

# Modifications to Gatwick Airport departure Route 4

April 2017

If and when someone wants to make a change to the design of the UK's airspace - because they want to use it more efficiently or to enable the use of new technology - it is their responsibility to establish the pros and cons of that change both for airspace users (airlines or light aircraft users) and for the people on the ground. The Government sets the policy framework for how airspace should be used and the CAA is responsible for deciding whether or not a change to that airspace design can go ahead.

In 2013, Gatwick Airport sought our approval to implement changes to all nine of their departure routes. These changes meant a move away from old ground-based navigational infrastructure, instead using the improved capabilities associated with satellite-based systems. This enables departing aircraft to follow more precise flight paths and ground-based systems across the UK can be eventually switched off. Our approval was given in August 2013 after a consultation by the airport.

As part of the airspace change process, around one year after they enter into effect, the CAA conducts a review to establish whether the impacts and benefits of the change have been as anticipated. In the case of Gatwick's departure route changes, the review included a comprehensive study of flight paths flown and assessment of the significant amount of feedback we received from the general public, particularly over noise concerns. On the basis of this 2015 review, we then required Gatwick to undertake additional work.

## What is Route 4?

Route 4 is one of nine departure routes at Gatwick and involves a take-off towards the west, an immediate 180 degree wrap-around turn to the north and east, and finally an eastbound straight ahead section.

## Modified Route 4

Our report contained a number of requirements for Gatwick Airport to modify some routes to achieve a better replication of the associated original routes; Route 4 was one of those routes and it was subsequently modified. It now replicates the corrected Route 4 conventional SID.

We agreed that the modified Route 4 should be flown from 26 May 2016 and monitored for a six month period in order to gauge if the modified design was achieving our requirements. We advised Gatwick Airport that they would need to collate and submit data to us on Route 4 during that period; this process included the airport collating feedback received from members of the public and local communities.

Having conducted a review of the six month trial of the modified Route 4, we have decided that the RNAV SID designs currently published in the UK AIP should be made permanent.

## Timeline

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<b>August 2013</b>	CAA approved implementation of RNAV 1 SIDs at Gatwick Airport
<b>November 2013</b>	RNAV 1 SID procedures permanently introduced at Gatwick Airport
<b>November 2014</b>	CAA commences post implementation review of new RNAV 1 SIDs
<b>September 2015</b>	CAA publishes summary conclusions of review
<b>October 2015</b>	CAA provides Gatwick Airport with technical recommendations to assist in designing modification of Route 4
<b>November 2015</b>	CAA publishes detailed report on conclusions of review
<b>March 2016</b>	Gatwick publishes modified RNAV 1 Route 4 SID design
<b>May 2016</b>	CAA publishes agreement to modified design and requires data collection for six months. Modified Route 4 first flown.
<b>March 2017</b>	Gatwick Airport submitted corrected design for Route 4 conventional SIDs to CAA
<b>April 2017</b>	CAA publishes conclusions in respect of modified RNAV Route 4 SID design

### What analysis did the CAA undertake?

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The CAA analysed all the information provided by Gatwick Airport, including month-by-month track performance data correlated with weather data, specific track keeping performance by major airlines operating different aircraft types, and a review of complaint and feedback data submitted to Gatwick Airport by local communities.

Having reviewed six months of performance, we found that the majority of airlines maintained good track keeping adherence. South westerly and southerly winds do increase the likelihood of deviation from the track, and Gatwick Airport is engaging with operators to minimise this occurrence and on other track keeping deviations.

As expected, the largest volume of correspondence came from the most populated locations which have experienced an increase in noise levels since the implementation of the modified Route 4. There

was relatively little correspondence from the areas which experienced a decrease in noise impacts. All of the locations included in the summary of complaint data were outside the noise contour for significant aircraft noise as defined in [CAP 1346](#), the CAA's post implementation review of the new departure routes at Gatwick Airport, although it is clear that these communities may experience varying degrees of annoyance.

The CAA also considered the potential for confusion around the vectoring (or guiding by radio communication) of flights over the Horley area - the location of a number of complainants to Gatwick Airport during the modification monitoring period – and the provision in Gatwick's noise abatement procedures which state that aircraft shall avoid flying directly over the congested areas of Crawley and Horley. Gatwick Airport is working closely with NATS at Swanwick, which is responsible for vectoring, and as a result the number of flights over the Horley area has declined since this issue was first identified.

## What undertakings have been given by Gatwick Airport?

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Gatwick Airport has committed to a number of undertakings (the terms of which are published in full in our report) and will provide regular updates on these on their website. In summary:

1. Gatwick Airport will provide information to communities on the corrected Route 4 conventional SID and will explain why it has to be corrected and how it will align with the existing NPR
2. With the objective of providing meaningful respite, Gatwick Airport will consider options for a second RNAV 1 SID and will engage with local communities while it investigates this option
3. Gatwick Airport will consult with NATS and consider the potential for alternating or switching a proportion of Route 4 departures, in order to obtain some respite for overflown communities
4. Gatwick Airport will consult with Heathrow and NATS to investigate the withdrawal of the published Heathrow to Gatwick positioning flight SID
5. Gatwick Airport will work with DfT to investigate the possibility of clarifying the notes that apply to Gatwick's Noise Abatement Procedures section of the AIP to resolve potential for confusion, the 4000ft vectoring altitude decision, and the air traffic control procedures regarding flights directly over Horley
6. Gatwick will also use reasonable endeavours to ensure operators comply with noise abatement procedures and, as a priority, will require that:
  - the relevant operators ensure that their standard operating procedures are designed to maintain track conformance, within the NPR monitoring swathe and amend the AIP to reflect this;
  - where flights extend outside the NPR monitoring swathe, particularly on days experiencing strong south to south-westerly winds, GAL will require the relevant operators to ensure that their SOPs are designed to maintain track conformance, within the NPR monitoring swathe.
7. And, Gatwick will provide information on south to south-westerly winds, determining the threshold for the ATIS information service with their Flight Operations and Safety Committee
8. To publish progress on their website

## Potential considerations to reduce the noise impact on local communities

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The CAA recognises that some local residents may be overflown more frequently as a result of the modified Route 4. As part of our analysis, we considered whether there could be further steps that Gatwick Airport could take in order to mitigate these additional noise impacts. These possible areas of further investigation are set out in [Annex N](#) of this report and, amongst other things, include consideration of whether some air traffic can be switched from Route 4 to other SIDs, the possibility of requiring an aircraft to follow a steeper climb profile so that the aircraft can fly at a higher altitude during the departure phase of the SID, and whether a second RNAV 1 SID operated in conjunction with the modified RNAV 1 SID would offer meaningful respite.

## Can I still register a noise complaint?

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Yes, noise complaints can still be registered at Gatwick Airport's [dedicated noise website](#).

## Where can I find more information on the outcome?

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CAP 1531, the CAA's [Conclusions in respect of modification requirements relating to Route 4 RNAV 1 SIDs and correction requirements relating to Route 4 Conventional SIDs](#) is available on the CAA's website alongside all the supporting documentation.

### Definitions

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#### AIP - Aeronautical Information Publication

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This reference document contains information on facilities, services, rules, regulations and restrictions in UK airspace.

#### NPR - Noise preferential route

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Aircraft taking off from some airports are required to follow specific flight paths called Noise Preferential Routes (NPRs), unless directed otherwise by air traffic control.

#### RNAV - aRea NAVigation

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Uses GPS to guide the pilot and aircraft, including in low visibility conditions.

#### SID - Standard Instrument Departure

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Published flight procedures followed by aircraft immediately after take-off from an airport.