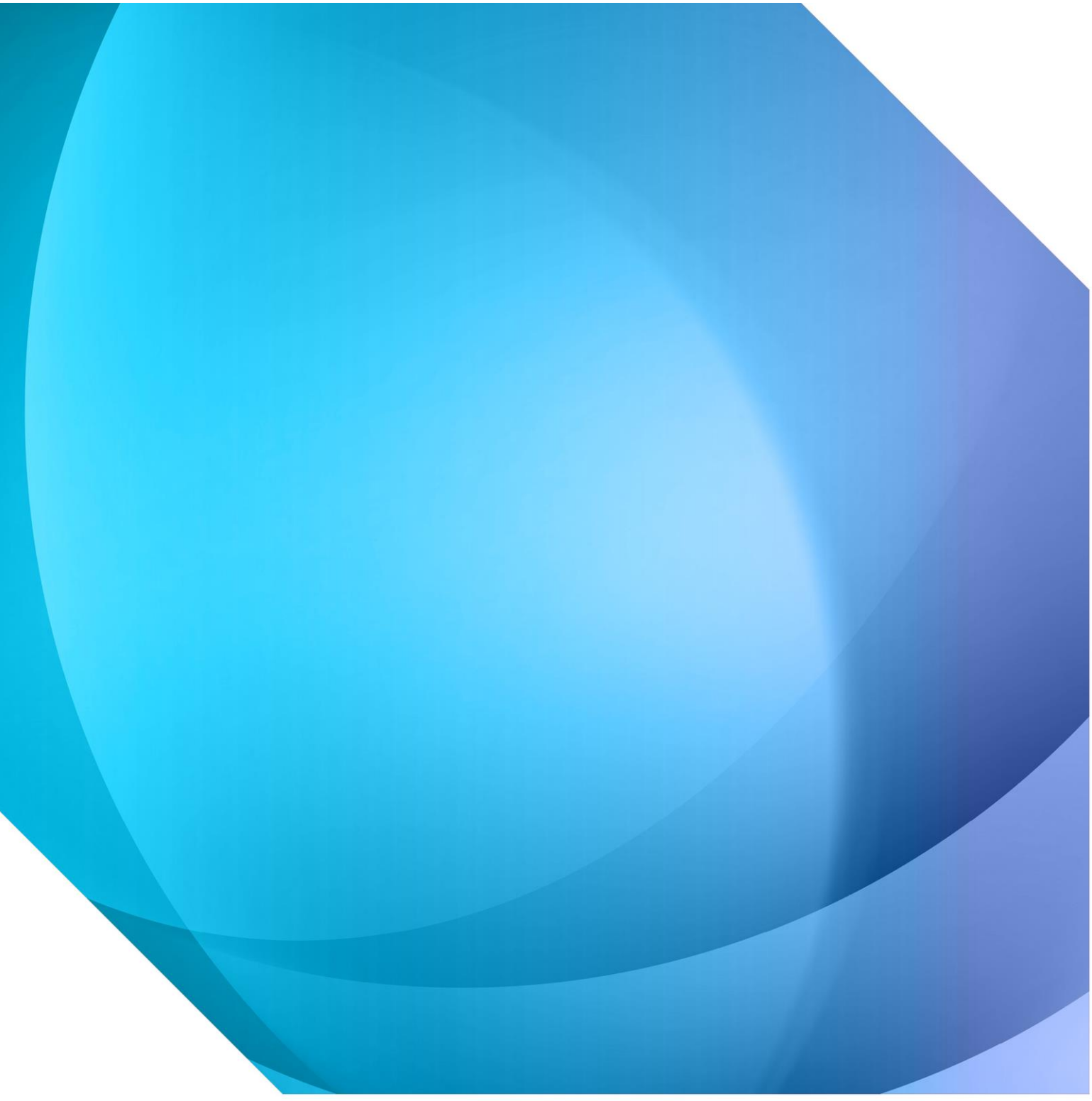
Safety and Airspace Regulation Group

Report of the CAA's Post Implementation Review of London Gatwick Airport's Modified Route 5 Runway 08 RNAV-1 Standard Instrument Departure Procedures

CAP 2198



Published by the Civil Aviation Authority, 2021
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This report is further to:

- CAA decision in August 2013 regarding the Gatwick airspace change introducing RNAV 1 SIDs at Gatwick Airport; and
- Stage 7 PIR conclusions dated 28 September 2015, 10 October 2015 and CAP 1346

Contents

References:

1) CAP 725 – Airspace Change Process Guidance Document

2) CAP 1616 – Airspace design: Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information

3) Department for Transport's Guidance to the Civil Aviation Authority on Environmental Objectives Relating to the Exercise of its Air Navigation Functions (2014)[1]

4) Gatwick Airport Limited Flight Performance annual Report 2014 (shows Leq contours for 2013) https://www.gatwickairport.com/globalassets/publicationfiles/business_and_community/all_public_publications/aircraft_noise/fpt_annual_report_2014_v6_lr.pdf

5) ERCD Report 1502 "Noise exposure Contours for Gatwick Airport 2014" (shows Leq contours for 2014) http://webarchive.nationalarchives.gov.uk/20161125114940/https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/458528/lgw_2014_report_final.pdf

6) ERCD Report 1702 "Noise exposure contours for Gatwick Airport 2016" (shows Leq contours for 2016) https://www.gatwickairport.com/globalassets/business--community/b_7_aircraft-noise/noise-exposure-contours-for-gatwick-2016-compressed.pdf

7) ERCD REPORT 1802 "Noise exposure contours for Gatwick Airport 2017" (shows Leq contours for 2017)

[1] https://www.gov.uk/government/publications/air-navigation-guidance

https://www.gatwickairport.com/globalassets/business--community/new-sub-category-landing-pages/aircraft-noise--airspace/fpt-reports/lgw_2017_annual_contours_report_final-1.pdf

Executive Summary

1. The CAA's airspace change process is a seven-stage process that is set out in CAP 725. Under this process, in 2013 London Gatwick Airport submitted a proposal to the CAA to replicate the Runway 08 'Route 5' conventional Standard Instrument Departure (SID) procedures with a replication RNAV-1[2] SID. The airspace change was approved by the CAA in August 2013 and was implemented in November 2013.

2. Stage 7 of this process is a Post Implementation Review (PIR) that normally begins one year after implementation of the change as soon after data is received from the sponsor commensurate with ongoing CAA workload at that time. Following a year of operation, the CAA conducted a PIR and our conclusion was published on 28 September 2015 with additional summary conclusions published on 1 October 2015 and 10 October 2015. The CAA's detailed report on those conclusions was published on 11 November 2015: Changes to Gatwick departures 2013. That report required GAL to examine whether a better replication of the Route 5 SID could be achieved. A minor modification was thereafter implemented on 30 March 2017.

3. This report determines whether the modified 2017 Route 5 RNAV-1 SID modification has achieved a better replication of the 2013 Runway 08 'Route 5' SID.

4. On 2 January 2018, the CAA introduced a new process for making a decision whether or not to approve proposals to change airspace design (CAP1616). However, as this Airspace Change Proposal (ACP) was fully implemented prior to the introduction of that document, and the PIR data received by the CAA prior to its introduction, this review has been undertaken in accordance with CAP725 metrics and the Department for

[2] Performance-based navigation (of which RNAV-1 is a type) is satellite aviation guidance; in comparison to ground-based navigation aids (such as those used by conventional SIDs) performance based navigational technology will allow aircraft to fly much more accurate and flexible tracks. Satellite guidance will also allow the UK's complicated and busy airspace to be redesigned, increasing capacity and efficiency while maintaining or enhancing safety performance. A route structure optimised for satellite guidance with aircraft flying a pre-programmed trajectory will also reduce the need for tactical intervention by air traffic controllers to instruct pilots to change direction, bringing down the cost of air traffic control, and optimise the climb and departure profiles of aircraft (which is the most expeditious routeing of aircraft so far as airlines are concerned, and which also burns the least fuel and overall causes the least noise.

Transport's Guidance to the Civil Aviation Authority on Environmental Objectives Relating to the Exercise of its Air Navigation Functions (2014). Nevertheless, due to the fact that the review work had not commenced before CAP1616 became effective, the CAA decided to adopt some principles from the CAP1616 process where it was possible to do so. This entailed the publication of data received from the sponsor, and an invitation to interested stakeholders to provide comment on the data received. A review of feedback received from stakeholders and members of the public who provided feedback directly to the CAA is included.

5. As a result of our PIR, the CAA has reached the following conclusions:

Operational conclusions

6. With the re-positioning of the first waypoint (previously KKE02) to KKE 04, thus delaying the first turn, the traffic pattern is now more aligned to the conventional SID as it crosses the A22, hence a better replication has been achieved on the initial departure track before reaching Dormansland.

7. In the vicinity of Dormansland, the modified RNAV-1 SID design has achieved a better replication of the conventional SID traffic pattern experienced before the change, by reversing the displacement of the main core traffic density pattern by approximately 250m to the north. The departure traffic pattern to the east of Dormansland converges back to KKE 10 producing the same pattern achieved by the original RNAV-1 SID design resulting in the main core density passing south of Penshurst. A similar displacement of the core traffic density pattern to the south of Penshurst of approximately 500m is evident when compared with the conventional SID traffic pattern as the modification did not change this section of the 2013 RNAV-1 SID.

8. No operational or flyability issues were experienced.

Stakeholder feedback conclusions

9. We have analysed the enquiries/complaints received by the change sponsor and the CAA, as well as the responses received during the 28-day feedback window as part of this Review. As a result of our analysis, we have concluded that the correspondence received is consistent with the anticipated impacts of this airspace change proposal.

Environmental conclusions

10. Following implementation of the modified RNAV-1 SID in 2017, the traffic pattern towards Dormansland is aligned closer to the 2013 pre-change conventional SID traffic pattern. The main core of flight tracks has moved back towards the northern extremity of Dormansland and towards the centre of the NPR monitoring swathe. It is therefore considered that overflight of Dormansland is similar to that experienced by the original conventional SID design and the northern extremity of Dormansland is likely to observe a return to a similar traffic pattern and associated noise impact to those from before the change in 2013 as the flight path returns to a more central position within the NPR monitoring swathe.

Confirmation of Gatwick Route 5 SID modification

11. In respect of the Route 5 modification, the CAA confirms that the impacts of the modification are as expected. Upon publication of this CAP 2198, the process in respect of this change and modification is concluded and the modification is confirmed.

Scope and Background of the PIR

What is a Post Implementation Review

12. The CAA's approach to decision-making in relation to proposals to approve changes to airspace is explained in its Guidance on the Application of the Airspace Change Process, CAP 725. This detailed Guidance provides that the seventh and last stage of the process is a review of the implementation of the decision, particularly from an operational perspective, known as a Post Implementation Review (PIR).

13. The Guidance states that the purpose of a PIR is to determine whether the anticipated impacts and benefits in the original proposal and published decision are as expected, and where there are differences, what steps (if any) are required to be taken.

14. If the impacts are not as predicted, the CAA will require the change sponsor to investigate why, so the CAA can determine whether further action is needed to change the airspace structure or to revise flight procedures to meet the terms of the original decision.

15. A PIR is therefore focused on the effects of a particular airspace change proposal. It is not a review of the decision on the airspace change proposal, and neither is it a re-run of the original decision process. However, in the case of this PIR, we are reviewing whether the minor modification of the Route 5 RNAV-1 SID implemented on 30 March 2017 is a better replication than that achieved by the 2013 RNAV-1 SID design originally implemented in November 2013.

Background to our conclusions in this PIR Decision

16. In August 2013, the CAA approved the changes to the London Gatwick Route 5 SID. In our PIR conducted in 2015, and our letter to GAL on 28 September 2015, we considered that a better replication of the Route 5 conventional SID may be achieved. We therefore required GAL to investigate a modified design to achieve more accurately the replication aimed for. In our letter we stated:

"The stated aim of introducing an RNAV-1 SID design the effect of which was to result in actual aircraft tracks that replicate the nominal track of the existing conventional SID was achieved to an acceptable standard. However, it is considered that a better replication may be achieved. Therefore, Gatwick is required to investigate a modified design to achieve that replication more accurately. If the modifications does, in the view of the CAA achieve more accurate replication, the modified RNAV-1 SID route will be notified and replace the RNAV-1 SID design originally approved. That will be the conclusion of GAL's airspace change request dated 30 November 2012 (as amended 9 January 2013) in respect of the Route 5 SID. In the interim period the published RNAV SID for this route will remain notified in the AIP'.

17. On 1 October 2015, the CAA provided GAL with a number of technical recommendations to assist GAL and their procedure design organisation in working on that modification requirement. A modified RNAV-1 Route 5 SID design to meet the CAA's modification requirement was submitted to the CAA for consideration. The CAA published its agreement that the modified design be implemented on 30 March 2017 and that specified data be collected for 6 months. The modified design has been in use since then.

18. The sponsor provided PIR data from April 2017 to September 2017. Whilst the final data was received by 30 October 2017, the CAA commenced the PIR of the modified SID in October 2020. The content and outcome of this review process by the CAA is discussed in this report including its annexes.

Data collected for the purpose of the PIR

Sources of Information

19. The data we required GAL to collect and provide to us after 6 months of operation of the modified RNAV 1 SID for Route 5 was set out in our letter to GAL dated 23 May 2016 (available on our website) and subsequently amended by later correspondence with GAL confirmed on 5 May 2017. The following data was received from GAL:

- Track dispersion plots up to 3900ft.
- Track dispersion plots up to 4000ft.
- Track density diagrams.
- Altitude band track dispersion plots for a selected week in July 2017 in the bands:

  - 4000-5000ft
  - 5000-6000ft
  - 6000-7000ft.
- Meteorological data (METAR) for each day (forecast weather for different times of the day).
- Monthly usage diagrams.

20. We also received:

- Correspondence from GAL to aircraft operators relating to track keeping performance.
- Details of Route 5 complaints made to GAL during the modified SID post-implementation period (i.e. from 30 March 2017 to 30 September 2017).
- A complaints map for each month for a period from April 2017 to September 2017 together with a full period map showing complaint locations for Route 5.
- A GAL assessment of whether the objectives of the change proposal have been achieved. Note: this was not provided with the original PIR data but subsequently requested by the CAA and provided on 11 November 2020. The details are included on the CAA website.

21. GAL provided the PIR data requested by CAA, however, when we commenced the PIR, we carried out a completeness check, and found that complaints location maps had only been provided for the month of April 2017. This was addressed and the remaining complaints location maps were provided in November 2020.

Objectives and Anticipated Impacts

The modification proposal and its objectives

22. The modified Route 5 RNAV-1 SID design implemented on 30 March 2017 was designed to better replicate the 2013 conventional SID traffic pattern (i.e. the flight paths) and address the southerly shift towards Dormansland, and the increased overflight of Dormansland which had arisen as a result of the RNAV-1 SID introduced in November 2013, by reversing the displacement of the main core concentration of flight paths back towards the northern extremity of Dormansland and towards the centre of the NPR monitoring swathe (i.e. the NPR centreline itself).

23. The minor modification resulted in the first waypoint being moved from KKE02 to KKE04, thus the first turn would be slightly delayed to ensure the traffic pattern achieved by the 2017 RNAV 1 SID better reflected that achieved by the conventional SID, as departures crossed the A22 and pass just to the northern extremity of Dormansland. After passing KKE04, the departures would resume a track towards the next waypoint (KKE10) which was unchanged from the 2013 RNAV 1 SID.

Anticipated Impacts of the modified 2017 RNAV-1 SID

24. The anticipated impact of the minor modification was to reverse some of the displacement of the main concentrated flight path back towards the NPR centreline and to the northern extremity of Dormansland. It was anticipated that the main core density traffic pattern could be adjusted by delaying the turn as aircraft approached the A22, in order to reverse the displacement of the core pattern to the south, (towards the centre of Dormansland) which was evident with the 2013 RNAV-1 SID design.

CAA Assessment

25. The CAA considered the information provided by GAL. To complete our review, this is what we did:

- We reviewed the GAL assessment of the implementation of the modified SID provided to the CAA on 11 November 2020.
- For comparative analysis purposes, we examined the monthly diagrams provided to determine which traffic sample would provide a similar, like for like traffic sample in terms of the number of departures flown in a particular month. We concluded that the May 2017 sample was the most appropriate month to complete a more detailed analysis of the 4000ft track dispersion plots, density plots and altitude band plots.
- To simplify comparison of the modified SID with the 2013 conventional SID track plots and the initial RNAV SID track plots of 2014, we then combined the PIR track dispersion, density plots and altitude band diagrams as shown in the PIR report dated 11 November 2015 with the May 2017 samples to enable a direct comparison of impacts; hence all the data is in one slide pack for easy cross reference.
- We carried out a comparative assessment of track dispersion and track density plots of the pre-implementation and post-implementation traffic patterns (i.e. pre-change traffic patterns using the previous conventional SIDs and the post-change traffic patterns using the RNAV SIDs) with the traffic patterns of the modified SIDs. Our analysis of this is at Annex A to this CAP 2198 (CAP2198A). In the Annex A, we also included a guide to interpret the various diagrams and described how we added our assessment of the modified Route 5 RNAV-1 SID.
- For analysis purposes, we divided the analysis of the track location and dispersion/concentration of the modified RNAV-1 SID design into three segments:
  - Segment 1 is from take-off to approximately the A22 / waypoint KKE04.
  - Segment 2 is from approximately the A22 / KKE04 to Lingfield / Dormansland.
  - Segment 3 is from Lingfield / Dormansland to Penshurst.

- We considered if there were any details of any ATC operational issues from London Terminal Control Swanwick, or any flyability issues reported to GAL and/or the CAA.
- We reviewed and considered complaints made and feedback received during the post-implementation period (i.e. from 30 March 2017 to 30 September 2017) to both the change sponsor and the CAA.
- We reviewed the feedback provided by interested parties following the 28-day feedback review window available in February-March 2021.
- We additionally examined the Noise Exposure Contours for Gatwick Airport 2017 published by GAL.

Operational Assessment

26. The CAA examined whether there was operational feedback provided to GAL from aircraft operators and Air Traffic Control.

Safety

27. The CAA is satisfied that the implementation of the proposal has not adversely affected the safety on the operation provided at London Gatwick airport and allied surrounding airspace within which the SIDs are located and which was already and previously tolerably safe.

Airspace efficiency

28. In the absence of any information being provided to the CAA to the contrary, the CAA is content that the implementation of the modified RNAV-1 Route 5 SIDs from Runway 08 at London Gatwick airport has neither increased nor reduced the efficiency of integrating traffic through the controlled airspace to the east of Gatwick airport.

Operational Feedback

Flyability

29. There were only a few queries raised by GAL to aircraft operators which, upon investigation by GAL, were mostly due to weather avoidance. No flyability issues were brought to the attention of the CAA.

30. Track keeping performance data provided by GAL indicated almost 100% compliance within the NPR monitoring swathe.

31. The CAA therefore concludes that the design of the SID and operational use by operators is satisfactory.

Air Navigation Service provision

32. There was no ATC feedback received regarding the modified design, which is unsurprising given the minor nature of the modification. In the absence of any information being provided to the CAA to the contrary, the Runway 26 RNAV-1 departure procedure has not caused any impacts on service provision which is provided by the LTC on departure. Departing traffic is handled in the same manner as the RNAV-1 SIDs prior to the modification.

Impacts of the Modified Route 5 RNAV-1 SID

33. This section provides a review of the impact of the modified RNAV-1 route 5 SIDs.

Assessment methodology and analysis outcome

34. The traffic patterns provided with the PIR track data were examined to determine whether the modification had achieved a better replication of the conventional SID. The main focus was on the initial segment to the A22, the first turn at KKE04 in the vicinity of the A22, and the proximity of the core traffic pattern in relation to Dormansland as departures climbed out towards the east. It was accepted, as part of the ACP submission, that there continued to be a variety of radar vectoring which, is permitted above 3000ft during the day, or 4000ft at night – this is not a result of the modified SID design and is therefore not considered as part of this PIR.

35. To undertake our assessment we compared traffic patterns of the altitude band up to 4000ft amsl, track density plots and finally the altitude bands from 4-5000ft, 5-6000ft and 6-7000ft amsl. Our detailed analysis is at Annex A.

36. With the use of Google Earth and relating to the locations of the main core density plots on the track diagrams provided by GAL, we were able to determine that the main core of departures had moved approximately 250m

back towards the north and towards the northern extremity of Dormansland. As a result, the core track is now over the 'Racecourse Road' as opposed to the populated area to the south of Racecourse Road.

37. With the re-positioning of the first waypoint (previously KKE02) to KKE04, this delayed the first turn; the effect and impact of this delayed turn means that the traffic pattern is now more aligned to the conventional SID as it crosses the A22, hence a better replication has been achieved on the initial departure track before reaching Dormansland.

38. In the vicinity of Dormansland, the modified RNAV-1 SID design has achieved a better replication of the conventional SID traffic pattern experienced before the change by reversing the displacement of the main core traffic density pattern by approximately 250m to the north. The departure traffic pattern to the east of Dormansland converges back to KKE10 producing the same pattern achieved by the original RNAV-1 SID design resulting in the main core density passing south of Penshurst. A displacement of this core density traffic pattern to the south of Penshurst of approximately 500m is evident when compared with the conventional SID traffic pattern, although this was already evident with the 2013 RNAV-1 SID and remains largely unchanged with the modification.

Environmental Assessment

39. This environmental assessment reviews whether the minor SID modification in March 2017 has delivered the anticipated environmental impacts of the recommendations as set out in the CAA's 2015 Post Implementation Review of the Implementation of RNAV-1 Standard Instrument Departures at Gatwick Airport (CAP1346) for Gatwick Airport's Route 5 SID. The 2015 PIR concluded that a better replication of the nominal track of the original 2013 pre-change conventional SID could be achieved.

40. With regards to the environmental impacts of the initial 2014 Route 5 RNAV-1 SID design, the 2015 PIR concluded that "…no changes are required to the RNAV-1 SIDs from the perspective of having regard to the noise impact of the change, our overall duties and in particular our environmental duty…" Therefore, the CAA did not require any changes to the 2014 RNAV-1 SID design from the perspective of the environmental impact.

41. As the majority of the changes to the SID design are outside the area of the 57 dBA Leq noise contours it was concluded that the minor SID modification would not materially affect the area of the 57 dBA Leq noise contours. Therefore, for this PIR the CAA did not request that Gatwick Airport undertake further noise assessment. This PIR noise assessment is therefore informed by the following pre-existing Leq noise contours, for:

- The situation immediately prior to the change in 2013 [reference 4];
- The situation immediately following the initial RNAV-1 SID (the 2014 noise contours) [reference 5]; and
- The situation immediately following implementation of the minor modification of the RNAV-1 SID in 2017 [reference 7].

Noise Impact of the 2014 RNAV-1 SID design

42. The scope of the original 2014 airspace change proposal to replicate the extant conventional Standard Instrument Departures (SIDs) from Gatwick Airport included nine SIDs. According to the changes anticipated as part of the original ACP there was likely to be a minor change to the area encompassed by the 57dBA Leq contour. These changes in the 57 dBA Leq contour were thought likely to occur as a result of the positioning of the Runway 26 LAM track (Route 4) and are in evidence in the contours which were further to the west of Gatwick in 2014; this change in noise was an anticipated as result part of the airspace change associated with the shift in Route 4 and not associated with Route 5.

43. Examination of the 2014 dBA Leq Contours in Reference 5 (for the first full year following the original change), shows that a reduction in population overflown of 1,300 below 4000ft amsl, and 900 below 7,000ft was achieved.

Noise Impacts of the 2017 RNAV-1 SID minor modification

44. The ‘Noise Exposure Contours for Gatwick Airport 2017’ (Reference 7) illustrates a comparison of Leq noise contours and associated population counts between 2016 and 2017 data. It is therefore possible to consider the Leq noise contours and population counts for 2016 before the minor SID modification and compare these noise outputs with 2017 following the minor SID modification. However, in addition to any changes in airspace design, it should be borne in mind that traffic volumes, meteorological conditions and aircraft fleet mix also have an influence on noise contour outputs in addition

to any changes in airspace design or fluctuations in traffic when considering the noise contour data.

45. In page 22, Table 11 of Reference 7 the population exposed by the 57dBA contour in 2016 was estimated to be 4,150 and this reduced by 100 people to 4,050 for 2017. However, this population information does not solely reflect the population affected by those communities under the Route 5 flight path and therefore is an overall estimate for areas and communities under all arriving and departing aircraft.

46. Reference 7 Figure B17, shows that the 2017 57 dBA contour (in black) is slightly reduced in size compared with the 2016 57 dBA contour (in red). This reduction in contour size is evident just south of Lingfield railway station. Examination of Reference 7 Figure B12 indicates that it is likely that up to 54 people are no longer exposed by the area of the 57 dBA contour. If the 54dBA noise contour is considered, Reference 7 Figure B17, illustrate there is likely to be a reduction in the population exposed to 54dBA Leq from 11,600 in 2016 to 11,300 in 2017, although this reduction may not be solely attributable to Route 5.

47. We can therefore conclude that this minor SID modification has not had an adverse impact on population counts, as a minor reduction in communities affected by noise above the 54 dBA Leq noise is indicated.

Noise impact in Dormansland

48. In the absence of any changes to traffic volume, and the distribution of that traffic on the available routes, those properties lying underneath the previous conventional SID traffic pattern in the vicinity of Dormansland, are likely to experience a return to the noise levels and frequency of overflight previously experienced. This is also likely to be the case for properties that lie under the departure traffic pattern to the east of Dormansland, where the traffic converges back to waypoint KKE10 producing the same pattern achieved by the original RNAV-1 SID design.

Noise impact in Penshurst

49. Given that Penshurst is outside the area of the 57 dBA Leq noise contour (which only extends as far as Lingfield), and the main concentrated traffic pattern has not moved any closer to Penshurst, it is reasonable to conclude that Penshurst would not be adversely affected by the minor modification.

Summary of Aircraft Track Plots

50. Examination of the 'track dispersion plots up to 4000ft' and track density diagrams supplied by GAL in 2013 indicates that there were two clear concentrations of tracks, one to the south of the extended runway centreline to the east of Markbeech, and one to the north of the extended runway centreline to the east of Penshurst. The track dispersion and density plots show that majority of the traffic has climbed out of the 4000ft level band by the time it has crossed the B2028.

51. Looking at the RNAV-1 density plots for 2014, only a single concentration of tracks is evident ("core track"). When passing Markbeech, the remaining traffic pattern is dispersed to the north and east of this core track, with tracks evenly dispersed from Lingfield to Penshurst. This degree of concentration and dispersal is also evident in the 2017 post modification track density diagrams, although initially, after passing the A22 / KKE04, two core tracks are evident with this dispersal appearing to diminish by the point at which the aircraft pass over Tandridge Lane.

52. It is considered that the 2017 modified SID traffic pattern is now better aligned with the conventional SID as it crosses the A22, hence a better replication of the conventional SID has been achieved on the initial departure track before reaching Dormansland. Therefore while a core track is evident at positions east of Crowhurst Road, to the north east of Dormansland; the majority of the dispersal that is evident in track dispersion plots from 2017 occurs at a more easterly point from this location, with the tracks remaining largely concentrated around the SID centreline up until this point.

53. In the vicinity of Dormansland, the modified RNAV-1 SID design has achieved a better replication of the conventional SID traffic pattern experienced before the change, by reversing the displacement of the main core traffic density pattern by approximately 250m to the north.

54. The 2017 track density plot shows an increased degree of concentration compared with the traffic pattern before the change in 2013. This concentration is similar to the original RNAV-1 design traffic pattern (before the modification) about the nominal track as departures pass Markbeech, and directly overhead waypoint KKE04, with the majority of the dispersal of tracks diminishing by the time aircraft cross the B2028, and all aircraft shown to be climbing to above 4000ft prior to waypoint KKE10

55. Following implementation of the 2017 minor SID modification, the traffic pattern as far as Dormansland, is aligned closer to the conventional 2013 SID traffic pattern. The shift of the core pattern as departures pass Dormansland has been reversed, with the result that there is less direct overflight of Dormansland compared with the situation with the initial RNAV-1 SID design. Therefore, the northern extremity of Dormansland could be expected to see a return to a traffic pattern and noise experience similar to that before the change in 2013 as the flight path returns to a more central position within the NPR monitoring swathe.

Conclusions

56. As a result of the environmental analysis of the PIR data received and the additional consideration of the annual Noise Exposure Contours for Gatwick, we conclude that the impacts are as the CAA expected.

CAA review of submissions provided by Third Parties

57. Various correspondence items were received from interested stakeholders to both GAL and the CAA. This section reviews the themes of that feedback.

Community stakeholder feedback since 30 March 2017

58. As part of the data collection process, the change sponsor was required to accept, process and collate noise enquiries/complaints relating to the implementation of this modified SID. This data was subsequently analysed by the change sponsor and submitted to the CAA in support of this Review. We also reviewed correspondence provided to the CAA.

59. The change sponsor provided stakeholder observation data covering the period from 30th March until 30th September 2017 – a 6-month period following the implementation of the amended Route 5 RNAV-1 SID. During this time, the sponsor received a total of 39 enquires/complaints from 9 different postcode locations. Within their PIR submission, the change sponsor specified postcode locations associated with 10 individual correspondents.

60. Focussing on the geographic location, the CAA notes that the highest number of enquiries/complaints came from postcodes in the Penshurst, Speldhurst, Lingfield and Cowden areas; a total of 21 enquiries were generated by one TN11 8 postcode (Penshurst) whilst 12 were generated by

TN8 7, TN3 0 and RH7 6 postcodes. A full breakdown of complaints by the postcode is provided in the Table 1 below:

Table 1

Location	Complaints
Penshurst	21
Speldhurst	5
Lingfield	5
Cowden	3
Tunbridge Wells	2
Alfold	1
Dormansland	1
Crawley	1

61. Most enquiries/complaints concerned specific aircraft movements, with the complainants highlighting that the associated noise impact was too loud. The change sponsor also received enquiries/complaints from areas being overflown by both the easterly departure route (Route 5) and westerly arrival route.

62. In addition to the feedback noted and considered above, the CAA has analysed the enquiries/complaints which it received directly from stakeholders following the implementation of the amended departure route. The analysis focussed on enquiries/complaints addressed to the CAA's Chair and Chief Executive Officer as well as those submitted via the 'Use of UK Airspace Report' form (FCS1521).

63. From the date of implementation (30th March 2017) up to the start of this correspondence analysis, the CAA received a total of 10 enquiries/complaints from 4 individuals concerning the implementation of this airspace change proposal. Six enquiries/complaints were addressed to the CAA's Chair and Chief Executive Officer and received from the same individual/or on their behalf via an MP, whilst 4 were submitted via the Airspace Use Report form (FCS1521).

64. We have used postcode/location data to plot the enquiries/complaints to identify specific areas where complainants reside. Most number of enquiries/complaints came from the same postcode in the Penshurst area,

whilst 2 enquiries/complaints came from Cowden and another 2 from Copthorne, Crawley.

65. To summarise, we have analysed the enquiries/complaints received by the change sponsor and the CAA as part of this Review. As a result of our analysis, we have concluded that the correspondence received is consistent with the traffic patterns we expected and observed when carrying out our aircraft track analysis and do not give rise to any unforeseen impacts of the proposal.

Community stakeholder feedback from the 28-day window review period

66. This PIR has been conducted using CAP 725 metrics but is following the process outlined in Stage 7 of CAP1616. The notable difference is the requirement to publish the change sponsors data submission and open an associated 28-day feedback window to gather stakeholder views.

67. During the 28-day feedback window, any stakeholder could provide any feedback for the CAA to consider as part of this review about whether the impacts of the change are those expected. This feedback was submitted to the CAA via airspace.policy@caa.co.uk

68. The change sponsor's data submission was published on the CAA's corporate website on 12 February 2021 along with the associated 28-day feedback window, which closed on Friday 19 March 2021.

69. A total of 2 responses were received – one response from an individual and one response on behalf of Dormansland Parish Council.

70. The main points raised in the feedback received, along with the CAA's response where appropriate, are outlined below:

- Noise & Overflight impact. New Route 5 SID has increased the noise footprint considerably over new area encompassing Dormansland, where there was never any overflying before.

  CAA Comment: The points raised from this specific piece of feedback have been considered and addressed throughout this report, specifically within paragraph 10 (Environmental Conclusions) and within the Environmental Assessment section, refer to paragraphs 48,

52-53 and 55 for conclusions around exposure to noise around Dormansland.

- Interaction with Westerly Arrivals. One of the concerns was that schools that are already overflown by Route 5 will also suffer from arriving aircraft and the resultant noise and pollution when on westerly operations. One of the schools is special needs and residential with 24-hour care school.

  In contrast, there was also a suggestion for aircraft to remain on the runway heading and within the same area which is already affected by westerly arrivals as opposed to turning a few degrees to the right.

  CAA Comment: Gatwick Airport Limited has commenced an airspace change proposal following CAP 1616 process (airspace change reference ACP-2018-60, to redesign all departure and arrival routes as part of FASI-South airspace modernisation programme. ACP-2018-60 will seek to limit and reduce the environmental impacts on local communities, including in the vicinity of Route 5 and westerly arrivals. It is also noted that Route 5 and 26L/R arrivals cannot operate simultaneously.

- Route 5 Concentration. One of the stakeholders said that concentration of aircraft on Route 5 is in contravention of government policy and that there should be 3 or 4 routes within the NPR of Route 5, as that would create a much better and fairer spread of aircraft during easterly operations and more akin to how aircraft flew previously.

  CAA Comment: Gatwick Airport Limited has commenced an airspace change proposal following CAP 1616 process (airspace change reference ACP-2018-60) to redesign departure and arrival routes as part of FASI-South airspace modernisation programme. One of the Design Principles of ACP-2018-60 considers different design options including multiple routes.

  Impacted stakeholders are encouraged to participate in the engagement opportunities on that developing proposal, details of which can be found on the airspace change portal airspacechange.caa.co.uk

- Consultation. One of the respondents stated that there has never been a proper consultation on the changes to Route 5 and these have been imposed on the stakeholder.

CAA Comment: The consultation assessment formed part of the CAA's decision on this ACP made in August 2013.

Conclusion

Operational conclusions

71. The CAA is satisfied that the implementation of the proposal has not affected the safety of the operation provided at London Gatwick Airport and allied surrounding airspace within which the SIDs are located and which was already and previously tolerably safe. As no operational issues were raised by aircraft operators or ATC, we are satisfied that the design was fit for purpose and no further modification is required.

Environmental conclusions

72. As a result of the environmental analysis of the PIR data received, we conclude that the anticipated impacts of the modification are as the CAA expected.

Stakeholder feedback conclusions

73. We have analysed the enquiries/complaints received by the change sponsor and the CAA, as well as the responses received during the 28-day feedback window as part of this Review. As a result of our analysis, we have concluded that the correspondence received is consistent with the anticipated impacts of this airspace change proposal.

Overall conclusion and confirmation of London Gatwick Runway 08 Route 5 Modified SIDs

74. Following the implementation and operation of the modified RNAV-1 SIDs and a review of the PIR data by the CAA, we have concluded that the impacts are as expected.

75. The CAA's airspace change process in respect of the GAL airspace change request dated 29 August 2014 relating to Route 5 has now been confirmed and concluded.

Note on plain language

76. The CAA has attempted to write this report as clearly as possible. Our approach has been to include all the relevant technical material but also to provide a summary and of the conclusions the CAA has reached in reliance on it in as understandable a way as possible. Nevertheless, when summarising a technical subject there is always a risk that explaining it in more accessible terms can alter the meaning. For that reason, the definitive version of our assessment and conclusions are in the attached technical reports.

Annexes

Annex A. Gatwick Route 5 Modified RNAV-1 SID Track Analysis.