



Reduced Night Noise Trial

RNN Data Report 5

Reporting Period: *19 April – 16 May 2024*

07 June 2024



LONDON GATWICK

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Executive Summary

The RNN trial commenced 11 January 2024. In the fifth reporting period (19 Apr – 16 May) there were 27 trial nights with 109 trial participants out of 260 arrivals in trial times (42% participation). The number of PBN flights has increased as movements increase through busier seasonal periods.

Of the trial flights the majority were within the trial thresholds. In total there were 3 noise outliers and 2 altitude outliers. Analysis and engagement with airlines continues, which will help to understand more about possible causes.

No safety concerns have been raised by pilots or ATCOs.

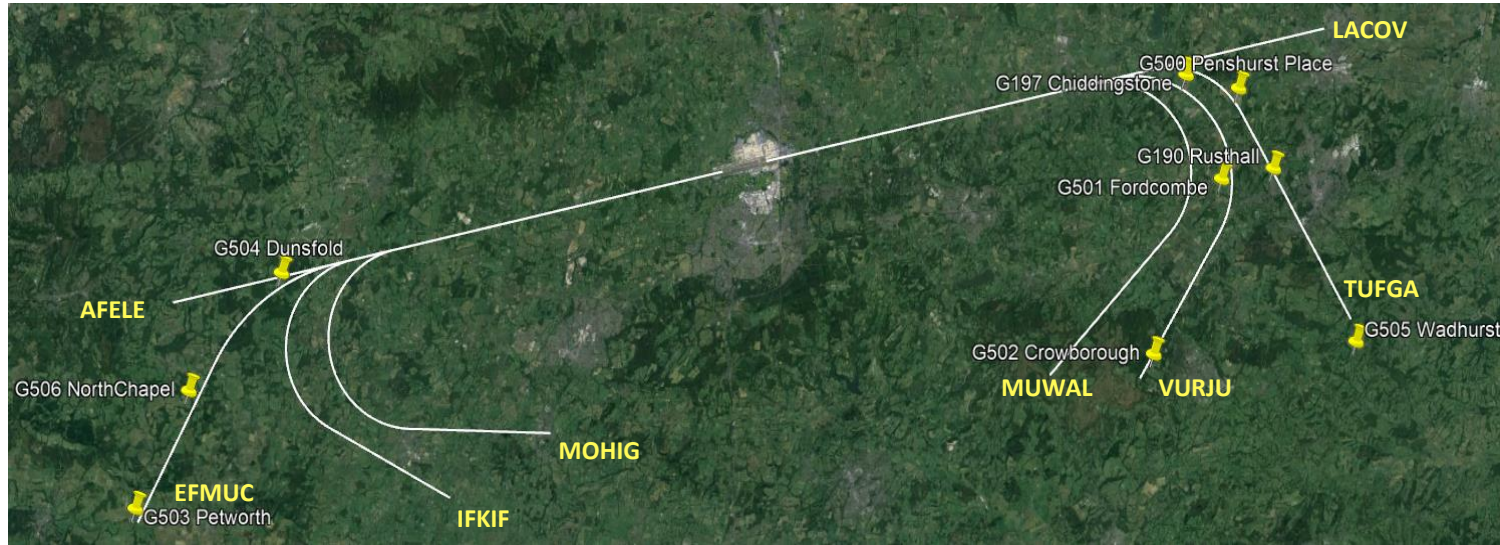
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Trial Stats

- The RNN trial commenced on **11 Jan 2024**, running between the hours 0130-0500. The data presented within this report includes 4 weeks of the trial (19 Apr – 16 May 2024).
- The trial procedure was available (Southern runway operations) on 28 nights, however, 1 night was a non-trial night, leaving 27 trial nights in total.
- Over the trial nights, it was reported that **109 flights** successfully participated in the trial, resulting in a 42% trial participation rate.
- There has been a gap in data identified for the NTK system, the cause is under investigation and if there is a possible resolution, this will be reflected in the final reporting.

Noise Monitor locations



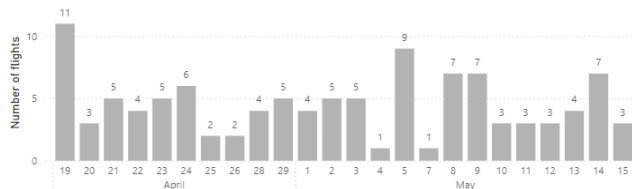
NMT distance to threshold
Wadhurst – 41 km
Rusthall - 32 km
Penshurst Place – 26 km
Crowborough – 40 km
Fordcombe – 31 km
Chiddingstone – 24 km
Petworth – 40 km
North Chapel – 33 km
Dunsfold – 25 km

- The noise monitor terminals (NMTs) were placed under the routes that were expected to be most used.
- In total, 9 NMTs, with a noise threshold level of 50dB, were located under 3 trial routes.
- Lmax adjustments have been made to aircraft overflying the NMTs within the overflight cone. These adjustments are dependent on the distance from monitor and can be up to 3dB.
- Only NMTs within the overflight cone for an aircraft participating in the trial are included in the analysis. Noise data picked up by NMTs outside of the overflight cone is discarded.
- Any unusual noise events are assessed on a case-by-case basis and are discarded if the source is found to be non-aviation. There was 1 outlier noise event discarded on this basis in this reporting period.
- In some cases, the noise and track keeping (NTK) system discards data if recordings contain sounds other than aircraft.

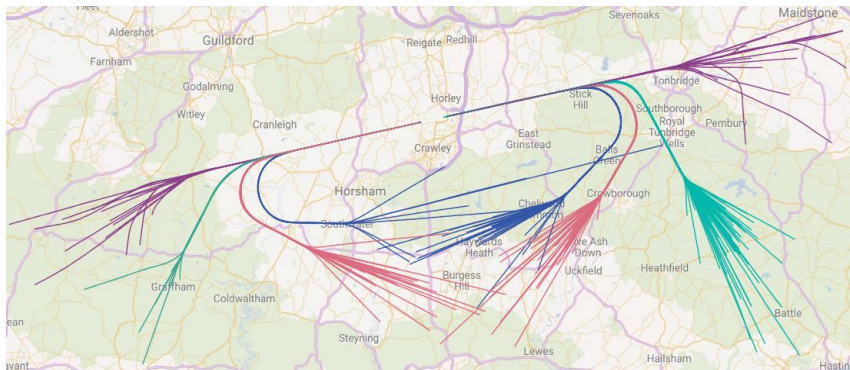
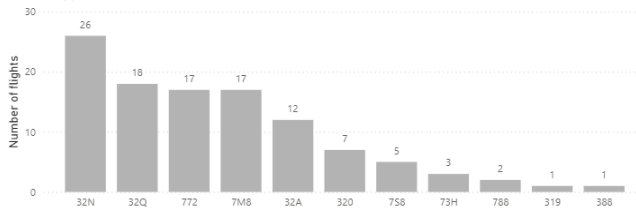
Data Analysis

Overview

Daily number of PBN flights



Aircraft types



Data definition

- Altitude is measured above aerodrome level (AAL)
- The noisiest 5 % of flights (based on baseline data) are above the noise outlier threshold
- The lowest 5 % of flights (based on baseline data) are below the altitude outlier threshold
- Threshold values are based on data in the equivalent baseline trial period (0130-0500)
- An outlier is a flight that exceeds either noise or altitude thresholds

- 109 flights participated in the trial.
- Total of 5 outliers (3 noise and 2 altitude outliers).
- There were 60 easterly arrivals and 49 westerly arrivals.
- Lateral track keeping of trial aircraft was good.
- 11 different aircraft types participated.
- NMTs are placed under TUFGA 1D, VURJU 1D and EFMUC 1A, therefore, there is noise data captured for 49 PBN arrivals.

	Westerly				Easterly			
Routes	LACOV 1D	MUWAL 1D	VURJU 1D	TUFGA 1D	AFELE 1A	EFMUC 1A	IFKIF 1A	MOHIG 1A
No. approaches	8	6	10	25	9	14	31	6
No. outliers	N/A	N/A	0	3	N/A	2	N/A	N/A

Data Analysis

TUFGA 1D – Noise Outliers

NMT noise events that exceed the outlier threshold

NMT name	Route	Operation Number*	Recorded Noise (dB)	Noise Threshold (dB)	Outlier Difference (dB)
Penshurst Place	TUFGA 1D	25387100	64.18	64.00	0.18
Penshurst Place	TUFGA 1D	25406166	64.23	64.00	0.23
Penshurst Place	TUFGA 1D	25439889	67.37	64.00	3.37
Wadhurst	TUFGA 1D	25439889	61.20	60.70	0.50

Observations

- There were 4 recorded noise events that exceeded NMT threshold values for 3 operation numbers on TUFGA 1D. One aircraft exceeded the noise threshold at two monitors. In total, **3 aircraft were noise outliers**.
- These aircraft flew above the altitude threshold.
- Outliers were recorded at 2 NMTs –Penshurst Place and Wadhurst.
- All other recorded noise events on TUFGA 1D for this reporting period were quieter than the trial night thresholds.

Data Analysis

EFMUC 1A – Altitude Outliers

NMT altitude events that exceed the outlier threshold

NMT	Route	Operation Number*	Recorded Altitude (ft)	Altitude Threshold (ft)	Outlier Difference (ft)
Petworth	EFMUC 1A	25484968	5902	5989	-87
Petworth	EFMUC 1A	25488671	5761	5989	-228

Observations

- There were 2 altitude events that recorded a lower altitude reading than outlier thresholds on EFMUC 1A. In total, 2 aircraft were altitude outliers.
- These aircraft did not exceed the noise threshold.
- The outliers were recorded at Petworth NMT.
- All other recorded altitudes were higher than the trial night thresholds.

Next steps

1. Continue engagement in relation to the trial.
2. Continue to record data and monitor trial progress.
3. Prepare the next trial progress report summarising data for the period 17 May – 13 June.