt – Denham MoU.**

500ft RVS forms the backbone of the MoU between Northolt and Denham for the separation of Northolt outbound/inbound traffic against Denham visual circuit traffic. If this dispensation was removed, all Northolt SIDs from RW25 would have to be routed west of Denham. This would place Northolt departures closer to Burnham possibly requiring co-ordination with London/Heathrow Northbound departures from RW27.

3. There are other occasions where the application of 500ft RVS has proved indispensable in allowing Northolt to carry out its operational task. Cat B Islander ac and police helicopters regularly utilise this tool whereby their presence within the NRMA has had minimal effect on their operations; on Northolt operations and other SVFR traffic.
4. In summary, it is felt that the removal of the RVS dispensation would have a detrimental effect to operations at Northolt and London/Heathrow and the flow of SVFR traffic within the London CTR. Historically it has proved a very useful tool, allowing ac to continue where normally they would be held or re-routed. Traffic has been transferred to Northolt by SVFR controllers purely because we can utilise this rule and its use has aided their workload. Use of RVS has meant that traffic has been able to flow with the minimum of disruption in the vicinity of Northolt, in spite of the fact that a high percentage of the movements at Northolt compared to other aerodromes are category flights. It is also worth noting that there is no record of any incident at Northolt caused by its use.
5. The views contained within this letter are those of the ATC executive at Northolt ATC, and are intended to aid the discussion forum that has taken place. Any changes to policy and/or the way we operate at Northolt would ultimately have to be negotiated through HQ 3Gp.

DR JOHNSTONE  
Flt Lt  
LEO  
For OC

Comments received from:

Bill Petruzel, Aviation Safety Inspector, National Resource Specialist, CNS/ATM

### **“NUISANCE” TA / RA s in TMAs**

Martyn, you have the right take on the AIC in that for us in the U.S. airspace we have designated the aircrew or operator as the one to decide which mode to have the TCAS system in when operating in areas that may produce unwanted RAs, but are under very tight control with air traffic services. We outline those instances and suggest that the operator put his TCAS in the “TA-only” mode to avoid any undue or unwarranted RAs that might disrupt the operation. They are listed on pages 10 and 11 of the AC and you should note that they include when operating in Parallel Runway Monitoring (PRM) operations.

This has worked out for us by and large and we are not having reports from operators or from Air Traffic Services that any situation or location is experiencing difficulties due to TCAS. In earlier days (early 90’s) we had trouble around Dallas, TX and places like Philadelphia and Atlanta for specific reasons, but those problems have by and large been taken care of. Also, in places that have closely-spaced parallel operations like San Francisco, it has also worked out to allow the operator to select the TA-only mode, if he expects to get an RA but otherwise is under close supervision by ATC. Note that we still have the TCAS turned on and operating and do not say that they can turn it off completely.

Helicopters present a unique problem. We recognize that helicopters may cause RAs in any configuration and the guidance has always been to treat this like one would an airport where “unnecessary” RAs might occur.

The RAs are not incorrect as you might imagine, but may be operationally a “nuisance.” This is a very touchy area for us in the U.S. also, but we have not really experienced any big problems at repeating locations like Washington, DC where numerous helicopters operate in and around the airport. One way to handle this situation operationally is to take off in the “TA-only” mode and delay the selection of the TA/RA mode until you reach some altitude such as 5000.’ This is what some operators do after take off in order to not let helicopter traffic generate an RA at an inopportune time, but at the same time the helicopter or helicopters are fully in sight.

Some operators choose to leave the TCAS in the full-up mode of TA/RA and just “fly through” the RA, but that is not encouraged by FAA or the company of the operator either. This happens sometimes, but is not a reported nuisance, since it is chosen by the operator. San Francisco is one place this happens to some air carriers, but they don’t report the problem. Officially, FAA says to always follow any RA you encounter, because you never can be positive that the aircraft causing the RA is the one you have in sight. This works across the board. Bottom line is that TCAS operates as designed and you will get an RA, if you break the boundaries of the encounter geometry. That is why an RA when you have the situation fully under control may be a nuisance at worst, but the system works as designed.

The FAA is not in the position of designating where the operators should put their equipment in the TA-only mode, because the regulations simply say that, if you are required to have a TCAS installed, you must have it “on and operating.” That wording allows putting it in the TA-only mode without repercussions from the authorities.

Discretion is left to the operator to operate in a safe manner. And history has shown that the operator at least here in the U.S. has done so very well in most all situations.

If there is anything else about the TCAS operation, I would be glad to help you. Other than what I have just relayed to you, there is nothing else in the U.S. regulations that dictates anything about the mode of the TCAS equipment other than what you read in AC 120-55B when it comes to operation of the TCAS equipment. FAA keeps no list of "trouble spots" for TCAS and leaves it up to the operator to operate in a safe fashion.

END

## TCAS RA Encounters within London CTR (NATS)

The ACAS Operational Monitoring team receive reports on TCAS RA encounters within UK airspace. It is not a mandatory requirement of pilots/controllers to report TCAS RA's however they are strongly encouraged to do so; it is believed that approximately a third of all encounters are reported. By analysing the reported TCAS RA encounters over the past 24 months (Jan 03 – Dec 04) we have determined that there were 7 reported encounters within the London CTR.

The location of an encounter is established by plotting the radar tracks of the aircraft involved into a TCAS simulation tool. This tool generates a closest point of approach (CPA). We visually calculate the mid-point of this CPA and use it as an indication of the location of each encounter. As this represents the mid-point of the event we have included encounters that occurred on the edge of the CTR.

We do not request or record reports on TCAS TA encounters, therefore the information contained in this document is for RA encounters only.

**Figure 1: TCAS Alerts within London CTR**



Figure 1 shows the location of the 7 encounters that occurred, within the London CTR. A brief summary of each encounter (working from west to east) is provided below:

- EGLL inbound against light aircraft infringing CAS
- EGLL inbound to 27R against SVFR helicopter\*
- EGLL inbound against helicopter\* from Battersea
- EGLL inbound against VFR helicopter\* (Inbound aircraft had to be broken off and re-sequenced)
- EGLC inbound against SVFR helicopter\*
- EGLC inbound against Capital Radio's GA7 Cougar light aircraft
- EGLC inbound against VFR helicopter\*

\*No indication of helicopter route.

Table 1 provides a summary of the operation and type of aircraft involved in these 7 TCAS RA encounters.

**Table 1: Aircraft involved in TCAS RA encounters within London CTR**

VS	EGLC Approach	EGLL Approach	Total
Helicopter	2	3	5
Other Aircraft	1	1	2
<b>Total</b>	<b>3</b>	<b>4</b>	<b>7</b>

It can be seen that the majority (5) of these encounters occurred between an aircraft on approach to either EGLC or EGLL and a Helicopter. Unfortunately the helicopter routes could not be determined for these encounters as they were not reported.

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

London Terminal Control SI 33/05 TC

### Supplementary Instruction (TC)

#### Introduction

A letter of agreement (LoA) exists between TC and London Heliport regarding the control of helicopter traffic wishing to land at sites within the Battersea area of responsibility, and additionally at Kensington and Buckingham Palaces.

Although the procedure detailed in this LoA is a standard operating practice for TC London/Heathrow (SVFR) and TC Thames controllers, the content of the LoA should have been incorporated into the TC MATS Pt 2, and this instruction is published to correct this oversight.

#### Procedure

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

- Battersea Power Station, Chelsea Barracks, and any other landing site within the Battersea circuit area,
- Kensington Palace, and
- Buckingham Palace

Departures from any of these sites will be co-ordinated by Battersea ATC prior to lift. TC London/Heathrow (SVFR)/TC Thames is responsible for ensuring separation of traffic in the Battersea circuit area including helicopters departing from or landing at Kensington Palace/Buckingham Palace. However, this responsibility may be delegated to Battersea ATC. TC London/Heathrow (SVFR)/TC Thames is responsible for maintaining separation between traffic that is under the control of Battersea ATC and other traffic operating under the control of TC that is outside the Battersea circuit area.

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

Originator: Terminal Control Operations  
File Ref: 8JD/81/02/L  
To be incorporated into TC  
MATS Part 2 - Edition 02/05  
Sector(s): TC London/Heathrow (SVFR), TC Thames  
Effective: Immediate