



Reduced Night Noise Trial

RNN Data Report 6

Reporting Period: *17 May – 13 June 2024*

05 July 2024



LONDON GATWICK

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Executive Summary

The RNN trial commenced 11 January 2024. In the sixth reporting period (17 May – 13 Jun) there were 23 trial nights with 144 trial participants out of 346 arrivals in trial times (42% participation). The number of PBN flights has increased as movements increase through busier seasonal periods.

Of the trial flights, 16 were 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.

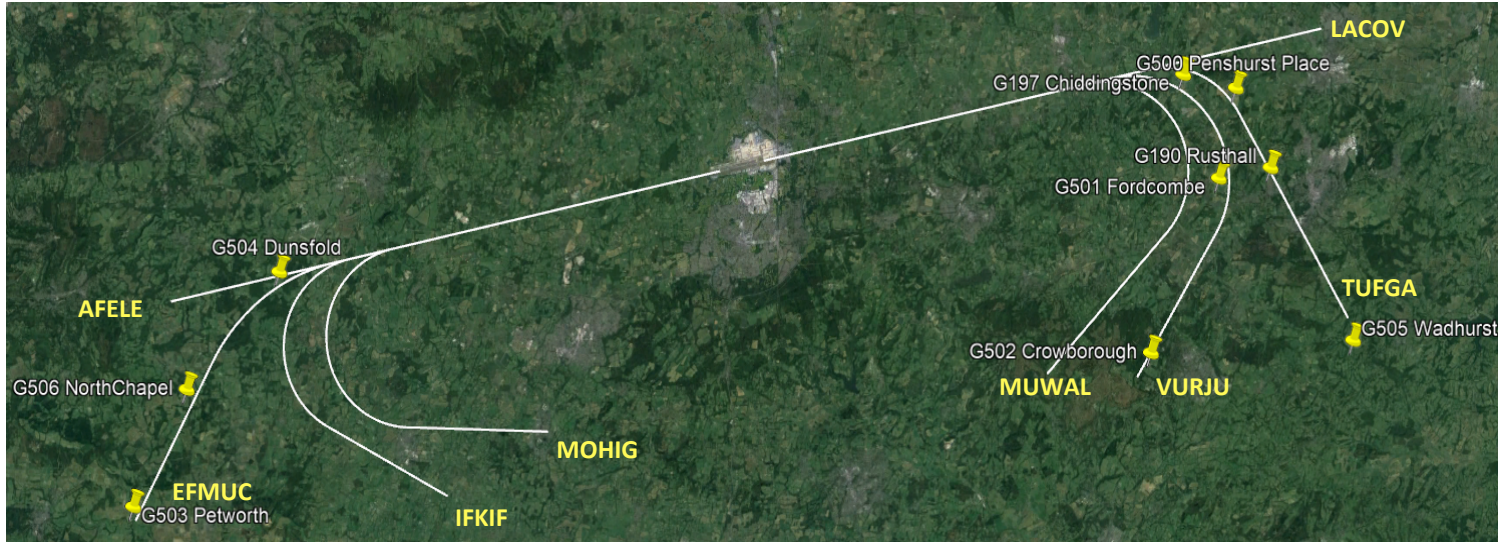
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Trial Stats

- 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 (17 May – 13 Jun 2024).
- The trial procedure was available (Southern runway operations) on 23 nights.
- Over the trial nights, it was reported that **144 flights** successfully participated in the trial, resulting in a 42% trial participation rate.
- For this period, 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



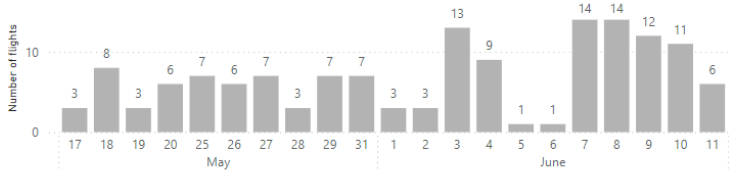
NMT distance to threshold
Wadhurst – 41 km
Rusthall - 32 km
Penshurst Place – 26 km
Crowborough – 40 km
Fordcombe – 31 km
Chiddingstone – 24 km
Petworth – 40 km
North Chapel – 33 km
Dunsfold – 25 km

- 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 were 3 outlier noise events 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.

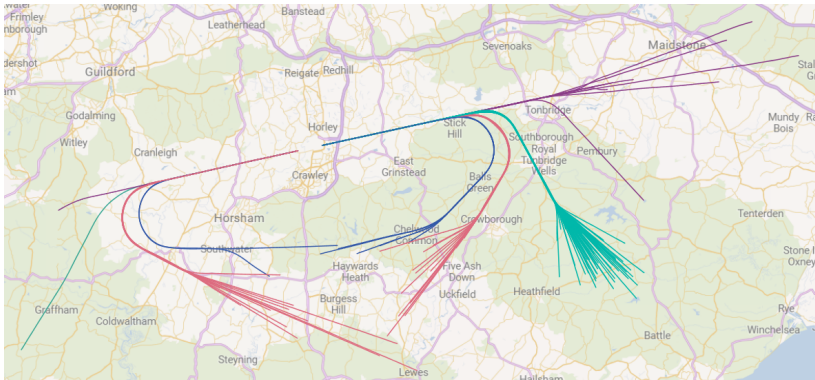
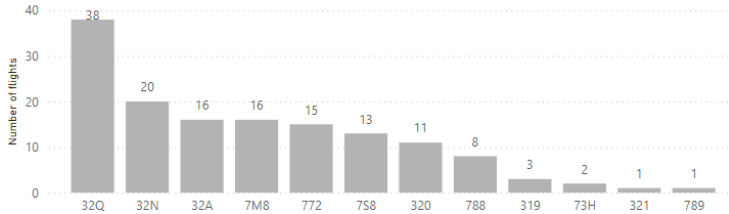
Data Analysis

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

- 144 flights participated in the trial.
- Total of 16 outliers (8 noise, 5 altitude, and 3 noise & altitude).
- There were 21 easterly arrivals and 123 westerly arrivals.
- Lateral track keeping of trial aircraft was good.
- 12 different aircraft types participated.
- NMTs are placed under TUFGA 1D, VURJU 1D and EFMUC 1A, therefore, there is noise data captured for 108 PBN arrivals.

Routes	Westerly				Easterly			
	LACOV 1D	MUWAL 1D	VURJU 1D	TUFGA 1D	AFELE 1A	EFMUC 1A	IFKIF 1A	MOHIG 1A
No. approaches	11	5	24	83	1	1	17	2
No. outliers	N/A	N/A	3	12	N/A	1	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	25538881	64.36	64.00	0.36
Wadhurst	TUFGA 1D	25538883	61.88	60.70	1.18
Rusthall	TUFGA 1D	25538904	65.19	63.40	1.79
Penshurst Place	TUFGA 1D	25546843	64.53	64.00	0.53
Penshurst Place	TUFGA 1D	25555309	64.44	64.00	0.44
Wadhurst	TUFGA 1D	25555309	61.43	60.70	0.73
Penshurst Place	TUFGA 1D	25555337	67.11	64.00	3.11
Wadhurst	TUFGA 1D	25555337	65.58	60.70	4.88
Penshurst Place	TUFGA 1D	25568593	66.96	64.00	2.96
Rusthall	TUFGA 1D	25586245	63.44	63.40	0.04

Observations

- There were 10 recorded noise events that exceeded NMT threshold values for 8 operation numbers on TUFGA 1D. 2 aircraft exceeded the noise threshold at two monitors.
- In total, **8 aircraft were noise outliers** (3 of these were both noise and altitude outliers).
- Outliers were recorded at 3 NMTs – Penshurst Place, Rusthall and Wadhurst.
- All other recorded noise events on TUFGA 1D for this reporting period were quieter than the trial night thresholds.

Data Analysis

TUFGA 1D – Altitude Outliers

NMT altitude events that exceed the outlier threshold

NMT	Route	Operation Number*	Recorded Altitude (ft)	Altitude Threshold (ft)	Outlier Difference (ft)
Penshurst Place	TUFGA 1D	25543087	3654	3657	-3
Penshurst Place	TUFGA 1D	25590749	3645	3657	-12
Penshurst Place	TUFGA 1D	25555309	3635	3657	-22
Penshurst Place	TUFGA 1D	25555337	3631	3657	-26
Penshurst Place	TUFGA 1D	25546879	3628	3657	-29
Penshurst Place	TUFGA 1D	25603687	3628	3657	-29
Penshurst Place	TUFGA 1D	25538881	3625	3657	-32

Observations

- There were 7 altitude events that recorded a lower altitude reading than outlier thresholds on TUFGA 1D. In total, **7 aircraft were altitude outliers** (3 of these were both noise and altitude outliers).
- The outliers were recorded at Penshurst Place NMT.
- All other recorded altitudes on TUFGA 1D for this reporting period were higher than the trial night thresholds.

Data Analysis

VURJU 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)
Chiddingstone	VURJU 1D	25546849	65.20	64.60	0.60
Fordcombe	VURJU 1D	25546852	68.10	64.60	3.50
Fordcombe	VURJU 1D	25573016	64.83	64.60	0.23

Observations

- There were 3 recorded noise events that exceeded NMT threshold values on VURJU 1D. In total, **3 aircraft were noise outliers**.
- These aircraft did not exceed any altitude thresholds.
- Outliers were recorded at 2 NMTs – Chiddingstone and Fordcombe.
- All other recorded noise events on VURJU 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	25509225	5941	5989	-48

Observations

- There was 1 altitude event that recorded a lower altitude reading than outlier thresholds on EFMUC 1A. In total, **1 aircraft was an altitude outlier.**
- This aircraft did not exceed any noise thresholds.
- The outlier was recorded at Petworth NMT.
- All other recorded altitudes on EFMUC 1A for this reporting period 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 final trial progress report summarising data for the period 14 June – 11 July.
4. Produce summary report of trial findings, learnings and next steps.
5. Arrange briefing to present final report.