

Reduced Night Noise Trial

Industry Workshop Summary Paper

28 February 2018

Date: 3 April 2018

Attendees: Helios, Gatwick, NMB Chairman, ANS, EasyJet, Virgin Atlantic, Norwegian, CAA, NATS, Department for Transport, Trax International.

Introduction

A night time trial of RNAV to reduce night noise has been proposed at the NMB and is being planned (night trial period: 01:30-05:00 local time). A workshop with industry representatives was held on 28 February 2018 to investigate technical constraints and considerations of the Reduced Night Noise (RNN) trial. This paper summarises the outputs from the industry workshop, and identifies, where applicable, any conclusions or recommendations made.

An RNN Trial community workshop will be held on 14 March 2018 and this summary is provided as an input to that workshop.

Industry feedback

The following section summarises the feedback received from industry experts on a number of key topics during the workshop.

Topic	Comments and Conclusions
Traffic data analysis	<p>Comments:</p> <ul style="list-style-type: none"> • Traffic flow varies from year to year as a result of non-routine disruption such as ATC strikes or natural events e.g. ash clouds caused by volcanic eruptions. This must be taken into consideration for the proposed RNN trial. • Regarding the vertical profiles, it was observed that pilots unfamiliar with Gatwick will always approach cautiously (ie low) unless RNAV is available.
Trial Routes	<p>Comments:</p> <ul style="list-style-type: none"> • The location of the routes was discussed at length and there was support for the principle of putting the RNAV routes in the current arrival swathe, to allow the capture of baseline data as well as trial data. • Two RNAV routes to each runway end could be a manageable number of routes for a trial (ie 4 in total). This could allow a south-west and south-east approach to each runway. • The more routes there are, the fewer the number of noise monitors available to collect data for each one. For planning purposes, four routes was considered a reasonable compromise. • Timescales to implement the trial are tight and there is already a risk. The time required for the CAA approval stage needs to be confirmed. • The routes will need to reflect the constraints of RNAV design. Some easterly arrivals appear to include tight turns that may not be ICAO PANS-OPS compliant. These turns might not be replicable in the RNAV routes. • The trial is not required to validate the feasibility of RNAV since it is already flown at other airports. Instead it is to gather data on the benefits of RNAV to reduce noise at Gatwick and could inform future airspace design. It was described as a trial of concepts, not route design. • The RNAV routes will inevitably introduce some concentration. However, although there would be more aircraft in the concentrated areas, there may still be fewer L_{max} 60dB events in these areas as there will be fewer ‘outlier’ (noisier) aircraft.

	<ul style="list-style-type: none"> In parallel to the trial, an activity could start to investigate the optimum location of future RNAV routes in LAMP. This could be proposed to the NMB. <p>The workshop concluded:</p> <ol style="list-style-type: none"> Four RNAV routes would be a manageable number for the trial; two to runway 08 and two to runway 26. There was discussion on the maximum number of RNAV routes possible in future airspace design, but it is not yet possible to resolve this question. ICAO RNAV design criteria could impact on one or more of the trial routes. The timescales for the CAA trial approval process are still to be confirmed. A parallel activity on the identification of the optimum future locations of RNAV routes could be proposed to NMB.
<p>Noise monitors</p>	<p>Comments:</p> <ul style="list-style-type: none"> The location of noise monitors was discussed and the strategy for siting them. The number of noise monitors that will be available for the trial is not yet known. Gatwick is planning additional procurement to increase availability. The earliest that noise monitors could be sited is expected to be summer 2018. This would allow max. 5 months of monitoring before the proposed trial starts. A strategy to locate monitors across the swathe was proposed, allowing a good ‘before’ and ‘after’ comparison. Noise monitoring of the entire swathe is not logistically feasible so a sampling method will be used, and some noise modelling may be required to supplement the results. Locating noise monitors can be challenging as consideration must be given to the distance from the RNAV route and other noise sources such as busy roads, etc. Location is also reliant on community help to find good sites. Noise monitors should not be located close to the final (ILS) approach as there is little noise benefit in this area. <p>The workshop concluded:</p> <ol style="list-style-type: none"> Discussions should continue offline once more is known on the availability of noise monitors. Community support for noise monitor siting will be requested at the CNG workshop.
<p>Airspace constraints</p>	<p>Comments:</p> <ul style="list-style-type: none"> There was a concern related to the airspace constraints to the West of the airport (Easterly approaches). The RNAV procedure must be designed according to the existing airspace dimensions, and there is a chance these could limit the achievable noise benefits for easterly arrivals. Traffic analysis indicates that airspace constraints do not affect existing descent profiles to runway 08 during the trial period, however this needs to be investigated further. There are a number of ways to design the RNAV routes and more discussion is needed to determine which would be most suitable. Therefore, the issue of airspace constraints could not be resolved in the workshop and an additional discussion is required. One of the pilots commented that, from their perspective, it would be undesirable to have RNAV approaches only at one runway end. <p>The workshop concluded:</p> <ol style="list-style-type: none"> An additional meeting should be held amongst technical experts to resolve this issue. RNAV routes should preferably be designed for both runway ends.
<p>RNAV vertical profile</p>	<p>Comments:</p> <ul style="list-style-type: none"> There was a discussion about the starting altitude of the RNAV procedures. Whilst it may be possible to start from a higher altitude in some directions, it would complicate the operations considerably.

	<ul style="list-style-type: none"> • “Ideal” RNAV procedures from Top of Descent would be impractical due to additional airspace constraints at higher altitudes. • It was therefore agreed that RNAV procedures should commence from 7,000ft where possible. • CAA ERCD are undertaking a study to define a Low Noise Arrivals Metric (NMB Activity 9), in parallel to the RNN trial. The design of the RNAV profiles should benefit from the early stages of this work in consultation with the CAA ERCD. <p>The workshop concluded:</p> <ol style="list-style-type: none"> 1. RNAV routes should start from 7,000ft where possible. 2. RNAV profiles should be designed in consultation with the CAA ERCD to benefit from NMB Activity 9.
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Next Steps

- Feedback received at the RNN Industry Workshop will support discussions at the RNN Community Workshop on 14 March.
- A Technical Workshop will be organised with industry representatives shortly after the Community Workshop, to agree the concept of operation and provide input to the IFP Design.
- Feedback from the RNN Industry, Community and Technical workshops will be used as input to the next NMB (NMB/10, 11th April), during which the NMB will discuss and agree the design principles for formal route design.
- At NMB/11 (27 June) the NMB will be invited to provide input to assist in the finalisation of any Go/No-Go decision.