

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

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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/lqw_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-1² 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 routing 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: