

Noise Monitoring Report

July - December

2022

Table of Contents

Executive Summary	3
Introduction.....	5
General Statistics	6
Noise Monitoring Statistics	9
NMT 1: Bay Lane	18
NMT 2: St. Doolaghs	23
NMT 3: Bishopswood	28
NMT 4: Feltrim.....	33
NMT 5: Balcultry	38
NMT 6: Artane	43
NMT 20: Coast Road.....	48
Glossary	53
Report inquiries	54

Executive Summary

This noise monitoring report is drafted for the period July - December 2022. This report consists of three parts: introduction to this report, general statistics related to the operations at Dublin Airport, and noise monitoring statistics per noise terminal. This executive summary briefly lists numbers related to the noise performance of Dublin Airport, these can be found in Table 1 and Table 2. In Table 1 the number of events from noise monitoring terminals (NMTs) which are directly overflowed are listed. These events are correlated aircraft noise events, they are coupled with a specific arriving or departing aircraft overflying the NMT. Table 2 shows in summary the average measured noise levels for the second half of 2022 for all operational NMTs. As one may expect, NMTs frequently overflowed (NMTs 1, 2, and 20) measure higher noise levels which are attributed to aircraft, in comparison to the other NMTs.



Figure 1: Runway Layout Dublin Airport

NMT	Number of correlated aircraft noise events			
	Description	Arrivals	Departures	Total
1	Arrivals Runway 10R, Departures Runway 28L	6,565	19,989	26,554
2	Arrivals Runway 28L, Departures Runway 10R	29,782	8,550	38,332
5	Arrivals Runway 16, Departures Runway 34	504	4	508
6	Arrivals Runway 34, Departures Runway 16	23	291	314
20	Arrivals Runway 28L, Departures Runway 10R	23,718	6,281	29,999

Table 1: Correlated aircraft noise events

NMT	Daytime noise level, LAeq, 16 h[dB]		Nighttime noise level, LAeq, 8 h[dB]	
	Total	Aircraft	Total	Aircraft
1	62.3	61.3	58.4	57.2
2	61.6	60.7	58.1	57.0
3	60.7	54.2	54.9	43.0
4	56.0	44.3	51.7	38.5
5	75.5	57.3	77.4	52.1
6	57.9	40.6	55.0	35.7
20	63.9	58.9	59.0	54.7

Table 2: Average measured noise levels

Introduction

This half yearly, commissioned by Dublin Airport, presents a summary of the noise performance near Dublin Airport, for the period from July 1st to December 31st 2022.

To monitor aircraft noise levels and flight tracks near Dublin Airport, a Noise and Flight Track Monitoring System (NFTMS) is in place. This system, by Envirosuite, is composed of a feed from Air Traffic Control radar to capture the aircraft, and a series of Noise Monitoring Terminals (NMTs) which are installed in the area around the airport. In total, seven NMTs are in place:

- Bay Lane: (NMT 1: monitoring runway 28L departures and runway 10R arrivals)
- St. Doolaghs: (NMT 2: monitoring runway 10R departures and runway 28L arrivals)
- Bishopswood: (NMT 3: monitoring local area)
- Feltrim: (NMT 4: monitoring local area)
- Balcultry: (NMT 5: monitoring runway 34 departures and runway 16 arrivals)
- Artane: (NMT 6: monitoring runway 16 departures and runway 34 arrivals)
- Coast Road: (NMT 20: monitoring runway 10R departures and runway 28L arrivals)

This report presents the results of the measurements in the period from the start of July to the end of December 2022 for all NMT locations. The NMT locations are shown in Figure 2. General statistics of flight operations of Dublin Airport in the second half of 2022 are provided in the General Statistics section. Results specific to the measurements obtained at the various monitoring stations are presented in the Noise Monitoring Statistics section.



Figure 2: Noise Monitoring Terminal locations

General Statistics

Traffic

In the second half of 2022, Dublin Airport handled a total of 104,476 flights and 16,168,000 passengers. This is an increase of 50% in traffic and an increase of 123% in passenger numbers compared to the same period in 2021. Note that the number of movements includes both departures and arrivals. Figure 3, gives an hourly distribution of the movements for second half of 2022, compared to the hourly distribution of the same period in 2021.

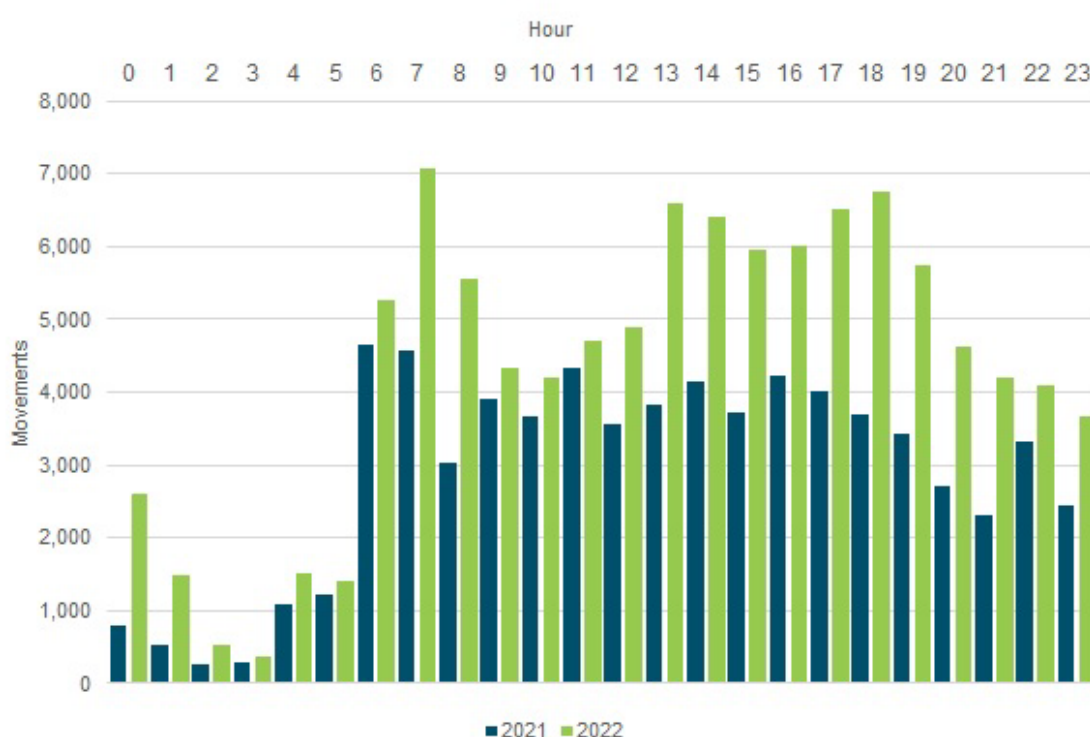


Figure 3: Hourly distribution of movements from July – December 2021 vs 2022

A wide variety of aircraft operate from Dublin Airport ranging from turboprop aircraft such as the ATR and Dash-8 to wide body jets like Boeing 777. However, majority of movements were performed using medium sized jets, with the Boeing 737 and Airbus A320 series aircraft accounting for more than 67% of the total. Figure 4 provides a more detailed overview of aircraft types. The aircraft types are divided into the categories: A/B and C/D. Table 3 on the next page list typical aircraft types belonging to these categories.

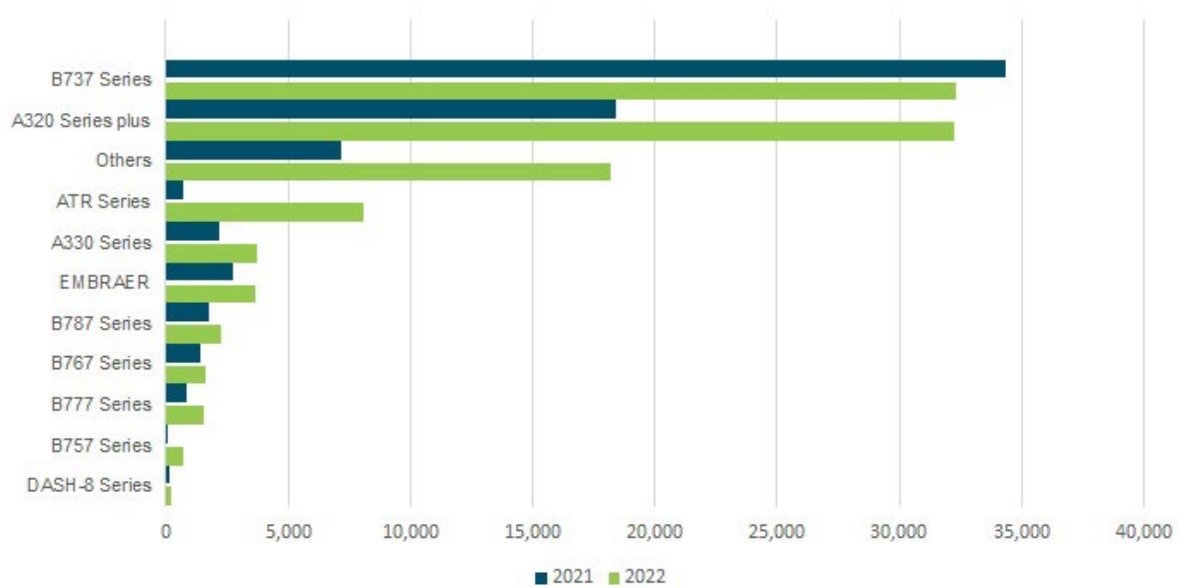


Figure 4: Aircraft type distribution July – December 2021 vs 2022

Aircraft category	Aircraft type:
A/B	Propellor aircraft
	Turboprop aircraft
	Whisper jets (aircraft like BAe-146 and Avro-Jet)
	Mostly small general aviation aircraft powered by piston engines
C/D	Airbus
	Boeing
	Bombardier Canadair Regional Jet (CRJ) - Series
	Business jets
	Embraer

Table 3: Aircraft type classification

Track Adherence

There are four environmental corridors at Dublin airport, one for every runway direction. For both the second half of 2021 and 2022, 98% of category C/D aircraft stayed within these corridors. Category A/B aircraft may operate outside these.

Runway use and weather

Figure 5 shows that Runway 28L, the runway for aircraft landing and departing in the westerly direction, handled 79% of all movements in the period July to December 2022 versus 89% in 2021. Runway 10R, the runway for aircraft landing and departing in the easterly direction, was 20% of the movements in the period July to December 2022 versus 10% in 2021. The remaining percentage of the movements in 2021 and 2022 took place on the cross runway 16/34.

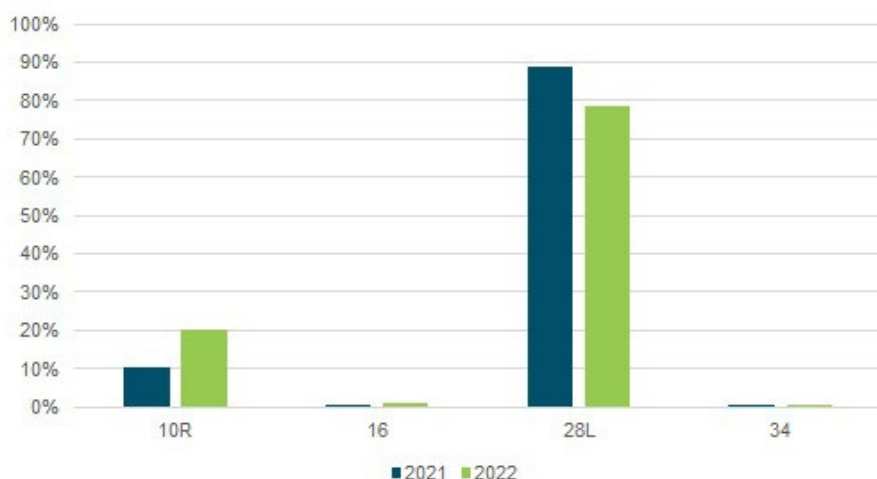


Figure 5: Runway usage, July – December 2021 vs 2022

Overflying height analysis

The measured sound levels depend on the height at which the NMT is overflown. Generally, higher overflying altitudes result in lower recorded sound levels. For NMT's, which are directly overflown, the average overflying height is shown in Table 4 below for the second half of 2021 and 2022. In which A and D stands for arrivals and departures respectively.

NMTs	Height (ft)			
	2021		2022	
	A	D	A	D
NMT1	680	2,340	670	2,280
NMT2	850	2,530	850	2,410
NMT3	740	2,340	760	2,270
NMT4	970	2,830	1,000	2,710
NMT5	870	4,730	860	3,630
NMT6	900	3,270	1,050	2,660
NMT20	1,500	3,400	1,500	3,240

Table 4: Average overflight height

Busiest day flight tracks

The images below are screenshots of tracks from ANOMS NFTMS system. The images show arrival (red) and departure (green) tracks for the busiest day in each month of the second half split into traffic flowing easterly runway 10L/10R and westerly runway 28L/28R.

July 2022 Easterly operations

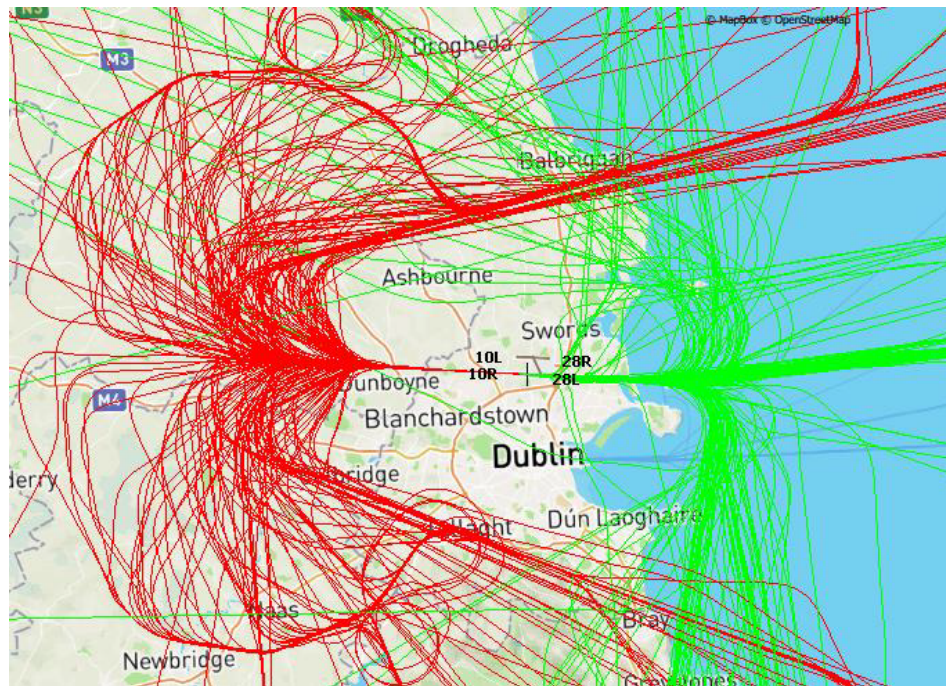


Figure 6: 441 Easterly operations on 27th July 2022

July 2022 Westerly operations

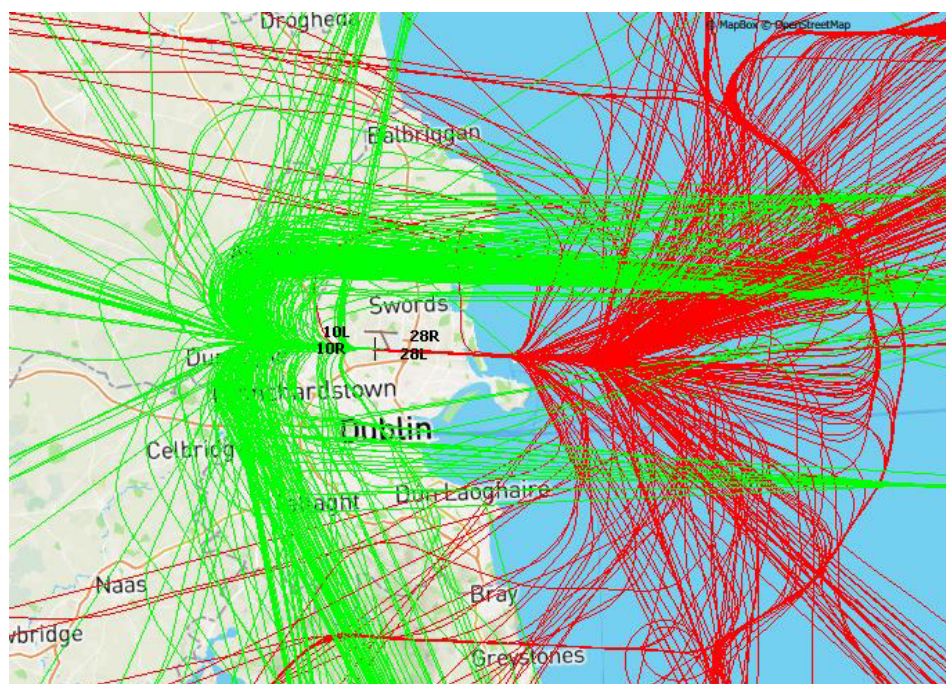


Figure 7: 706 Westerly operation on 1st July 2022

August 2022 Easterly operations

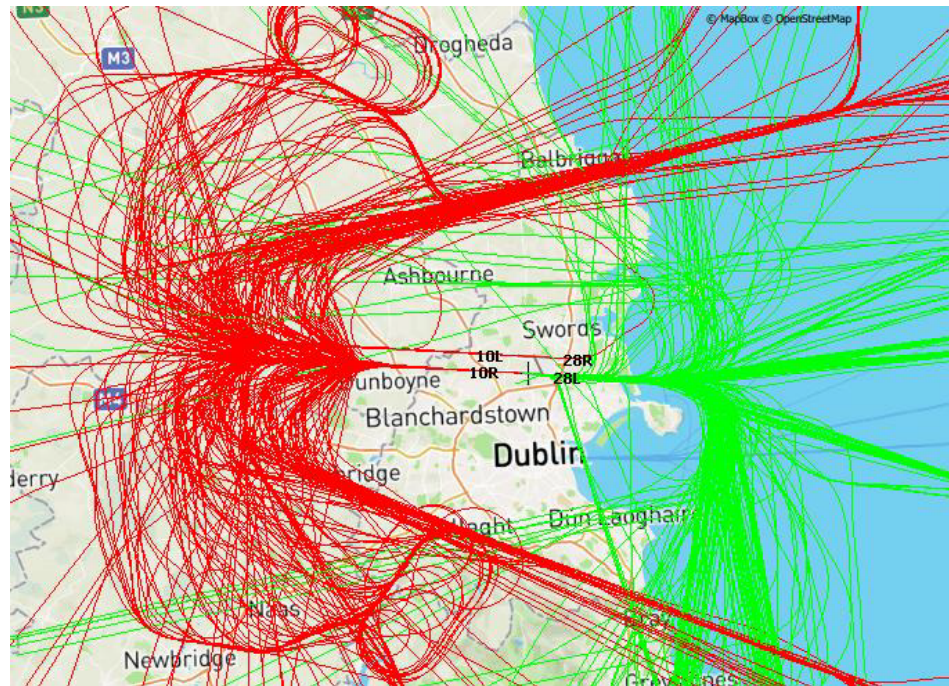


Figure 8: 655 Easterly operations on 29th August 2022

August 2022 Westerly operations

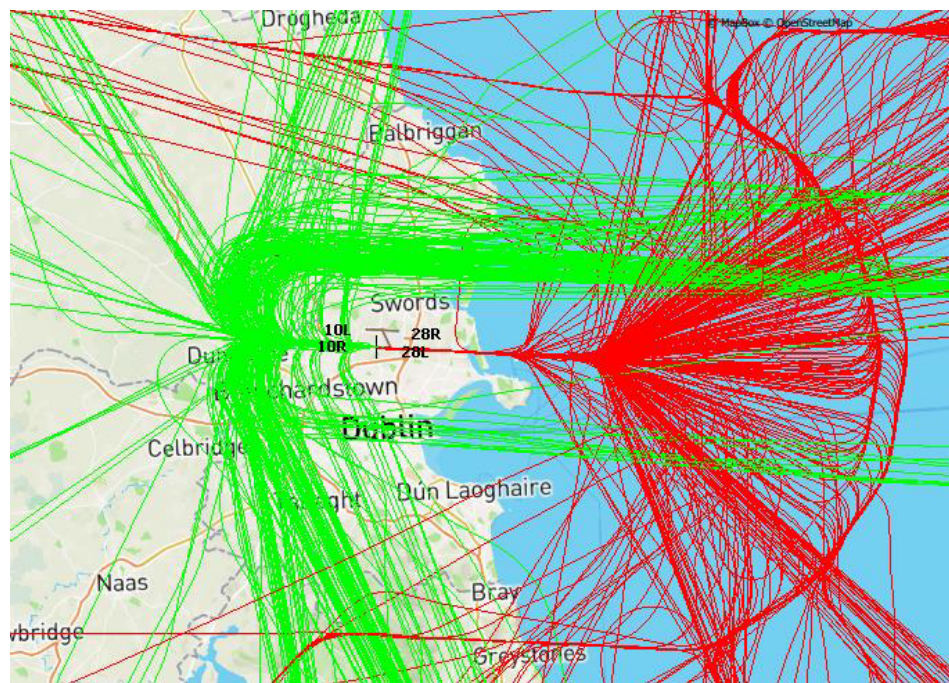


Figure 9: 708 Westerly operations on 19th August 2022

September 2022 Easterly operations

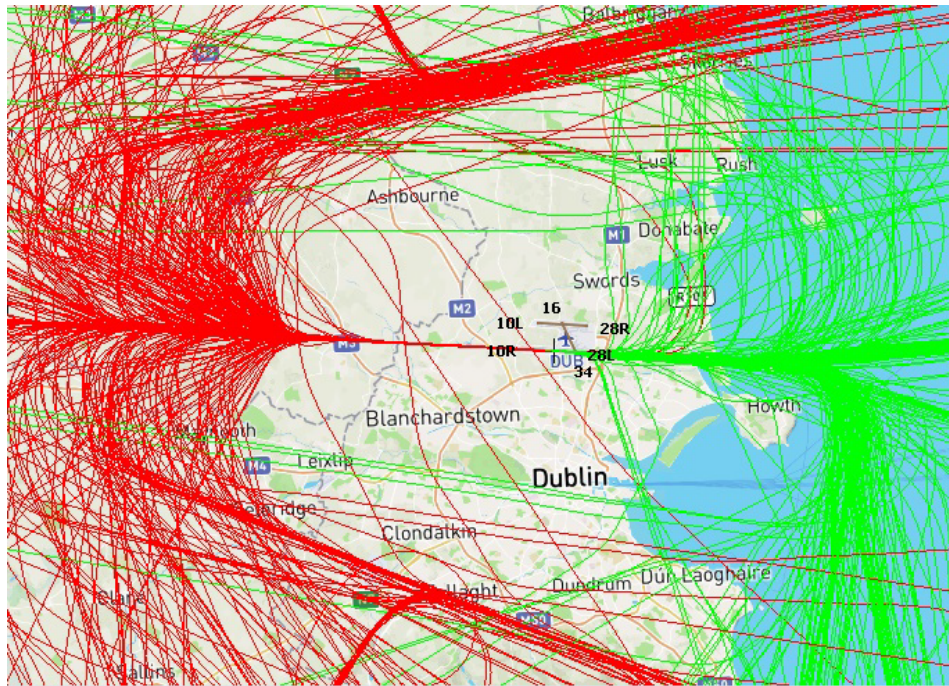


Figure 10: 684 Easterly operations on 05th September 2022

September 2022 Westerly operations

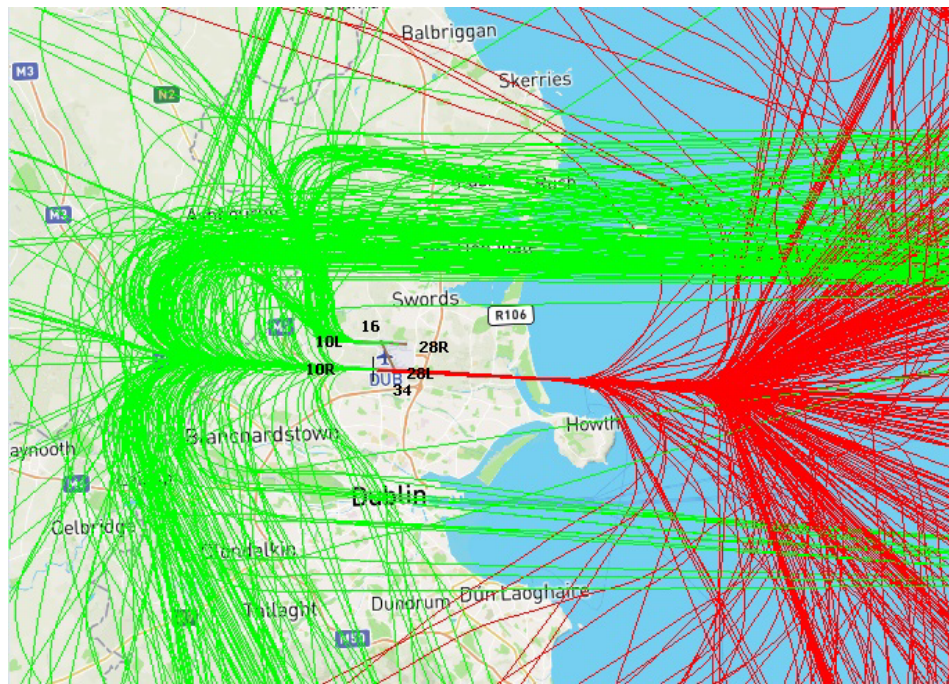


Figure 11: 710 Westerly operations on 09th September 2022

October 2022 Easterly operations

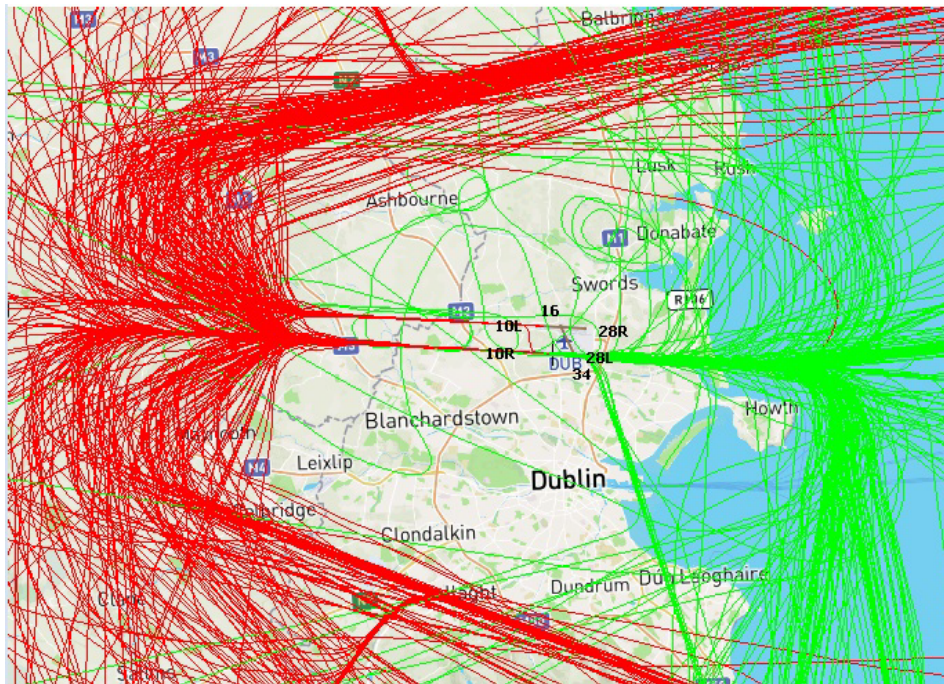


Figure 12: 677 Easterly operations on 21st October 2022

October 2022 Westerly operations

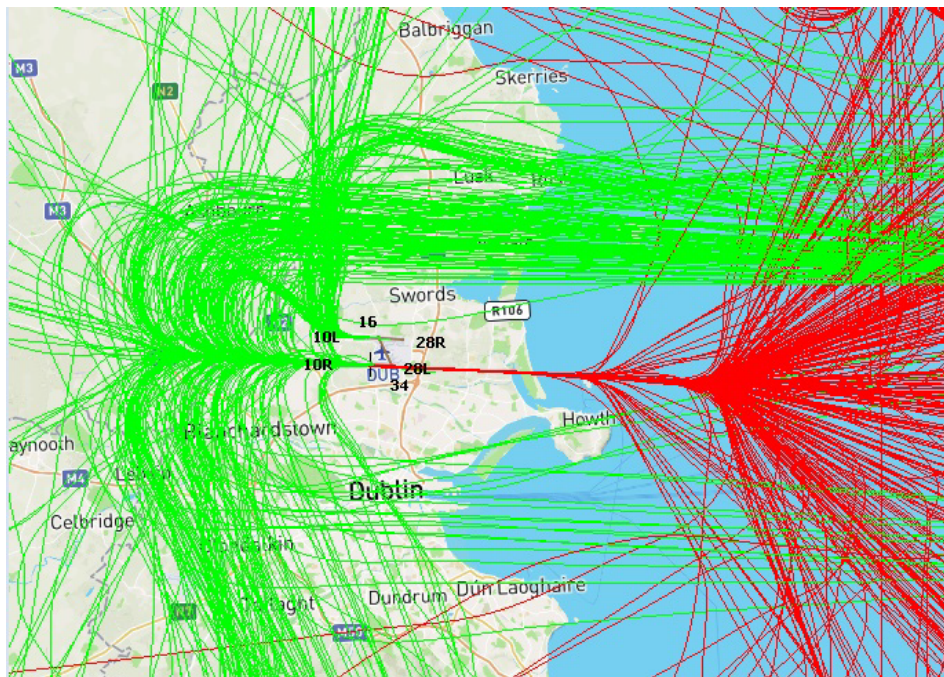


Figure 13: 688 Westerly operations on 07th October 2022

November 2022 Easterly operations

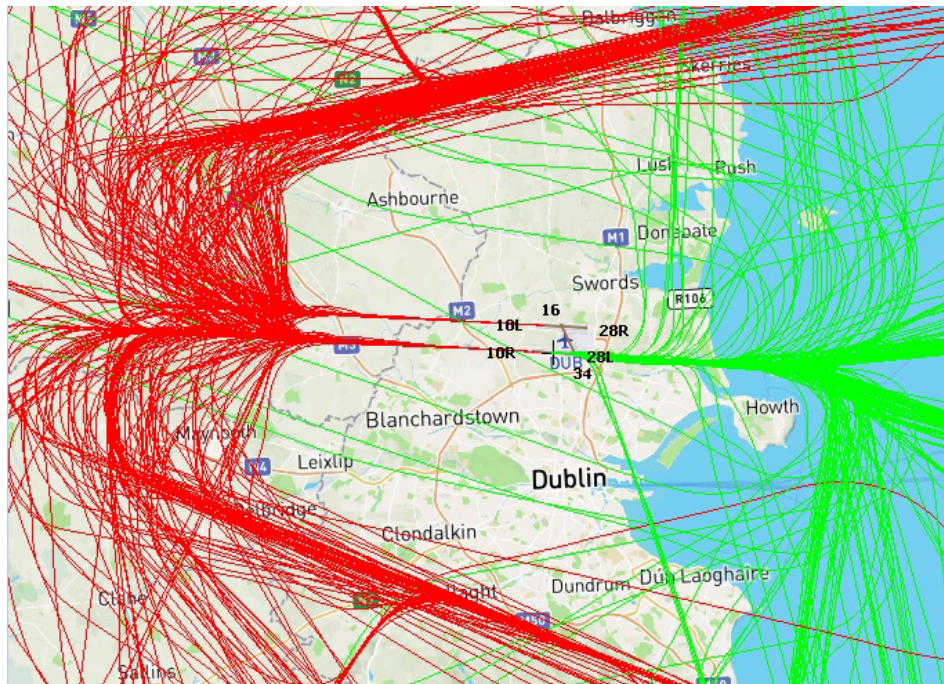


Figure 14: 574 Easterly operations on 13th November 2022

November 2022 Westerly operations

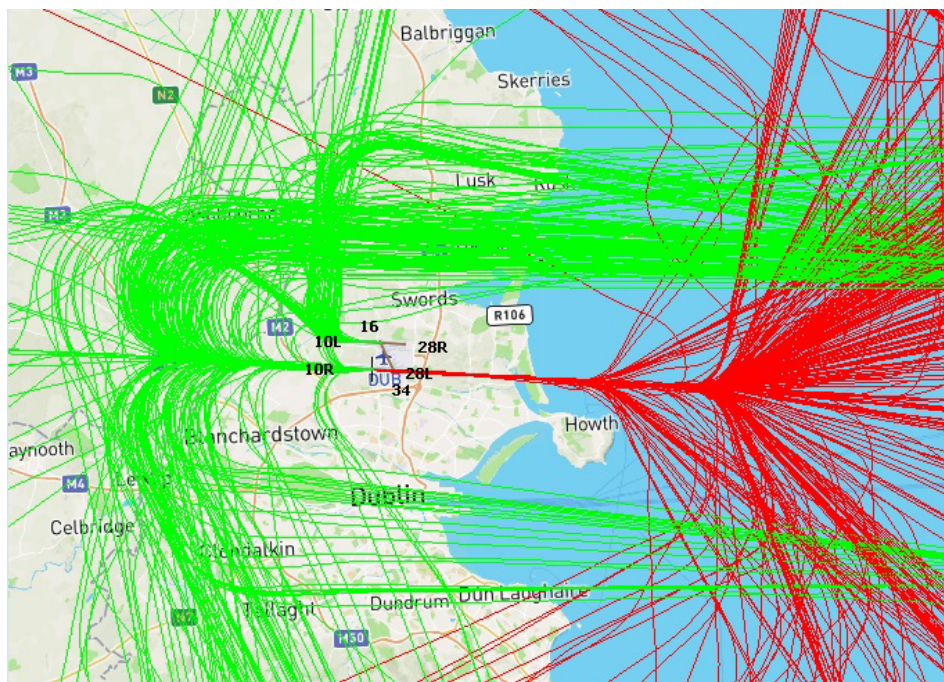


Figure 15: 674 Westerly operations on 04th November 2022

December 2022 Easterly operations

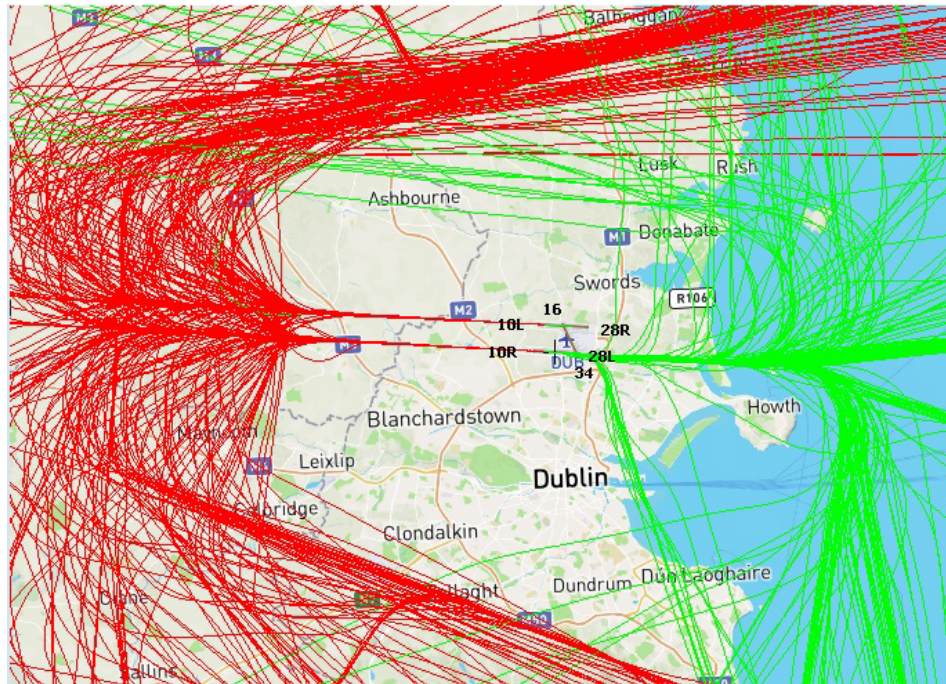


Figure 16: 592 Easterly operations on 05th December 2022

December 2022 Westerly operations



Figure 17: 643 Westerly operations on 19th December 2022

Noise Monitoring Statistics

Reading guide

The noise values presented in this report are values based on measurements, these values will differ from noise contours produced by computer modelling and are not directly comparable. Noise contours produced by computer modelling are typically based on an average summer or annual day and include all aircraft movements rather than those which produce correlated noise events.

The measured noise values are obtained from Noise Monitoring Terminals (NMTs). An upgraded Noise and Flight Track Monitoring System (NFTMS) with all new NMTs, provided by Envirosuite, has been commissioned by DAA as of 2017 to monitor the noise performance of Dublin Airport. This system subject to a further upgrade in Q1 2021 and further upgrades and expansions of the system are being considered.

These NMTs are set to record continuously and to trigger a noise event when two conditions are met. The first condition is the threshold level. The threshold level needs to be exceeded before recording is initiated. The threshold levels are continuously adjusted by Envirosuite to ensure maximum correlation between noise and individual operations. The second condition is the length of the recorded noise events. The recorded noise events should last for at least 10 seconds. Due to its proximity to agricultural, roads, and/or urban areas, NMTs can be triggered not just by aviation noise. It is for this reason the system is designed to correlate a noise event with an aircraft departing or landing. Similarly, the system can detect when the noise originates from a weather event, such as thunder or other stormy conditions.

Noise measurements are classified in three categories: aircraft, community, and weather. The community category, or normal human activity, includes all noise events that are not categorized as aircraft or weather. The measurement of total noise includes all three noise categories.

Noise levels calculation methodology

The noise monitoring system logs, per correlated aircraft event, the duration and measures the noise level of the event, which is later converted to LAeq, 1hour. This is the sound level, in decibels, equivalent to the total A-weighted sound energy of one hour. Average noise levels, for a reference duration, are derived from LAeq, 1 hour. The four noise levels are used in this report are:

- LAeq, 16 h, average daytime noise levels: - The LAeq, 16 h is determined by averaging the aircraft noise levels per month between 07:00 and 23:00, hence 16 hours.
- LAeq, 8 h, average nighttime noise levels: - The LAeq, 8 h is determined by averaging the aircraft noise levels per month between 23:00 and 07:00, hence 8-hour equivalent.
- LAeq, average hourly noise levels: - Same methodology applies for LAeq, compared to LAeq, 16 h and LAeq, 8 h, instead an average is taken per hour over a half year period instead of per month.
- LMax: - LMax indicates the maximum recorded noise level per correlated aircraft-noise event, while the average noise levels indicate the average noise levels for a reference duration.
- LMax distribution: This distribution is determined by determining the number of occurrences per 3 dB bracket, since every 3 dB increase is a doubling in sound level.

Average NMT figures

The following graphs presented below display an Average value measured per NMT between the reporting period from July 1st up to and including December 31st, 2022. The categories are as followed:

Average monthly LAmax noise levels per NMTs are shown in Figure 12

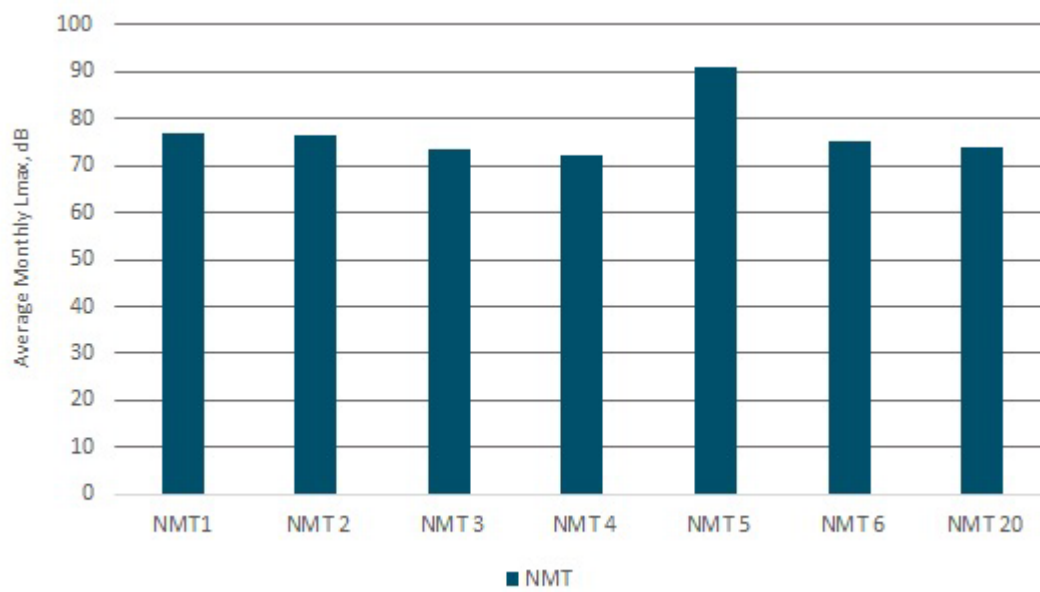


Figure 18: Average LAmax levels distribution for NMTs, July – December 2022

Average monthly LAmax noise levels per NMT for departing and arriving aircraft.

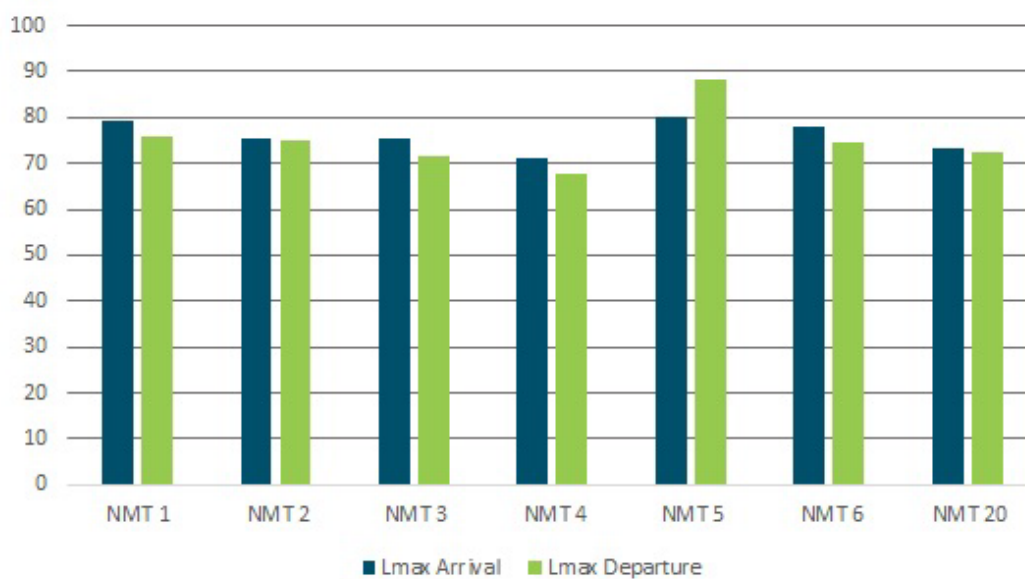


Figure 19: Average LAmax levels distribution for NMTs for arriving and departing aircraft, July – December 2022

Figure 14 presents the average noise levels measured at by all the NMTs for this reporting period during daytime which is defined as 07:00 in the morning to 22:59 in the evening. This procedure is followed both for all noise events, and for those events that were correlated to aircraft movements. The results shown are presented per NMT.



Figure 20: Averaged daytime noise levels per NMTs, July – December 2022

Noise levels during the night are determined using a similar method as described above. The night period is defined as a period between 23:00 in the evening to 06:59 in the morning. Noise levels are therefore averaged over an 8-hour window. Figure 9 presents these results per NMT.



Figure 21: Averaged nighttime noise levels per NMTs, July - December 2022

NMT 1: Bay Lane

Noise Monitoring Terminal 1 ('Bay Lane') is located west of Dublin Airport, see Figure 16 below, under the extended runway centreline of runway 28L. Its purpose is to monitor runway 28L departures and runway 10R arrivals. The resulting data for NMT 1 measurements in the period from July 1st up to and including December 31st, 2022 are presented in this section.



Figure 22: Noise Monitoring Terminal Bay Lane Location

Noise Events

The figure below shows the breakdown of noise events attributed to aircraft, weather, and the community.

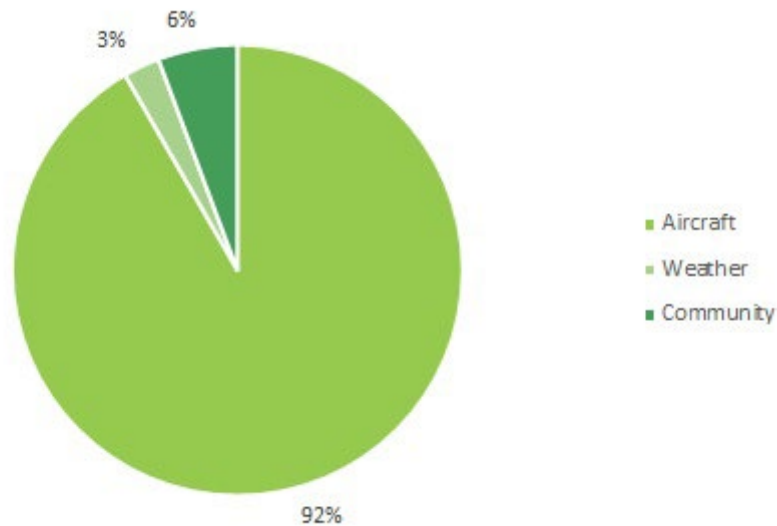


Figure 23: NMT 1 Noise Event Types

NMT Operational Status

To ensure that Noise Monitoring Terminals keep working within specific limits, internal calibration checks are completed every 6 hours. Outside of the 6 hourly calibration checks, NMTs will require maintenance and during this time will not record noise events. The operational status of NMT 1: Bay Lane is presented in Figure 18.

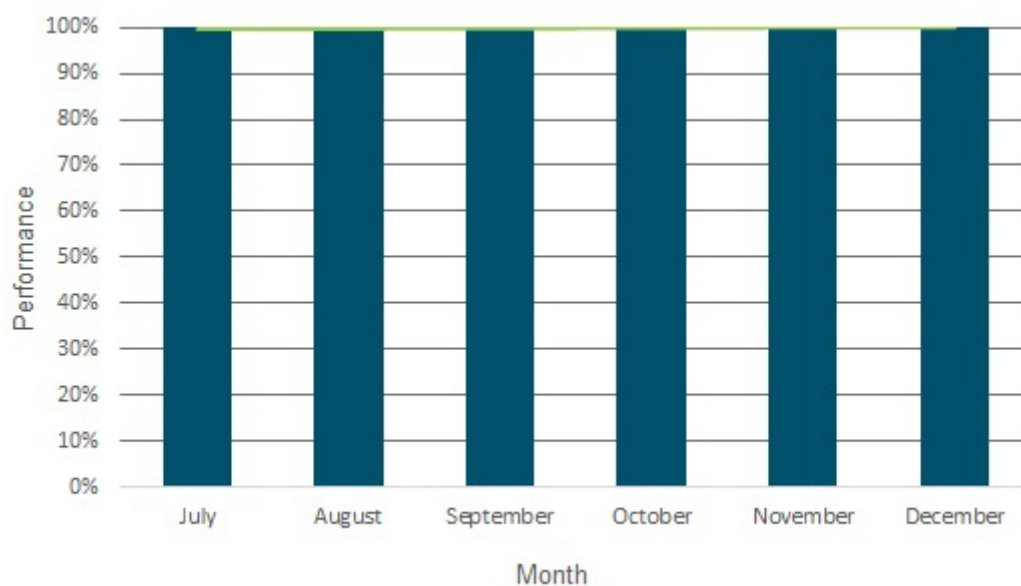


Figure 24: Operational status of NMT1, July – December 2022

Noise Levels

Figure 19 presents the average noise levels measured at NMT 1 during daytime periods, which are defined to be from 07:00 in the morning to 22:59 in the evening. Recorded noise levels during these time segments are therefore averaged over a 16-hour window.

This procedure is followed both for all noise events, and for those events that were correlated to aircraft movements. The results shown are presented monthly.

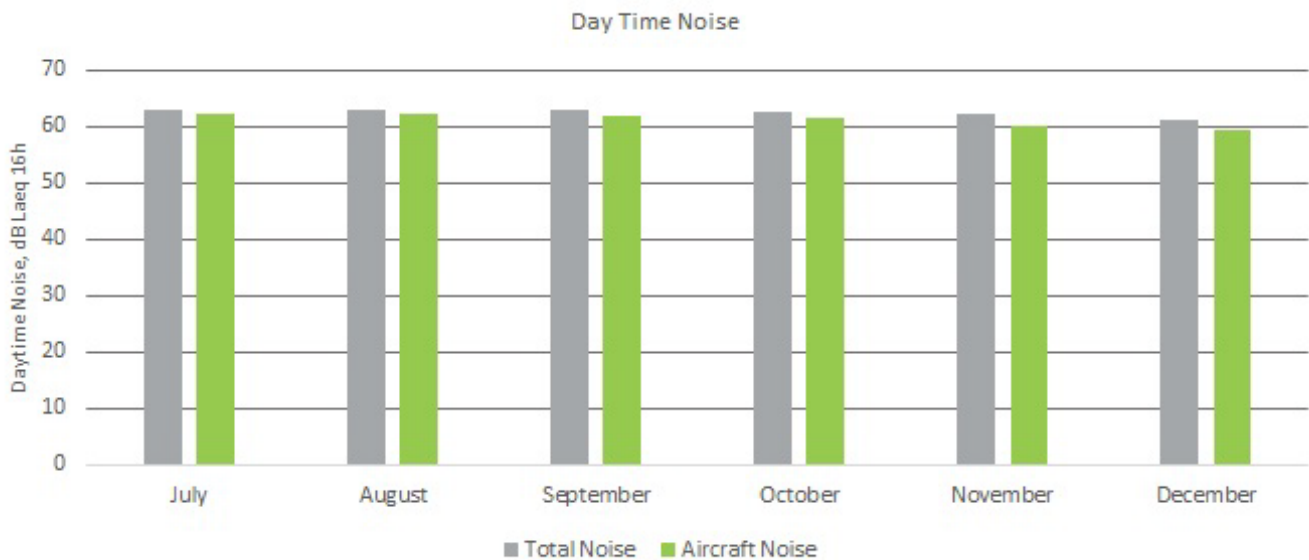


Figure 25: Averaged daytime noise levels for NMT 1, July – December 2022

Noise levels during the night are determined using a similar method as mentioned above. The night period is defined as a period between 23:00 in the evening to 06:59 in the morning. Noise levels are therefore averaged over an 8-hour window. Figure 20 presents these results monthly.

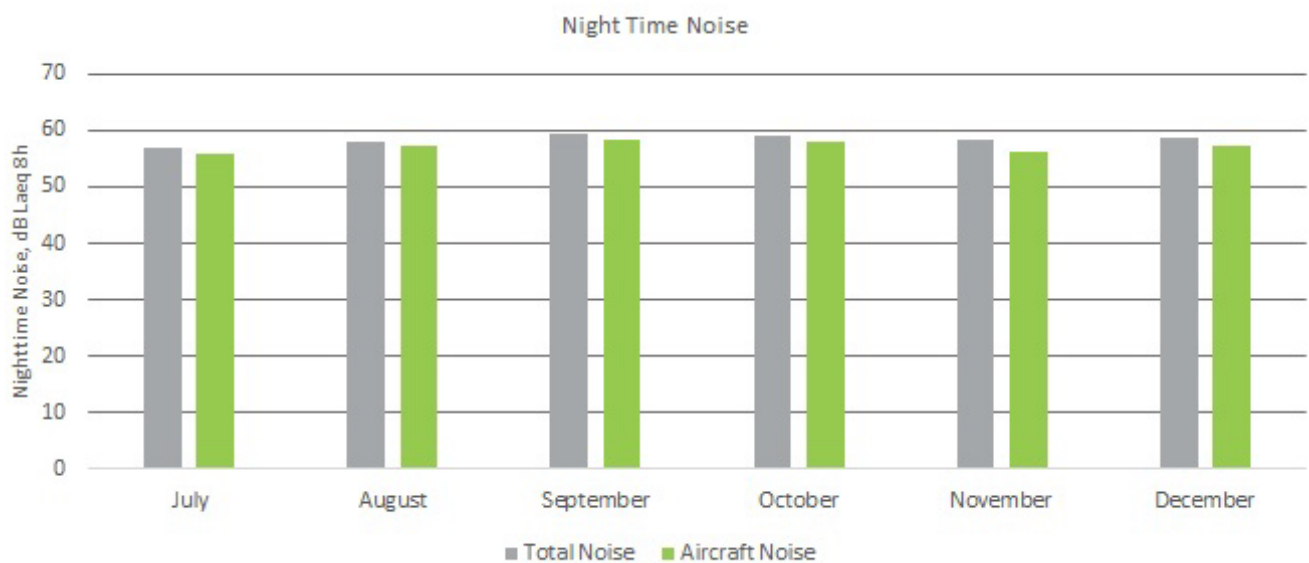


Figure 26: Averaged nighttime noise levels for NMT 1, July – December 2022

The hourly noise distribution at NMT 1 as shown in Figure 21.

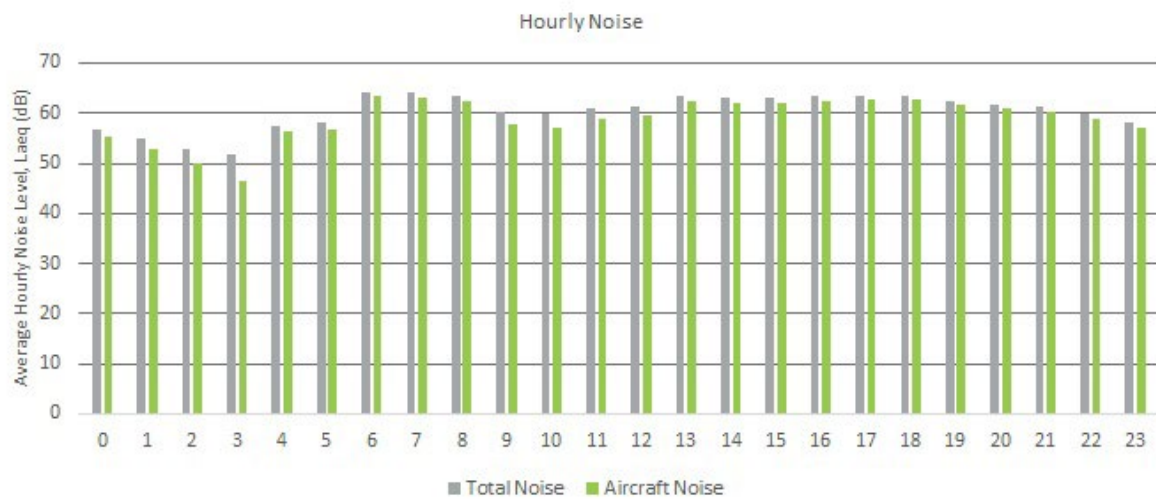


Figure 27: Averaged hourly noise levels for NMT 1, July - December 2021

Figure 22 shows the L_{Amax} distribution for aircraft noise for the second half of 2022 for NMT1.

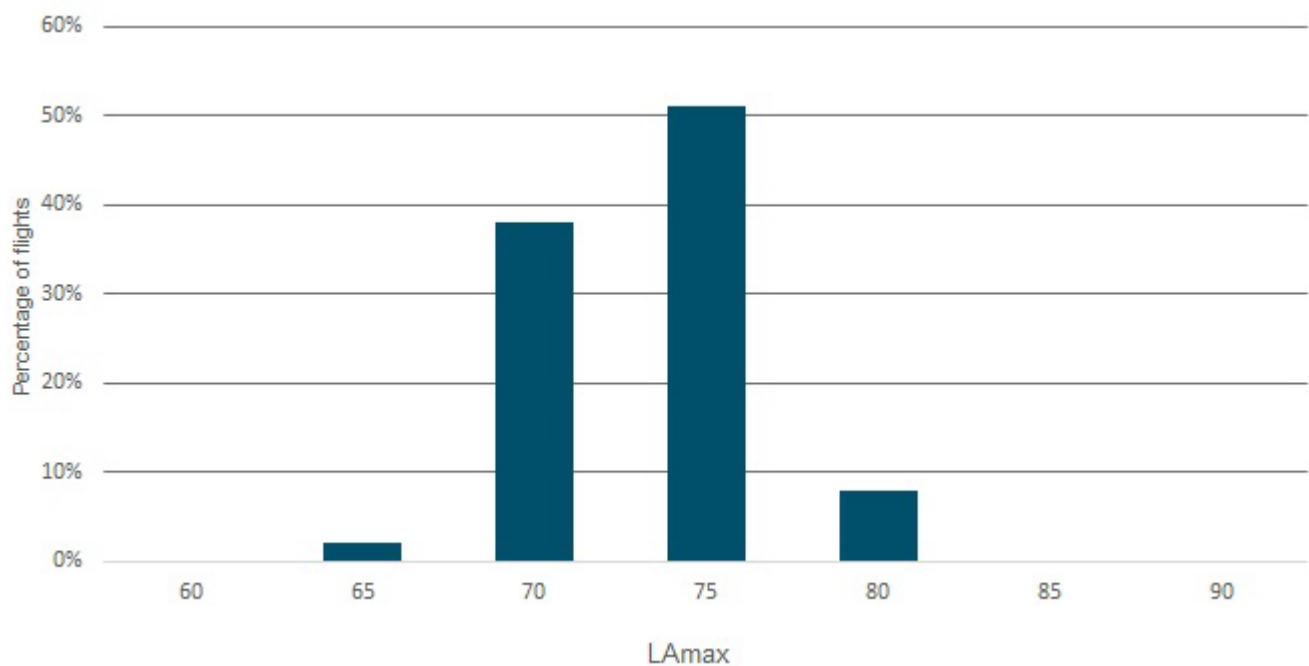


Figure 28: L_{Amax} levels distribution for NMT 1, July – December 2022

Table 5 shows the top 10 loudest correlated aircraft types from the total count of correlated noise events to NMT1.

Aircraft Type	Max dB	Total Count
C130	88.5	1
MD83	87.2	1
B764	82.2	173
B772	80.6	156
B77W	80.4	428
B77L	80.1	96
A333	80	1557
B735	79.7	4
B739	79.7	14
B753	79.7	6

Table 5: LAmax by aircraft types correlated to NMT1, July - December 2022

NMT 2: St. Doolaghs

Noise Monitoring Terminal 2 ('St. Doolaghs') is located east of Dublin Airport, see Figure 23 below, under the extended runway centreline of runway 10R. Its purpose is to monitor runway 10R departures and runway 28L arrivals. The resulting data for NMT 2 measurements in the period from July 1st up to and including December 31st, 2022 are presented in this section.



Figure 29: Noise Monitoring Terminal St. Doolaghs Location

Noise Events

The figure below shows the breakdown of noise events attributed to aircraft, weather, and the community.

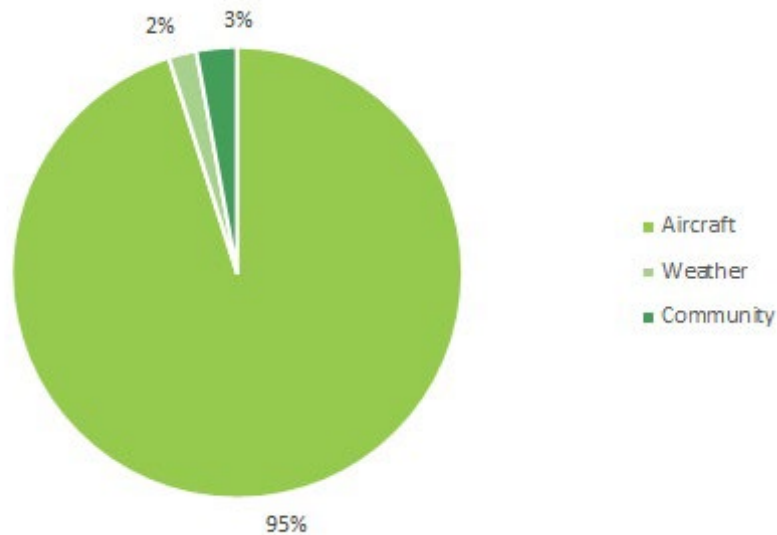


Figure 30: NMT 2 Noise Events Types

NMT Operational Status

To ensure that Noise Monitoring Terminals keep working within specific limits, internal calibration checks are completed every 6 hours. Outside of the 6 hourly calibration checks, NMTs will require maintenance and during this time will not record noise events. The operational status of NMT 2: St. Doolaghs is presented in Figure 25.

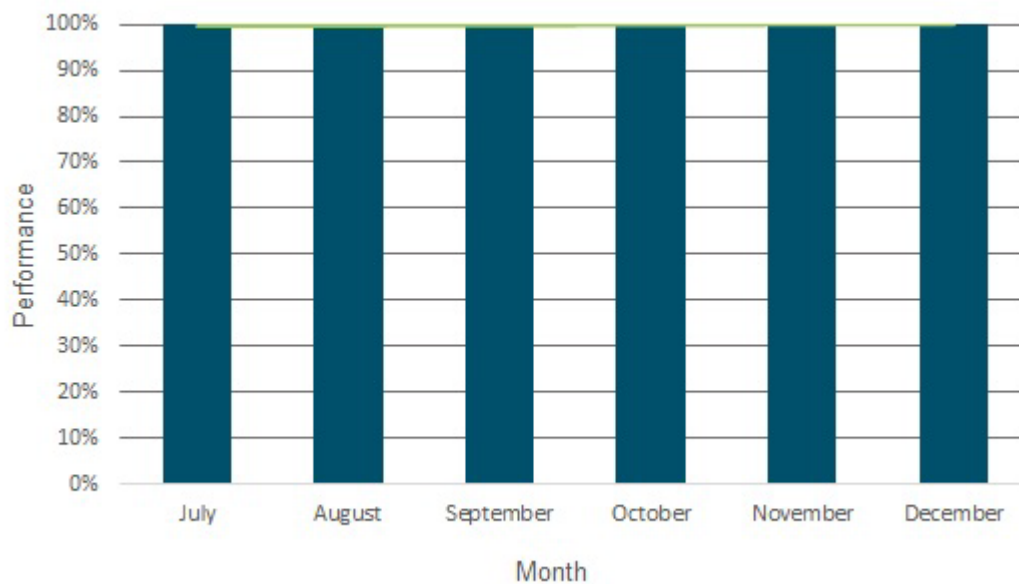


Figure 31: Operational status of NMT 2, July – December 2022

Noise Levels

Figure 26 presents the average noise levels measured at NMT 2 during daytime periods, which are defined to be from 07:00 in the morning to 22:59 in the evening. Recorded noise levels during these time segments are therefore averaged over a 16-hour window.

This procedure is followed both for all noise events, and for those events that were correlated to aircraft movements. The results shown are presented monthly.

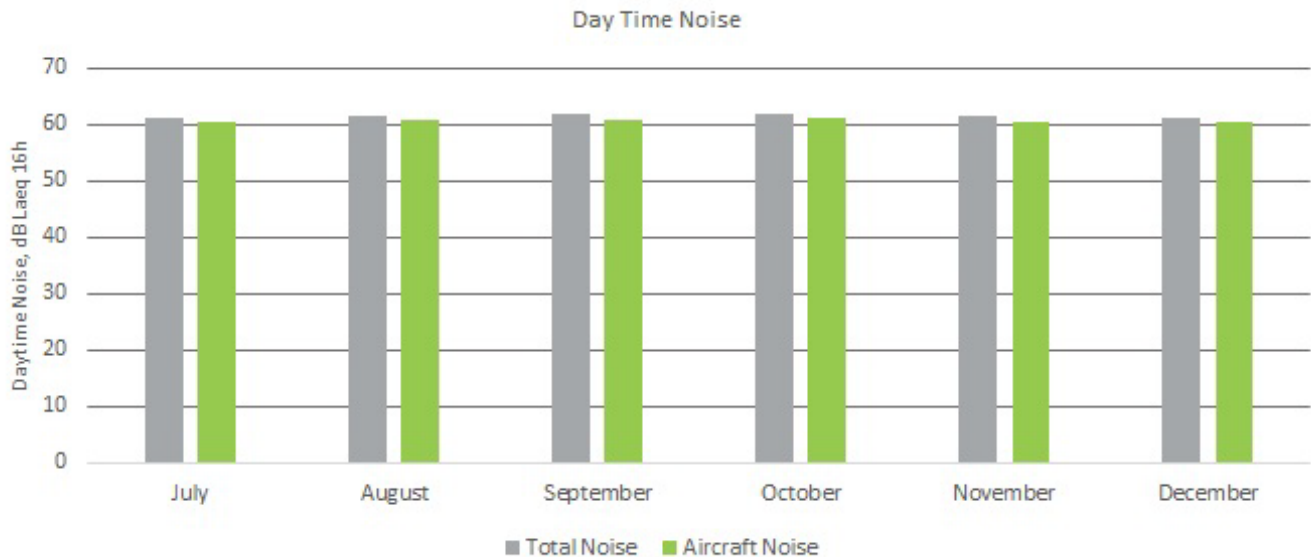


Figure 32: Averaged daytime noise levels for NMT 2, July – December 2022

Noise levels during the night are determined using a similar method. The night period is defined as a period between 23:00 in the evening to 06:59 in the morning. Noise levels are therefore averaged over an 8-hour window. Figure 27 presents these results monthly.

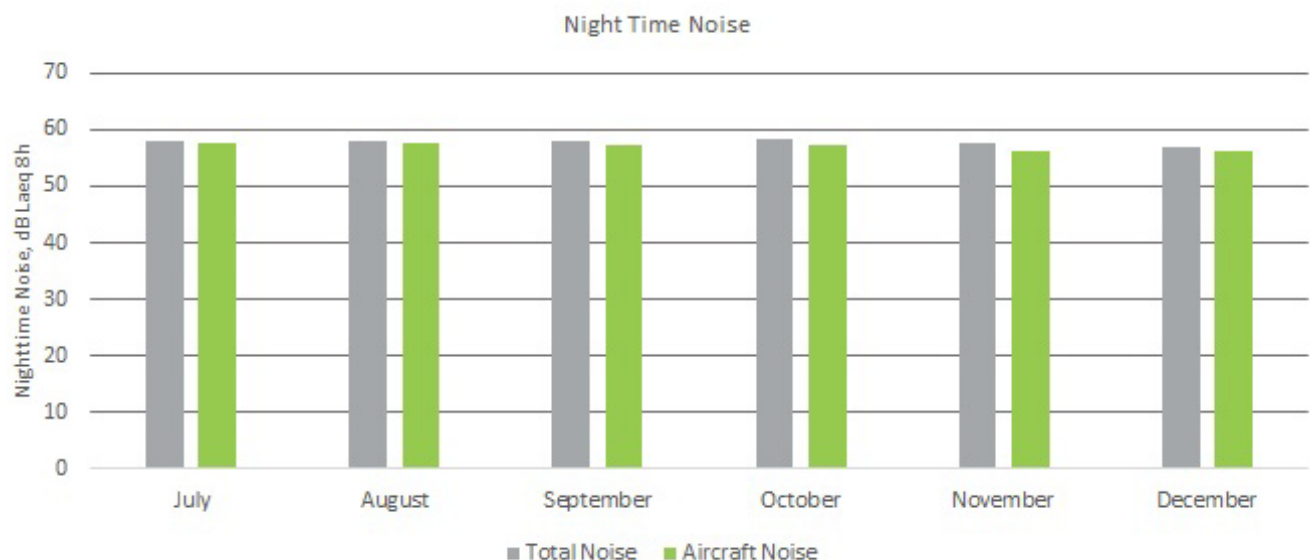


Figure 33: Averaged nighttime noise levels for NMT 2, July – December 2022

The hourly noise distribution at NMT 2 as shown in Figure 28.

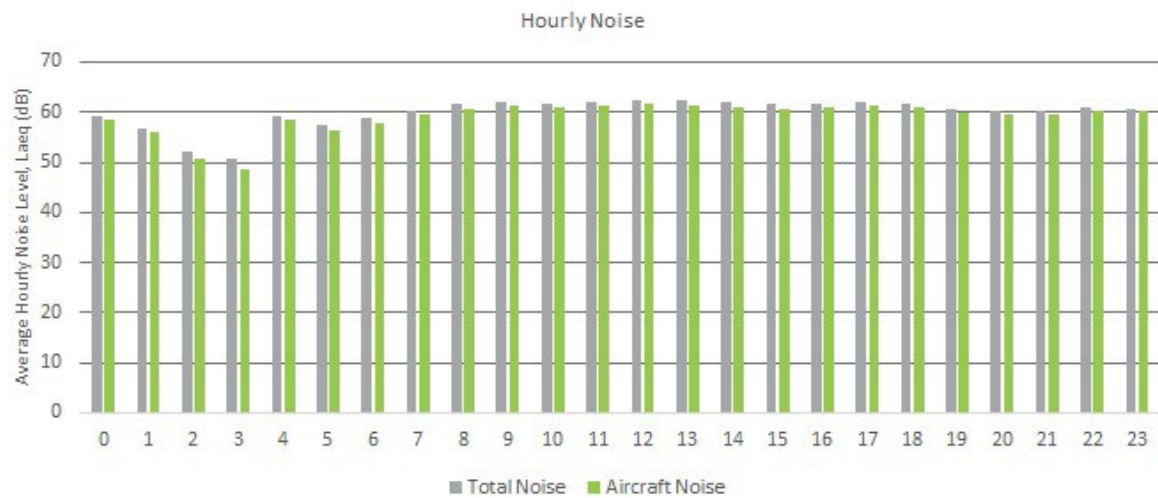


Figure 34: Averaged hourly noise levels for NMT 2, July – December 2022

Figure 29 shows the LAmax distribution for aircraft noise for the second half of 2022 for NMT 2.

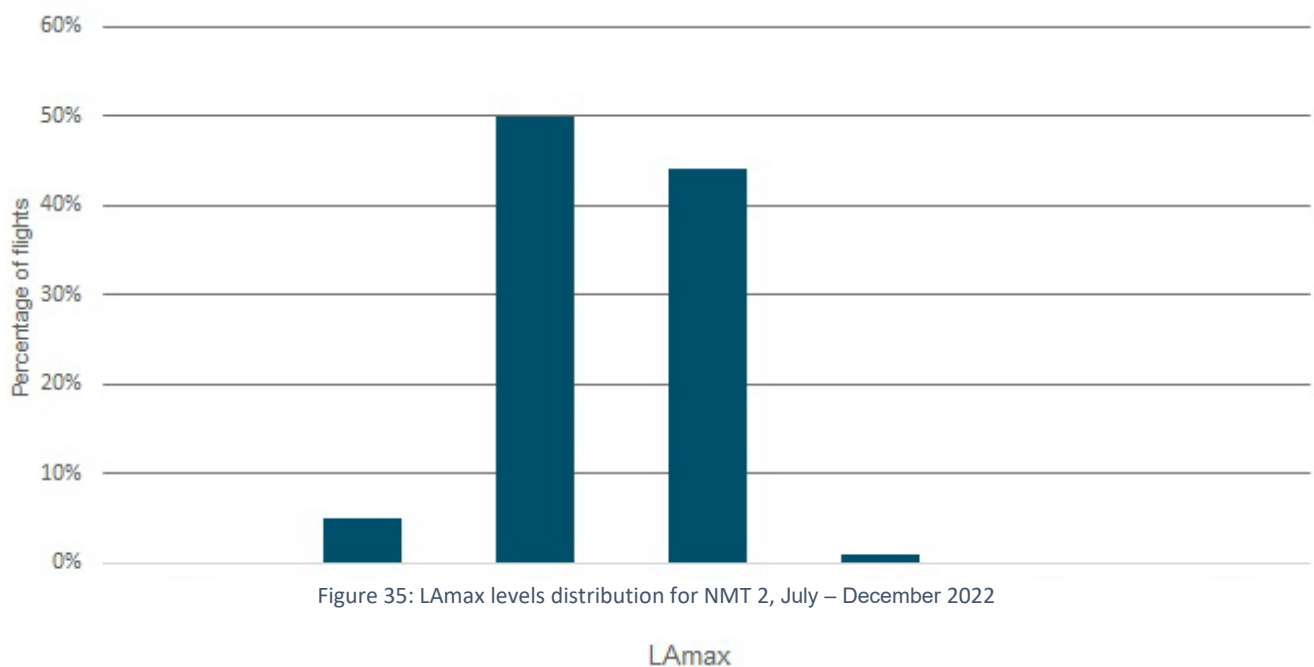


Figure 35: LAmax levels distribution for NMT 2, July – December 2022

Table 6 shows the top 10 loudest correlated aircraft types from the total count of correlated noise events to NMT2.

Aircraft Type	Max dB	Total Count
K35R	81.5	1
MD82	81	2
MD83	80.8	1
B735	79.1	3
B764	79.1	416
C130	78.7	1
B77W	78.3	505
B733	78.2	2
A333	78.1	2123
B734	77.9	202

Table 6: LAmax by aircraft types correlated to NMT2, July - December 2022

Noise Monitoring Terminal 3 ('Bishopswood') is located west of Dublin Airport and north of flightpath for runway 10R/28L, see Figure 30 below. Its purpose is to monitor aircraft noise levels in the local area. The resulting data for NMT 3 measurements in the period from July 1st up to and including December 31st, 2022 are presented in this section.



Noise Events

The figure below shows the breakdown of noise events attributed to aircraft, weather, and the community.

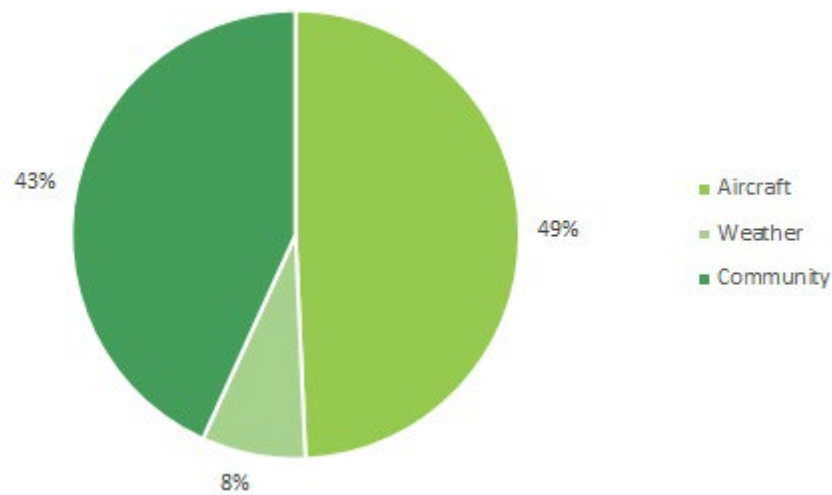


Figure 37: NMT 3 Noise Event Types

NMT Operational Status

To ensure that Noise Monitoring Terminals keep working within specific limits, internal calibration checks are completed every 6 hours. Outside of the 6 hourly calibration checks, NMTs will require maintenance and during this time will not record noise events. The operational status of NMT 3: Bishopswood is presented in Figure 32.

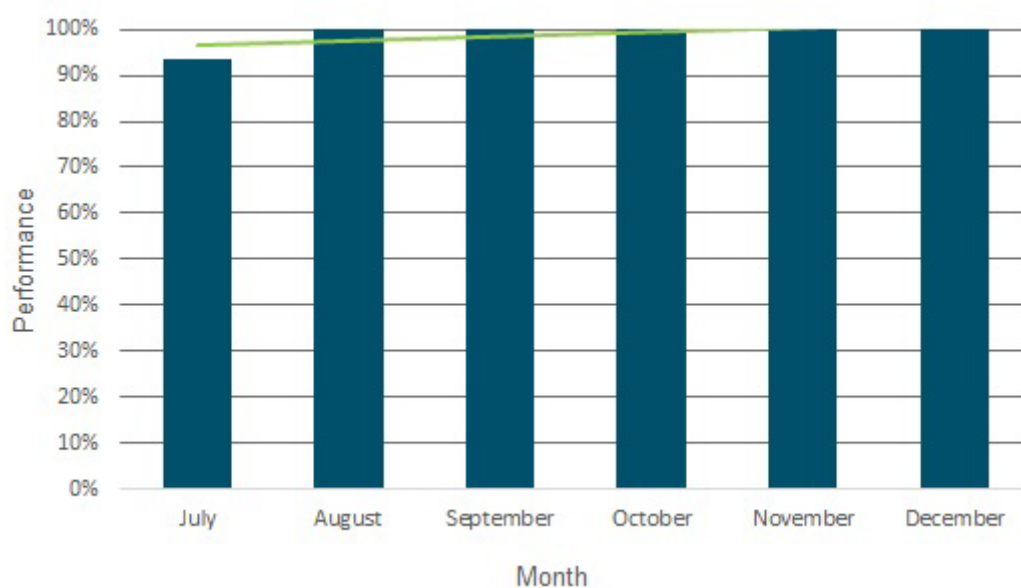


Figure 38: Operational status of NMT 3, July – December 2022

Noise Levels

Figure 33 presents the average noise levels measured at NMT 3 during daytime periods, which are defined to be from 07:00 in the morning to 22:59 in the evening. Recorded noise levels during these time segments are therefore averaged over a 16-hour window.

This procedure is followed both for all noise events, and for those events that were correlated to aircraft movements. The results shown are presented monthly.

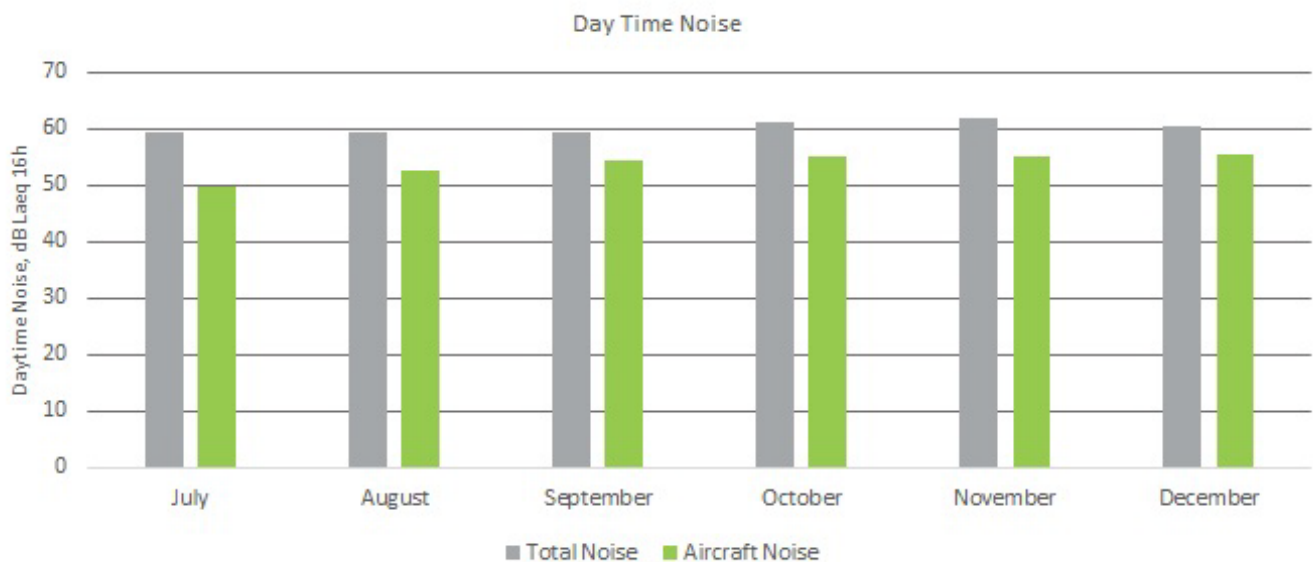


Figure 39: Averaged hourly noise levels for NMT 3, July – December 2022

Noise levels during the night are determined using a similar method. The night period is defined as a period between 23:00 in the evening to 06:59 in the morning. Noise levels are therefore averaged over an 8-hour window. Figure 34 presents these results monthly.

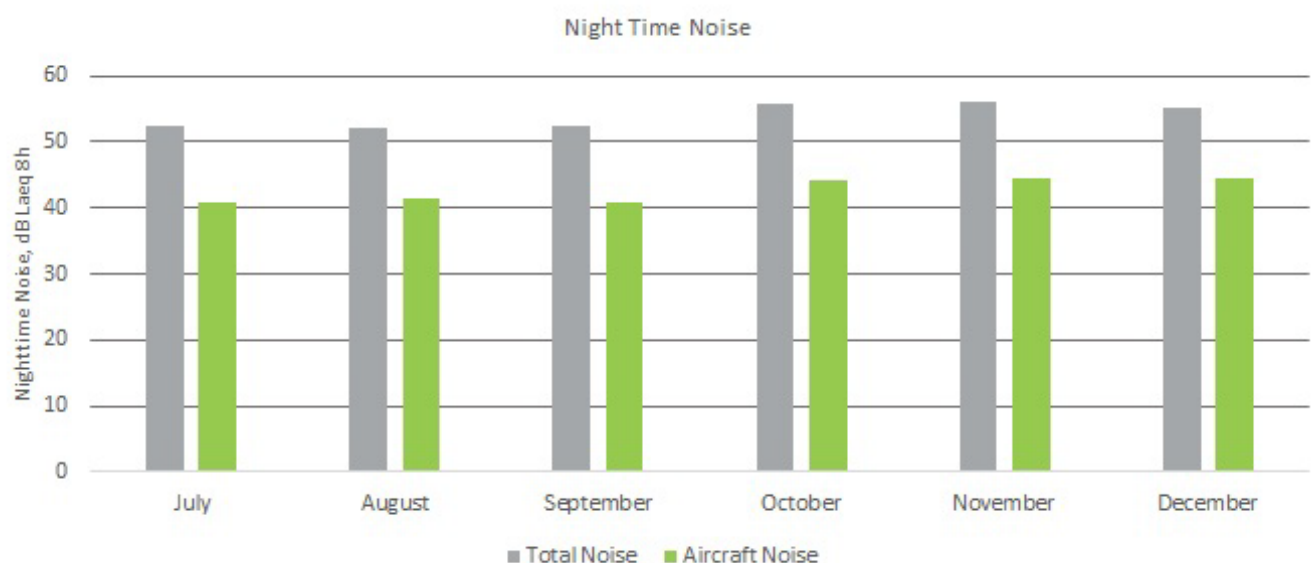


Figure 40: Averaged nighttime noise levels for NMT 3, July – December 2022

The hourly noise distribution at NMT 3 as shown in Figure 35.

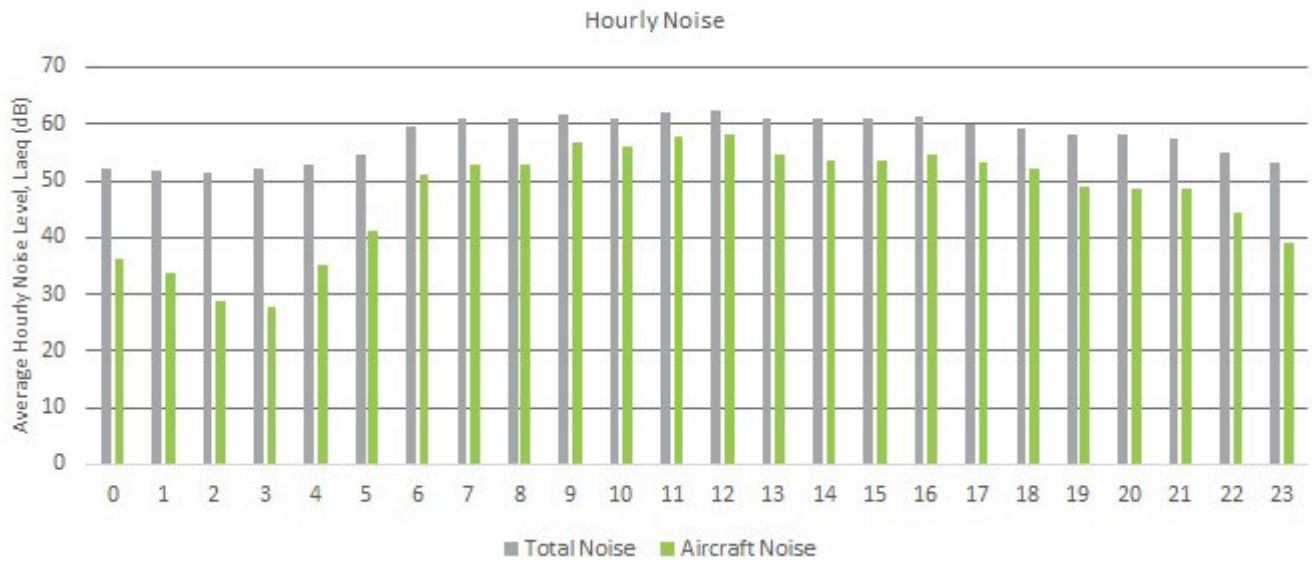


Figure 41: Averaged hourly noise levels for NMT 3, July – December 2022

Figure 36 shows the L_{Amax} distribution for aircraft noise for the second half of 2022 for NMT 3.

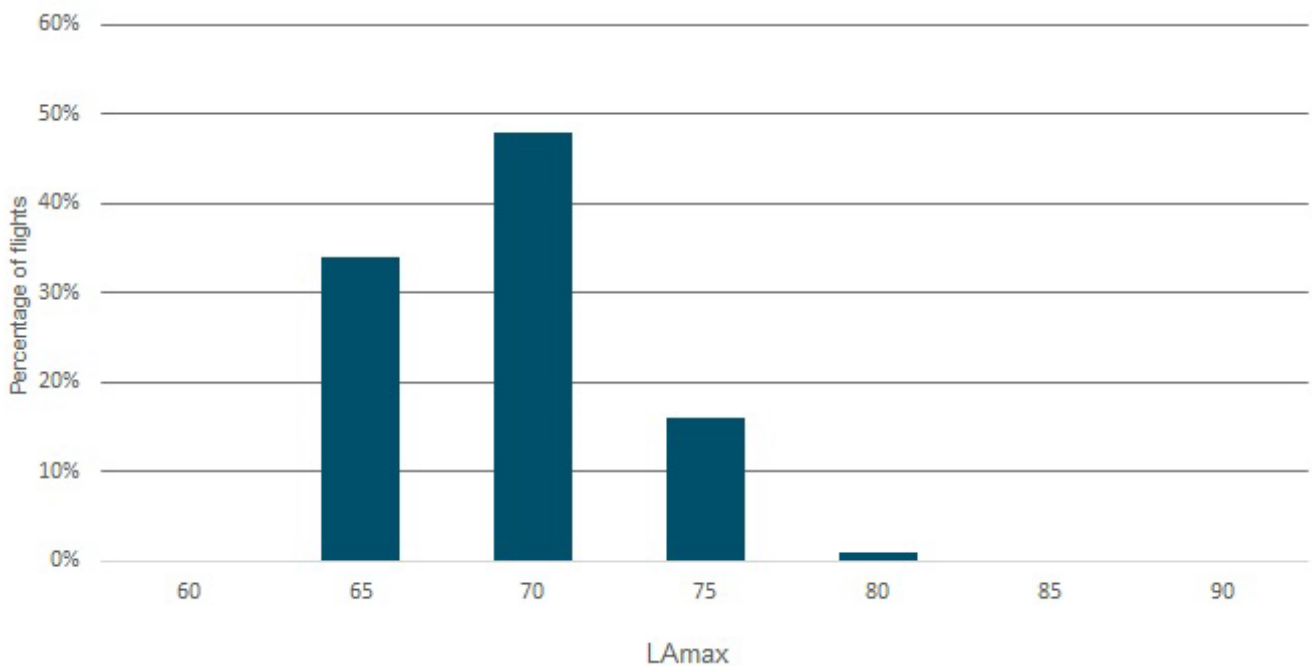


Figure 42: L_{Amax} levels distribution for NMT 3, July – December 2022

Table 7 shows the top 10 loudest correlated aircraft types from the total count of correlated noise events to NMT3.

Aircraft Type	Max dB	Total Count
E121	78.4	4
B764	74.9	338
P180	74.7	4
A333	74.4	1571
B753	74.4	11
E295	73.9	10
A359	73.7	41
B39M	73.4	9
AT75	73.3	1
C525	73.3	2

Table 7: L_Amax by aircraft types correlated to NMT3, July - December 2022

NMT 4: Feltrim

Noise Monitoring Terminal 4 ('Feltrim') is located east of Dublin Airport and north of the flight path of runway 10R/28L, see Figure 37 below and monitors the local area. The resulting data for NMT 4 measurements in the period from July 1st up to and including December 31st, 2022 are presented in this section.



Figure 43: Noise Monitoring Terminal Feltrim Location

Noise Events

The figure below shows the breakdown of noise events attributed to aircraft, weather, and the community.

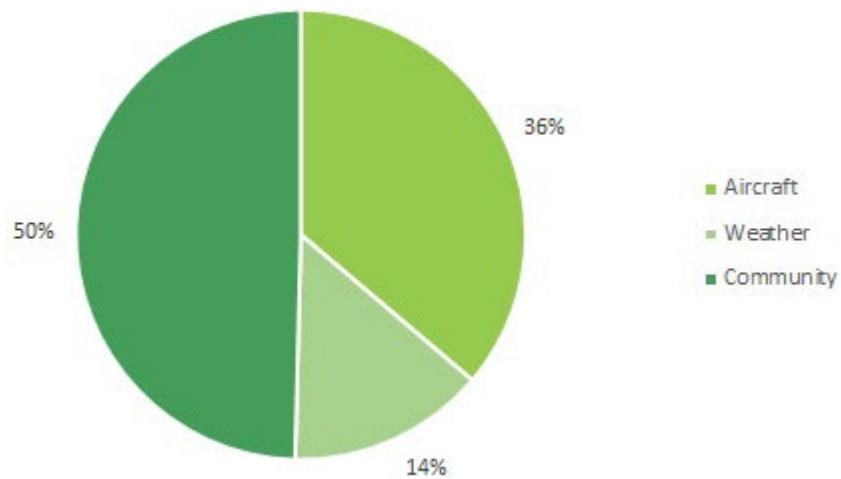


Figure 44: NMT 4 Noise Event Types

NMT Operational Status

To ensure that Noise Monitoring Terminals keep working within specific limits, internal calibration checks are completed every 6 hours. Outside of the 6 hourly calibration checks, NMTs will require maintenance and during this time will not record noise events. The operational status of NMT 4: Feltrim is presented in Figure 39.

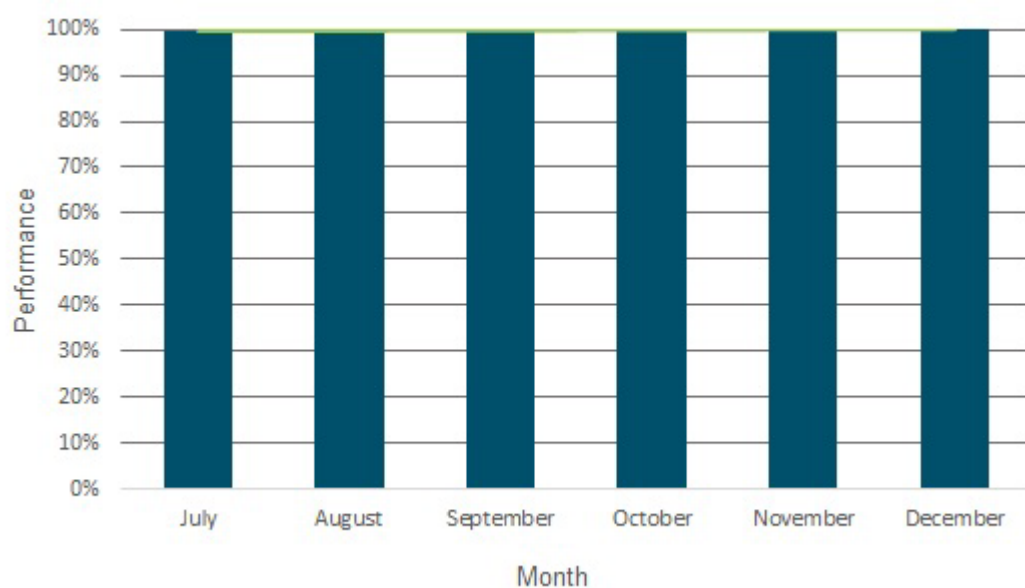


Figure 45: Operational status of NMT 4, July – December 2022

Noise Levels

Figure 40 presents the average noise levels measured at NMT 4 during daytime periods, which are defined to be from 07:00 in the morning to 22:59 in the evening. Recorded noise levels during these time segments are therefore averaged over a 16-hour window.

This procedure is followed both for all noise events, and for those events that were correlated to aircraft movements. The results shown are presented monthly.

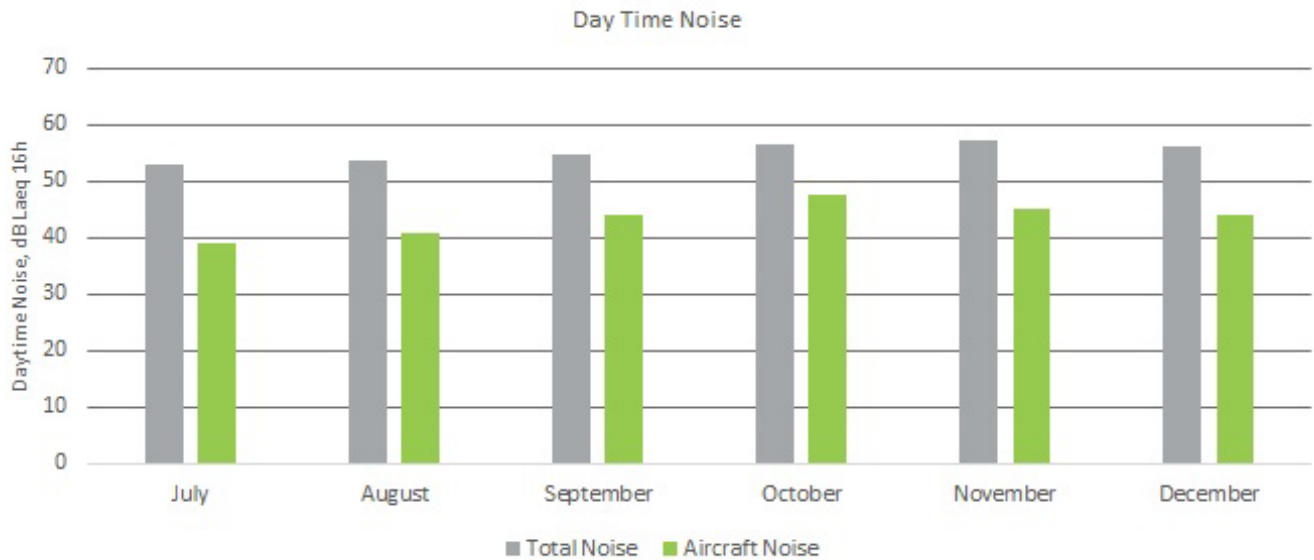


Figure 46: Averaged daytime noise levels for NMT 4, July – December 2022

Noise levels during the night are determined using a similar method. The night period is defined as a period between 23:00 in the evening to 06:59 in the morning. Noise levels are therefore averaged over an 8-hour window. Figure 41 presents these results monthly.

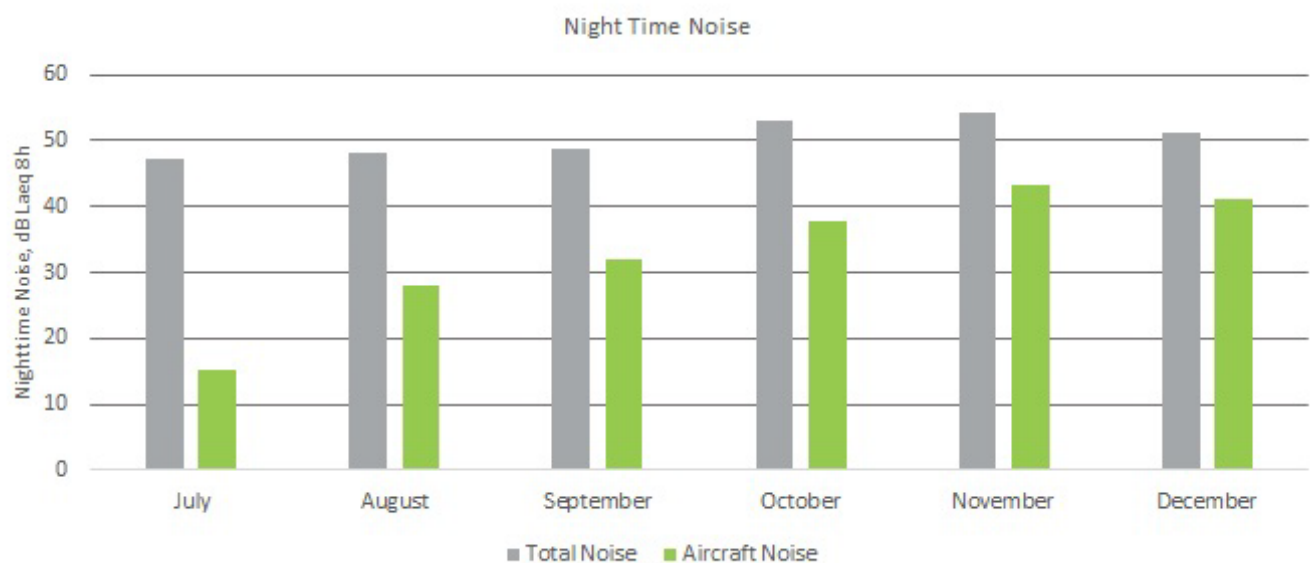


Figure 47: Averaged nighttime noise levels for NMT 4, July – December 2022

The hourly noise distribution at NMT 4 as shown in Figure 42.

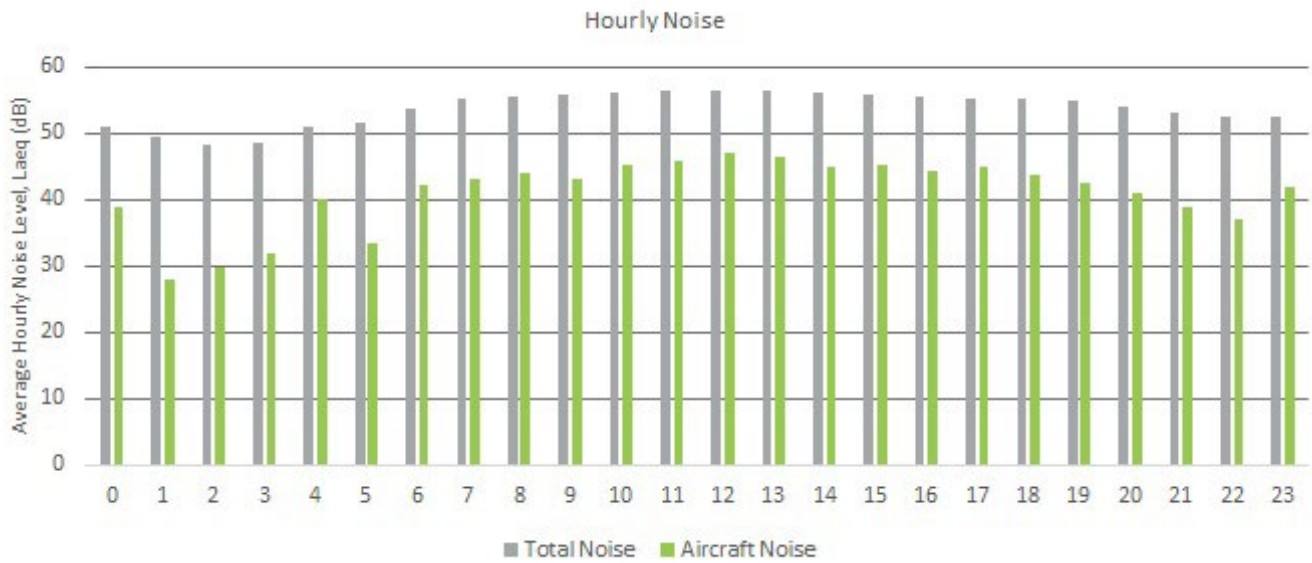


Figure 48: Averaged hourly noise levels for NMT 4, July – December 2022

Figure 43 shows the LAmax distribution for aircraft noise for the second half of 2022 for NMT 4.

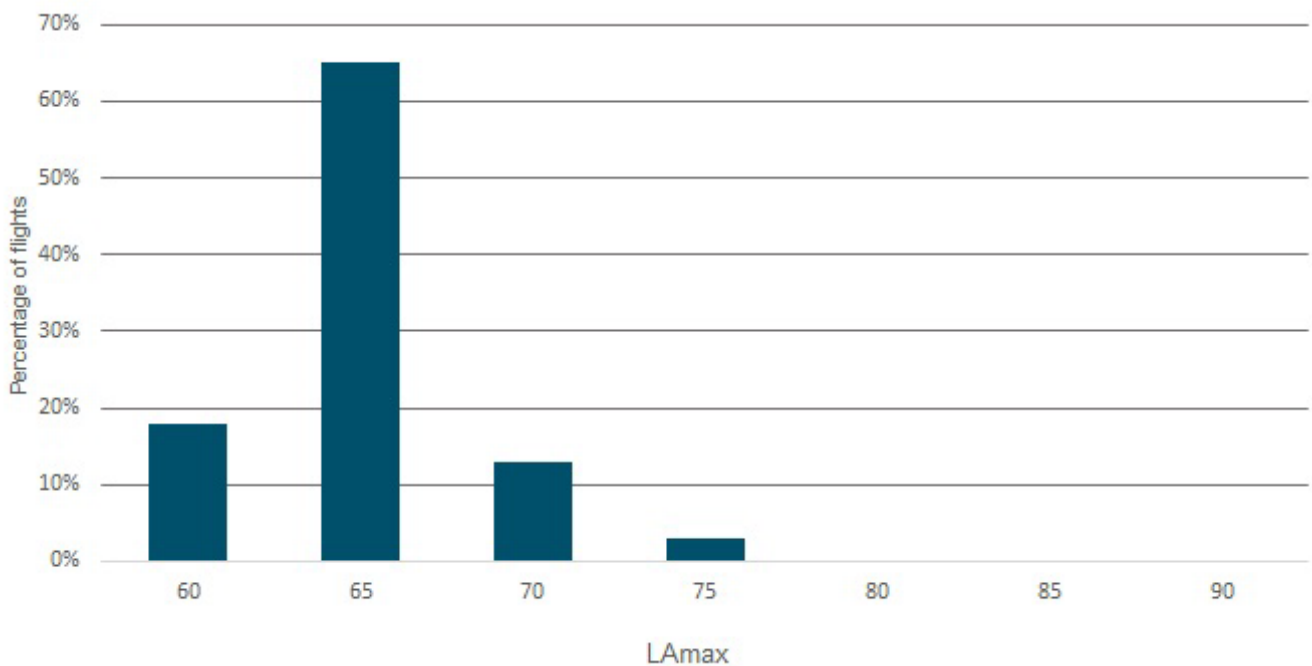


Figure 49: LAmax levels distribution for NMT 4, July – December 2022

Table 8 shows the top 10 loudest correlated aircraft types from the total count of correlated noise events to NMT4.

Aircraft Type	AVG Max dB	Total Count
SF50	77.1	1
MD82	74.6	1
GLF6	73.6	2
AT72	73.2	22
C525	72.3	1
E550	72	3
BCS1	71.8	1
LJ40	70.8	1
GLEX	70.6	9
C560	70.5	1

Table 8: LAmax by aircraft types correlated to NMT4, July - December 2022

NMT 5: Balcultry

Noise Monitoring Terminal 5 ('Balcultry') is located northwest of Dublin Airport, see Figure 44 below, under the extended runway centreline of runway 34. Its purpose is to monitor runway 34 departures and runway 16 arrivals. The resulting data for NMT 5 measurements in the period from July 1st up to and including December 31st, 2022 are presented in this section.



Figure 50: Noise Monitoring Terminal Balcultry Location

Noise Events

The figure below shows the breakdown of noise events attributed to aircraft, weather, and the community.

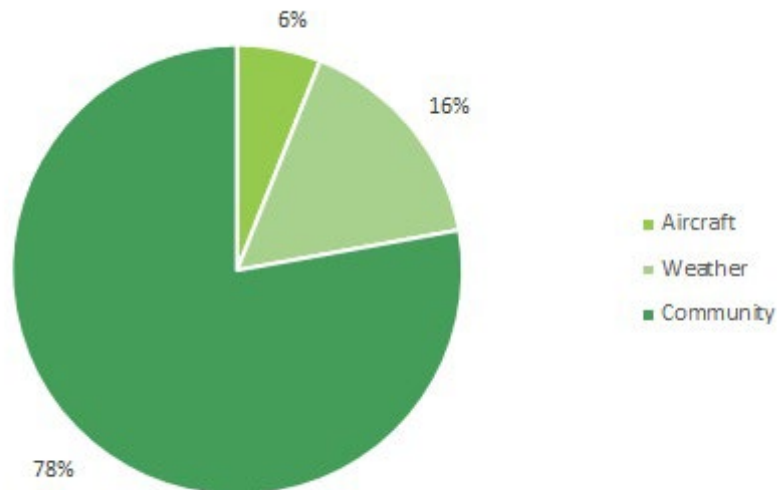


Figure 51: NMT 5 Noise Event Types

NMT Operational Status

To ensure that Noise Monitoring Terminals keep working within specific limits, internal calibration checks are completed every 6 hours. Outside of the 6 hourly calibration checks, NMTs will require maintenance and during this time will not record noise events. The operational status of NMT 5: Balcultry is presented in Figure 46.



Figure 52: Operational status of NMT 5, July – December 2022

Noise Levels

Figure 47 presents the average noise levels measured at NMT 5 during daytime periods, which are defined to be from 07:00 in the morning to 22:59 in the evening. Recorded noise levels during these time segments are therefore averaged over a 16-hour window.

This procedure is followed both for all noise events, and for those events that were correlated to aircraft movements. The results shown are presented monthly.

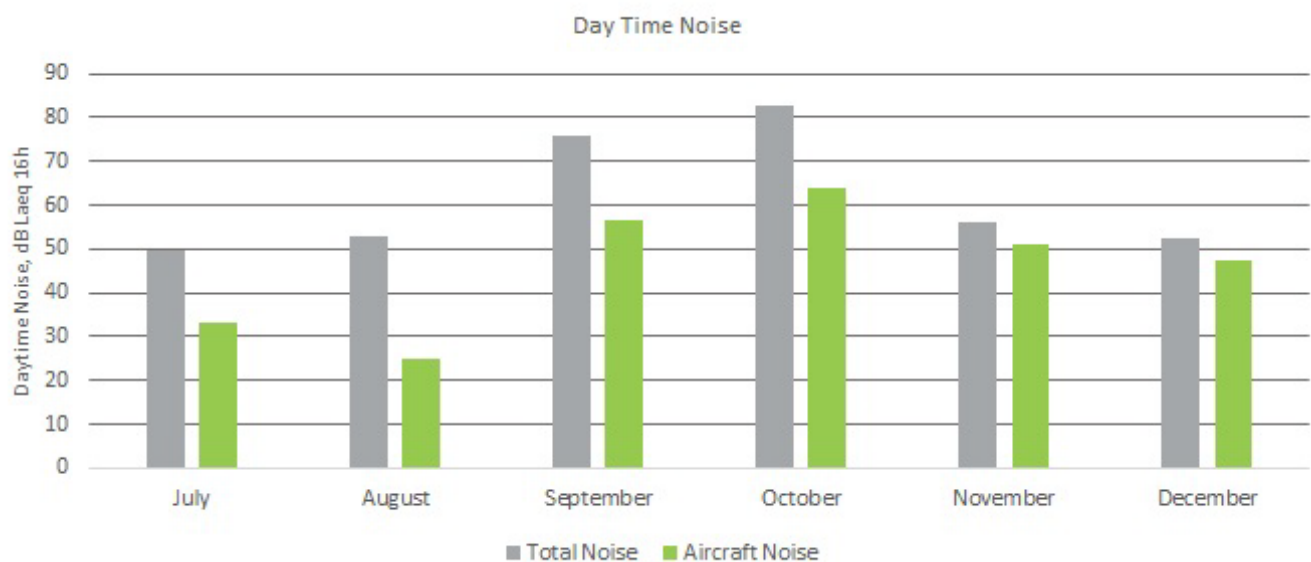


Figure 53: Averaged daytime noise levels for NMT 5, July – December 2022

Noise levels during the night are determined using a similar method. The night period is defined as a period between 23:00 in the evening to 06:59 in the morning. Noise levels are therefore averaged over an 8-hour window. Figure 48 presents these results monthly.

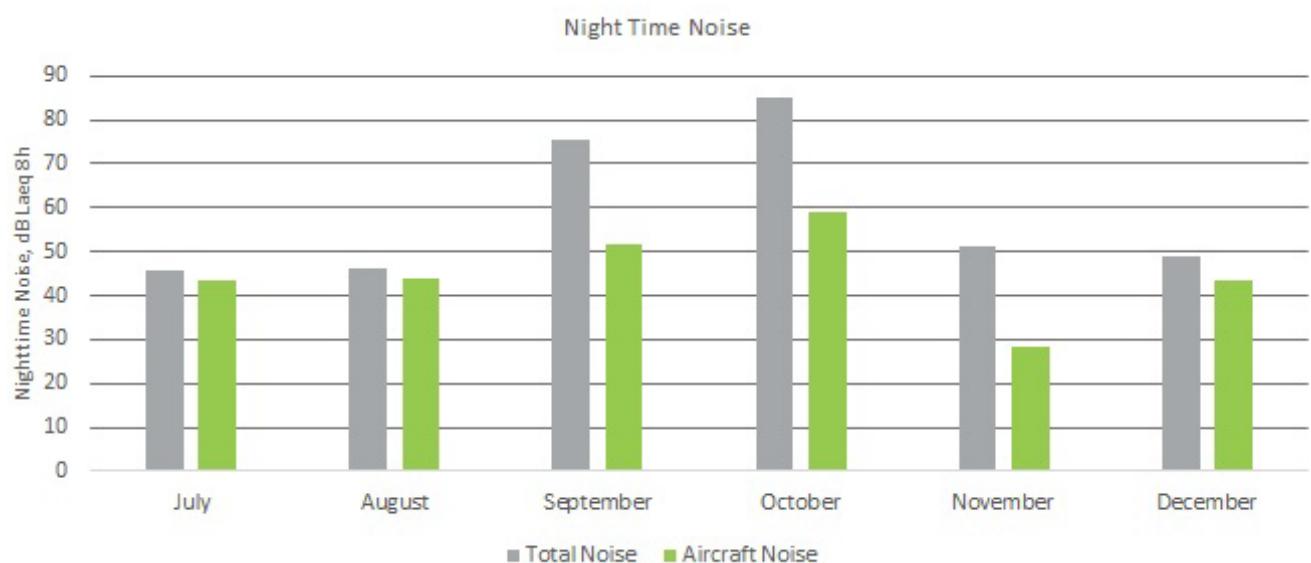


Figure 54: Averaged nighttime noise levels for NMT 5, July – December 2022

The hourly noise distribution at NMT 5 as shown in Figure 49.

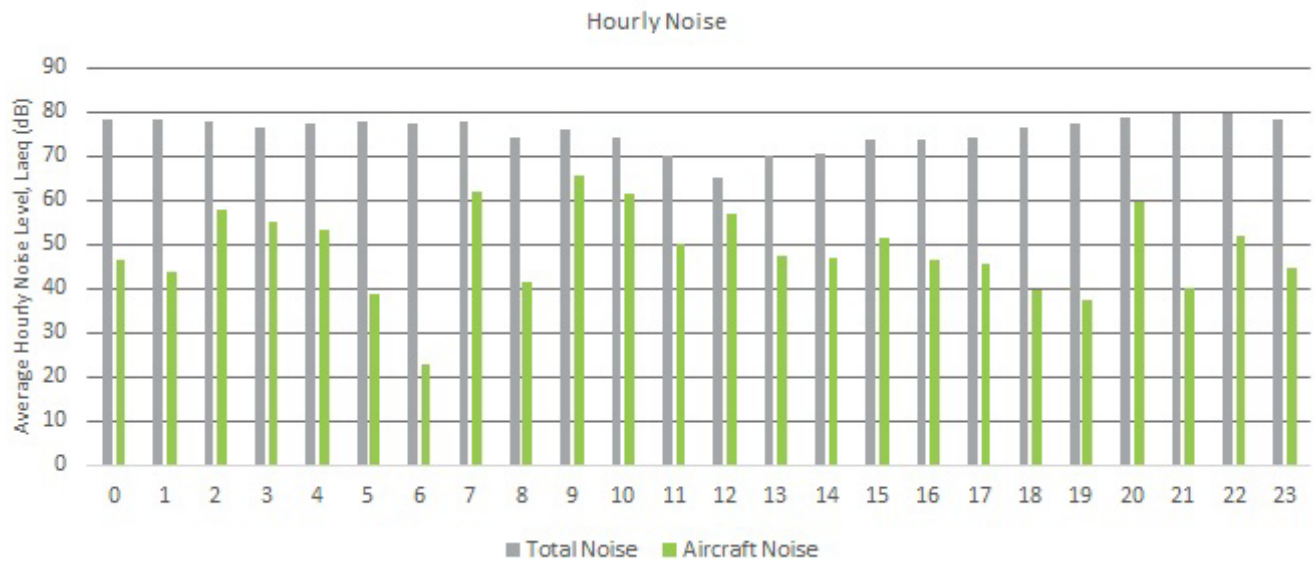


Figure 55: Averaged hourly noise levels for NMT 5, July – December 2022

Figure 50 shows the LAmax distribution for aircraft noise for the second half of 2022 for NMT 5.

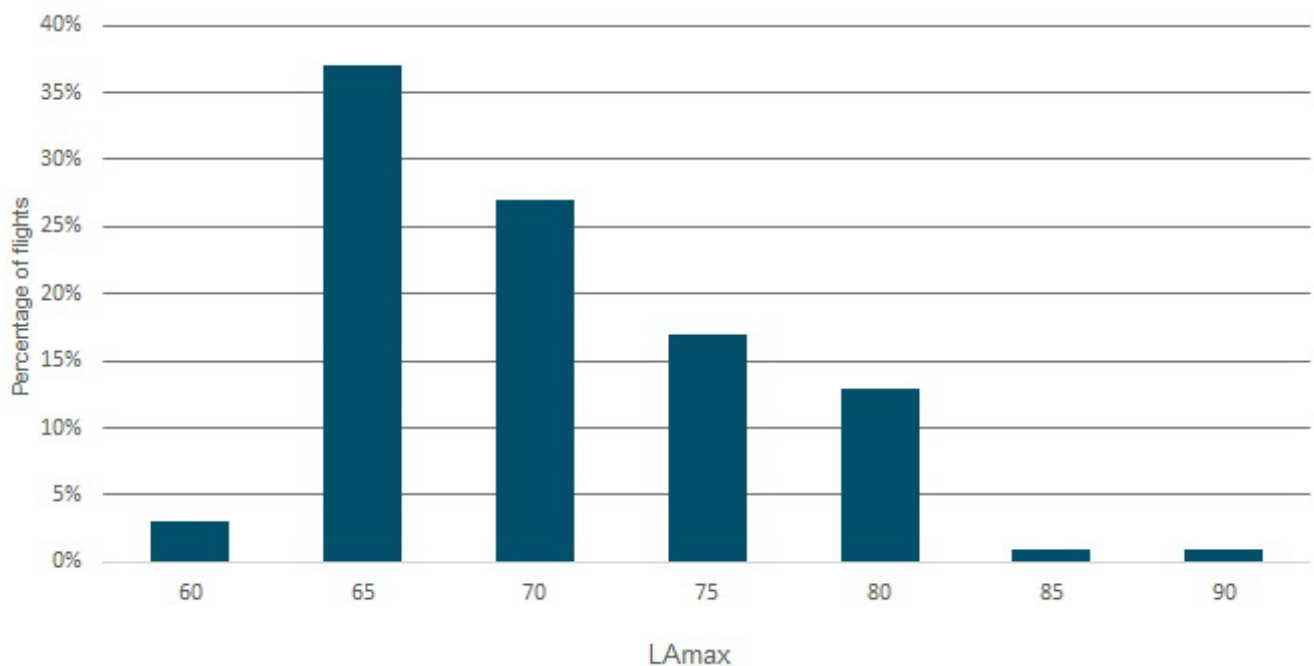


Figure 56: LAmax levels distribution for NMT 5, July – December 2022

Table 9 shows the top 10 loudest correlated aircraft types from the total count of correlated noise events to NMT5.

Aircraft Type	Max dB	Total Count
A339	94.6	1
E295	82.6	2
AT72	82.2	20
A359	80	3
7M8	79.9	1
B772	79.8	4
AT76	78.7	7
B734	78.7	4
B735	78.7	1
AT73	78	97

Table 9: LAmax by aircraft types correlated to NMT5, July - December 2022

NMT 6: Artane

Noise Monitoring Terminal 6 ('Artane') is located southeast of Dublin Airport on the roof a school building, see Figure 51 below, under the extended runway centreline of runway 16. Its purpose is to monitor runway 16 departures and runway 34 arrivals. The resulting data for NMT 6 measurements in the period from July 1st up to and including December 31st, 2022 are presented in this section.



Figure 57: Noise Monitoring Terminal Artane Location

Noise Events

The figure below shows the breakdown of noise events attributed to aircraft, weather, and the community.

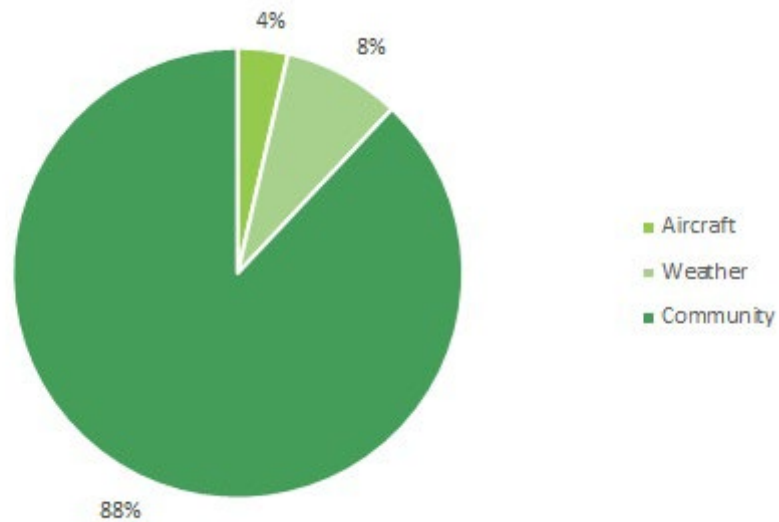


Figure 58: NMT 6 Noise Event Types

NMT Operational Status

To ensure that Noise Monitoring Terminals keep working within specific limits, internal calibration checks are completed every 6 hours. Outside of the 6 hourly calibration checks, NMTs will require maintenance and during this time will not record noise events. The operational status of NMT 6: Artane is presented in Figure 53.



Figure 59: Operational status of NMT 6, July – December 2022

Noise Levels

Figure 54 presents the average noise levels measured at NMT 6 during daytime periods, which are defined to be from 07:00 in the morning to 22:59 in the evening. Recorded noise levels during these time segments are therefore averaged over a 16-hour window.

This procedure is followed both for all noise events, and for those events that were correlated to aircraft movements. The results shown are presented monthly.

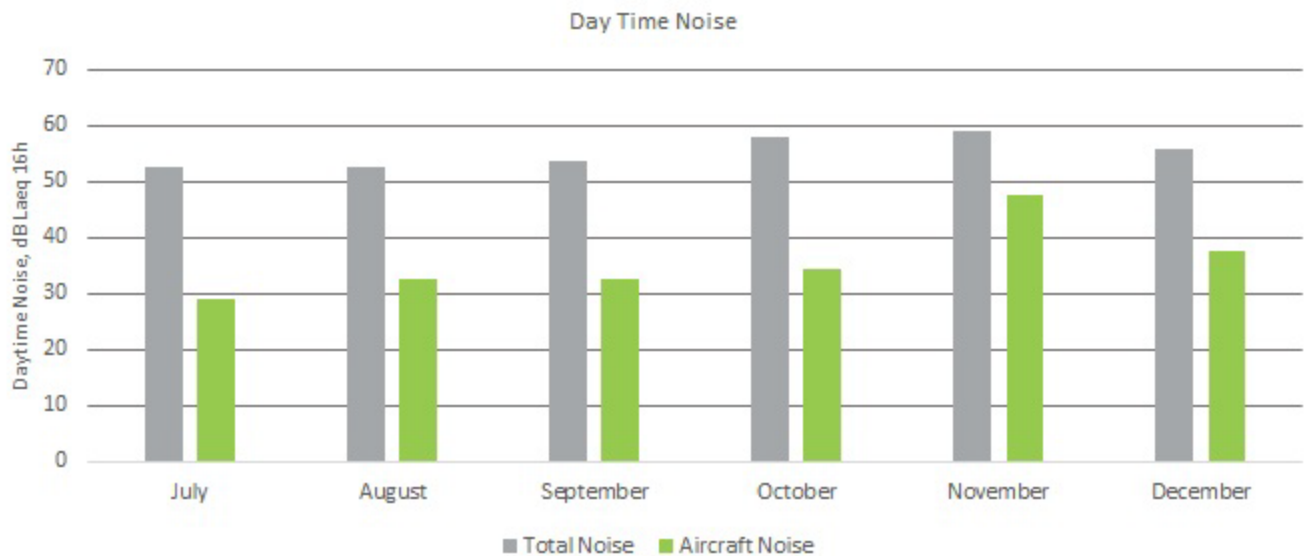


Figure 60: Averaged daytime noise levels for NMT 6, July – December 2022

Noise levels during the night are determined using a similar method. The night period is defined as a period between 23:00 in the evening to 06:59 in the morning. Noise levels are therefore averaged over an 8-hour window. Figure 55 presents these results monthly.

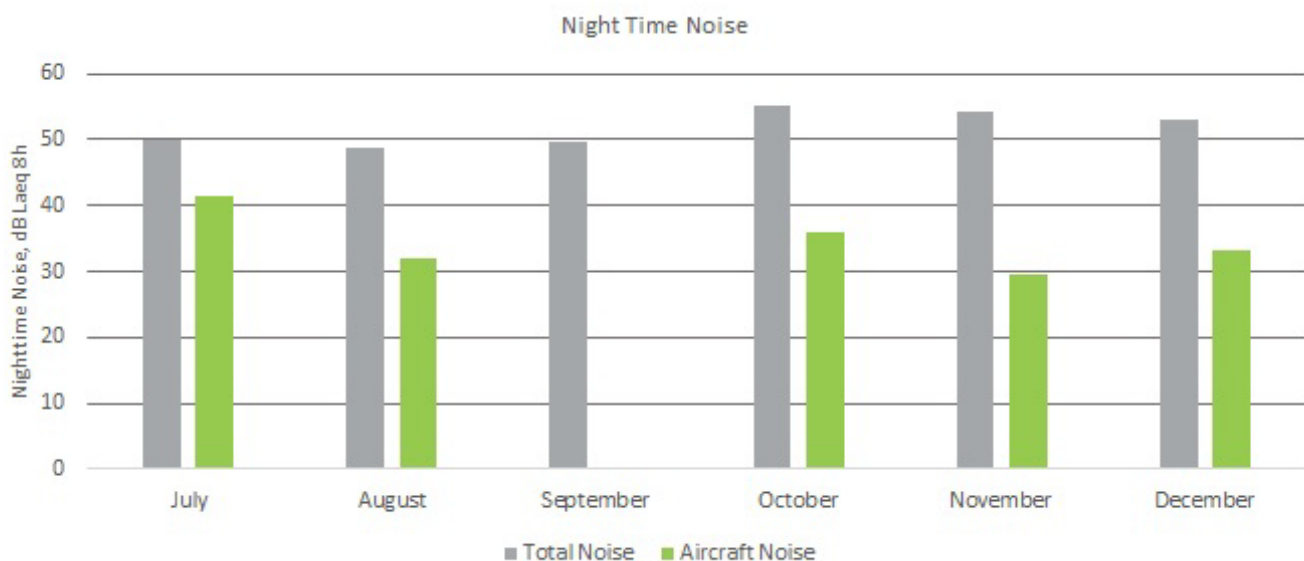


Figure 61: Averaged nighttime noise levels for NMT 6, July – December 2022

The hourly noise distribution at NMT 6 as shown in Figure 56.

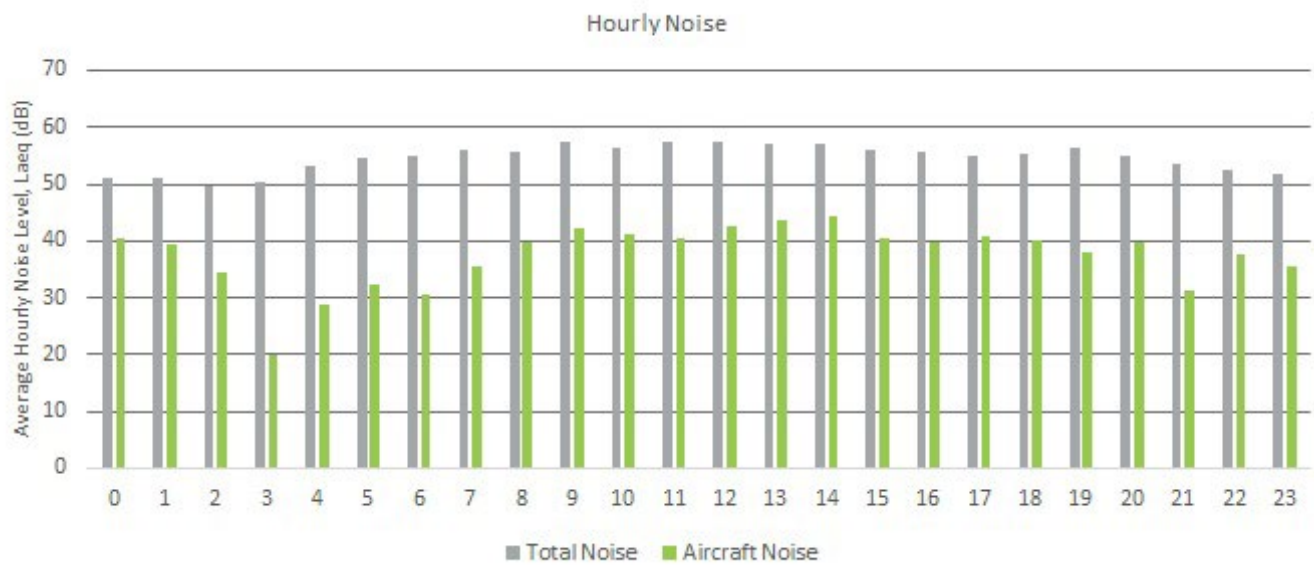


Figure 62: Averaged hourly noise levels for NMT 6, July – December 2022

Figure 57 shows the LAmax distribution for aircraft noise for the second half of 2022 for NMT 6

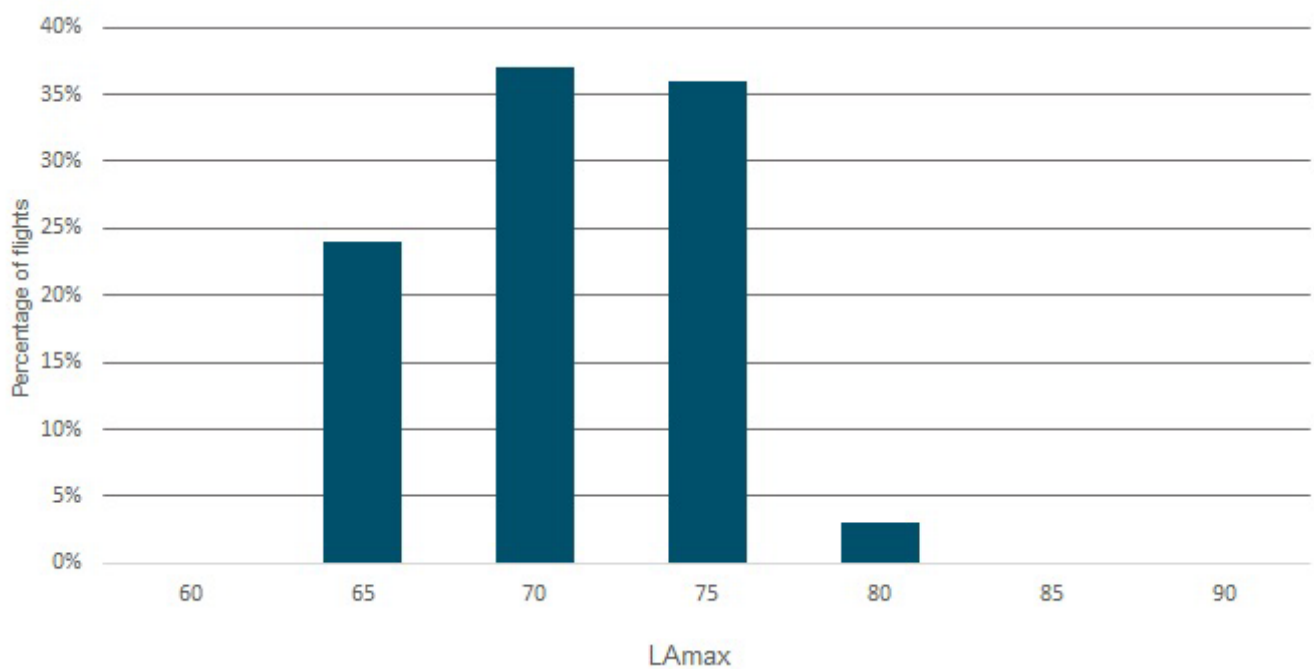


Figure 63: LAmax levels distribution for NMT 6, July – December 2022

Table 10 shows the top 10 loudest correlated aircraft types from the total count of correlated noise events to NMT6.

Aircraft Type	Max dB	Total Count
A333	80.7	14
B764	80.1	3
B77W	78.7	2
B78X	78.5	1
A306	78.3	2
A332	77.4	1
B39M	77.3	1
B733	76.9	1
B788	76.4	4
E195	76.4	1

Table 10: LAmax by aircraft types correlated to NMT6, July - December 2022

NMT 20: Coast Road

Noise Monitoring Terminal 20 ('Coast Road') is located east of Dublin Airport, see Figure 58 below, under the extended runway centreline of runway 10R. Its purpose is to monitor runway 10R departures and runway 28L arrivals. The resulting data for NMT 20 measurements in the period from July 1st up to and including December 31st, 2022 are presented in this section.



Figure 64: Noise Monitoring Terminal Coast Road Location

Noise Events

The figure below shows the breakdown of noise events attributed to aircraft, weather, and the community.

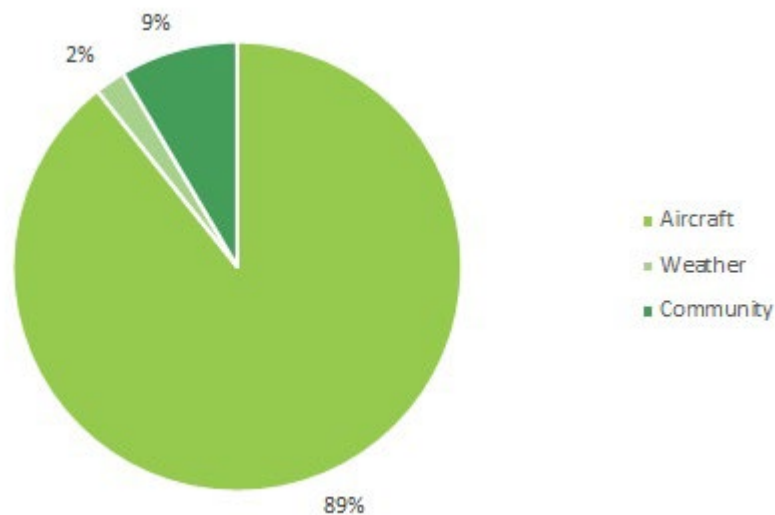


Figure 65: NMT 20 Noise Event Types

NMT Operational Status

To ensure that Noise Monitoring Terminals keep working within specific limits, internal calibration checks are completed every 6 hours. Outside of the 6 hourly calibration checks, NMTs will require maintenance and during this time will not record noise events. The operational status of NMT 20: Coast Road is presented in Figure 60.

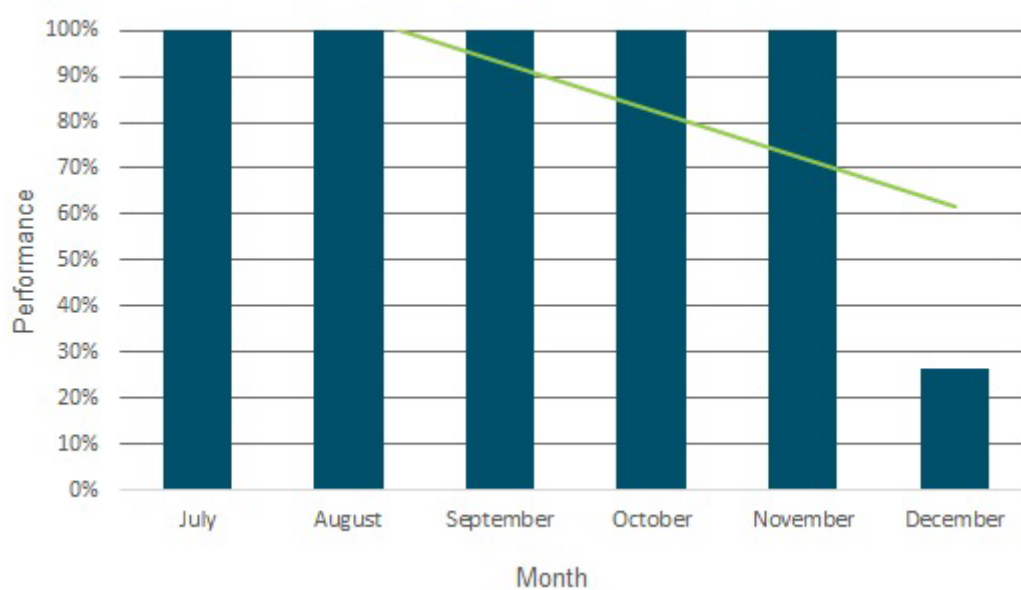


Figure 66: Operational status of NMT 20, July – December 2022

Noise Levels

Figure 61 presents the average noise levels measured at NMT 20 during daytime periods, which are defined to be from 07:00 in the morning to 22:59 in the evening. Recorded noise levels during these time segments are therefore averaged over a 16-hour window.

This procedure is followed both for all noise events, and for those events that were correlated to aircraft movements. The results shown are presented monthly.

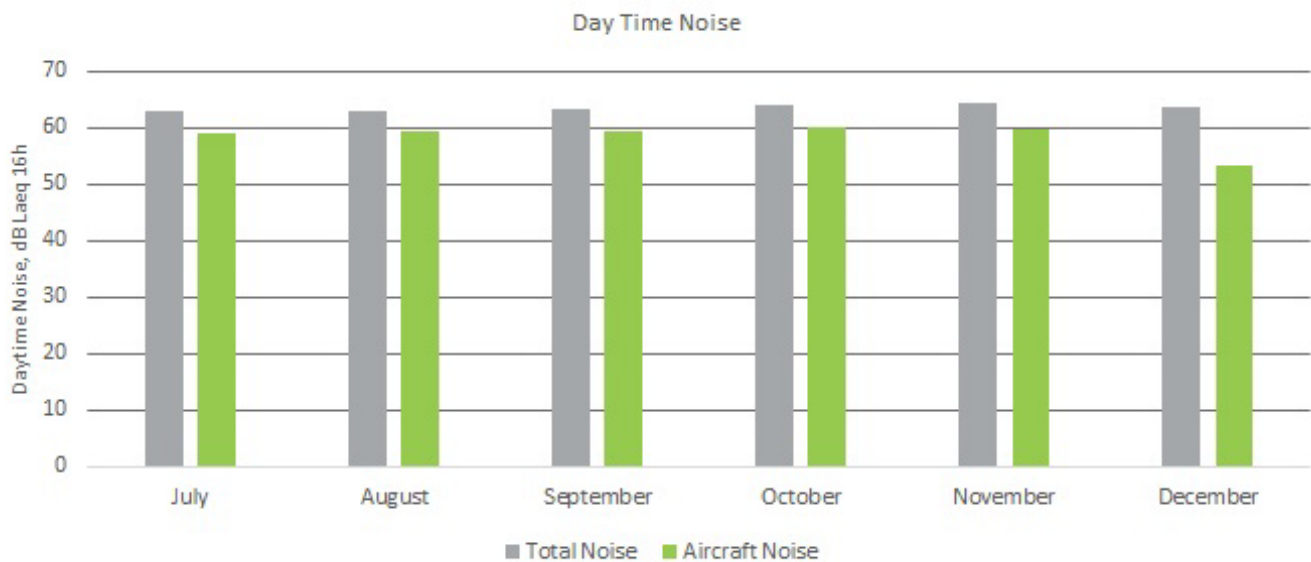


Figure 67: Averaged daytime noise levels for NMT 20, July – December 2022

Noise levels during the night are determined using a similar method. The night period is defined as a period between 23:00 in the evening to 06:59 in the morning. Noise levels are therefore averaged over an 8-hour window. Figure 62 presents these results monthly.

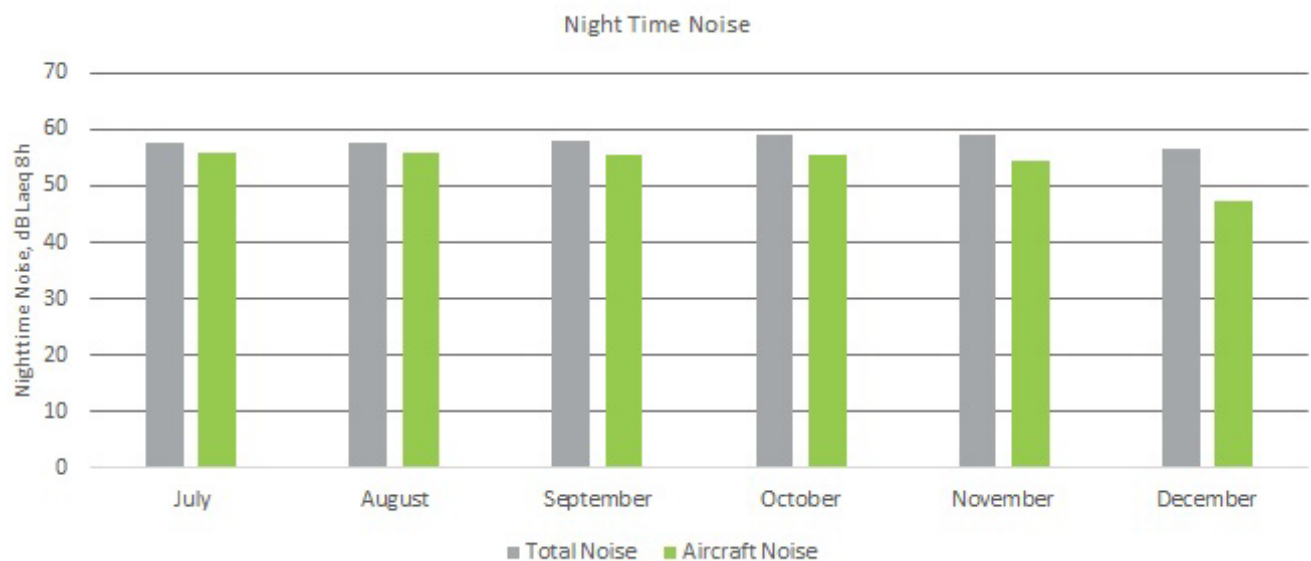


Figure 68: Averaged nighttime noise levels for NMT 20, July – December 2022

The hourly noise distribution at NMT 20 as shown in Figure 63.

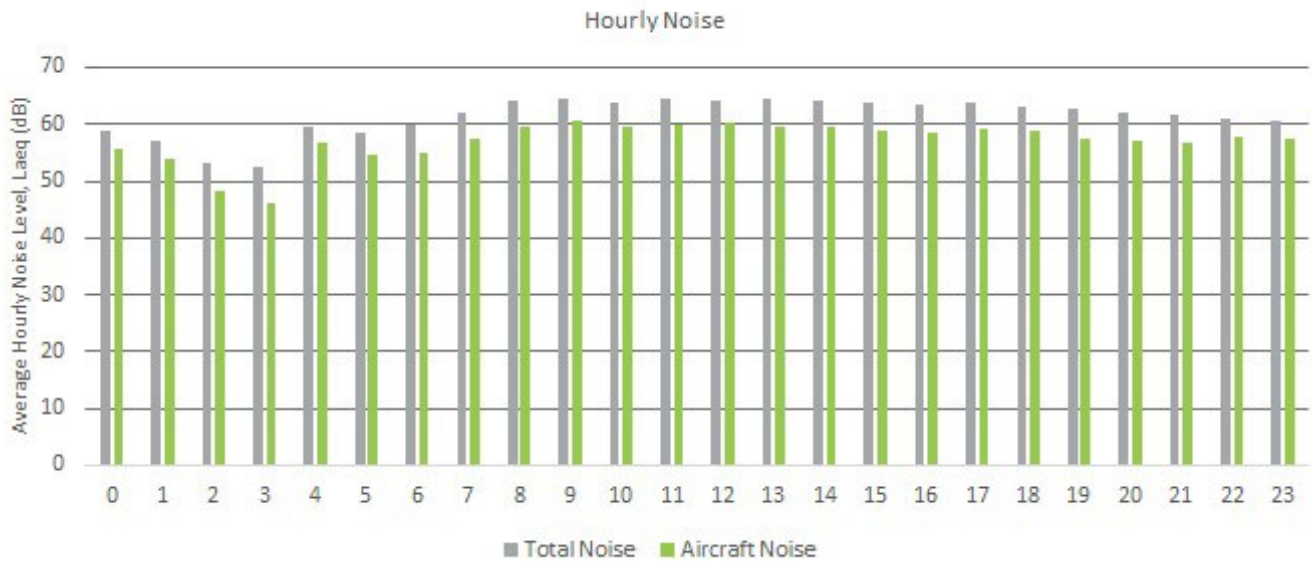


Figure 69: Averaged hourly noise levels for NMT 20, July – December 2022

Figure 64 shows the L_{Amax} distribution for aircraft noise for the second half of 2022 for NMT 20.

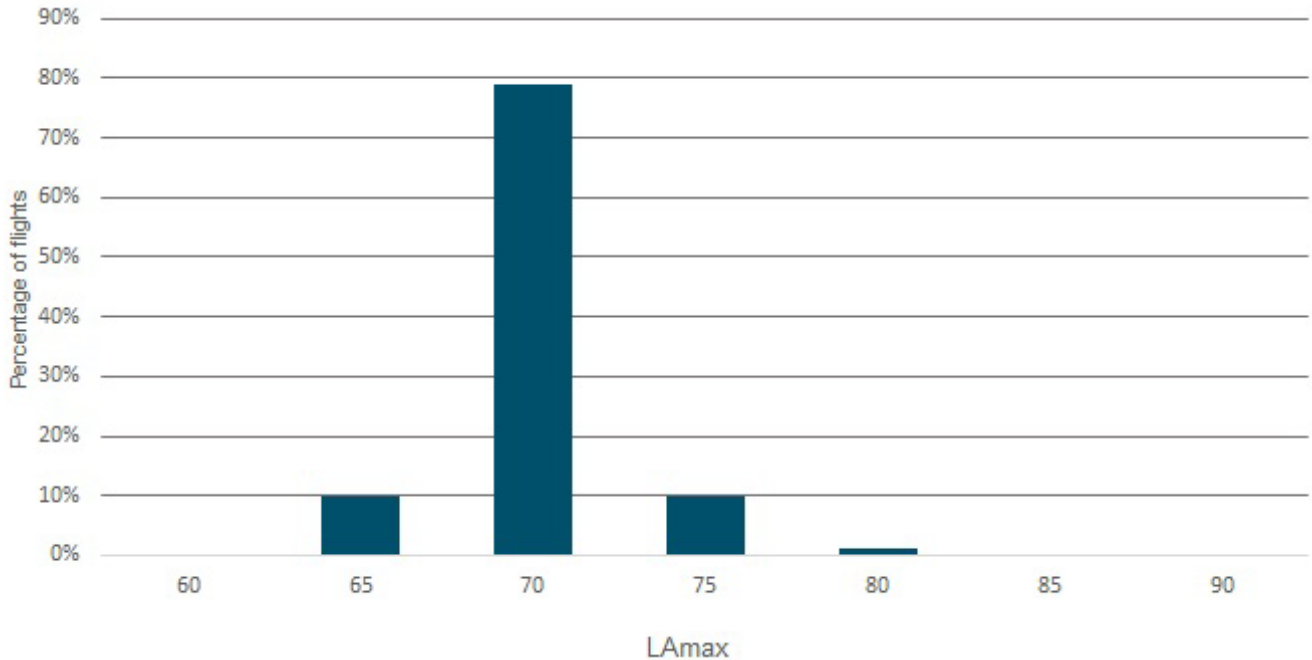


Figure 70: L_{Amax} levels distribution for NMT 20, July – December 2022

Table 11 shows the top 10 loudest correlated aircraft types from the total count of correlated noise events to NMT20.

Aircraft Type	Max dB	Total Count
B733	78.2	1
K35R	77.2	1
A339	77.1	1
C130	77.1	1
PRM1	77.1	1
P180	76.7	8
B764	76.5	342
MD82	76.5	2
B77W	76.3	441
A333	76	1924

Table 11: LAmax by aircraft types correlated to NMT20, July – December 2022

Glossary

Symbol	Description	Unit
LAeq	A-weighted, equivalent noise level, averaged per hour over a half year period.	[dB]
LAeq, 8 h	A-weighted, equivalent noise level, averaged over eight hours per month between 23:00 and 07:00 (nighttime), hence 8 hour equivalent.	[dB]
LAeq, 16 h	A-weighted, equivalent noise level, averaged over 16 hours per month between 07:00 and 23:00 (daytime), hence 16 hour equivalent.	[dB]
LA,MAX	A-weighted, maximum recorded noise level per correlated aircraft-noise event, instead of indicating the average noise levels for a reference duration.	[dB]

Report inquiries

Phone: +61 2 9463 4503

Online form: <https://www.dublinairport.com/about-us/-community-affairs/noise-complaint>

This report is drafted by Envirosuite on behalf of Dublin Airport.