



All NATMAC Representatives

13 August 2015

Dear Stakeholders,

CAA DECISION LETTER

LUTON RUNWAY 26 BROOKMANS PARK RNAV1 SIDs AIRSPACE CHANGE PROPOSAL

1. INTRODUCTION

1.1 For over 10 years Luton Airport has been working with airlines, NATS, (the Luton Airport Air Traffic Control (ATC) provider, and the Civil Aviation Authority (CAA) to look at ways track-keeping can be improved on the Runway 26 Brookmans Park (BPK) Standard Instrument Departure (SID)¹ route. Aircraft using the Runway 26 Clacton, Dover and Detling SIDs from Luton Airport often fly outside of the current Noise Preferential Route (NPR) swathe, overflying densely populated areas such as Hemel Hempstead and St. Albans. After many options for new designs were considered, Luton Airport (now referred to as the change sponsor) formally trialled 2 SID designs in 2013 to gather environmental data to inform a consultation for new SID designs. The sponsor conducted a consultation through their Airport Consultative Committee, aviation stakeholders, and a number of environmental stakeholders. Following the consultation, the change sponsor submitted a formal request to the CAA for a change to the airspace design, i.e. the Airspace Change Proposal (ACP).

1.2 Following the submission of the ACP for changes to the Runway (Rwy) 26 RNAV1 (SIDs) via the Brookmans Park (BPK) reporting point and onwards to the points Detling (DET) VOR and MATCH (see Note below), the CAA undertook a detailed analysis of the ACP which included: a review of Instrument Flight Procedure design proposals, issuing regulatory approvals of the SID designs, an environmental assessment and a review of the consultation process. The purpose of this letter is to provide you with an overview of the proposal and my subsequent decision on it.

Note: Reference to Clacton (CLN) and Dover (DVR) SIDs is maintained throughout the package, as the proposal relates to these SIDs which were trialled for a short period to gather environmental data prior to consultation. Both SIDs have since been truncated (i.e. the SID ends at an earlier position) to positions after BPK VOR at MATCH and DET VOR respectively; this has no bearing on the RNAV SID proposals as the tracks remain the same to BPK.

¹ The SID is given a name to identify the direction to where the aircraft will fly the initial route to immediately after takeoff.

2 INFORMATION THAT HAS BEEN CONSIDERED

- 2.1 In making my decision, I have considered a number of documents including the sponsor's consultation document, the change sponsor's ACP and the CAA's Operational Report, Consultation Report and Environmental Analysis. These documents will be published on the CAA's website shortly.

3 PROPOSAL OVERVIEW

- 3.1 The proposal was designed to introduce an RNAV1 SID² replication of Rwy 26 BPK SIDs to replicate the flight profiles of existing conventional SIDs to DET and MATCH. The aim was to replicate as closely as possible the existing nominal track over the ground of the conventional SIDs up to the turn towards BPK which occurs after passing between the villages of Markyate and Flamstead, to correct the excursion from the 3 KM wide NPR swathe (which has resulted in aircraft flying over the northern part of Hemel Hempstead - an issue for a considerable number of years), and then enable the departures to fly the original and intended track towards BPK after the turn which would result in aircraft flying between Hemel Hempstead and Redbourn; at the same time, the SID replication aims to maintain the existing nominal vertical profiles.
- 3.2 The sponsor also proposed to raise the upper limit of the NPR to 4000ft, from 3000ft, after which aircraft, in accordance with the terms of the existing SID, may be radar vectored by air traffic control (ATC) for operational reasons (either for separation against other traffic or to provide a more expeditious flight path towards their destination). However, to enable aircraft to remain on track to BPK for as long as possible without deviating away from the nominal and intended track, the sponsor proposed to introduce a restriction on how soon aircraft could be vectored by stipulating that in normal circumstances, aircraft could not be vectored until after passing the railway line between Harpenden and St Albans.
- 3.3 In support of the proposed vectoring restriction the sponsor has also proposed to introduce an NPR compliance monitoring swathe for the RNAV departures with a width of 2km wide as far as the railway line (after which vectoring would be permitted and normally be expected). Until such time as the conventional SIDs is withdrawn, there would therefore effectively be 2 published NPR swathes at Luton for this routeing. The location of NPR's and their associated compliance monitoring swathes are a matter for the airport operator at Luton and do not form part of my decision.
- 3.4 No change is requested to the dimensions of the controlled airspace with this ACP. However, a change to a SID is a change to a notified feature of airspace which requires the CAA to make a decision in accordance with its statutory functions set out in more detail below.
- 3.5 Various options were considered by the change proposer and these were detailed in the sponsor's consultation with appropriate diagrams to explain the existing issues and the options available; the Consultation Document will also shortly be published on the CAA website for ease of reference.
- 3.6 The introduction of RNAV SIDs is in line with the CAA Performance Based Navigation Policy, as set out in the CAA [Future Airspace Strategy](#), to introduce RNAV operations in London Terminal Airspace in order to facilitate growing demand and safe operation. At the same time RNAV SIDs will contribute towards Government policy to achieve better track-keeping accuracy and concentrate traffic where possible and to reduce the number of people overflown.

² RNAV1 denotes the navigation performance specification of the SID design.

4 CONSULTATION

- 4.1 The Sponsor undertook a consultation through the Airport Consultative Committee, aviation and environmental stakeholders from 10 April 2014 to 9 July 2014. The Stakeholder Consultation Document will be published on the CAA's website shortly.
- 4.2 Additionally, the CAA's Safety and Airspace Regulation Group (SARG) has conducted its own assessment of the consultation. This assessment will be published on the CAA's website shortly. SARG concluded that the Consultation Report and associated material met SARG requirements.
- 4.3 Sponsors must conduct their consultation exercise in accordance with the criteria set out in the Cabinet Office's Code of Practice on Consultation (now replaced by the 2013 Guidance on Consultation). Specific consultation requirements for a PBN SID replication apply and have been complied with.³
- 4.4 I have carefully considered this information and I am satisfied that the consultation was in accordance with the requirements of CAPs 724 and 725. This was a well-run consultation and the Sponsor demonstrated a willingness to engage with the various stakeholders in order to mitigate the issues raised.

5 STATUTORY DUTIES

- 5.1 My statutory duties are set out in Section 70 of the Transport Act 2000 (the Act), the CAA (Air Navigation) Directions 2001, as varied in 2004 (the Directions), and Guidance to the CAA on Environmental Objectives relating to the exercise of its air navigation functions.⁴
- 5.2 In summary, the CAA's primary duty under section 70(1) of the Act requires that the CAA exercises its air navigation functions so as to maintain a high standard of safety in the provision of air traffic services. This duty takes priority over the remaining factors set out in section 70(2). Where an airspace change proposal satisfies all of the factors identified in section 70(2) and where there is no conflict between those factors, the CAA will, subject to exceptional circumstances, approve the airspace change proposal. Where an airspace change proposal satisfies some of the factors in section 70(2) but not others, this is referred to as a conflict within the meaning of section 70(3). In the event of a conflict, the CAA will apply the material considerations in the manner it thinks is reasonable having regard to them as a whole. The CAA will give greater weight to material considerations that require it to "secure" something than to those that require it to "satisfy" or "facilitate". The CAA regards the term to "take account of" as meaning that the material consideration in question may or may not be applicable in a particular case and the weight the CAA will place on such material considerations will depend heavily on the circumstances of the individual case. The analysis of my statutory duties is set out below.

³ See the CAA's Guidance on PBN SID Replication for Conventional SID Replacement paragraph 11

⁴ Revised in 2014 by the DfT (the Guidance).

5.3 Safety

5.3.1 My primary duty is to maintain a high standard of safety in the provision of air traffic services and this takes primacy over all other duties.⁵ In this respect, I am content that the proposed RNAV1 SID designs are appropriate and meet International Civil Aviation Organisation (ICAO) and CAA design requirements. All RNAV1 procedures have been examined by CAA's IFP design specialists and regulatory approvals have been issued. The new charts and navigation data base coding tables have been approved for publication in the UK AIP via a double AIRAC promulgation cycle for implementation on 20 August 2015. The existing conventional SIDs will remain for a period of time until such time as all operators are RNAV1 equipped and approved for RNAV1 operations.

5.4 The most efficient use of airspace

5.4.1 I am required to secure the most efficient use of the airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic.⁶ The CAA considers that the most efficient use of airspace is defined as:

"The most aircraft movements through a given volume of airspace over a period of time in order to make best use of the limited resource of UK airspace from a whole system perspective."

5.4.2 The CAA does not anticipate that the introduction of the RNAV SID will enable any increase, or cause any decrease, in the number of departures which may be flown from Luton or the number of aircraft movements through any volume of airspace. There is therefore no impact on the efficient use of airspace.

5.5 Requirements of aircraft operators and owners

5.5.1 I am required to satisfy the requirements of operators and owners of all classes of aircraft.⁷ There is no proposal to change the existing controlled airspace and therefore Class G users are not affected by this change. As aircraft fleet equipage statistics indicates approximately 90% of operators regularly using Luton Airport are RNAV1 capable, it is expected that these users will be able to take advantage of the new RNAV1 procedures. Operators not currently equipped will still be able to fly the existing conventional SIDs until such time as they are withdrawn.

5.5.2 Evidence gathered from Trial of the proposed SIDs (flown for a period of approximately one month in the Spring of 2013) was used to produce track dispersion plots to enable impacts to be portrayed in consultation. The trial indicated that, there should be more consistency in aircraft track keeping around the turn towards BPK which indicates that there will be a very slight reduction in track mileage flown for those aircraft which currently fly the wide turns because the turn towards BPK will, under the proposed SID, have a speed restriction which will reduce the radius of turn flown and it is anticipated will marginally reduce fuel burn.

5.5.3 The CAA's Operational Assessment will be published on the CAA's website shortly.

⁵ Transport Act 2000, Section 70(1).

⁶ Transport Act 2000, Section 70(2)(a).

⁷ Transport Act 2000, Section 70(2)(b).

5.6 Interests of any other person

5.6.1 I am required to take account of the interests of any person (other than an owner or operator of an aircraft) in relation to the use of any particular airspace or the use of airspace generally. The CAA examined a number of anticipated impacts, some of which attracted feedback during the consultation process outlined above.

FLAMSTEAD

One representative organisation strongly objected to the proposal citing breaches of RNAV design criteria. These issues were properly considered. To address the concerns the stakeholder was advised that the SID design had evolved over many years, was designed by DAP (now SARG) IFP regulators prior to outsourcing, and has had an independent CAA IFP regulatory check prior to being subjected to operational trial. The design meets current PANS OPS design criteria, and I am satisfied therefore that this concern is not borne out and has been adequately addressed by the CAA.

It should be noted that Flamstead is located on the inside of the turn to BPK within the eastern half of the existing NPR swathe. Over time, conventional SIDs have progressively flown wider turns than the existing SID design can now accommodate with modern aircraft capabilities, and that the departures have drifted further way from Flamstead during the turn. The Flamstead issues were carefully considered as it was apparent that the stakeholder was concerned that aircraft would fly closer to Flamstead under the proposed SID. As the traditional NPR swathe extended over Flamstead, departures from Luton have always been close to the village as they turn to BPK. This will continue with the proposed new SID design.

SANDRIDGE

A further source of public objections (78) came from Sandridge. These responses were examined to ascertain if there were particular issues to be addressed. Sandridge is a village north of St Albans which is situated precisely under the centreline of the existing SID. The proposed RNAV SID is also aligned precisely overhead Sandridge. Whilst the ACP states overflight around Sandridge is normally around 6000ft (the SID design has a technical cap at 5000ft but a higher altitude is frequently experienced), the main concerns were the anticipated impact of concentration of aircraft that is anticipated from an R-NAV1 SID. A significant number of responses indicated that traffic should be re-routed to the north of Sandridge in open country side away from rural areas between Sandridge and Wheathampstead.

As part of its consideration of the ACP the CAA queried with the sponsor whether re-routeing around Sandridge would be feasible (notwithstanding Sandridge is in the centre of the existing route centreline).

The sponsor indicated that a re-route scenario could be considered with a future design using newly approved criteria published in late 2014, however, whether this is feasible would depend on the design used and the presence of other traffic patterns. I also considered that Sandridge is on the route at present, traffic is routinely vectored prior to Sandridge, and that I anticipate that under the SID proposed in the ACP this will continue to be the case and the typical altitude attained by Sandridge will continue to be 6000ft. I therefore conclude that it is reasonable to accept the replicated design as proposed as the impact is anticipated to be similar to what is experienced today.

HEMEL HEMPSTEAD

There was significant support from Hemel Hempstead, as the existing SID overflight of this area which under the new design is anticipated to be avoided; the proposal seeks to address this issue, and I am satisfied that the proposal will reduce overflight of this area as demonstrated in the consultation document. It should be noted that unless and until the existing conventional SID is withdrawn, it is still likely that non RNAV1 approved flights may still fly routings as they do today.

ST ALBANS

Whilst there was significant support from areas within the St Albans, there were a small number of objections from some residents of St Albans (up to 39). Whilst St Albans suffers from some overflight because of the existing track keeping issues of departures flying outside the NPR swathe, resulting in flights further south than they should be (this arises from 'ballooning' around the turn to BPK due to a lack of any form of speed restriction other than not above 250kts below FL 100), I anticipate that the RNAV designs would provide some environmental (in noise terms) benefit to St Albans.

HARPENDEN

The proposed SID (via its design, including speed restrictions), aims to increase the proportion of aircraft keeping to the nominal track of the existing SID. My understanding is that some Harpenden respondents believe this will mean more noise. For the reasons contained in the CAA's environmental analysis (which will be published on the CAA's website shortly), I believe that the noise impact on Harpenden will not be significant.

NPR SWATHE WIDTHS

It should be noted that the proposal indicates that the airport intends to introduce a revised NPR swathe width of 2kms, alongside the proposed CAA change to the published SID (which includes a rise in the upper limit vectoring altitude from 3000ft to 4000ft, and an extension of a vectoring restriction until past the railway line from Harpenden to St Albans. One objective of the proposal is to overcome the deficiencies of the existing SID, which, with its lack of a formal speed restriction around the early turns, results in aircraft overshooting the normal track, thus exacerbating the impact of flying outside the existing NPR swathe.

I anticipate that that this RNAV proposa, will overcome the existing track keeping issues.

Formal ICAO design criteria now exists that was not available to the sponsor when this ACP was being developed, trialled and consulted on. Whilst that design criteria could be used to improve the track-keeping around the complicated turns of this procedure, and indeed others at Luton Airport, I do not consider that the potential for even better track keeping in the future is a reason not to approve the ACP requested, with its anticipated associated benefits, now.

Interested parties should note that there will be 2 NPR swathes published with different widths until the conventional SIDs are withdrawn.

5.7 Guidance on environmental objectives

- 5.7.1 In performing my statutory duties, I am obliged to take account of the extant guidance provided by the Secretary of State,⁸ namely the 2014 Guidance to the CAA on Environmental Objectives. Additionally, where a proposed PBN SID represents the replication of a conventional SID, it is the CAA's policy that further environmental requirements apply.⁹
- 5.7.2 The Environmental Research and Consultancy Department (ERCD) has undertaken an assessment of the environmental impact of this change, the findings of which will be published on the CAA's website shortly.
- 5.7.3 Having carefully considered this information, I have concluded that the change will have a positive overall environmental impact.
- 5.7.4 My considerations of the environmental aspects of this proposal are such that the proposal will address the track-keeping problems which have existed at Luton for a long time. Aircraft have affected some populated areas of Hemel Hempstead and St Albans by flying wide turns outside the extant NPR swathe which the design seeks to address and resolve, and I am therefore satisfied the objective of this proposal results in environmental benefits being realised. Whilst there will be an element of concentration of departures as demonstrated in the consultation document, which should bring departures back into the original swathe of the NPR, the implementation is in line with Government guidance to concentrate traffic, and whilst some people will experience more concentration, others will see less overflight. There will be no negative impacts for Local Air Quality, tranquillity, visual intrusion or biodiversity. I consider that the design results in an overall reduction in the number of people overflowed and will reduce the noise impact in more areas than will be adversely affected.
- 5.7.5 As a point to note, following some observation concerning noise over South Luton during the trials in Spring 2013, the altitude at which aircraft may turn after departure has been revised back to 1030ft AMSL which is concurrent with the existing design (in the trial it was rounded up to 1100ft AMSL), and hence I have advised the sponsor to monitor the first turn track keeping performance and provide feedback to the CAA after implementation.
- 5.7.6 If the anticipated track-keeping performance is realised, as referred to above, it is anticipated there will be a small reduction in CO2 emissions.

5.8 Integrated operation of ATS

- 5.8.1 I am required to facilitate the integrated operation of air traffic services provided by or on behalf of the armed forces of the Crown and other air traffic services.¹⁰ There is no impact on other ATS providers.

5.9 Interests of national security

- 5.9.1 I am required to take into account the impact any airspace change may have upon matters of national security.¹¹ There are no impacts for national security.

⁸ Transport Act 2000, Section 70(2)(d)

⁹ See the CAA's Guidance on PBN SID Replication for Conventional SID Replacement paragraph 10]

¹⁰ Transport Act 2000, Section 70(2)(e).

¹¹ Transport Act 2000, Section 70(2)(f).

5.10 International obligations

5.10.1 I am required to take into account any international obligations entered into by the UK and notified by the Secretary of State.¹² Other than meeting national certification requirements for RNAV1 operations from operators' respective regulatory authorities, there are no international obligations to be met at present, although it is anticipated that PBN will be mandated across Europe in the next decade. Once conventional SIDs are completely withdrawn, all foreign operators will require RNAV1 certification to operate into Luton.

5.11 No conflicts

5.11.1 In accordance with section 70(3) of the Act and the CAA published policy, I am required to consider whether the airspace change proposal produces any conflicts between the material considerations identified in section 70(2). For the reasons given above, I do not consider that there is any conflict between factors I have a duty to take into consideration.

6. REGULATORY DECISION

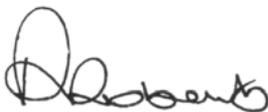
6.1 I am content that the proposed airspace design is safe, which satisfies my primary statutory duty. For the reasons given above, I am also content that the proposed change has a positive or neutral impact on each of the other factors identified in section 70(2) of the Act. In those circumstances, in the absence of exceptional circumstances, it is CAA policy to approve the airspace change proposal. There are no exceptional circumstances in the instant case to justify departing from the CAA's standard practice.

6.2 I have therefore decided to approve the implementation of RNAV SIDs.

6.3 The revised airspace will become effective from 20 August 2015 (AIRAC 9/2015) and has been promulgated via a double AIRAC cycle. If you have any queries, the SARG Project Leader, Mr D W Raine, may be contacted on 020 7453 6518, or via e mail: dave.raine@caa.co.uk .

6.4 In line with our standard procedures the implications of the change will be reviewed after one full year of operation, at which point, my staff will engage with interested parties to obtain feedback and data to contribute to the analysis.

Yours sincerely



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Mark Swan
Director, Safety and Airspace Regulation Group

¹² Transport Act 2000, Section 70(2)(g).