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██████████  
Director SARG

17 Jul 13

**BRIEF for Director SARG – GATWICK PBN REPLICATION RNAV1 SIDs ACP**

- This brief updates briefs of 16 Jan 13 and 14 Feb 13. Following Director's previous queries, developments are:
  - Updates to elements of the Operational Report are at Attachment 1.
  - The Consultation Report is updated at Attachment 2.
  - The Environmental Report is unchanged.
  - Response to Director's queries at Attachment 3.
  - Response to Director's queries on Brief v2 & Operational Report at Attachment 4.
- A position paper was sent to DfT on 1 May 13 regarding the Route 4 NPR issue (Rwy 26 SIDs right turn to the east) stating why DAP believed the introduction of the Route 4 SIDs had an insignificant impact to the NPR alignment. Confirmation from DfT has been received to agree to the DAP rationale for approval of changes to Route 4 SID together with a conditional requirement for Gatwick to consult on an NPR change following issue of the new ANG – see Attachment 5/5a for position paper, the DfT response and subsequent text revision.

**RESOLUTION OF PREVIOUS PROCEDURE DESIGN ISSUES**

- Following initial analysis of procedure designs, issues and comments raised by DAP IFP have been addressed by ██████████ revised procedure design reports were submitted. Analysis has now been concluded:
- DAP IFP regulatory approval of revised SID designs has been completed; all design issues are resolved except flyability - see below; charts are currently being checked against the designs.
- Flyability checks on: BIG1X, HARDY1X & DAGGA1X SIDs have been completed using an un-validated RVT desktop tool. Some issues have arisen which indicate that some types (B747-400 and A340-300) may not reach the altitude constraints on the first 2 waypoints of the BIG1X during the first turn. A not below 2500ft constraint was imposed for obstacle clearance, and a 3000ft constraint was imposed for controlled airspace containment
  - The desktop tool indicated the A340 would achieve 1699ft by KKW04 (should be 2500ft) and 2858ft by KKN06 (should be 3000ft). Similarly, the B747 would only reach 2184 ft by KKN06 (3000ft).
  - Although NATS intimated these aircraft would not be fully fuelled for this procedure (BIG1X is a positioning SID to Heathrow), the same design is used for the initial segments of the LAM1X, CLN3X and DVR 1X procedures so there was a genuine concern that NATS mitigation had not fully considered the impact on these SIDs and others which had similar new altitude constraints (the altitude constraints are not on the existing conventional SIDs).
  - As the desktop tool is un-validated, the issue may well be the desktop tool itself and not the capability of the aircraft, as the existing conventional SIDs have been flown by these types since their introduction (although they do not have the new altitude constraints in their design). There is currently ongoing discussion between the SARG IFP designer, Head of AR and NATS as to how these issues may be resolved.

-- Consequently, at this moment, it may be necessary to specifically exclude the heavier Category D aircraft types (e.g. B747-400 and/or A340-300), from using all but the straight ahead departures and the Rwy 26 Seaford SID (this SID has extra track miles compared to the others) until these issues are resolved. A possible interim solution will be for the sponsor to have the procedure checked in a flight simulator.

-- Therefore, subject to the outstanding flyability issue, the CAA is now in a position to approve implementation.

#### IMPLEMENTATION

- The next deadline for AIS for charts is Friday 26 July for a Double AIRAC implementation on 14 November (as the charts have been drawn already and are currently subject to ongoing checking, I expect that the publication deadline will be met).

#### RECOMMENDATION

- Except for the outstanding flyability issue, as all other issues have now been resolved, the implementation of the complete suite of RNAV SIDs is recommended. Should the flyability issues concerning the heavier aircraft not be resolved prior to implementation date, then restrictions on use can be imposed depending on developments in the interim period.

- A number of regulatory requirements should be stipulated with the decision letter to GAL / NATS LTC as outlined in Attachment 1.



#### ATTACHMENTS:

1. Operational Report Update.
2. Consultation Report Revision Ver 3.
3. Response to Director's queries (e mail 22 Feb 13).
4. Response to Director's queries within Operational Report.
5. DFT feedback regarding NPR consultation.
- 5a. DFT revised condition for implementation of Route 4.

OPERATIONAL REPORT UPDATE

- **Flyability.** Use of an [REDACTED] tool to assess flyability of the BIG1X, HARDY/BOGNA1X (agreed change from SFD1X) and the TIGER1X (includes the DAGGA & WIZAD SIDs) was thwarted by a number of issues during NATS training on the tool and its subsequent evaluation. NATS was not content with some output from the tool regarding results showing the observed track of turns at flyby waypoints. Track data at these Waypoints (WPs) indicated tracks which were almost equivalent to flyover turns (i.e. almost reaching the WPs). Therefore, in comparison to actual RNAV SID Trial results, the tool did not provide confidence, and moreover it had not been validated for use.
  - Other flyability options were considered by NATS.
  - As outlined in the covering brief, an [REDACTED] tool was used to evaluate flyability for the BIG1X, BOGNA1X and the DAGGA1X. Ongoing issues are being addressed. If appropriate, certain restrictions on use may be necessary if outstanding issues cannot be resolved prior to implementation.
- **Rwy 26 'Route 4' NPR issue.** (page C-5, Serial 1.3). A meeting was held between DfT and DAP on 26 March to enable the DAP PL to brief DfT on the existing swathes of conventional SID track distribution and impact of the changes. [REDACTED] and [REDACTED] also attended [REDACTED].
  - DAP briefed DfT that the impact of RNAV SID introduction was not significant. DAP was advised to present further justification for DfT to consider. DfT has since endorsed the DAP viewpoint and has issued a conditional requirement for GAL to determine whether the Route 4 was consistent with the new ANG guidance (subject to consultation in summer 2013), and if the impact is such that the NPR has to be changed, then GAL need to consult on a new NPR within one year of the guidance being issued. See Attachment 5 for details.
- **Deadlines** (page C-9, Serial 2.8). As detailed in covering Brief.
- **SID Designs.** (page C-9, Serial 2.8). Revised designs have been examined by DAP IFP. All previous design issues have now been resolved.
- **Airspace Containment** (page C-11 Serial 2.18).
  - HARDY1X, KENET1X/1Z, SAM1X/1Z and DAGGA1X all leave CAS at the SID extremities which is no different to existing conventional procedures.
    - A Regulatory Requirement should be provided to NERL (LTC) to ensure controllers take action to ensure aircraft will remain within CAS. Note: this is the case with existing SIDs as aircraft must be climbed to reach the Standing Agreement levels for transfers to following NATS sectors.
  - Altitude constraints. Four Rwy 08 procedures (DVR1Z/LAM1Z/CLN1Z/BIG1Z) required an altitude constraint at certain positions to guarantee CAS containment in the climb. These have been revised and the designs accepted by DAP IFP – issue resolved.
- **Obstacle Clearance** (page C-11 Serial 2.19). Revisions to designs were completed and have been accepted by DAP IFP – issue resolved.

## CONFIRMATION OF REGULATORY REQUIREMENTS TO BE ISSUED WITH ACP APPROVAL

1. Regarding Route 5 implementation (Rwy 08 straight ahead SIDs (BIG1Z/CLN1Z/DVR1Z), Gatwick Airport Limited to be advised to monitor track-keeping, determine if there is an impact to Dormansland, then if necessary and appropriate, consider repositioning waypoint KKE 02 to improve track dispersion to better replicate the conventional traffic distribution
2. Gatwick Airport Limited is advised to determine specific post implementation track keeping assessment action and methodology, brief SARG prior to implementation, and provide monthly reports to SARG in a format to be agreed.
3. SARG to determine specific post implementation track keeping monitoring requirements (internal SARG discussion required) and provide details to Gatwick.
4. DfT conditional requirement for Route 4 NPR:

'On 25 June 2013, the Department for Transport issued a consultation on its proposed new guidance from the Secretary of State to the CAA on its environmental objectives. The approval on Route 4 is therefore given subject to the condition that the airspace change relating to Route 4 will take into account the new guidance from the Secretary of State when this is issued, and in particular ensure that there is an appropriate match between the Standard Instrument Procedure and the Noise Preferential Route. You will need therefore to review and assess whether Route 4 meets the parameters of Noise Preferential Routes as defined within the new guidance and consult within a 12 month period, commencing from the publication date of the new guidance to the CAA on its environmental objectives (which is expected to be before the end of 2013), on any changes necessary to ensure that Route 4 does meet the parameters of Noise Preferential Routes as defined within the new guidance.'

5. In light of revised 2012 obstacle data which necessitated some minor revisions to the RNAV SID designs (inclusion of an additional altitude constraint), NATS is advised to review existing conventional SIDs and determine what action is required regarding published gradients.
6. NATS LTC is advised to remind ATC staff that, as with existing conventional SIDs, controllers take action to ensure aircraft using the HARDY1X, KENET1X/1Z, SAM1X/1Z and DAGGA1X RNAV SIDs will remain within CAS.

**RESPONSE TO DIRECTOR'S QUERIES (e Mail 22 FEB 13)**

- **Q1.** The issue of route 4 use by heavies: annex C to A1/3 page C8 2 8 italics (and elsewhere in documentation) deems that <10% would fly a wider turn under the new RNAV procedure, yet this has not been trialled and appears to be based on conventional SID experience only in the trials work – what assurance do we have that this percentage is likely to be borne out in practice under the RNAV procedure and in relation to A380 what effect might it have on this SID i.e. is it likely to be worse or can the A380 make the speed/AOB/G equation work satisfactorily?

-- **Response:** The RNAV SIDs all have speed restrictions ranging from 220 to 250KIAS and as long as these are adhered to, then the resultant tracks would be expected as per the trialled SIDs.

- **Q2.** The issue of CA CF path terminators – annex C to A1/3 page C8 2.8. Are we absolutely certain that this issue has indeed been resolved satisfactorily for all relevant design criteria – although there is a statement to that effect in the text it is not clear in the documentation and probably needs to be stronger?

-- **Response:** All CA-CF Path Terminators have been removed.

- **Q3.** The observation at annex D to A1/3 page D3 1.6- - process objection: who considered that 'departure from the guidance of CAP 725 was reasonable given the nature of the proposal' in respect of the 'major process objection' lodged by [REDACTED]

-- **Response:** APCC has discussed this with Director. A revised Consultation Report is at Attachment 2.

- **Q4.** Flag H – NATS ACP document – page 31 route 2 options – discussion on the design versus speed restrictions rate of climb etc – has any thought been given to mandating a higher minimum rate of climb above the 4 degrees noise abatement limit, to bring the first turn slightly closer to the existing NPR CL- it has 'lost' .75km to the east?

-- **Response:** There are 2 Noise Abatement parameters which have to be met:

--- After take off the aircraft shall be operated in such a way that it is at a height of not less than 1000ft aal at 6.6km from start of roll as measured along the departure track of that aircraft.

-- Thereafter, aircraft shall maintain a gradient of climb of not less than 4% to an altitude of not less than 3000ft.

The existing trialled SIDs had a design PDG of 5.75% (the parameters proscribed in Draft CAA design Policy during original designs.

-- The new design is such that some procedures have been refined due to revised obstacle criteria in the 2012 obstacle survey [REDACTED] to conclude)

- Q5. Similarly for route 4, is there a minimum roc that would reduce the aircraft footprint out of the swathe? I accept that this may produce other less beneficial outcomes such as increased noise or flaps down longer etc but would like to see the balance of the equation worked out.

-- **Response:** TBC after DAP IFP analysis.

- Q6. J2 – email [REDACTED] last paragraph – assertion that NPR swathe re-positioning under RNAV procedures is a largely theoretical issue (because track is already flown) and that redrawing it and re-consulting would be largely counter-productive in that it would lead people to expect that it had some 'hidden' meaning re more noise due aircraft movements, which is not the case. There is also the point that any redraw might allow the convention SIDs to drift further NW while they are retained which we would need to safeguard against. In the wider debate on NPR swathes should we be advising govt to dramatically reduce the NPR swathe width under RNAV as a benefit to consumers and simply have a thicker centreline that is strictly policed?

-- **Response DAP IFP:**

It is evident that the existing NPRs are predicated on something other than the conventional SIDs as they are flown today. The only way to get either a conventional or RNAV SID to track the centre of these NPR swathes would be to restrict the speed to such a degree that the airline/operators would be unlikely or willing to accept. Also, the disconnect now between the NPR and where the a/c actually track is such that if one was to force the a/c back to the centre of the NPR, while it may make one community happy it would cause complaints from another. In the RNAV context as each procedure have a State published coding, the predictability of the nominal track can be defined as opposed to conventional SIDs where the coded overlay is different from coding house to coding house and it is not possible to accurately define the nominal track.

I believe the important factor is that the NPR correctly reflects the SID in question, in that way the width of the swathe becomes somewhat academic but it would allow for a reduction in swathe width for RNAV procedures. For at the moment as the NPR does not correctly represent the SID, the complete width of the swathe is being used in order to say that the SID nominal track lies inside the NPR swathe.

**Observations from ERCD [REDACTED]:**

The topic of NPRs and their definition (e.g. are they a line or a swathe, should the NPR line match the SID line) is under discussion as part of the drafting of the updated Air Navigation Guidance by the DfT.

[REDACTED] is currently consulting on changes to some of its SIDs. They are introducing PBN. In acknowledgement that by using PBN they are unable to achieve a good replication (i.e. the new SID will have a noise impact), they are offering a reduction in the width of the NPR swathe – from 1.5km either side of the centreline to 1km either side.

## ATTACHMENT 4

### RESPONSE TO DIRECTOR'S QUERIES WITHIN OPERATIONAL REPORT

1. **Brief page 2.** Path terminators – resolved; designs resubmitted – CA CF designs removed.
2. **Route 2 Query** (page C16). WP positioning not known until procedure is flown. If issues, then WP can be adjusted and chart re-issued.
3. **Route 3 and Route 4 NPR parameters Query** (page C-18). We do not know why the parameters for Route 4 and Route 3 are different. The DAP PL asked DfT on 26 March. No one at DfT knew the answer [REDACTED] cannot explain the rationale

-- In all likelihood, for aircraft to fly the NPR centreline, aircraft would probably have a fly the turn at 180kts, with 30 deg AoB. This would have implications for flyability - see response to Q6 below.

-- [REDACTED] concludes that the SID may have been 'drawn up' to turn onto the radial to DET VOR accommodating aircraft navigation capabilities at the time, potentially flying the SID manually. It looks like a convenient placing of the route midway between Reigate and Horley. This argument doesn't follow the rationale for the Rwy 08 left turn out (history likewise unknown). The original design is therefore [REDACTED] and no members of the CAA can offer a logical explanation.

-- However, in the DAP Position Paper to DfT (at Attachment 5) there is comment from [REDACTED] concerning history of track keeping and that historical evidence indicated that aircraft would have to have been flying the procedures manually in order to comply with the NPR swathe.

## ATTACHMENT 5/5a

1. E Mail [REDACTED] – DfT dated 1 May 13 with Position Paper.
2. E Mail DfT-[REDACTED] endorsement of DAP Position Paper dated 7 Jun 13.
3. DfT revised condition to Route 4 implementation.

[REDACTED]

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**From:** [REDACTED]  
**Sent:** 01 May 2013 16:40  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** Gatwick RNAV SIDs  
**Attachments:** Gatwick RNAV SIDs 010513.docx

Dear [REDACTED]

Please find attached our promised short note on the rationale why we believe that the Director can approve the RNAV SID designs at Gatwick. I look forward to receiving your views.

Our current target date is for an AIRAC cycle for implementation in August so we need to make our decision no later than the end of May.

Should you need anything else from us please do not hesitate to contact me or [REDACTED] Happy to come over and brief as required.

Best regards

[REDACTED]



1 May 2013

## GATWICK 'ROUTE 4' RNAV STANDARD INSTRUMENT DEPARTURE IMPLEMENTATION

### INTRODUCTION

Following an RNAV 1<sup>1</sup> Standard Instrument Departure (SID) Trial of four RNAV SIDs which commenced in 2007, after consultation, Gatwick Airport Limited (GAL) has submitted an Airspace Change Proposal to the CAA in accordance with the Airspace Charter (CAP 724) and the Guidance on the Application of the Airspace Change Process (CAP 725) to introduce RNAV 1 SIDs to replicate all the existing SID routes currently in use. In due course, existing conventional SIDs will be withdrawn following a post implementation management oversight process.

The introduction of RNAV SIDs is in line with the CAA Performance Based Navigation Policy, as set out in the 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.

### CURRENT ISSUE - RUNWAY 26 CONVENTIONAL SID (ROUTE 4)

A particular issue exists with the existing conventional Runway (Rwy) 26 SID to the east (Route 4 in the consultation), whereby approximately 4% of departures fly outside the lateral boundaries of the NPR swathe for a small period during the initial right turn from Gatwick before they reach 4000ft amsl, after which, they may be vectored by Air Traffic Control for separation against other traffic and for expedient climb. Track data presented by Gatwick indicates traffic is also well dispersed beyond the NPR swathe north of Gatwick after the initial turn as the majority of aircraft are above 4000ft amsl.

### HISTORICAL SITUATION

With the introduction of Noise and Track Keeping (NTK) Systems in 1993, an NPR swathe was defined in order that adherence to track keeping could be monitored in a quantified manner. The NPR swathe was defined as a corridor widening from the departing end of the runway to a maximum of 1.5km either side of the NPR centreline. Historical data indicates a discrepancy has existed for quite some years - the ground track of the 'Route 4' SID in 1989 does not appear to correlate with the NPR centreline as shown on the DfT NPR diagram of 1993. The CAA is unable to find archive data to explain this discrepancy (the CAA is not responsible for NPR promulgation). We believe this could be due to a number of factors, such as magnetic variation changes not being accommodated over the years. In addition, analysis of archive Flight Data Recorder (FDR) information shows that where historic ground tracks were closer to the NPR centreline, pilots were hand flying aircraft at higher angles of bank and slower speeds than would be considered acceptable today, and not compatible with current Flight Management Systems (FMS)

### FUTURE POSITION WITH ROUTE 4 RNAV SID DESIGN

Whilst the Rwy 08 Trial SID was very successful in correlating with the NPR parameters, the Rwy 26 RNAV SID cannot be designed to fly completely within the existing NPR lateral swathe. This is due to the RNAV design criteria that determines the radius of the turn, the speed and the angle of bank all of which is pre-coded into the FMS and enables the SID to be flown automatically. Additionally, all departures must fly straight ahead to 500ft before turning and the SID designs must also take into account all obstacles. Departures therefore have to follow a prescribed flight path in accordance with the SID design, which takes into account all these requirements; this effectively means that aircraft using the Route 4 RNAV SIDs cannot turn any earlier than has been

<sup>1</sup> RNAV 1 denotes the Performance Navigation Specification for aircraft track keeping accuracy with the result that aircraft will fly within +/- 1 nautical mile within the designed flight path for 95% of the flying time. This results in improved track keeping accuracy compared with conventionally designed SIDs using ground navigation aids

demonstrated with the designs of the Trial SID. Hence GAL has proposed to implement the RNAV SID design as flown during the Trial.

The impact of the new RNAV SID will mean that, whilst all RNAV departures will eventually fly outside of the NPR swathe, 95% of these are above 4000ft amsl, and thus may be vectored for traffic separation and further climb (as is the case with the conventional SID), or continue on the track of the SID as designed. Where aircraft will leave the existing NPR swathe during the first turn, (in the vicinity of Beare Green), the slower climbing aircraft are likely to be marginally below 4000ft amsl for a short period of time of up to approximately 20 seconds depending on climb performance. As a result, the trial has demonstrated a similar level of track-keeping as for the conventional SID, with around 5% of operations flying outside the NPR swathe below 4000ft amsl on the first turn in this same area. We therefore consider that the introduction of RNAV on Route 4 will have no significant impact on dispersion of traffic in relation to the existing NPR.

### FEEDBACK FROM CONSULTATION

Feedback from the consultation for this route was extremely low; one member of the public from Leigh objected due to the prospect of additional noise resulting from concentration of more aircraft overflying his village; [REDACTED] also objected on the grounds of increased noise and concentration arising from the overflight of a greater number of aircraft. A process objection was lodged by [REDACTED] concerning the conduct of the consultation, mainly based on the requirements of CAP 725 (CAP 725 is guidance rather than mandatory requirements). However, from the initial Framework Briefing, DAP considered that departure from the guidance was reasonable given the nature of the proposal. Specifically, the use of the Airport's Consultative Committee as a vehicle for consultation was agreed as an acceptable way of reducing the consultation burden for SID replication and the associated environmental considerations. Whilst [REDACTED] considered that other organisations should have been consulted, the result would have been a wide consultation that was not required due to the nature of the proposal. Hence, the stakeholder list agreed at the Framework Briefing was considered adequate. The overall assessment of the consultation process by the CAA was that it was satisfactory and met DAP requirements. The consultation did not specifically reference a change to the existing NPRs, nor is one proposed.

### IMPACT ON NOISE

CAP 725 sets out a requirement to demonstrate the effect of an airspace change on the average summer day 16 hour Leq noise contours and on 90 and 80dBA Sound Exposure Level (SEL) departure noise footprints for the most frequent and noisiest aircraft routinely operating at night. Changes in flight track distribution as a result of the revised SID are very limited within the region covered by both the noise contours and noise footprints and thus there is no effect on Leq noise contours or SEL noise footprints.

Supplementary analysis has been conducted to quantify the effect of changes in flight track distribution within the NPR swathe. Both Gatwick Airport's and our own analysis has shown that the RNAV trial SIDs have not affected the departure climb profile, thus changes in noise exposure are entirely related to the lateral disposition of flight tracks within the swathe. Noise exposure on the ground is dependent on both the shift in track over the ground and the altitude of an aircraft – noise impact of a shift in ground track lessens with increasing aircraft altitude. At 4000ft amsl, a shift in ground track of 750m causes a change in single event SEL of 0.8dBA. A 500m shift causes a change in SEL of 0.3dBA. These changes related to comparisons between two flights.

Taking into account the overall changes in track distribution, noting there is little change in ground tracks for one-third of departures on Route 4, the overall change in noise exposure at any location below 4000ft amsl is likely to be no more than 0.5dB. Having said that, changes in noise exposure

that do occur are at noise exposure levels far below those normally considered in assessing aircraft noise impact.

## CONCLUSION

Overall, DAP does not consider the impact of the introduction of the RNAV SID on Route 4 to be significant for the following reasons:

- There is no impact on Leq 16 noise contours and SEL footprints as the effects are beyond existing Leq noise contours and SEL footprints.
- The excursion outside the NPR swathe below 4000ft is for a very short duration (approximately 20 secs) and whilst below 4000ft amsl, aircraft will be no further away than approximately 500m from the NPR swathe extremity on the northwest side of the NPR as they complete the first turn – resulting in a noise change of less than 0.5dBA SEL. Thereafter, aircraft will have reached 4000ft amsl, after which there is no restriction on the flight paths departures may follow
- Approximately 4% of departures using the conventional SIDs currently leave the NPR swathe below 4000ft amsl during the first turn. Above 4000ft amsl there is widespread dispersion beyond the NPR swathe. Approximately 24% of departures using the conventional SID are outside the NPR swathe above 4000ft amsl on completion of this first turn. We consider that it is impossible for residents to determine the precise altitude of a departure, and hence persons outside the NPR swathe, to the west and to the north, will consider that they are already frequently over-flown, albeit at altitudes above the NPR vectoring limits.
- Given existing track dispersion, it is evident that the NPR does not appropriately reflect where aircraft have been historically flying. As SID charts from 1989 indicate they would have flown onto a radial outside the NPR swathes at that time, this is an historical issue which could have been corrected some time ago. However, the RNAV SID proposal highlights the issue which has become more apparent in that modern aircraft performance is such that flight profiles flown some 25 years ago are no longer achievable by the majority of current operators due to modern avionics, advances in technology and the FMS used by current aircraft operators. Gatwick Route 4 is a clear example to illustrate that some conventional SID designs cannot be precisely replicated due to an unrealistic profile such as the existing Rwy 26 Route 4 conventional SID design.
- With due consideration of the Transport Act and the powers devolved to DAP, in line with the extant Environmental Guidance to the CAA, we have considered the interests of all parties, and the consultation feedback. We therefore consider that as the impact of the new 'Route 4' RNAV SID NPR swathe excursion is for such a short duration, is broadly consistent with existing traffic patterns, and for a very small distance away from the NPR swathe, the Director Airspace Policy would deem this not to be significant and is therefore minded to approve the proposed design of the 'Route 4' RNAV SID.

We would therefore seek your acknowledgement of this proposed course of action before we approve this change. We stand ready to provide any additional briefing material you may require.

## CAA RECOMMENDATIONS

In light of the issues raised, the CAA recommends:

- That where precise replication of existing conventional SIDs is not possible within existing NPRs, policy regarding the implementation of new RNAV SIDs and realignment of existing NPRs is addressed by the DfT in the re-drafting of the Air Navigation Guidance

- Consideration is given to reviewing NPR parameters as it is evident that some existing NPRs do not reflect where aircraft can be expected to be seen below the appropriate vectoring altitudes.

- With the application of RNAV SIDs in the future, opportunities should be taken to reduce the lateral and vertical parameters of NPR swathes where appropriate.

- In particular reference to Gatwick, given that the Director, Airspace Policy will approve the RNAV SID changes, GAL reviews the Route 4 NPR swathe delineation within one year of the revised Air Navigation Guidance being published and consult on a revised NPR delineation. (Note: DAP will include this as a condition of the SID change approval).

[Redacted]

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**From:** [Redacted]  
**Sent:** 10 June 2013 16:08  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: Gatwick RNAV SIDs

[Redacted]

[Redacted]

[Redacted]  
[Redacted]

**From:** [Redacted]  
**Sent:** 10 June 2013 10:27  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** FW: Gatwick RNAV SIDs

[Redacted]

[Redacted]  
[Redacted]  
[Redacted]  
[Redacted]

[Redacted]

[Redacted]

**From:** [Redacted]@dft.gsi.gov.uk]  
**Sent:** 07 June 2013 14:51  
**To:** [Redacted]  
**Cc:** [Redacted]  
**Subject:** RE: Gatwick RNAV SIDs

[Redacted]

Thank you for your suggested revised wording of the paragraph on route 4, and apologies for the delay in getting back to you.

[Redacted]  
[Redacted]  
[Redacted]  
[Redacted]  
[Redacted]  
[Redacted]  
[Redacted]

I would be happy to consider further suggested amendments to the paragraph but I know that Gatwick are pushing for the response to their change proposal and so this could delay things further. We would be happy to talk directly with Gatwick to ensure that they are clear about what we expect. [Redacted] has a meeting shortly.)

With regard to the Air Navigation Guidance itself, you will be pleased to learn that ministers have agreed to consult before the summer recess and I am hoping that it might even be out by the end of this month.

Happy to discuss,

[REDACTED]

[REDACTED] | UK Department for Transport | [REDACTED]  
[REDACTED]@dft.gsi.gov.uk

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**From:** [REDACTED]@caa.co.uk]  
**Sent:** 29 May 2013 17:21  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: Gatwick RNAV SIDs

[REDACTED]

Thank you.

[REDACTED]

**From:** [REDACTED]@dft.gsi.gov.uk]  
**Sent:** 29 May 2013 17:14  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: Gatwick RNAV SIDs

Apologies for the delay – we are checking a small change with our lawyers and should be able to get back to you early next week,

[REDACTED]

[REDACTED] | UK Department for Transport | [REDACTED]  
[REDACTED]@dft.gsi.gov.uk

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**From:** [REDACTED]@caa.co.uk]  
**Sent:** 29 May 2013 17:07  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** FW: Gatwick RNAV SIDs

[REDACTED]

I am about to go off on leave and wondered whether you had been able to consider the attached e-mail regarding Gatwick?

Regards

[REDACTED]

**From:** [REDACTED]  
**Sent:** 20 May 2013 14:37  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: Gatwick RNAV SIDs

Dear [REDACTED]

Thank you for this. I have now consulted with the team here and, if you are content, we would propose a very slight amendment to your suggestion for the final paragraph as follows.

Your approval is given subject to the condition that the airspace change relating to Route 4 will take into account any new Guidance from the Secretary of State to the CAA on Environmental Objectives, and in particular ensure that there is an appropriate match between the Standard Instrument Procedure and the Noise Preferential Route. This acknowledgement by the Secretary of State is also made on the basis that you will meet a requirement that you will consult within a 12 month period (commencing from the date of publication by the Secretary of State of the new guidance to the CAA on Environmental Objectives) on any proposal required to make any necessary changes to the Noise Preferential Route to ensure that it is consistent with the new Guidance."

I think this preserves the intent of what you were proposing but ensures there is no scope for misinterpretation – on the behalf of any party that might be involved!

If that is acceptable then we will go back in writing to Gatwick without further delay.

[REDACTED]

**From:** [REDACTED]@dft.gsi.gov.uk  
**Sent:** 15 May 2013 13:59  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** FW: Gatwick RNAV SIDs

Dear [REDACTED]

I have discussed your proposal with [REDACTED] and lawyers here.

Overall we are happy to agree the approach you propose.

On route 4 specifically we can agree, subject to a small change in the proposed letter to Gatwick. We would prefer the final paragraph to say:

Your approval is given subject to the condition that the airspace change relating to Route 4 will take into account the new Guidance from the Secretary of State to the CAA on Environmental Objectives, and in particular ensure that there is an appropriate match between the Standard Instrument Procedure and the parameters of the Noise Preferential Route. This acknowledgement by the Secretary of State is also made on the basis that you will meet a requirement that you will consult within a 12 month period (commencing from the date of publication by the Secretary of State of the new guidance to the CAA on Environmental Objectives) on whether Route 4 meets the parameters of the Noise Preferential Route and to ensure that it

is consistent with the new Guidance. If change to the Noise Preferential Route is required this would need to be covered in the consultation.

Hopefully this allows a pragmatic way forward.

Assuming you are content we will brief Ministers for information in parallel to seeking their agreement to the draft Air Navigation Guidance.

Happy to discuss,

[REDACTED]

[REDACTED] | UK Department for Transport | [REDACTED]  
[REDACTED]@dft.gsi.gov.uk

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**From:** [REDACTED]@caa.co.uk  
**Sent:** 01 May 2013 16:40  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** Gatwick RNAV SIDs

Dear [REDACTED]

Please find attached our promised short note on the rationale why we believe that the Director can approve the RNAV SID designs at Gatwick. I look forward to receiving your views.

Our current target date is for an AIRAC cycle for implementation in August so we need to make our decision no later than the end of May.

Should you need anything else from us please do not hesitate to contact me or [REDACTED] Happy to come over and brief as required.

Best regards

[REDACTED]

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