Directorate of Airspace Policy

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LONDON LUTON AIRPORT AIRSPACE CHANGE POST-IMPLEMENTATION REVIEW

1. SUMMARY:

1.1 In accordance with the Airspace Charter and the airspace change process, a post implementation review has been completed following the introduction of revised airspace arrangements at London Luton airport (LLA) in May 2006.

1.2 The review has found that the airspace change has been successful. The enhanced safety issues identified in the airspace change proposal have been achieved and the operational benefits have largely been realised.

1.3 Nevertheless, tactical intervention is still required to assure separation from easterly arrival traffic and departure routes towards Compton. It is therefore recommended that modifications to the existing standard instrument departure to Compton from runway 08 should be considered to deconflict this from arrival traffic flows.

1.4 DAP placed a requirement on the original airspace change approval that arriving traffic should not be routinely radar vectored over the town of Leighton Buzzard, unless tactically unavoidable. This has caused the contracted Air Traffic Services Provider (ATSP) NATS certain difficulties and, to some extent, has restricted the freedom of controllers to vector and sequence traffic to runway 08.

1.5 There has also been a considerable amount of confusion and misunderstanding from local communities as to the application of this operational condition, and what is and what is not allowed to overfly the town of Leighton Buzzard.

1.6 The revised Letter of Agreement (LOA) with the London Gliding Club (LGC) at Dunstable has enhanced the cooperative partnership for the flexible use of controlled airspace (airspace sharing) to the northwest of Luton and has met its objectives.

1.7 From the environmental perspective, the airspace change has facilitated the introduction of Continuous Descent Approaches (CDA) for easterly runway operations, albeit from an altitude of 5000 ft. The CDA compliance rate has been assessed as 88% for all easterly arrivals. Additionally, the anticipated benefit in reducing the overall numbers of persons overflown by arriving traffic to runway 08 has been realised.

1.8 NATS has not been able to provide any specific data on airspace crossing refusals for transit aircraft and it would appear that the ATSP did not establish a mechanism to record such data. This was a requirement included within the airspace change approval.

1.9 A further requirement of the airspace change approval was that NATS were to review the vertical and lateral designations of the controlled airspace at LLA to ensure that all segments of the Luton CTA are contiguous with the boundaries of the London TMA. No proposal has yet been received from NATS to enable this change to be undertaken and the matter remains outstanding.

1.10 In consideration of all aspects of this airspace change, no immediate modifications to the airspace arrangements are required. However, It is known that changes to the airspace arrangements in the London TMA (LTMA) are being developed for intended implementation in 2009. It is, therefore, recommended that consideration be given to rerouting the easterly arrival track to LLA to a position north of Leighton Buzzard and for aircraft to commence their CDA from a much higher altitude. This would provide less restrictive airspace for tactical sequencing of arrival traffic and further reduce environmental impact.

2. BACKGROUND:

2.1 The London Luton Airspace Change Process

2.1.1 The Sponsor of the Luton airspace change proposal (ACP) was London Luton Airport Operations Limited (LLAOL) and the initial proposal to increase the existing Class D controlled airspace at London Luton airport was originally made to DAP in July 1997.

2.1.2 The ACP was locally known as the “Western Airspace Extension” and sought to provide additional controlled airspace to the north west of Luton, so as to enable a left hand traffic pattern for arriving aircraft from the LOREL holding facility and to segregate arrival and departure traffic streams.

2.1.3 The process for establishing the airspace change then went through 3 separate ACPs, with corresponding consultation processes undertaken. The reason for this lengthy and protracted process was the development of the proposals following consultation responses, DAP requirements with regard to the content of the submission and also a change of ATSP when NATS were contracted to provide air traffic services at LLA in October 2000.

2.1.4 The third and final ACP process commenced in June 2004 and was submitted to DAP in March 2005. Following an extensive evaluation of the proposal, including further refinements to the airspace arrangements, approval was given for the airspace change in March 2006, some 9 years after the first outline proposal had been discussed.

2.1.5 In issuing the approval, the Director of DAP distributed a comprehensive analysis of the issues related to the approval of this airspace change to all stakeholders and consultees. This initiative ensured that parties involved with this airspace change understood the reasoning behind the approval decision and to broaden their understanding of the airspace change process and the role of the Directorate in dealing with changes to airspace arrangements, particularly the environmental impact of such changes.

2.1.6 The revised airspace arrangements were implemented on 11 May 2006.

2.2 The London Luton Airspace Change Proposal

2.2.1 The ACP proposed the establishment of two new CTAs to the northwest of Luton, which would facilitate a left-hand traffic pattern for arriving aircraft to the easterly runway 08 at LLA.

2.2.2 The strategic objectives of the ACP were to:

- enhance the safety and efficiency of aircraft operations in the vicinity of LLA;
- enable segregation of arriving traffic from LOREL for runway 08 against CPT 4C standard instrument departures (SIDs);
- facilitate CDA to Runway 08;
- mitigate the environmental impact to the extent possible;
- accommodate other airspace users;

2.2.3 The approval of the airspace change requires that:

- arriving traffic for runway 08 should not be routinely radar vectored over the town of Leighton Buzzard, unless tactically unavoidable. When this occurs, the event and the circumstances are to be recorded;
- arriving traffic from the LOREL Terminal Hold for runway 08 should not be radar vectored to the south of Luton/Dunstable (right hand circuit pattern), unless overriding flight safety considerations require it. When this occurs, the event and the circumstances are to be recorded;
- the missed approach procedure for runway 08 should continue as a right-hand pattern to avoid conflict with aircraft inbound from LOREL and to ensure airspace containment;
- in the interest of expedition, the very small number of arrivals from the south and south east can be vectored right hand for runway 08 and CDA profiles are to be followed whenever possible.;
- NATS review the vertical/lateral designations of airspace to ensure that all segments of the Luton CTA are contiguous with the LTMA;
- the Sponsor retains adequate noise and track keeping material to demonstrate the flight profiles that existed before and after the change;
- the Sponsor continues to engage with the local community and work actively on matters affecting that community through the Airport Consultative Committee.

2.2.3 The approval of the airspace change also requires the contracted Air Traffic Services Provider (NATS) to:

- continue its policy of providing access to Class D airspace for those aircraft requiring to transit through or operate within the area:

- review its policy in respect of the provision of an appropriate level of ATS to traffic operating in the immediate vicinity of controlled airspace;
- provide to DAP on a regular basis, or on request, statistics for transit flights through controlled airspace and provision of service outside controlled airspace, including refusals of access or service;
- monitor CDA compliance and provide evidence to DAP on a regular basis, or when requested, details of the compliance rate achieved.

3. POST INTRODUCTION REVIEW - GENERAL:

3.1 Following the implementation of any airspace change, it is expected that the Sponsor of the airspace change will monitor and assess the efficacy of the change. Notwithstanding this, DAP will carry out a post-implementation review at a date notified in the approval notice. The purpose of the operational review will be to assess and validate the success of the airspace change, and its progress to date, to identify any operational issues that may have arisen since the introduction of the change. This will normally commence at the 12 - month point.

3.2 The review is necessary in order to identify any subsequent requirements to bring about further changes to ATC patterns and procedures, and indeed further changes to airspace structures, the need for which can only be determined through operational experience.

3.3 The nature of each review will be determined by the scale and impact of the airspace change itself. Reviews of minor changes may be conducted by correspondence, whereas more significant changes may require DAP staff to visit the unit concerned. The net result of each review should be the same - to ensure that the revised arrangements are working as anticipated. If this is determined not to be the case, changes to the arrangements may have to be made.

3.4 The Review may need to include an assessment of the environmental impact of the airspace changes. In particular, it will be necessary to assess if any anticipated environmental benefits have been delivered and, if not, why not.

4. POST INTRODUCTION REVIEW – LONDON LUTON ACP

4.1 This Review was commenced during April 2007, although it would be fair to say that, because of the ongoing interest from a number of stakeholders and consultees, a post implementation review has been ongoing since the airspace change came into effect.

4.2 Easterly operations were in force on the day when the airspace change was implemented and the DAP Project Officer took the opportunity to visit the areas around the town of Leighton Buzzard and directly observe the introduction of the new easterly arrival procedures.

4.3 As a result of direct comment and requests for information on the impact of the Luton airspace change to DAP, close contact has been maintained with the Sponsor, through the LLA's Airfield Environmental Manager, Mr Neil Thompson. Useful information and statistical data was provided from Luton's Noise and Track monitoring equipment.

4.4 The Project Officer visited LLA four times since the airspace change was implemented and a number of related issues, including track dispersion around Leighton Buzzard and CDA compliance, have been discussed directly with the Sponsor and also with representatives from their ATSP, NATS.

4.5 A formal visit was made to LLA on 18 October 2006 to evaluate the introduction of the airspace change and to observe the capabilities of the LLA Noise and Track (NTK) system. Particular emphasis was placed on the routes of arriving aircraft to runway 08 and compliance to CDA procedures. Representatives from NATS Terminal Control and NATS Luton were on hand to discuss the operational impact. At the time of visit, easterly operations accounted for 30% of the runway utilisation and a total of 4380 aircraft had flown the revised arrival route from LOREL.

4.6 The Project leader also took the opportunity to attend a meeting of the LLA Consultative Committee on 19 March 2007 where a short presentation was made on behalf of DAP to describe the airspace change process and forward an invitation to participate in the post implementation review. Additionally, it provided an opportunity to meet representatives of local pressure groups and to assess the role of Consultative Committee and its monitoring of LLA operations.

4.7 It should be stated here that, inasmuch as the Luton ACP was probably the most extensively developed and consulted airspace change proposal, the pro-activity of the Sponsor could not have been more willing or constructive. LLA, through Mr Thompson, provided timely answers and data without complaint and worked extensively with DAP to review the airspace change and assess its impact.

4.8 The Sponsor was requested to forward their comments on the airspace change and additionally completed a CAS ACP Questionnaire in order to obtain some constructive feedback on the efficiency and practical application of the ACP process. A comprehensive assessment report on the airspace change was provided and is shown at Appendix B. A copy of the completed questionnaire is attached at Appendix A.

4.9 Additional comment was invited from the contracted ATSP, NATS, the ATSD Southern Regional Inspector, NATMAC representatives, representatives of the LLA Consultative committee and other interested parties and local pressure groups that had made contact with DAP.

5. ASSESSMENT OF THE AIRSPACE ARRANGEMENTS

5.1 Arrival Procedures and Traffic Integration

5.1.1 The airspace change sought to enhance the safe segregation of the arrival and departure traffic flows to/from runway 08.

5.1.2 Previously, arriving traffic from the LOREL holding facility had to be vectored overhead the aerodrome, or to the west of it over the town of Dunstable and the adjacent gliding site, into a right hand traffic pattern. Not only were there additional airspace constraints to affect the descent profile of the aircraft, but the arriving aircraft also had to be tactically integrated into the westbound standard instrument departure (SID) procedure towards Compton (CPT4C SID). This had lead to many difficulties, not least concerns for controller workload and safety when integrating descending and climbing aircraft within the same portion of limited airspace to the southwest of the aerodrome.

5.1.3 No changes to the departure procedures were proposed in the ACP. Nevertheless, despite the immediate segregation of the arrival and departure tracks, there is still a potential conflict point between arrival and departing traffic to the west of LLA, in the vicinity of the Henton NDB.

5.1.4 Following the airspace change, arriving aircraft to runway 08 descend on the CDA from 5000 ft to 3000 ft (altitude) and establish the final approach track at a range of 8 to 12 nm from touchdown. The present CPT4C SID profile requires the departing aircraft to climb to 5000 ft and on a track towards the Henton NDB. This track could take the aircraft within 2 nm of the arrival aircraft without any vertical separation being guaranteed or achieved. Therefore, there is a requirement for ATC to consider and apply tactical radar vectoring to all CPT 4C departures in order to achieve separation from the final approach track to runway 08. A suitable ATC instruction has been implemented by NATS to ensure that the TC Luton controller achieves separation between the arrival and departure traffic before further transfer of control.

5.1.5 A modification to the CPT 4C SID track, to ensure strategic track separation from runway 08 arrivals, might be an appropriate action to consider and would be eminently achievable using area navigation (RNAV) criteria.

5.1.6 The airspace change has enabled CDA to be flown for easterly arrivals, particularly those from LOREL. Previously, such arrivals had to be tactically integrated against Compton departures to the southwest of LLA (as described in paragraph 5.1.2 above) and descended to an altitude of 3000 ft in order to achieve vertical separation. The emphasis was on tactical traffic integration rather than consideration for environmental impact and the airspace change has now provided the necessary airspace to enable the CDA to be flown. Arriving aircraft from LOREL maintain an altitude of 5000 ft until west/southwest of Leighton Buzzard (a distance of 15 nm from touchdown) and then descend to an altitude of 3000 ft to intercept the final approach and then continue descent on the glide path.

5.1.7 In recognition of the reduced environmental impact with the use of the CDA, it is noted that the airspace change has not permitted a higher initial altitude to be prescribed for arriving traffic. Given the track distance from the holding area at LOREL, some consideration is needed to review the minimum altitudes being applied with a view to increasing the initial level from which a CDA commences (see also paragraph 5.1.14).

5.1.8 The approval for the airspace change includes a requirement that NATS should not routinely radar vector arriving traffic for runway 08 over the town of Leighton Buzzard, unless tactically unavoidable. When this occurs, NATS are to record the event and the circumstances under which this was considered necessary. No mechanism was specified as to what action would be employed to review such events, although it is known that the Sponsor regularly evaluates the arrival tracks with their NTK system and discusses the matter with NATS. However, there is no DAP process currently in place to continually audit compliance with this approval condition or for NATS to justify those occasions when overflight of Leighton Buzzard occurs.

5.1.9 The requirement to avoid direct overflight of Leighton Buzzard has caused NATS some difficulties, particularly when low visibility procedures are in place. In order to achieve maximum runway utilisation at LLA, accurate vectoring is required to space the arriving aircraft at the correct distance from touchdown. Although additional airspace (CTA-9) has been established to provide airspace for the sequencing of arrival traffic, controllers are faced with having to choose to vector arriving traffic north or south of Leighton Buzzard, which can further complicate the provision of accurate spacing.

5.1.10 In consideration of vectoring arrival traffic north of Leighton Buzzard, controlled airspace (CAS) is limited and controllers are not always able to achieve the ‘best practice’ requirement of vectoring aircraft no closer than 2 nm to the edge of CAS. Therefore, there is some overflight of the northern part of Leighton Buzzard. An additional ‘fillet’ of

CAS (commonly referred to as the "buffer zone") was added to the original CTA-9 proposal by DAP in order to enhance airspace containment to the northwest and west of Leighton Buzzard. Although use of this airspace was not considered necessary for general vectoring requirements, it was recognised that, from time to time, controllers might need to use this airspace when tactically unavoidable. This consideration was consistent with the general use of CAS within the UK.

5.1.11 From data supplied by the Sponsor, it has been assessed that when easterly runway operations are in force, approximately 7% of arrival traffic from LOREL overfly Leighton Buzzard and some 4% fly through the "buffer zone". Whereas historically the split between easterly and westerly operations normally averages 30/70 %, the actual split over the past year has been in the region of 43/57 %. When easterly operations are in force, this equates to some 11 flights over the town of Leighton Buzzard and 6 flights through the "buffer zone", per day.

5.1.12 In practical terms, vectoring aircraft to the south of Leighton Buzzard provides more airspace for the downwind leg and is the most preferred option. However, this concentrates traffic over a small number of rural communities and can cause the turn onto the left base leg and final approach to be more restricted.

5.1.13 The controlled airspace at Luton is not wholly contained (contiguous) within the London TMA (LTMA). The LTMA northern boundary largely follows the outline of the Luton CTR and CTAs, although the existing CTAs 3 and 4 and the newly established CTAs 8 and 9 to the west of Luton (in the vicinity of the Henton NDB) are positioned beneath the Daventry CTA. It was DAP's intention to have all the segments of CAS at Luton made contiguous with the LTMA and for this matter to be addressed within the Luton ACP. However, this was not achieved. Subsequently, the approval for the airspace change included a requirement for this action to be undertaken by the Sponsor through their ATSP. However, this action is still outstanding at the time this review was completed.

5.1.14 NATS have advised DAP that they are in the process of developing a proposal to modify airspace and procedures in the northeastern part of the LTMA within the next 2 years. This proposal is likely to include modifications to the existing flight paths of arriving traffic to Luton. It would be most opportune, therefore, for the proposal to also include a consideration for the raising of the initial altitude from which a CDA can be flown. The avoidance of any overflight of Leighton Buzzard would also be an advantage and reduce overall environmental impact in this area.

5.1.15 In assessing the operational impact of this airspace change, it is concluded that:

- the airspace change has provided enhanced safety for easterly operations at Luton, enabling the segregation of arriving and departing aircraft flight paths;
- there is sufficient airspace to meet current vectoring and sequencing requirements;
- there are no immediate airspace containment issues to be resolved;
- the requirement to tactically avoid overflight of Leighton Buzzard adds to controller workload and complicates the accurate sequencing of easterly arrival traffic to LLA;
- the tactical use of CDA procedures is working well with good compliance. However, a higher initial arrival level would reduce the environmental impact;

- modifications to the existing CPT 4C SID procedure could provide a conflict free track against runway 08 arrival traffic and reduce the need for ATC intervention and tactical vectoring.

- NATS should comply with the requirements of the approval for this airspace change and ensure that all LLA CAS is now encompassed within the LTMA.

5.2 Gliding Operations (Dunstable and Halton)

5.2.1 The relationship between LLA and the gliding operations at Dunstable and Halton has been a long-standing one, particularly with regard to airspace sharing. The airspace change had threatened to restrict existing Dunstable activities when easterly operations were in force at LLA. However, agreement was reached between representatives of the London Gliding Club (LGC), BGA and NATS to modify existing LOAs and achieve a favourable compromise.

5.2.2 Both the BGA and LGC have commented on the helpfulness and professionalism of the ATSP in delivering flexible access to CAS for gliding and similar traffic. No comment was received from the gliding operations at Halton and there is no evidence to suggest that there are any outstanding issues to be resolved. The review has, therefore, determined that the modified procedures for airspace sharing, particularly within the new portions of CAS, have proved to be workable and there are no issues to be resolved.

5.3 Transit Aircraft

5.3.1 The introduction of CTA 8 and 9 further reduced the Class G airspace to the northwest of Luton, albeit a reconsideration of the base of CAS was undertaken during the approval of the airspace change and the overall impact was reduced. This area is frequently used by air training organisations for general flying and adverse comment was received during the ACP consultation phases concerning the loss of airspace and the perceived reluctance of ATC to provide transit clearances, when required. Nevertheless, this matter was addressed within the approval for the airspace change and NATS gave an undertaking that they were committed to providing such access to CAS as and when required.

5.3.2 When assessing the impact of the airspace change on other airspace users, there was conflicting comment that controlled airspace transit clearances might be restricted or refused. Commercial helicopter operators reported a most pro-active approach to their requests, whereas privately operated helicopters indicated some resistance or to delay to VFR crossing clearances. However, it was considered that these comments were generally directed at the whole of the Luton CAS, rather than being specific to the establishment of the additional CTAs.

5.3.3 There was general comment from some Denham based air training organisations (that use Cranfield for instrument flight training) that the airspace change has caused them “inconvenience”. Additional routings, with associated additional flying costs, are now required to avoid the new areas of CAS. Nevertheless, none of the comments forwarded suggest that transit clearances are being refused to access the additional controlled airspace.

5.3.4 A condition of the airspace change approval requires NATS, as ATSP, to maintain a record of any refusals to transit CAS. However, this data has not been made available and it appears that the Sponsor has not yet established, through their ATSP, a

mechanism by which such transit refusals can be recorded. This is a matter than should now be addressed by the ATSP and DAP should remind NATS of their obligation to record and provide such data.

5.3.5 Cranfield Aerodrome had previously expressed concern that the originally favoured Luton ACP Option 3 route (that would take easterly arriving aircraft to Luton further north of Leighton Buzzard) could restrict their arriving traffic from the south. Cranfield aerodrome is situated in Class G airspace and their concerns were centred on the availability of sufficient airspace for their traffic to climb to meet acceptance levels to join their instrument approach procedures. It was also considered that when avoiding the Luton CAS, this traffic would overfly Milton Keynes.

5.3.6 Whereas, it might have been appropriate for some form of compromise to have been delivered to manage the Cranfield traffic more efficiently (either through a LOA or other airspace sharing agreement), the Sponsor decided to develop a further airspace change alternative, known as Option 3A, which was then adopted and approved. This directed the flow of LLA arrival traffic more towards the Leighton Buzzard area, with all the resultant objections and complaints that have arisen with regard to the overflight of that town and adjacent rural areas and, of course, caused DAP to request NATS not to routinely vector aircraft over Leighton Buzzard.

5.3.7 It has been noted that, with an increased demand for Cranfield departing traffic to access enroute CAS, agreements have now been reached with NATS that largely removes the original objection that Cranfield had for the original Luton airspace change proposal, Option 3.

5.4 Environmental Factors

5.4.1 The ACP sought to provide a number of environmental benefits:

- The total numbers of persons overflown by easterly arriving traffic at Luton would be significantly reduced;
- CDA would now be possible for easterly arriving traffic;
- The AONB to the southwest of Luton/Dunstable would not be overflown by arriving traffic;

5.4.2 It has been assessed that the anticipated benefits, as specified in the ACP, have been achieved and the additional DAP requirement to avoid the overflight of the town of Leighton Buzzard, wherever possible, enables a further reduction in the number of persons overflown.

5.4.3 The overflight of the town of Leighton Buzzard by easterly arriving flights has already been commented upon, however, this particular issue is one that has caused a great deal of controversy between interested parties as to its environmental impact. From the outset, representative groups for the local communities expressed considerable comment and objection to the practicalities of overflying Leighton Buzzard, or not.

5.4.4 For those living in the Leighton Buzzard area, it was widely, assumed that the airspace over Leighton Buzzard was a “no-go” area for LLA easterly arrivals and should be avoided all the time. In fact, the conditions placed upon the Sponsor was that NATS, their ATSP, should not routinely radar vector arriving aircraft for runway 08 over the town of Leighton Buzzard, unless tactically unavoidable. As has been assessed above, NATS have found it difficult to completely avoid any overflight of the town of Leighton Buzzard and there are times when it is “tactically necessary” to overfly this area.

Additionally, because of the position of aircraft in the sky, perhaps related to their height, there is also a perception that aircraft are overflying Leighton Buzzard when in fact they are operating on routes close to the north and south of the town.

5.4.5 The rural communities around Leighton Buzzard, especially to the south, are of the opinion that the route of these flights should be over the town so as to preserve the tranquillity of the rural areas. In its guidance to the CAA on environmental matters, the DfT emphasises the need to minimise the numbers of persons overflown and to that extent, the CAA is required to support the avoidance of flight over urban areas. Nevertheless, there is also consideration for the preservation of the tranquillity of rural areas and DAP has to exercise a balanced judgement when considering the environmental impact of airspace change.

5.4.6 The question of concentrating arrival tracks, particularly to the south of Leighton Buzzard, was raised by a number of correspondents. The DfT guidelines to the CAA indicate Government preference in the concentration of departing aircraft into a small number of departure tracks, consistent with airspace management and overall safety considerations. The guidelines also suggest that landing noise can be a more serious noise problem than departures. Therefore, the adoption of "concentration", rather than "dispersion" is something that DAP also has to balance when approving an airspace change.

5.4.7 Given that the available airspace for the tactical vectoring of arrival traffic is limited, the application of a further restriction to avoid the direct overflight of the town of Leighton Buzzard has, by necessity, required that the arrival tracks are concentrated mainly to the south of the town.

5.4.8 It was also apparent that there was no clear 'community' viewpoint as to where the tracks of the aircraft should be. The general attitude seems to be that the positioning of the flight paths is not a problem as long as they are over someone else's area.

5.4.9 The application and effectiveness of CDA was commented on by many correspondents. It has already been assessed that the airspace change has enabled the use of CDA for runway 08 and that 85% of the easterly arrivals from LOREL undertake compliant CDA. However, the CDA commences from an altitude of 5000 ft and there is only a short period of flight where the benefits of the procedure are actually felt. In the mean time, aircraft are in level flight from the LOREL gate to a position west or south west of Leighton Buzzard where the CDA commences – a distance of some 25 miles. Although the aircraft are flying at a higher altitude than previously, there is a noticeable noise impact, particularly from the Airbus aircraft types that generate a whining sound. The sponsor has undertaken noise measurements along the arrival routes and their findings seem to indicate that the actual noise readings are generally below the level that represents the onset of significant community annoyance.

5.4.10 The Sponsor's report (see Appendix B to this review) contains various graphics obtained from the LLAOL NTK system that clearly describes the arrival paths, compliance with CDAs and contributes to the analysis of environmental impact.

6 STAKEHOLDER COMMENTS

6.1 Sponsor (LLAOL)

6.1.1 The Sponsor of the ACP, London Luton Airport Operations Limited (LLAOL) forwarded a detailed and comprehensive report that evaluated the airspace change from the operational and environmental point of view. The report contains analysis of flight paths

and CDA compliance and indicates that some work has been undertaken to assess noise impact along the revised arrival routes. A copy of the Sponsor report is shown at Appendix B.

6.1.2 The Sponsor also completed the Controlled Airspace Section questionnaire on the airspace change process and indicated the need for improved communication between DAP and the Sponsor during the early stages of the process. There was also an inference that conflicting information had been provided as regards any restriction of overflight of Leighton Buzzard. A copy of the completed questionnaire is shown in Appendix A.

6.1.3 It should be noted that since this ACP was first established there have been two revisions to the airspace change process.

6.2 NATS

6.2.1 As the ATSP directly involved in the management of the airspace and the conduct of air traffic services within the designated areas of the Luton CTR/CTAs, NATS was an important consultee. Two responses were forwarded. NATS Terminal Control (TC) Operations, the controlling authority for the Luton CAS, submitted their response into the Sponsor report (see paragraph 6.1 above). An additional response, basically echoing the NATS TC position, was forwarded by NATS headquarters' staff through a NATMAC response (see paragraph 6.3 and Appendix C).

6.2.2 The main essence of the NATS' submission was to reflect on the limiting factors associated with the restriction for the tactical vectoring of arrival traffic over Leighton Buzzard.

6.3 NATMAC

6.3.1 NATMAC members were included in the post-implementation review and invited to make comment on the airspace change. It is disappointing to note that only 8/37 responded, equivalent to a 22% response.

6.3.2 Of the responses, only NATS, GATCO, the BGA and AOA/AOPA made substantive comments.

6.3.3 NATS endorsed comments from a central point of view that endorsed comments made by NATS TC within the Sponsor report.

6.3.4 GATCO raised similar concerns as NATS, for the tactical avoidance of Leighton Buzzard and the impact this had on the efficient sequencing of arrival traffic.

6.3.5 The BGA confirmed that the modified arrangements for airspace sharing were working well and complemented NATS controllers for balancing the needs of Luton and gliding traffic.

6.3.6 The AOA small aerodrome representative forwarded a response that was effectively an AOPA response and highlighted difficulties and associated increases in costs for general and commercial aircraft operations in operating outside the new CTA 8/9.

6.3.7 A summary of all comments received is shown in Appendix C.

6.4 Other Stakeholders

6.4.1 Following the distribution of the DAP decision letter to all consultees to explain the ACP approval, and the attendance at the LLA Consultative committee meeting in March 2007, it was decided to include a range of other stakeholders and consultees within the airspace change post implementation review. These included members of the LLA Consultative committee, those individuals and Parish Councils that had addressed their views directly to DAP since the implementation of the airspace change, and also MPs representing the constituencies most affected by the airspace change.

6.4.2 There was a mixed response from local Council representatives depending on their locality under the arrival swathe. The range of comments included the conditions pertaining to the overflight of Leighton Buzzard and the concentration of routes over rural areas. There was additional comment on noise disturbance and compliance to the CDA procedures.

6.4.3 There was a general assumption from a number of respondents that a “no-fly” zone had been established around Leighton Buzzard and there were opposing viewpoints from rural communities, and those within the boundaries of Leighton Buzzard, as to where the aircraft tracks should actually be.

6.4.4 Several correspondents in or around the town of Leighton Buzzard made comment on the adherence to the overflight restriction and DAP’s apparent relaxation of these conditions. As has been assessed previously in this review, the approval condition stated that the ATSP should not routinely radar vector arriving aircraft for runway 08 over the town of Leighton Buzzard, unless tactically unavoidable. DAP has to accept, that there will be circumstances where overflights cannot be avoided.

6.4.5 With regard to CDA, one respondent commented on the definition of CDA within the LLA AIP entry. It should be noted that DAP does not have responsibility for any such definition. Nevertheless, the UK industry code of practice on CDA has been recently updated and includes an agreed definition. Following discussion of this matter, the Sponsor has agreed to adopt the standard industry code of practice CDA definition. Both the Sponsor and NATS indicate a high level of compliance to CDA on runway 08 – some 85% of all traffic from LOREL. Ryanair also responded and indicated that their compliance rate to CDA is some 90% with a desired target of 100% compliance.

6.4.6 The Parish Council at the village of Toddington, about 8 nm northwest of LLA, forwarded a response complaining about lack of consultation and aircraft noise impact from the amended routeings together with a petition of some 375 names. Toddington lies under an existing portion of LLA CAS (CTA 5) and were included in all three full consultations of the ACP and, indeed, submitted a response to each phase. Nevertheless, the concerns expressed by this Parish Council highlight the importance of including such communities in ACP consultations, especially when flight paths are changed within existing CAS.

6.4.7 Several respondents expressed comment as to whether the operational safety and environmental benefits of the airspace change have been achieved, particularly as industry seems to be self-regulating. This indicated a lack of understanding over DAP involvement and its independent oversight. In the assessment of this airspace change, the Sponsor has been extremely pro-active to DAP requests to illustrative data from their Noise and Track systems. This data has contributed to the DAP assessment that the objectives of the airspace change have been achieved.

6.4.8 Shortly after the airspace change was implemented, DAP received an observation that the use of visual approaches was contributing to easterly arriving aircraft following an abbreviated trajectory and lower flight profile to runway 08, particularly over the town of Dunstable. It should be noted that the Sponsor reacted positively to these concerns and implemented changes with NATS to ensure that the minimum final approach for runway 08 should commence no closer than 7 nm from touchdown and no lower than an altitude of 2500 ft.

7. CONCLUSIONS

7.1 The review has assessed that the Luton "Western Airspace Extension" airspace change has been successful. The enhanced safety issues, identified in the airspace change proposal, have been achieved and the operational benefits have largely been realised.

7.2 Controllers are still required to tactically vector aircraft following the CPT4C standard instrument departures as interaction with arrival traffic to runway 08 can still occur. It has been considered that modifications to the existing CPT 4C SID procedure could provide a conflict free track against runway 08 arrival traffic and reduce the need for ATC intervention and tactical vectoring.

7.3 Although safety has been enhanced with the strategic segregation of Luton easterly arrival and departure traffic, the imposition of further restrictions to tactically avoid, wherever possible, the overflight of the town of Leighton Buzzard has caused additional workload, particularly in sequencing traffic when low visibility procedures are in force at LLA.

7.4 There has been a considerable amount of confusion and misunderstanding from local communities as to the application of the restriction to avoid overflight of the town of Leighton Buzzard and within the 'buffer zone' containment area.

7.5 The requirement to avoid overflight of the town of Leighton Buzzard has caused the concentration of easterly arrival tracks to the south of the town.

7.6 The revised Letter of Agreement with the London Gliding Club at Dunstable has enhanced the cooperative partnership for airspace sharing within the controlled airspace to the northwest of Luton and has met its objectives.

7.7 The airspace change has facilitated the introduction of CDA for easterly runway operations and the compliance rate is higher than initially expected by the Sponsor. Nevertheless, the CDA procedure operates within a narrow band of airspace and consideration should be given to raise the initial level from which this procedure commences.

7.8 The anticipated benefit in reducing the overall numbers of persons overflown by arriving traffic to runway 08 has been realised.

7.9 NATS has not been able to provide any specific data on airspace crossing refusals for transit aircraft. This is a requirement of the airspace change approval and NATS should be reminded to comply with this requirement and establish a process to record this data.

7.10 The airspace change approval required NATS to review the vertical and lateral designations of the controlled airspace at LLA and to ensure that all segments of the Luton CTA are contiguous with the boundaries of the London TMA. This matter remains outstanding and NATS should be reminded to comply with this requirement.

7.11 In consideration of all aspects of this airspace change, no immediate modifications to the airspace arrangements are required. However, It is known that changes to the airspace arrangements in the London TMA (LTMA) are being developed for implementation in 2009. It is, therefore, recommended that consideration be given to rerouting the easterly arrival track to LLA to a position north of Leighton Buzzard and for aircraft to commence their CDA from a much higher altitude. This would provide less restrictive airspace for tactical sequencing of arrival traffic and further reduce environmental impact.

<original signed>

P MARKS
Head of Controlled Airspace Section
Directorate of Airspace Policy

APPENDIX A – Airspace Change Questionnaire

AIRSPACE CHANGE PROCESS - IMPLEMENTATION REVIEW QUESTIONNAIRE

Please complete each of the sections below, continue on a supplementary sheet if necessary.

***** Delete where applicable

PART 1 - ADMINISTRATION

NAME OF AERODROME: London Luton Airport
NAME OF AERODROME OPERATOR: London Luton Airport Operations Ltd.
WAS A CONTROLLED AIRSPACE SECTION (CAS) POINT OF CONTACT APPOINTED TO DEAL WITH YOUR AIRSPACE CHANGE PROPOSAL? YES/~~NO*~~
DID YOU EXPERIENCE ANY DIFFICULTY IN CONTACTING YOUR CAS POINT OF CONTACT TO DISCUSS YOUR CHANGE PROPOSAL? YES/~~NO~~*

DID YOU MEET WITH YOUR CAS POINT OF CONTACT AT ANY TIME TO DISCUSS YOUR AIRSPACE CHANGE PROPOSAL.

YES/~~NO*~~

If yes, approximately how many times, and did this assist the process?

4-5 times throughout the 9 year process, mainly in the latter stages.

If no, do you believe the process would have been assisted by meeting your Point of Contact?
YES/~~NO*~~

If no, how would the process been assisted by meeting your Point of Contact?

More contact in the early stages would have been beneficial.

WERE YOU SATISFIED WITH THE ACCURACY AND TIMELINESS OF THE ADVICE PROVIDED BY THE CAS POINT OF CONTACT?

~~YES~~/NO*

If no, please list comments

Unfortunately the guidance provided by DAP changed a number of times throughout the process. This was perhaps due in part to a change in priority within the Airspace Charter. However it was difficult for us to ascertain the criteria priorities and deal accordingly. Conflicting guidance on the overflight of Leighton Buzzard was given on a number of occasions.

PART 2 – AIRSPACE CHANGE IMPLEMENTATION

DESCRIPTION OF THE AIRSPACE CHANGE

Small extension to Class D controlled airspace to the north west of the Airport to enable arriving aircraft to be radar vectored north of the airfield downwind for Runway 08.

DATE OF IMPLEMENTATION (INCLUDING AIRAC DATE)

11th May 2006

DOES YOUR AIRSPACE STRUCTURE NOW SATISFY YOUR CURRENT OPERATIONAL REQUIREMENTS?

YES/~~NO*~~

If no, please list shortcomings and provide brief details of how these are mitigated and of any intention to seek further airspace changes.

However, the overflight of Leighton Buzzard restriction (unless tactically unavoidable) results in a concentrated swathe between Leighton Buzzard and Dunstable rather than a much wider swathe originally proposed.

PROCEDURE CONTAINMENT

Is the containment of SIDs, STARs, holding patterns and/or instrument approach procedures within the airspace based upon Nominal Track or Primary Area?

Nominal Track/Primary Area*

Are SIDs, STARs, holding patterns and/or instrument approach procedures adequately contained?

YES/~~NO*~~

If no, please list shortcomings and provide brief details of how these are mitigated and of any intention to seek further airspace changes

SIDs

If introduced or amended as a part or result of the airspace change, do the new procedures satisfy your operational requirements as envisaged?

YES/NO*

If no, please list shortcomings and provide brief details of how these are mitigated and of any intention to seek further airspace changes

STARs

If introduced or amended as a part or result of the airspace change, do the new procedures satisfy your operational requirements as envisaged?

YES/~~NO*~~

If no, please list shortcomings and provide brief details of how these are mitigated and of any intention to seek further airspace changes

CDAs

If introduced or amended as a part or result of the airspace change, do the new procedures satisfy your operational requirements as envisaged?

YES/~~NO*~~

If no, please list shortcomings and provide brief details of how these are mitigated and of any intention to seek further airspace changes

High levels of CDA achievement, higher than anticipated.

NOISE ABATEMENT PROCEDURES

If introduced or amended as a part or result of the airspace change, do Noise Preferential Routes satisfy your operational requirements as envisaged?

YES/NO*

If no, please list shortcomings and provide brief details of how these are mitigated and of any intention to seek further airspace changes

Do the new operational arrangements satisfy noise abatement requirements and facilitate the use of Continuous Descent Approaches?

YES/~~NO*~~

If no, please list shortcomings and provide brief details of how these are mitigated and of any intention to seek further airspace changes.

If yes, please list benefits and provide brief details of how these enhance safety and efficiency of operations.

CDA achievement has reduced noise levels (compared to old routing) and aircraft are now higher for longer.

However, noise levels are concentrated along a tighter swathe over rural communities between Leighton Buzzard and Dunstable than was originally proposed due to the restriction on the overflight of Leighton Buzzard.

With any future airspace change we would ask for consideration of a raising of the transit altitude from the Hold to the descent point.

ENTRY/EXIT LANES

If introduced or amended as a part or result of the airspace change, do the new lanes satisfy your operational requirements as envisaged?

YES/NO* (If no, please list shortcomings and provide brief details of how these are mitigated and of any intention to seek further airspace changes)

VISUAL REFERENCE POINTS (VRPs)

If introduced or amended as a part or result of the airspace change, do your VRPs satisfy your operational requirements as envisaged?

YES/NO* (If no, please list shortcomings and provide brief details of how these are mitigated and of any intention to seek further airspace changes)

TRAFFIC INTEGRATION

Do the new airspace arrangements permit the effective integration of IFR and VFR arrival, departure and transit flight by all classes of aircraft?

YES/~~NO*~~

If no, please list shortcomings and provide brief details of how the airspace arrangements could be further improved.

If no, please state the number of, and reasons for, refusals of service to transit traffic since the new/revised airspace arrangements took effect.

Please state the number of transit aircraft that have crossed the airspace for which you act as controlling authority since the new/revised airspace arrangements took effect.

Information available from NATS if required.

FLEXIBLE USE OF AIRSPACE

If introduced or amended as a part or result of the airspace change, do Flexible Use of Airspace arrangements satisfy your operational requirements as envisaged?

YES/~~NO*~~

If no, please list shortcomings and provide brief details of how these are mitigated and of any intention to seek further airspace changes

If yes, do you believe such arrangements satisfy the operational requirements of other airspace users as envisaged?

LoAs in place and positive feedback from other airspace users, such as London Gliding Club.

PART 3 – THE AIRSPACE CHANGE PROCESS

HOW WERE YOU MADE AWARE OF THE AIRSPACE CHANGE PROCESS?

Liaison with DAP

WERE YOU AWARE AT THE START OF THE CHANGE PROCESS THAT THE AIRSPACE CHANGE PROCESS GUIDANCE DOCUMENT (CAP725) IS AVAILABLE ON THE CAA WEBSITE (www.caa.co.uk)?
YES/~~NO*~~

WHAT DO YOU CONSIDER TO BE THE STRENGTHS OF THE AIRSPACE CHANGE PROCESS? If necessary, please list comments on a supplementary sheet. New CAP 725 provides a definitive outline of the process, lacking during our own 9 year ACP.
WHAT DO YOU CONSIDER TO BE THE WEAKNESSES OF THE AIRSPACE CHANGE PROCESS? If necessary, please list comments on a supplementary sheet. It is important that DAP guidance (i.e. priority of criteria and basic objectives) provided at the start of the ACP does not change throughout the process, as was the case on this occasion, when conflicting guidance was given concerning the overflight of Leighton Buzzard.
ARE THERE ANY ASPECTS OF THE AIRSPACE CHANGE PROCESS THAT ARE NOT ADEQUATELY COVERED IN THE AIRSPACE CHANGE PROCESS GUIDANCE DOCUMENT? ~~YES~~/NO* (If yes, please list comments on a supplementary sheet if necessary)

WHEN COMPLETE, THIS QUESTIONNAIRE SHOULD BE POSTED, E-MAILED OR FAXED TO:

Manager, Controlled Airspace
Directorate of Airspace Policy
CAA House
45-59 Kingsway
London WC2B 6TE

Telephone: (0207) 453 6510

Fax: (0207) 453 6565
e-mail: peter.marks@dap.caa.co.uk

APPENDIX B – LONDON LUTON AIRPORT WESTERN AIRSPACE EXTENSION – AIRSPACE REVIEW

London Luton Airport Operations Ltd.
Airfield Environment Office

London Luton Airport Western Airspace Extension:

Airspace Review

Contents

1. Objective of the Airspace Change Review

On 11th May 2006 new Class D controlled airspace was established to the north west of the Airport to enable arriving aircraft to be radar vectored north of the airfield downwind for Runway 08, which strategically deconflicts them from traffic departing on Compton routeings.

The review seeks to establish whether the airspace change has been successful in achieving their stated objectives, in particular:-

- Provide access to Class D airspace by other users
- Monitor CDA compliance
- Concentrate aircraft away from heavily populated areas
- Review airspace vertical/lateral designations
- Demonstrate flight profiles
- Engage with local communities

2. Review

2.1. Provide access to Class D airspace by other users

A number of conditions were placed upon the formal approval for the airspace change and further requirements were placed upon the Airport's contracted Air Traffic Services Provider, presently NATS. DAP specifically required that NATS:-

a) Undertakes to continue its policy of providing access to Class D airspace, when it is applicable, for those aircraft requiring to transit through or operate within the area.

b) Undertakes to review its policy in respect of the provision of an appropriate level of ATS to traffic operating in the immediate vicinity of controlled airspace.

c) Undertakes to provide to DAP on a regular basis, or on request, statistics for transit flights through controlled airspace and provision of service outside controlled airspace, including refusals of access or service.

The additional area of airspace is Class D and as such is available to all users. London Luton Airport (LLA) is committed to providing continued access. In support of this commitment following lengthy discussions, letters of agreement for the flexible use of airspace were reached with the London Gliding Club, Dunstable Handgliding & Paragliding Club, JSAT(G) and RAF Halton.

These agreements established flexible airspace sharing agreements with the gliding clubs and to date they have been operated with success.

Currently NATS TC Luton provide DAP with the relevant Flight Progress Strips on Luton ATSOCAS and Zone crossing traffic for them to collate – this provides information on aircraft that have crossed the Luton CTR or been provided with an ATC service in the vicinity. NATS TC Luton are shortly to instate a procedure requiring controllers to annotate Flight Progress Strips with XD when an aircraft has been refused access to CAS.

2.2. Monitor CDA compliance

Prior to the airspace change the interaction between inbound and outbound aircraft on Runway 08 with the requirement for arrivals to perform a stepped approach made it impossible for the majority of aircraft to perform a CDA during easterly operations.

At the beginning of May 2006, LLA implemented additional software to automatically monitor the rate of compliance for CDA. The table below shows the rate of compliance for aircraft that have successfully achieved a CDA between May 2006 to March 2007, which is much higher than was initially anticipated, and the Airport is working with airlines and NATS to further improve upon these figures.

Month		Arrivals			
		08	26	Heli	Total
May	Total	*1,296*	*3,701*	*192*	5,189
	% CDA	*65%*	*77%*	-	*75%*
June	Total	*2,560*	*2,612*	*238*	5,410
	% CDA	*91%*	*86%*	-	*89%*
July	Total	2,419	2,979	213	5,611
	% CDA	*91%*	*80%*	-	*85%*
August	Total	764	4,231	158	5,153
	% CDA	*84%*	*78%*	-	*80%*
September	Total	1,489	3,869	194	5,552
	% CDA	*90%*	*77%*	-	*81%*
October	Total	1,528	3,383	218	5,129
	% CDA	*88%*	*78%*	-	*81%*
November	Total	0	4,085	172	4,257
	% CDA	*0%*	*76%*	-	*76%*
December	Total	596	3,541	86	4,223
	% CDA	*89%*	*72%*	-	*74%*
January	Total	474	3,812	37	4,323
	% CDA	*86%*	*78%*	-	*78%*
February	Total	1,164	2,957	60	4,181
	% CDA	*89%*	*77%*	-	*80%*
March	Total	1,240	354	63	457
	% CDA	*78%*	*77%*	-	*77%*
Total	Total	13,530	35,524	1,631	50,685
	% CDA	85%	77%	-	80%

2.3. Concentrate aircraft away from heavily populated areas

During the consultation the Airport stated that the new arrivals procedure would reduce the population overflown by around 200,000 during easterly operations. This has been further enhanced by the following requirements placed by DAP upon the approval:-

a) Arriving aircraft for Runway 08 should not be routinely vectored over the town of Leighton Buzzard, unless tactically unavoidable. When this does occur, the event and circumstances shall be recorded.

b) Arriving aircraft from the LOREL Terminal Hold for Runway 08 should not be radar vectored to the south of Luton/Dunstable (right hand circuit pattern), unless overriding flight safety considerations require it. When this does occur, the event and the circumstances shall be recorded.

c) The missed approach procedure for Runway 08 may continue as a right hand pattern to avoid conflict with aircraft inbound from LOREL and to ensure airspace containment.

d) In the interest of expedition, the very small number of arrivals from the south and south east may be vectored right hand for Runway 08 and CDA profiles are to be followed wherever possible.

In the initial period following implementation of the airspace there were a number of complaints concerning aircraft apparently overflying Leighton Buzzard directly over the town. Many of these reports were incorrect with aircraft following a route some way to the south of the town, however some aircraft did follow a route close to the town centre. The Airport worked very closely with NATS on this to ensure that this restriction was closely adhered to and following continued usage of the procedure fewer aircraft strayed over the town.

During the period May 2006 to April 2007 winds determined a modal split of 28% easterlies and 82% westerlies (compared to a 5 year average annual runway usage split of 31% easterly / 69% westerly.

A monthly breakdown of runway usage split is shown below:

Month	Easterly	Westerly
May 2006	**25%**	75%
June 2006	**49%**	51%
July 2006	**45%**	55%
August 2006	**15%**	85%
September 2006	**29%**	71%
October 2006	**30%**	70%
November 2006	**0%**	100%
December 2006	**14%**	86%
January 2007	**11%**	89%
February 2007	**29%**	71%
March 2007	**28%**	72%
April 2007	**56%**	44%
Average Modal Split	**28%**	**72%**

From 11th May 2006 to 31st March 2007 there were a total of 15,632 easterly arrivals with 7,489 (48%) following the new approach from Lorel. A total of 71 aircraft flew directly over Leighton Buzzard, which equates to 1 incident just over every 4 days on average. The main reason for aircraft following this route is that it is not always possible to contain all inbound traffic, via the LOREL Gate, left hand downwind for Runway 08 south of Leighton Buzzard. This normally occurs during periods of heavy inbound demand when a tactical requirement to adjust the inbound spacing occurs. This ratio is likely to increase following discussions with NATS/DAP regarding routing aircraft to the north of the town through CTA-9 at the occasional times when it is tactically unavoidable, Controllers now preference positioning aircraft over Leighton Buzzard as opposed to routing north of the town.

Since implementation of the new area of airspace there have been very few incidents of aircraft requiring to follow the "old" right-hand downwind approach over Luton/Dunstable. This has occurred on 18 occasions with the main reason being weather avoidance.

During easterly operations there were a disproportionately high number of complaints from the area between Leighton Buzzard and Dunstable regarding a number of visual approaches through this area of airspace. The Airport and NATS worked together to reduce this impact and consequently restricted all propeller driven aircraft whose MTWA exceeds 5700kg and all jet aircraft which have requested or have been authorised to make a visual approach are to ensure that they are established on final approach no closer than 7nm from touchdown. Additionally, such aircraft are not to descend below altitude 2500ft until established on the final approach track.

2.4. Review airspace vertical/lateral designations

As part of the airspace approval DAP requested that NATS review the vertical/lateral designations of airspace to ensure that all segments of the Luton CTA are contiguous with the LTMA.

Some Terminal Manoeuvring Area vertical profiles have been altered to the west of Luton. NATS LTCC were not consulted about this and are currently assessing the impact prior reviewing the vertical/lateral designations of the airspace.

2.5. Demonstrate Flight Profiles

The following diagrams demonstrate some of the noise and track keeping data that is held within the Airport's Topsonic Aircraft Noise and Track Monitoring System.

- Diagram 1 Easterly arrivals prior to airspace change
- Diagram 2 Easterly arrivals following airspace change (1)
- Diagram 3 Easterly arrivals following airspace change (2)
- Diagram 4 Easterly arrivals showing flight levels
- Diagram 5 CDA profile
- Diagram 6 Plot Density Diagram Old Procedure
- Diagram 7 Plot Density Diagram New Procedure

Diagram 1 shows the replaced "s-shaped" approach for easterly arrivals prior to the airspace change, and clearly displays the interaction difficulties with easterly Compton departures to the south of the Airport.

Diagrams 2,3 and 4 show plots for a 24 hour period on 24th March 2007, which are following the DAP request to preference the overflight of Leighton Buzzard when tactically unavoidable.

Diagram 5 shows a typical flight profile for an arrival which is compliant with CDA criteria of a section of level flight no greater than 2.5Nm following the descent from 5000ft altitude. The Topsonic Aircraft Noise and Track Monitoring System automatically detects and flags flights for CDA compliance.

Diagram 6 & 7 are plot density diagrams for the old and new procedure. Diagram 6 covers 1st January to 30th April 2006, and Diagram 7 is all easterly arrivals between 1st January and 30th April 2007 and clearly displays the concentration of tracks to the south of Leighton Buzzard.

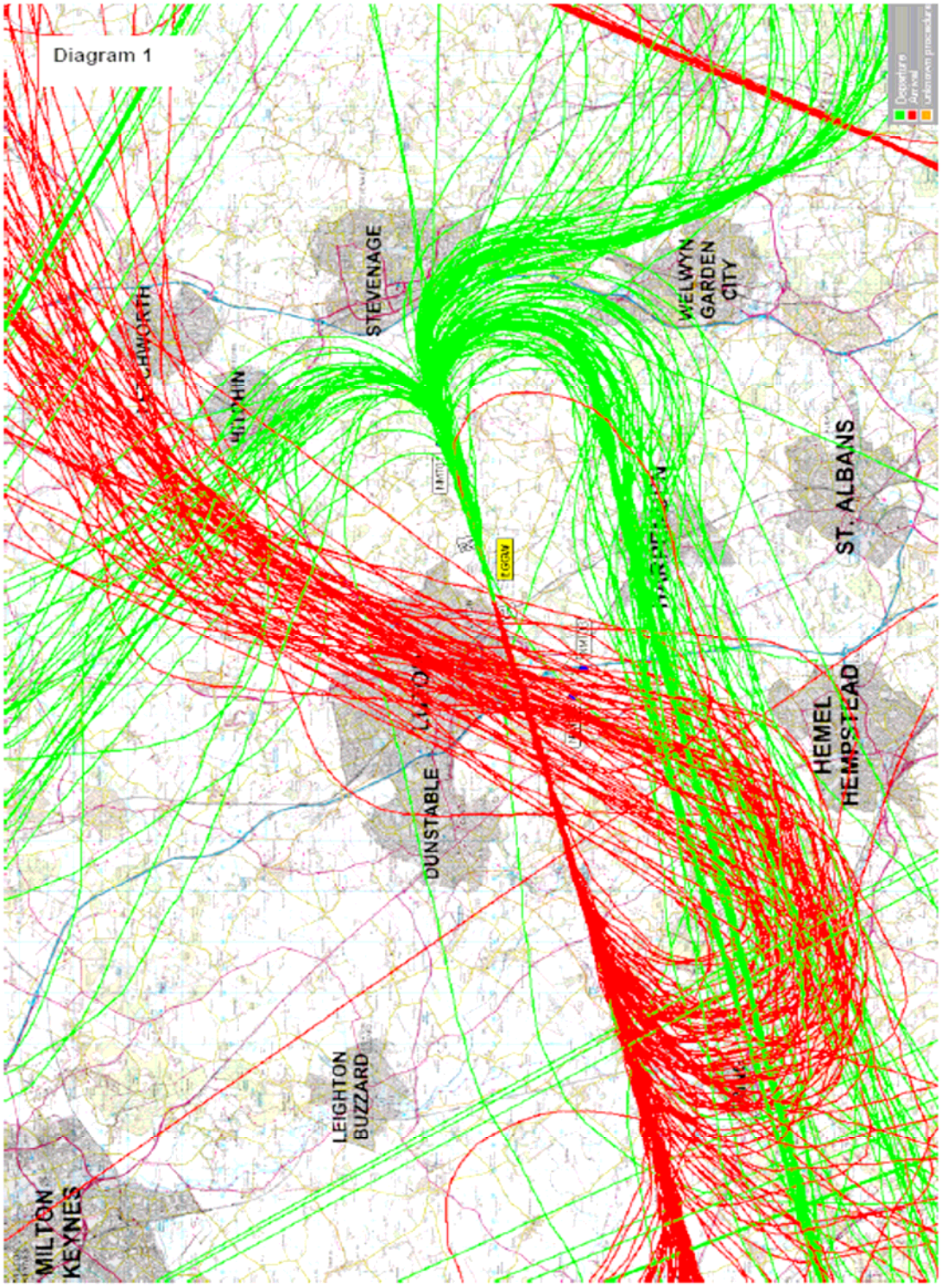


Diagram 1
STEVENAGE
WELWYN GARDEN CITY
ST. ALBANS
HEMEL HEMPSTEAD
DUNSTABLE
LEIGHTON BUZZARD
MILTON KEYNES

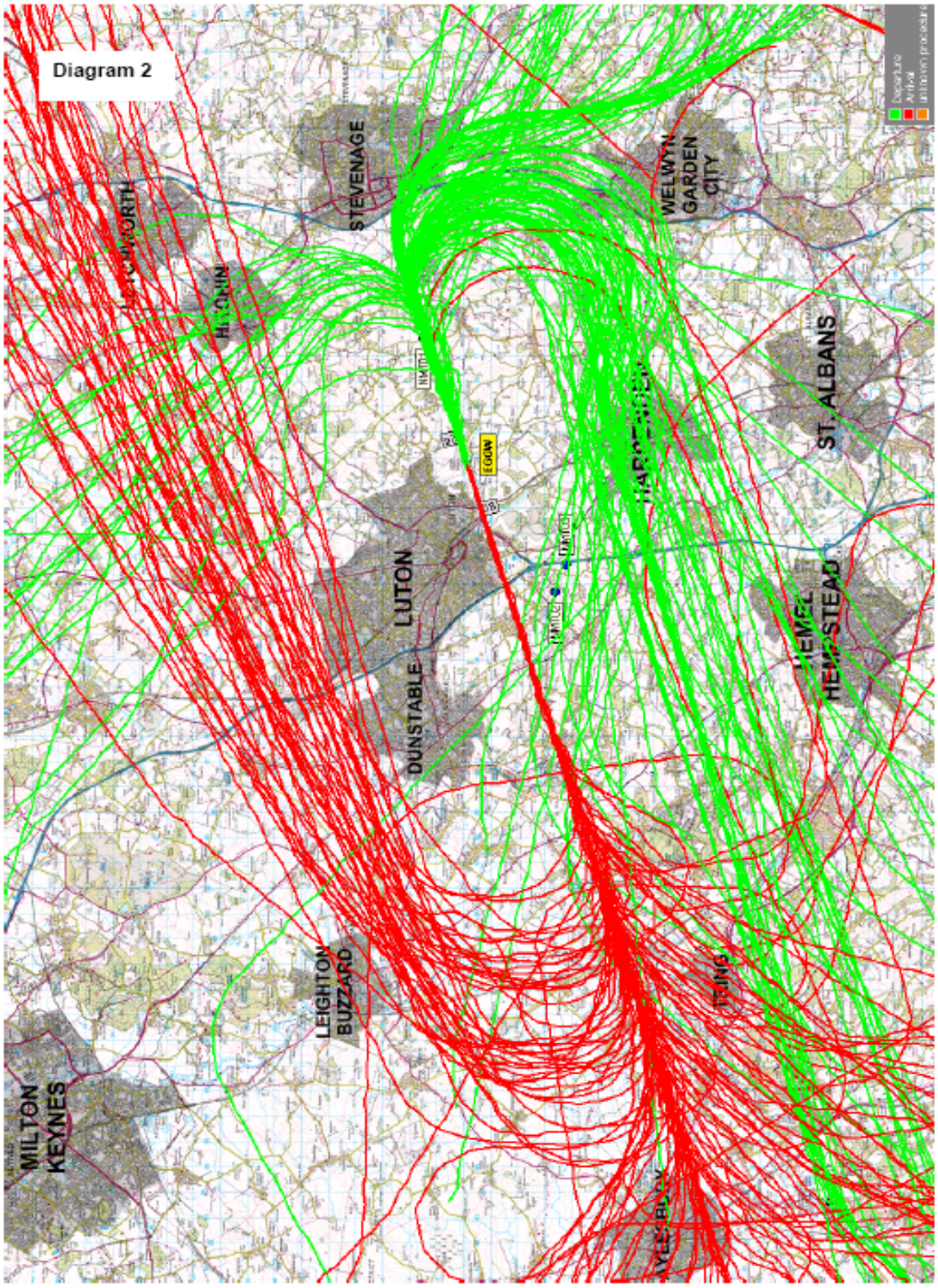
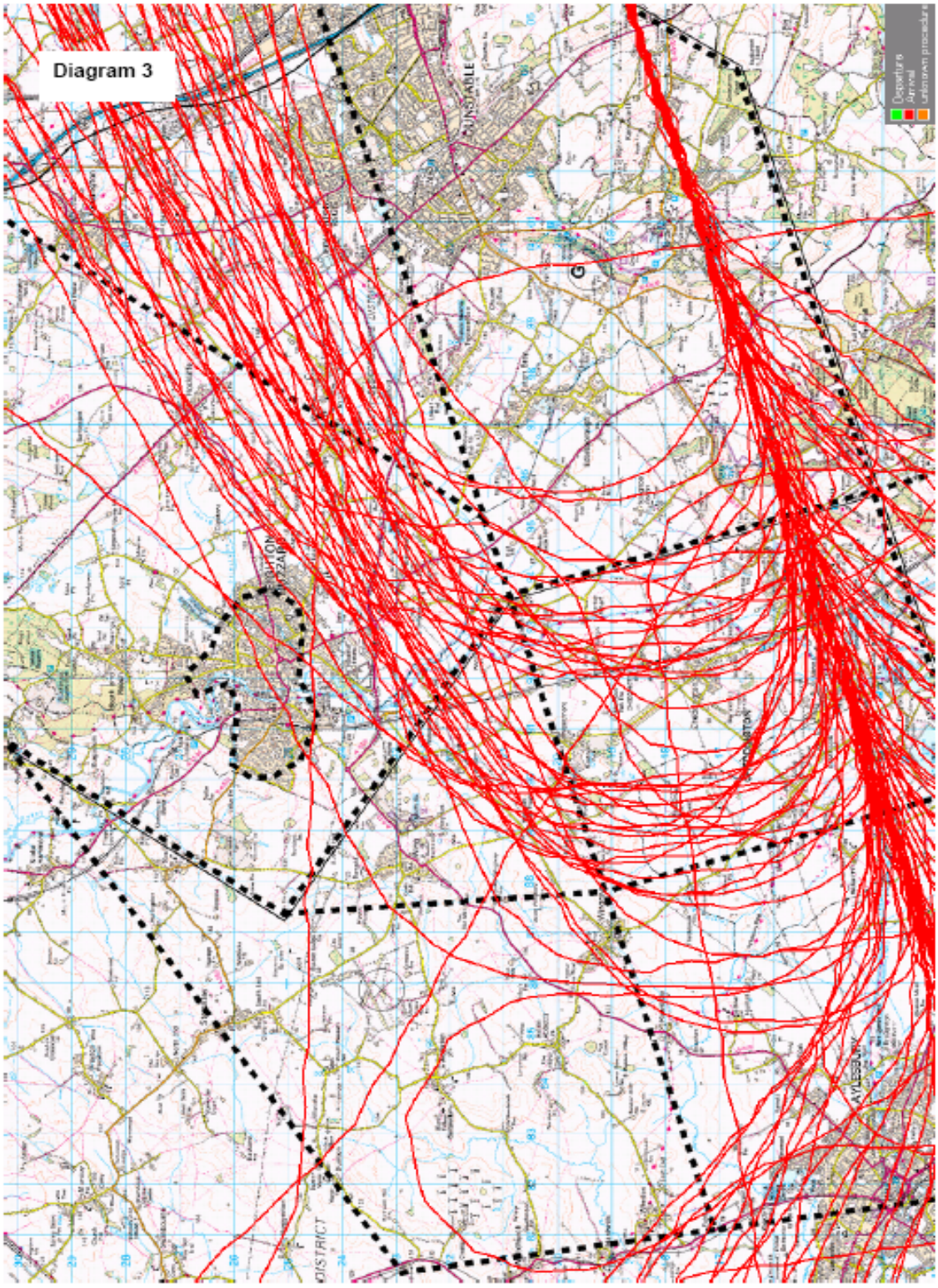


Diagram 2
STEVENAGE
WELWYN GARDEN CITY
ST. ALBANS
LUTON
DUNSTABLE
LEIGHTON BUZZARD
MILTON KEYNES
EGGW

Diagram 3



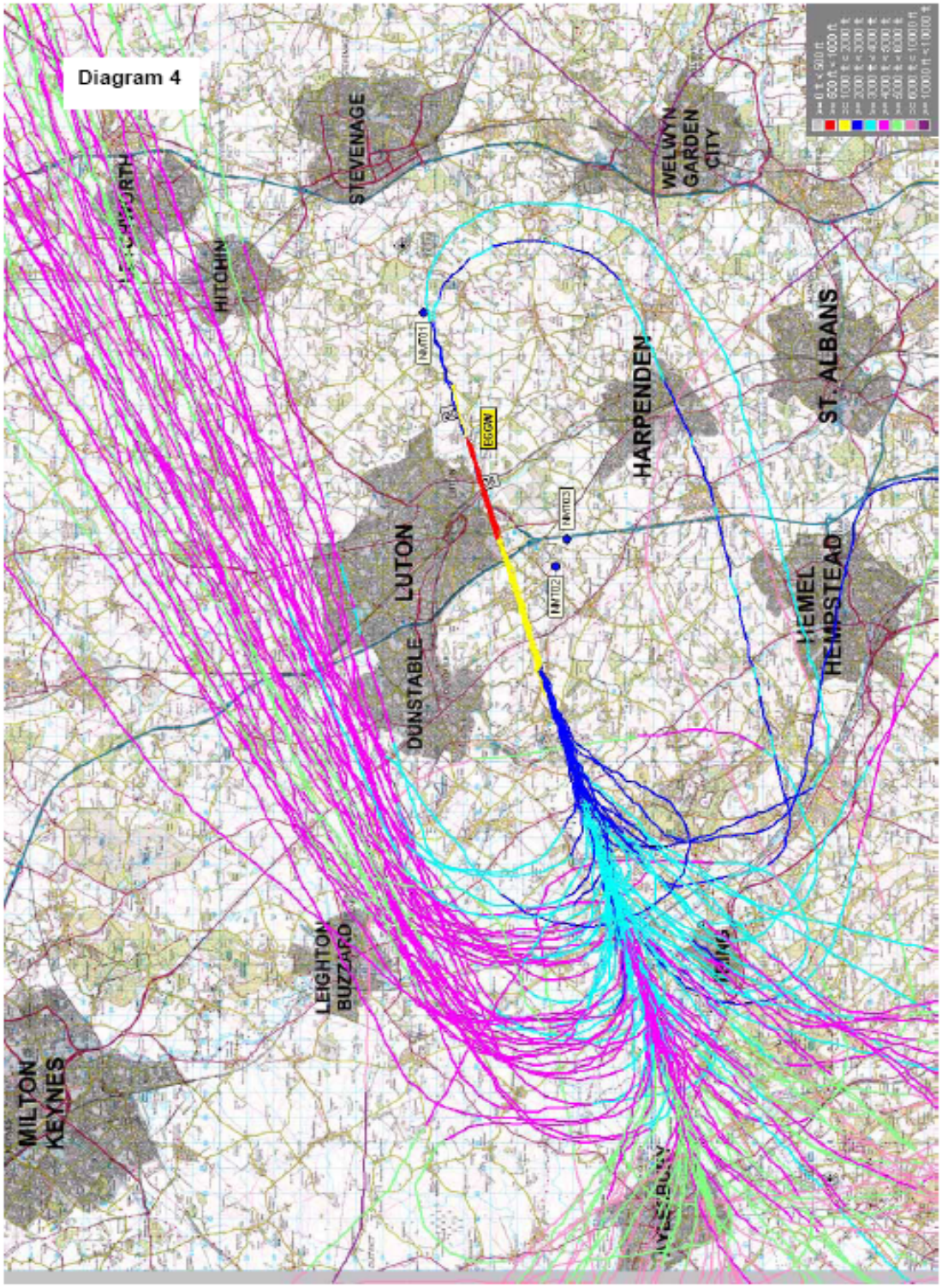
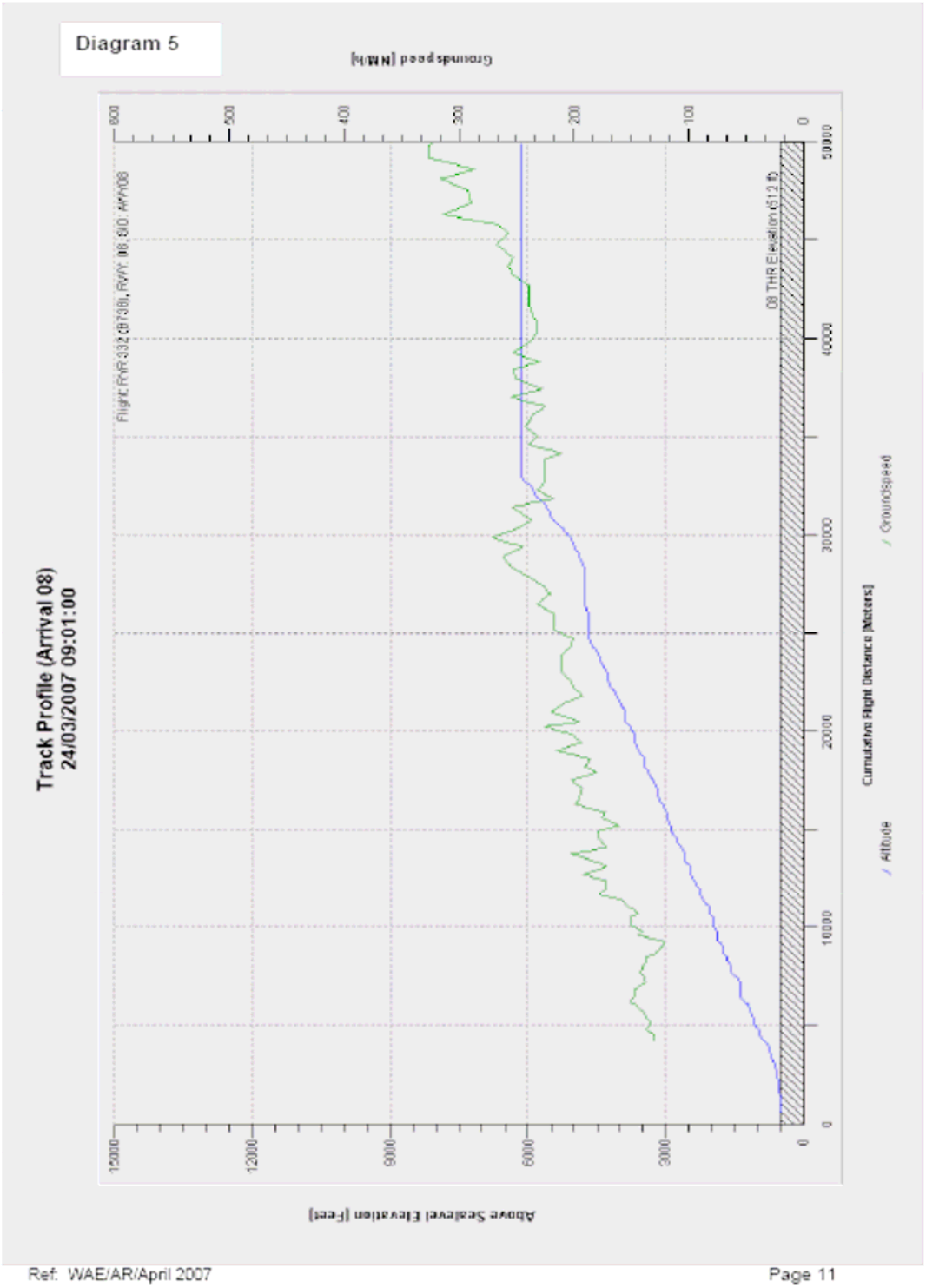


Diagram 4
STEVENAGE
WELWYN GARDEN CITY
HITCHIN
HARPENDEN
ST. ALBANS
LUTON
DUNSTABLE
HEMEL HEMPSTEAD
LEIGHTON BUZZARD
MILTON KEYNES
BIGGIN

Diagram 5


Track Profile (Arrival 08)
24/03/2007 09:01:00
Groundspeed [NMi/h]
Above Sealevel Elevation [Feet]
Cumulative Flight Distance [Meters]
Flight: RYR 332 (B738), RWY: 08, SID: AWN08
08 THR Elevation (512 ft)
Groundspeed
Altitude
800
500
400
300
200
100
0
15000
12000
9000
6000
3000
0
50000
40000
30000
20000
10000
0

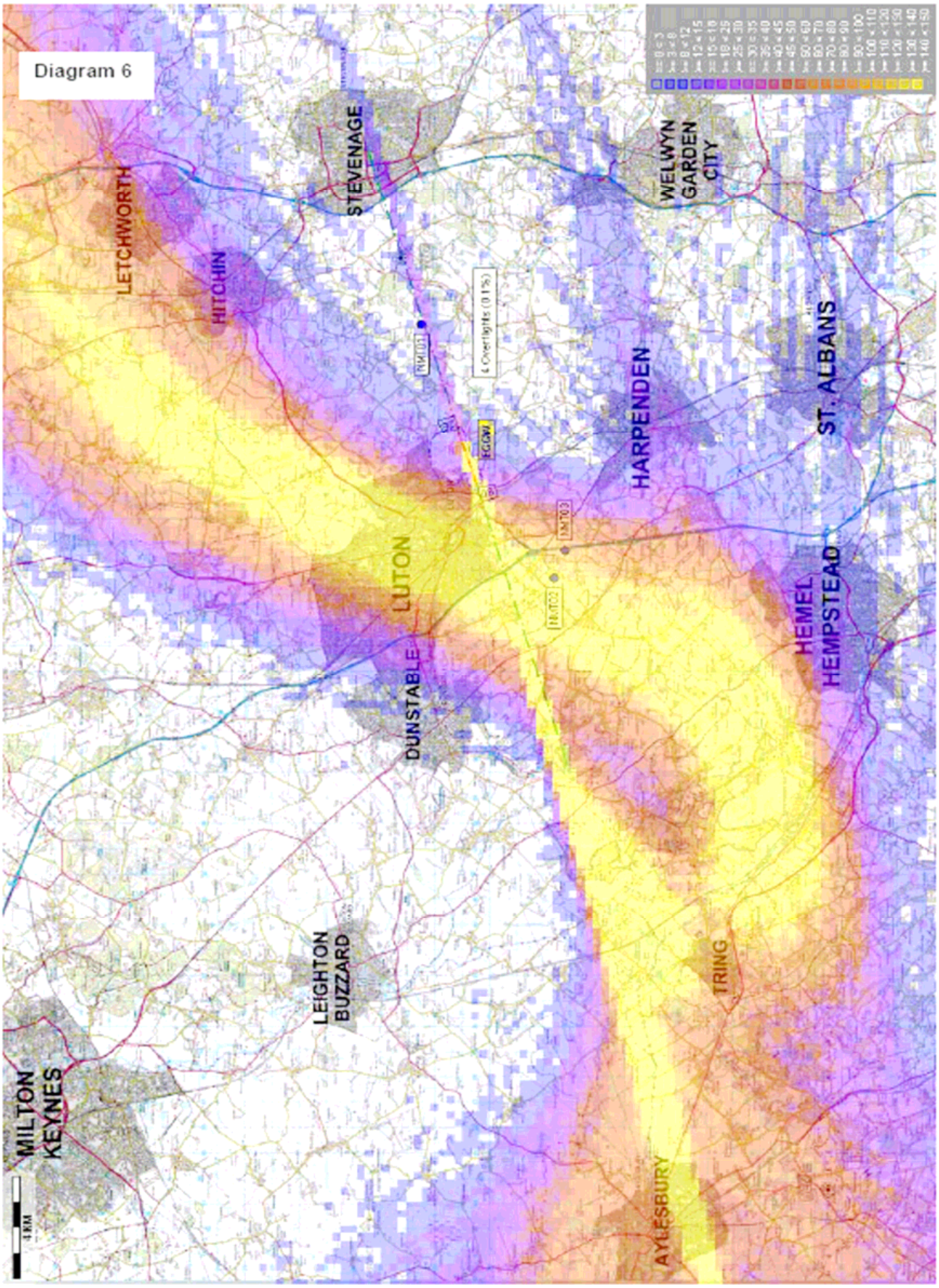


Diagram 6
LETCHWORTH
HITCHIN
STEVENAGE
WELWYN GARDEN CITY
HARPENDEN
ST. ALBANS
LUTON
DUNSTABLE
HEMEL HEMPSTEAD
LEIGHTON BUZZARD
TRING
AYLESBURY
MILTON KEYNES

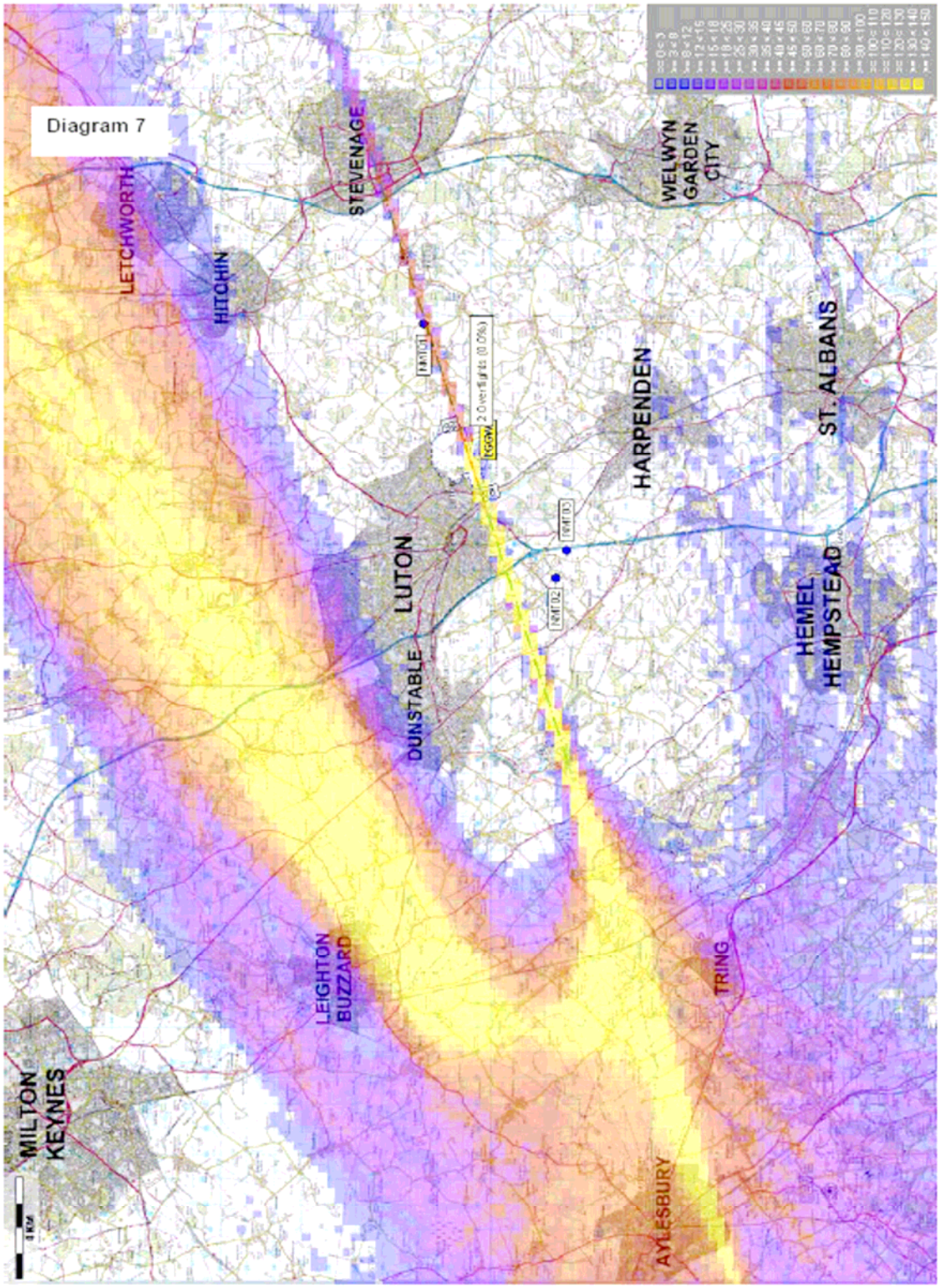


Diagram 7
LETCHWORTH
HITCHIN
STEVENAGE
WELWYN GARDEN CITY
HARPENDEN
ST. ALBANS
LUTON
DUNSTABLE
HEMEL HEMPSTEAD
LEIGHTON BUZZARD
TRING
MILTON KEYNES
AYLESBURY
KGW
RMT01
RMT02
RMT03

2.6. Engage with local communities

Complaints received

Whilst it was anticipated that complaints would increase in areas below the new arrivals swathe, reported concerns have been received primarily from a small number of individuals in certain locations.

The table below identifies the locations with the highest number of Complaints, Events (eliciting a complaint) and Complainants received by the Airfield Environment Office relating to Luton arrivals following the new arrivals flightpath between 11th May 2006 and 30th April 2007.

	LLA Complaints	Events*	Complainants
Cheddington	10	9	6
Eaton Bray	11	14	5
Flitton	17	0	13
Harlington	5	0	5
Leighton Buzzard	9	6	3
Long Marston	4	2	4
Lower Gravenhurst	3	21	1
Mentmore	21	48	5
Slapton	47	166	13
Stanbridge	7	30	2
Tebworth	5	0	3
Toddington	36	16	26#
Wingrave	6	8	5
Total	**181**	**320**	**91**

** Where no events are listed, the disturbance reported was of a general nature.*

 # Of these 26 complainants, 24 contacted the airport only once during this period

Since the implementation of the new arrivals flightpath and the resultant heightened awareness of aircraft activity in general, the Airfield Environment Office received an increased number of complaints relating to overflights from other airports from communities impacted by the new approach.

The list below identifies the main locations from which these non-LLA complaints originated.

	Non-LLA Complaints	Events	Complainants
Eaton Bray	1	1	1
Flitton	11	4	2
Mentmore	3	2	3
Slapton	9	15	4
Stanbridge	2	2	2
Toddington	7	1	4
Wingrave	5	6	5
Total	**38**	**31**	**21**

Noise monitoring

An extensive portable noise monitoring programme was established prior to implementation of the new airspace, aiming to provide 'before' and 'after' monitoring data, in a variety of locations beneath the new arrivals swathe. Further monitoring took place post-implementation and the resultant data confirmed that the impact of the new arrivals flightpath is in line with the anticipated noise levels outlined in the ERCD Environmental Assessment. A Bureau Veritas report supplied to NTSC is appended to this document.

It is intended to continue noise monitoring beneath the new approach this summer, in fewer locations but over a longer period, to further add to the data already gathered in relation to the noise levels of the arriving aircraft.

Visits to Airfield Environment Office / NATS

- David Lidington, MP for Aylesbury
- Mike Penning, MP for Hemel Hempstead
- Chalgrave Parish Council Chair
- Buckinghamshire Association of Local Councils (BALC), Chair + 2 members
- Arranged visit to NATS West Drayton for two residents from Mentmore and Cheddington
- Flitton resident

London Luton Airport Consultative Committee (LLACC) discussions

Throughout the consultation period and post implementation LLACC members, along with Noise and Track Sub-Committee (NTSC) members, were updated at length on progress concerning the airspace change, which was a regular agenda item at each quarterly meeting. The proposed locations for the continued noise monitoring exercise this summer were also suggested by the NTSC.

3. Conclusions

The airspace change has been very successful in achieving its stated objectives of providing a significant safety improvement during easterly operations whilst reducing the controller interaction/workload. The airspace change has also delivered an environmental improvement with a significant reduction in the number of people overflown by the approach whilst increasing the number of aircraft that can now achieve a CDA.

The introduction of a number of procedural changes and restrictions post implementation, following discussions between the Airport and NATS, has further improved the environmental impact during easterly operations.

The restriction upon the overflight of Leighton Buzzard (by easterly arrivals) has proved to be restrictive and led some communities to believe that it has been designated as a "no-fly" zone. This restriction has also concentrated tracks over a small number of rural communities to the south of the airport, in particular Mentmore, Slapton and Cheddington resulting in a number of complaints.

London Luton Airport

Briefing Note to NTSC – 6th November 2006

Western Airspace Extension

Introduction

1.0 This note provides some information on the noise levels that have occurred from aircraft making use of the new approach route to LLA from the Lorel stack via the so-called Western Airspace Extension.

Background

2.0 As part of the studies carried out when the extension was proposed, the Environmental Research and Consultancy Department (ERCD) of the Civil Aviation Authority (CAA) carried out an environmental assessment of the proposed changes, entitled "London Luton Airport Western Airspace Extension: Environmental Assessment" (ERCD Report 0404).

ERCD Findings

3.0 The ERCD report firstly discussed current L_{Amax} aircraft noise levels experienced by communities under the proposed swathe. It was highlighted that large areas currently experienced noise events due to Heathrow departure and arrival overflights as well as Luton OLNEY 1B departure overflights and Luton 26 arrival overflights. Estimates were made of the typical L_{Amax} noise levels produced by the most frequent aircraft types on each flight path. It was concluded from these estimates that such locations currently experienced aircraft noise levels at or below 60 dB L_{Amax}.

4.0 A comparison of maximum (L_{Amax}) noise level footprints was conducted for both the current and proposed arrival routes. For the 737-700, a slight shrinkage of the outer 65 dB(A) contour was predicted when considering the proposed arrival swathe. For the A300, a much larger reduction in footprint size of the 65 dB(A) contour for the proposed swathe was predicted. A shrinkage was also shown in the 70dB(A) and 75 dB(A) contours although this was to a lesser extent.

5.0 Such reductions were expected to result from the implementation of CDA flight procedures. It was noted from the extent of the L_{Amax} footprints that generally those locations under the new flight path were unlikely to experience L_{Amax} noise levels above 65dB(A). Locations falling within the 65 dB L_{Amax} contours were generally located beneath the final approach and as such were already subjected to a similar degree of arrival noise.

Luton Airport Noise Monitoring Programme

6.0 London Luton Airport have recently conducted a programme of noise monitoring at various locations beneath the current and new arrival swathes. These locations and associated L_{Amax} ranges are detailed in Table 1 below:

Table 1
Results of LLA Noise Monitoring Summer 2006

Location	Distance to touchdown (km)	Average L_{Amax}
Leighton Buzzard Golf Course	50.0	Not measurable
Cublington Church	34.3	57
Wing	33.3	57
Stanbridge Church	31.8	<60[1]
Billington All Saints Church	29.0	57
Mentmore Church of St Mary	26.5	60
Long Marston Cricket Club	23.0	59
Slapton Holy Cross Church	22.6	59
Cheddington Village Hall	21.3	57
Caddington	5.2	76

7.0 It can be concluded from the above measurement results that, at distances of more than 20 km from touchdown, L_{Amax} noise levels experienced under the current arrival swathe are generally below 60 dB(A

8.0 A similar study was carried out by Bureau Veritas (formally Stanger Science and Environment) in June 2000 entitled "Noise Implication of Western Airspace Extension". It was the aim of this study to determine the average L_{Amax} noise levels currently experienced at locations under the then current easterly arrival swathe and make comparisons with predicted noise levels assuming CDA procedures can be adopted for the new arrival route.

9.0 The predicted L_{Amax} noise levels are reproduced in Table 2 below.

[1] Traffic Noise disrupted the measurements.

30 Great Guildford Street, London SE1 0ES
Tel: 020 7902 6176: Fax: 020 7902 6118/6149

Table 2
Previous Predictions of the Impact of using the WAE

Distance to touchdown, nm (km)	Approx. location under existing route	Approx. location under new route	Existing route L_{Amax}, dB	New route L_{Amax}, dB
24 (45)	Luton	Streatley	59	58
23 (42)	-	Upper Sundon	60	58
20 (37.5)	-	Tebworth	61	58
16.5 (31)	Little Gaddesden	-	62	58
16 (30)	-	Leighton Buzzard	63	58
15 (28)	-	Linslade	67	58
13 (25)	-	Ledburn	67	60
12 (23)	Tring	Mentmore	67	60
11 (20)	-	Cheddington	67	63
9 (17)	Ivinghoe	Ivinghoe	67	65
8 (15)	Ickfield Way Path	Ickfield Way Path	67	67

10.0 Comparing these predictions with the results of the measurements shown in Table 1, show that, if anything, the actual levels are slightly lower than was originally expected.

Stephen Turner
Nicola Holt
30th October 2006

30 Great Guildford Street, London SE1 0ES
Tel: 020 7902 6170; Fax: 020 7902 6118/6149

APPENDIX C – LONDON LUTON ACP POST- IMPLEMENTATION REVIEW CONSULTATION/COMMENTS MATRIX

LONDON LUTON AIRSPACE CHANGE - REVIEW

ACP came into effect 11.5.2006 Review required May 2007

Review Commenced 20.3.2007 Review Completed: 31 July 2007

Ref	Organisation Name	Consult Date	Response Date	Summary of Comments (DAP response added)
SPONSOR				
S1	LLAOL	27.3.07	24.5.07 Email, Letter, Phone and visits	Detailed formal report received. ACP process questionnaire completed. Airspace change successful, objectives achieved, significant safety improvement during easterly operations whilst reducing controller workload. Environmental improvement with significant reduction in the number of people overflown by arriving aircraft whilst increasing the number of aircraft that can undertake a CDA. Restriction of overflight of Leighton Buzzard has proved to be restrictive and concentrated tracks over a small number of rural communities.
NATMAC ACTION LIST (8/37 responded = 22%)				
N1	AOA	20.3.07	-	No response received
N2	AOPA	20.3.07	26.3.07 Email	Airspace change proving to be an inconvenience, especially for IFR flights inbound to Cranfield from the south. Climb to the standard level to begin procedures now requires aircraft to route further to the west to achieve altitude. Additionally, Flying training outside CAS is now difficult to achieve in what used to be a local flying area and aircraft now have to operate further north with resultant increases in costs. (there was no reference or comment to CAS transit or operation within CAS under Luton Approach control)

N3	AOPA / GASCo	20.3.07	-	No response received
N4	BAA plc	20.3.07	-	No response received
N5	BALPA	20.3.07	13.4.07 Email	Airspace change reduces holding delays whilst providing separation from departing traffic to the south .
N6	BATA	20.3.07	-	No response received
N7	BAUA	20.3.07	-	No response received
N8	BBAC	20.3.07	-	No response received
N9	BGA	20.3.07	4.5.07 Email	Also in reply for LGC (see OC3). Airspace changes working well, despite certain restrictions that have had to be accepted. Highlighted helpfulness and pro-active response from NATS controllers to make the procedures work. Made technical comment on improving communications for the release of delegated airspace.
N10	BHAB	20.3.07	29.3.07 Email	No impact on operations. Controllers at Luton (and elsewhere) understanding and helpful. (see also N20 HCGB response)
N11	BHPA	20.3.07	-	No response received

N12	BMAA	20.3.07	-	No response received
N13	BPA	20.3.07	-	No response received
N14	British Airways (BA)	20.3.07	-	No response received
N15	Defence Aviation Safety Centre	20.3.07	-	No response received
N16	GAMTA	20.3.07	-	No response received
N17	GAPAN	20.3.07	-	No response received
N18	GASCo	20.3.07	-	No response received
N19	GATCO	20.3.07	19.5.07 Email	CPT outbound traffic needs to be closely monitored and radar guidance required to provide lateral separation from 08 final approach traffic. This can cause delay with transfer of control and corresponding loss of efficiency within LTMA NW airspace. Considered that still not sufficient airspace for the tactical vectoring of arrival traffic to runway 08. Concerns expressed over constraints for vectoring over Leighton Buzzard. Airspace delegation to London Gliding Club does not cause a significant impact. Concerns expressed over introduction of Chiltern Ridge Soaring area and impact it has on detecting unknown aircraft.

N20	HCGB	20.3.07	28.3.07 Email	VFR transits of Luton area seem to have become less available. Airspace change seems to have increased controller workload and thus affect VFR transits. (see also N10 BHAB response)
N21	Heavy Airlines	20.3.07	-	No response received
N22	HQ 3rd AF	20.3.07	-	No response received
N23	HQ DAAvn	20.3.07	-	No response received
N24	HQ STC	20.3.07	-	No response received
N25	Light Airlines	20.3.07	-	No response received
N26	MOD	20.3.07	-	No response received
N27	MOD (DPA)	20.3.07	-	No response received
N28	NATS (HQ)	20.3.07	21.5.07 Letter	Operational benefit to strategically de-conflict the arrival and departure tracks for runway 08 achieved. However, the restriction placed around Leighton Buzzard has limited the benefit and caused additional complications. Commented that, although NATS acknowledges commitment to avoid routine vectoring over Leighton Buzzard, it is not always possible to contain arriving traffic from the LOREL holding area south of Leighton Buzzard. The environmental benefits associated with use of CDAs have been achieved.

N29	NATS - AIS	20.3.07	-	No response received
N30	PFA	20.3.07	-	No response received
N31	RAeC	20.3.07	-	No response received
N32	SBAC	20.3.07	-	No response received
N33	SRG - FOD	20.3.07	27/3/07 Email	No comment.
N34	UAV Systems	20.3.07	-	No response received
N35	UAVS	20.3.07	-	No response received
N36	UKAB	20.3.07	-	No response received
N37	UKFSC	20.3.07	-	No response received

OTHER COMMERCIAL PARTIES **(3/11 responded = 27%)**

OC1	NATS TC	20.3.07	24.5.07	Response coordinated directly into Sponsor's report. See S1

OC2	SRG - ATSD	20.3.07	-	No response received
OC3	London Gliding Club (Dunstable)	20.3.07	4.5.07 Email	Also in reply for BGA (see N9). Airspace changes working well, despite certain restrictions that have had to be accepted. Highlighted helpfulness and pro-active response from NATS controllers to make the procedures work. Made technical comment on improving communications for the release of delegated airspace.
OC4	Halton Gliding Club	24.3.07	-	No response received
OC5	Ryanair	24.3.07	28.3.07 Email	Airspace change has enabled 97% CDA compliance and reduction in track miles to touchdown. Less exposure to noise sensitive areas.
OC6	Aer Arann	24.3.07	-	No response received
OC7	Monarch Airlines	24.3.07	-	No response received
OC8	Thomsonfly	24.3.07	-	No response received
OC9	Signature Flt Support	24.3.07	-	No response received
OC10	EasyJet	24.3.07	-	No response received

OC11	Silverjet Aviation	24.3.07	-	No response received

OTHER INTERESTED PARTIES (14/29 responded = 48%)

IP1	A Selous MP Beds SW	10.4.07	20.4.07 Letter	Commented that overflight of Leighton Buzzard is occurring on a regular basis. Traffic is normally concentrated to the south of Leighton Buzzard and more even distribution between north and south of the town would be preferential to spread the noise nuisance more widely.
IP2	Rt Hon P Lilley MP Hitchen & Harpenden	10.4.07	-	No response received
IP3	Toddington PC	30.4.07	23.5.07 Email, Letter & Petition	A petition of 375 names was sent to DAP. General complaint that residents had not been consulted, although records show this PC was included in the 3 consultation phases and had forwarded a response to the Sponsor. Continued objections to low flying, noisy aircraft, on new arrival route that passes over them.
IP4	J Bercow MP Buckingham	10.4.07	-	No response received
IP5	Mentmore PC	-	10.4.07 Letter	Comprehensive letter received containing an assessment of the airspace change and its impact on the local community. Issues of safety and environmental impact were raised. Disputed the need for overflight restriction over Leighton Buzzard and considered greater impact on rural communities. Also considered that Leighton Buzzard restriction concentrated aircraft, increasing controller workload and compromising safety.
IP6	Cheddington PC	-	20.3.07 Letter	Similar response to that of IP5. Comment made on balance of urban and rural environmental impact. Also considered that Leighton Buzzard restriction concentrated aircraft, increasing controller workload and compromising safety.

IP7	Chiltern Society	24.3.07	27.4.07 Letter	Commented on tranquillity and visual intrusion of flights over Vale of Aylesbury, and concentration of arrival tracks to avoid Leighton Buzzard with associated noise impact.
IP8	LLATVCC	24.3.07	16.4.07 Letter	New route successful. Concerns expressed over short cut approaches over Dunstable area. This latter point has been attended to with LLA imposing a minimum distance/altitude for final approach to runway 08.
IP9	South Beds DC	24.3.07	26.4.07 Email Letter	Visual intrusion of traffic, particularly related to non-adherence of flight paths to avoid overflight of Leighton Buzzard.
IP10	PAIN	24.3.07	1.5.07 Email & Letter	CDA not delivering the promised benefit. Disturbance over Leighton Buzzard area despite overflight restrictions. Perceived abandonment of routes to the north of Leighton Buzzard. Also made comment about restriction of night flights and complaint procedures to LLA.
IP11	Beds Assoc Town & Parish Councils	24.3.07	2.5.07 Email	Provided a collated response from Eggington, Harlington, Barton, Chalgrave, Hockliffe, Leighton and Linslade and Totternhoe. All councils expressed similar themes regarding overflight of their own areas and the associated noise disturbance.
IP12	PAVAN	24.3.07	1.5.07 Email Letter	Busier traffic overhead and aviation noise becoming more intrusive over the rural areas. Concerns over late evening/early morning traffic. Concern as to whether CDA procedures are consistent.
IP13	Bucks Assoc of Local Councils	24.3.07	30.4.07 Email Letter	Provided a collated response from Bierton with Broughton, Edlesborough, Mentmore, Soulbury, Stewekley, Wingrave, Great Brickhill, Pistone, and Slapton. Feedback was mixed depending on their position under the arrival swathe, however, noise disturbance and compliance to CDA procedures were key factors.
IP14	Chairman LLA ACC	24.3.07	24.4.07 Letter	The Chairman of the Airport Consultative Committee collated viewpoints expressed in Committee during the previous 12 months. Concerns had been expressed on the route of inbound aircraft, particularly through the “buffer area”, and overall impact of the CDA procedure and compliance to it.

IP15	Leighton Buzzard Society	24.3.07	27.4.07 Letter	Comments included concerns for the frequency of overflights of Leighton Buzzard and compliance with CDA procedures.
IP16	Leighton – Linslade Town Council	24.3.07	25.4.07 Letter	Although there was a general observation that Luton traffic have been less disturbing than envisaged, there was also concern expressed for overflight of Leighton Buzzard and apparent lack of compliance with CDA procedures.
IP17	Mid Beds DC	24.3.07	-	No response received
IP18	Beds CC	24.3.07	-	No response received
IP19	Herts CC	24.3.07	-	No response received
IP20	Bucks CC	24.3.07	-	No response received
IP21	Stevenage BC	24.3.07	-	No response received
IP22	Dacorum BC	24.3.07	-	No response received
IP23	Aylesbury Vale DC	24.3.07	-	No response received

IP24	North Herts DC	24.3.07	-	No response received
IP25	Herts Assoc Parish & Town Councils	24.3.07	-	No response received
IP26	St Albans DC	24.3.07	-	No response received
IP27	LADACAN	24.3.07	-	No response received
IP28	Breachwood Green Society	24.3.07	-	No response received
IP29	Cranfield Airport	24.3.07	-	No response received