

5

SECTION 131 FORM

File With \_\_\_\_\_

Appeal NO: ABP 314485

TO: SEO

Defer Re O/H ☐

Having considered the contents of the submission dated/ received 23/12/24

from John Stanford I recommend that section 131 of the Planning and Development Act, 2000  
be/not be invoked at this stage for the following reason(s): no new issues

E.O.: [Signature]

Date: 2/1/25

To EO: \_\_\_\_\_

Section 131 not to be invoked at this stage. ☐

Section 131 to be invoked – allow 2/4 weeks for reply. ☐

S.E.O.: \_\_\_\_\_

Date: \_\_\_\_\_

S.A.O.: \_\_\_\_\_

Date: \_\_\_\_\_

M \_\_\_\_\_

Please prepare BP \_\_\_\_\_ - Section 131 notice enclosing a copy of the attached submission

to: \_\_\_\_\_

Allow 2/3/4weeks – BP \_\_\_\_\_

EO: \_\_\_\_\_

Date: \_\_\_\_\_

AA: \_\_\_\_\_

Date: \_\_\_\_\_

File With \_\_\_\_\_

## CORRESPONDENCE FORM

Appeal No: ABP 314485Please treat correspondence received on 23/12/24 as follows:

. Update database with new agent for Applicant/Appellant \_\_\_\_\_

. Acknowledge with BP 23. Keep copy of Board's Letter ☐

1. RETURN TO SENDER with BP \_\_\_\_\_

2. Keep Envelope: ☐3. Keep Copy of Board's letter ☐

Amendments/Comments

Resp Recd

4. Attach to file

(a) R/S ☐(b) GIS Processing ☒(c) Processing ☒(d) Screening ☐(e) Inspectorate ☐RETURN TO EO ☐Plans Date Stamped ☐Date Stamped Filled in ☐EO: [Signature]AA: F. KhedjovDate: 21/1/25Date: 21/1/25

## Dillon Corcoran

---

**From:** John Stamford <johnstamford@hotmail.com>  
**Sent:** Monday 23 December 2024 11:31  
**To:** Appeals2  
**Subject:** Observation / Appeal re: 314485  
**Attachments:** JS Observation.pdf

**Caution:** This is an **External Email** and may have malicious content. Please take care when clicking links or opening attachments. When in doubt, contact the ICT Helpdesk.

Hi,

Please find attached my Observation / Appeal re: 314485.

I have previously made a submission on this case and therefore believe I do not have to pay the €50.

Many thanks.

John

John Stamford  
2 The Close  
Cnoc Dubh  
Ballyboughal  
Co. Dublin  
A41 Y778

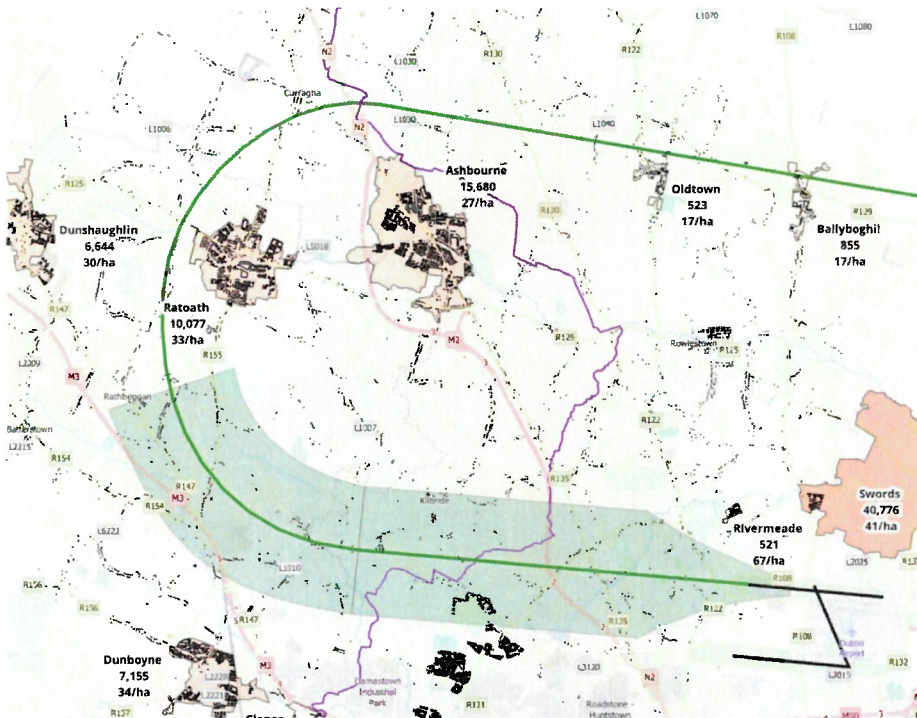
23rd December 2024

Dear An Bord Pleanála,

Re: #314485

I would like to make a submission based on the increased nighttime use of the North Runway (NR).

Simply put, in 2007 the DAA submitted plans which looked something like this.



You protected those areas by putting a condition on the planning approval that the DAA MUST adhere to the Environmental Impact Assessment Report (EIAR).

Houses in the green area were insulated from noise.

I myself moved into a house in Ballyboughal during this time and paid a lot of money for it. The house was built after 2007, and I moved in before the NR opened.

You can see from Figure 1, and from the planning conditions of adhering to the EIAR that Ballyboughal and my house should have minimal noise pollution from the airport.

However, when the NR opened things looked more like they do in Figure 2.

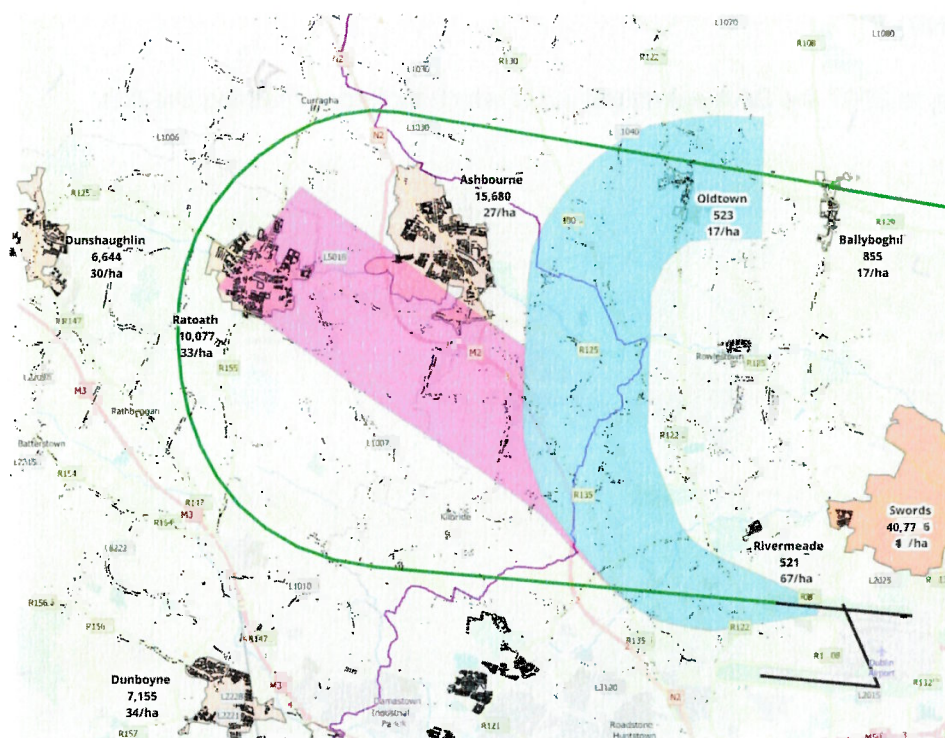


Figure 2

The use of the NR is clearly different to what was originally planned (Figure 1), and is in breach of the conditions set relating to the EIAR.

When challenged about any of this, Kenny Jacobs said on TV that the current routes are as planned, which seems difficult to understand based on Figure 1 and the conditions you set out. So based on this, he lied on TV.

He has also said it's a safety issue. How do we know this isn't true? Because when the south runway is closed for maintenance they still use the flight paths shown in Fig 2 and not those shown in Fig 1.

I suffer from aircraft flying over my house from 7am to 11pm every day. I get 8 hours of rest.

Since the NR has opened, I have not been able to have my windows open in my house as noise would be excessive (see an independent report from a qualified person Appendix 1)

This is further evidenced by Ryanair's video comparing living in Ballyboughal to living in an inner city while standing next to a train line. Appendix 1 shows Ballboughal exposure to 71dB with an exposure level of 78dB. For comparison, a train passing at 30m is 60dB.

And while decibels are sometimes difficult to translate, the doubling of sound intensity corresponds to an increase of about 3 dB.

The key difference is, that the NR has many more movements than trains passing. The earliest I can see back on the Webtrak website is 24th September 2004 which shows 103 operations. That is quicker than 1 every 45 seconds. This number is greater during the summer months.

And because of this high frequency of loud noises, I am also not able to sit in my garden. It's a good-sized garden, but it is unusable because of the noise.

The peaceful rural village I picked to raise my family is no longer peaceful.

And because of this high frequency of loud noises, I am not able to complain about them. The DAA does not accept bulk complaints and I can only submit 1 per minute. It would be a full-time job complaining about the situation and the system wouldn't allow it anyway.

And now we're been asked to accept an additional 2 hours of noise per day? This is ridiculous - you still haven't enforced the condition of adhering to the EIAR.

Everyone knows medical guidelines around sleep, everyone knows the impact of lack of sleep. And now people in Ratoath, Ashbourne, Oldtown and Ballyboughal are expected to only get 6 hours per night?

So really, the question is on you - do you think this is reasonable?

Should the residents of Ratoath, Ashbourne, Oldtown and Ballyboughal be negatively impacted by bad planning, bad implementation and bad enforcement?

It seems common sense to protect the residents, especially when they believed the original planning submission. When they believed ABP would enforce any deviations from the approved planning permission. And when the local environment adapted for over 15 years to accommodate those plans (Fig 1) and the conditions set out by ABP.

My children should not have their futures impacted through mismanagement of the DAA, or through lack of enforcement of the conditions set out by ABP.

I am in full support of DAA, expansion of flights, etc **providing** they stick to the original plans (fig 1) and EIAR.

I am not in support of continued operations in the existing way, or increased use of the NR.

My recommendations...

- Enforcement of beaches to the original planning and EIAR
- Stop all use of the NR until this can be resolved
- Compensate families in Ratoath, Ashbourne, Oldtown and Ballyboughal
- Offer voluntary buy-back schemes for houses purchased in Ratoath, Ashbourne, Oldtown and Ballyboughal prior to the NR opening
- Enforce the DAA to accept bulk complaints
- Stop all night-time flights
- Do not grant permission for the NR to be used between 11pm and 7am.

Please do the right thing here, residents and communities need the support of ABP.

Kind Regards

Dr John Stamford

## Appendix 1



# Technical Note

<b>Project:</b>	Ballyboughal, Co. Dublin	<b>Title:</b>	Noise Assessment
<b>Job Number:</b>	WDA230901	<b>Prepared By:</b>	Sean Rocks
<b>Date:</b>	30/04/2024	<b>Reviewed By:</b>	James Cousins
<b>Reference:</b>	WDA230901TN_A_01	<b>Client:</b>	Ballyboughal Community Council

## 1 Introduction

Following the commencement of operations of the new Dublin Airport North Runway, Wave Dynamics were engaged by David Walton of Ballyboughal Community Council to assess the noise levels from aircraft flyovers using sound exposure level measurements at Cnoc Dubh residential housing estate, Ballyboughal, Co. Dublin.

The objective of the assessment was to quantify the existing noise environment and the current noise levels from aircraft noise from the operation of the new North Runway at Dublin Airport. The measured noise levels have been compared with the predicted noise levels from the DAA noise contours and industry criteria.

### 1.1 Statement of Competence

This assessment and report were completed by Sean Rocks, Director | Senior Consultant; Sean has experience with aircraft noise, particularly for planning and complaints investigation. Sean's qualifications include a BEng (Hons) in Mechanical and Manufacturing Engineering, a Diploma in Acoustics and Noise Control (Institute of Acoustics), an IOA Certificate of Competence in Environmental Noise Measurement and SITRI certified sound insulation tester. Sean is a member of both Engineers Ireland and the Institute of Acoustics.

This report was peer reviewed by James Cousins, Managing Director | Principal Consultant with Wave Dynamics who has extensive experience in assessing noise and vibration from road and rail infrastructure on commercial and residential developments. James is an experienced consultant. His qualifications include; BSc (Hons) in Construction Management and Engineering, Pg Cert in Construction Law and Diploma in Acoustics and Noise Control (Institute of Acoustics) and an IOA Competence Cert in Building Acoustic Measurements. James is a member of both Engineers Ireland (MIEI) and the Institute of Acoustics (MIOA) and is the current SITRI Chairman.

## 2 Baseline Noise Survey

An attended noise survey was undertaken to quantify the noise levels from aircraft flyovers at the Cnoc Dubh estate, Ballyboughal. The attended noise measurements were conducted from 08:00hrs to 11:00hrs on 18<sup>th</sup> of April 2024 with aircraft taking off on the new North Runway in the westerly direction (normal operating procedure). Sound exposure level measurements were taken for aircraft flyovers during the attended noise survey.

### 2.1 Site Description and Measurement Locations

Ballyboughal is located in County Dublin, approximately 9-9.5km directly north of the new North Runway. The area is mainly a small village surrounded by agricultural land.

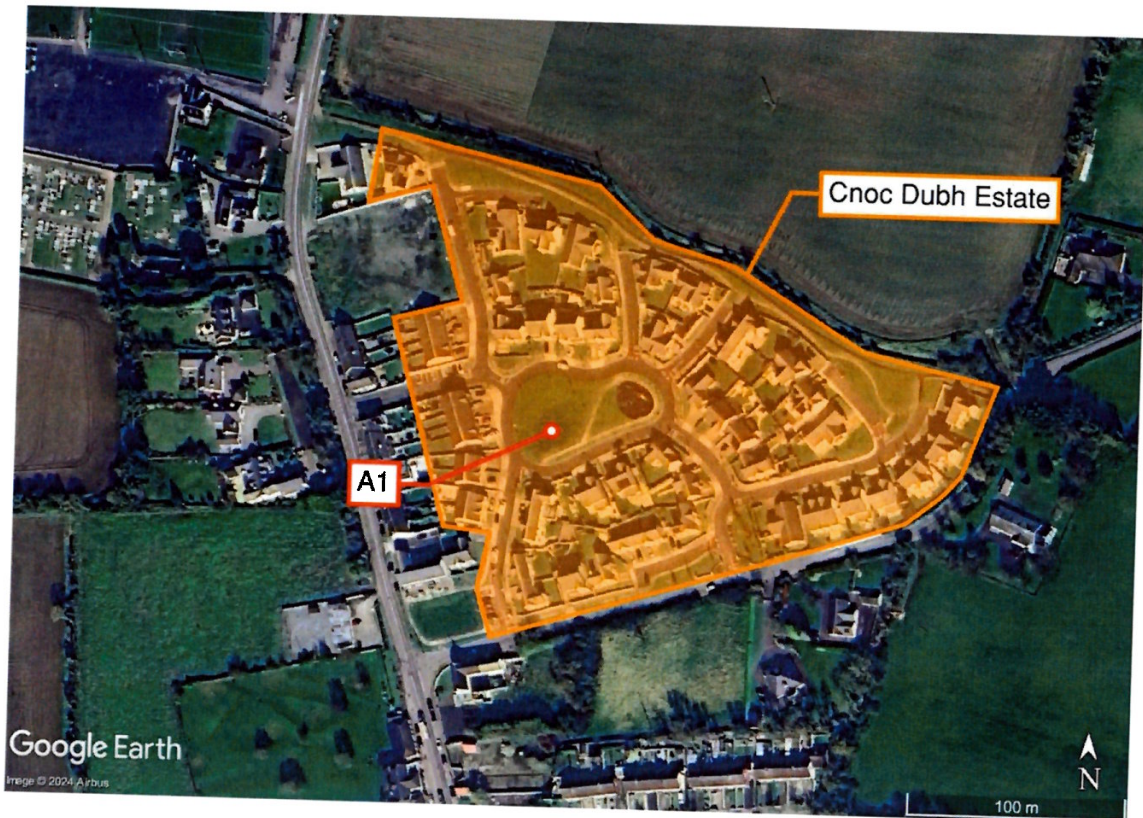


Figure 1: Site location and SEL measurement location A1.

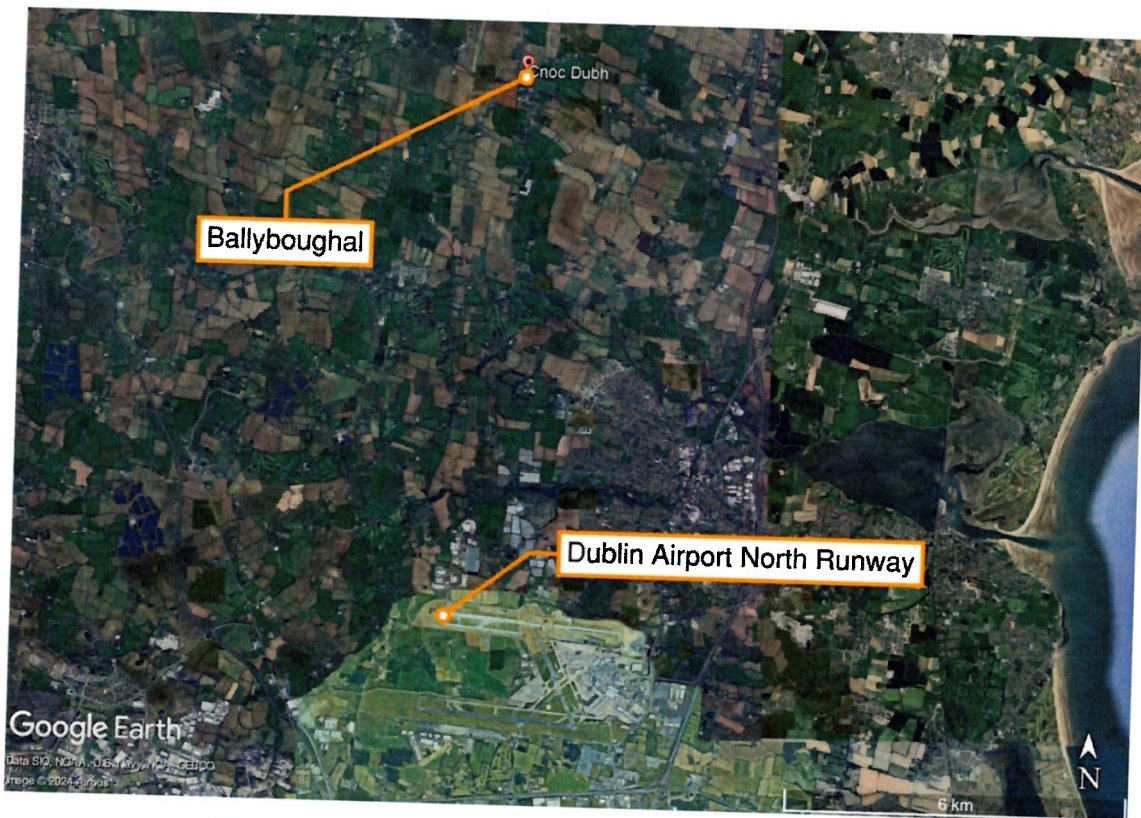


Figure 2: Site location in Relation to Dublin Airport and the new North Runway.



### 2.1.1 Survey Period

The noise measurements were undertaken on the 18<sup>th</sup> of April 2024 to establish the existing noise levels from aircraft flyovers in the Cnoc Dubh estate, Ballyboughal. It is understood that Dublin Airport was operating as normal during the survey, with aircraft taking off from the North Runway towards the west.

### 2.1.2 Noise Measurement Equipment

A Class 1 sound level meter/noise logger, in general accordance with IEC 61672-1:2013, was used for the attended measurements. Table 1 below summarises the measurement equipment used.

Table 1: Noise Measurement Equipment

Description	WD Asset Number	Model	Serial No.	Calibration Certificate No.	Calibration Due Date
Sound Level Meter	SLM4	NTI XL2-TA	A2A-23316-E1	UK-23-100	01/09/2025
Calibrator	CAL1	Nor 1251	31056	AC230226	16/10/2024

### 2.1.3 Subjective Noise Environment

Based on the information provided during the attended noise survey and logger deployment, the following noise sources were identified:

- Aircraft Noise from Aircraft Fly Overs.
- Road noise from the R108
- Birdsong
- Occasional activity from residents (cars arriving/departing, voices, etc.)

## 2.2 Noise Measurement Results

This section outlines the results of the attended noise survey.

### Attended Monitoring Results

Table 2 outlines the results of the attended measurements for aircraft flyover noise levels at location A1. The flyover sound exposure levels have been calculated from the measured  $L_{Aeq}$  levels.

The sound exposure level (SEL) from aircraft flyovers has been calculated using the following equation to allow direct comparison of the measured levels with the DAA predicted SEL contour maps:

$$L_{AX} = L_{Aeq} + 10 \cdot \log_{10}(d1/d2) - 10 \cdot \log_{10}(N) + 10 \cdot \log_{10}(T)$$

Where:

- $L_{AX}$  measured SEL
- N number of vehicle movements
- T time (seconds)
- d1 distance from the source to the receiver
- d2 distance from the source to the measurement

Table 2: Aircraft Flyover Noise Levels

Measurement				Aircraft Type	Measured Noise Levels		Sound Exposure Level
Location	Date	Time (hrs)	Duration (sec)		L <sub>Aeq</sub> dB	L <sub>AFmax</sub> dB	L <sub>Ax</sub> dB
A1	18/04/2024	08:21	83	Boeing 737-8AS	56	63	75
A1	18/04/2024	08:26	48	Boeing 737-8AS	61	66	78
A1	18/04/2024	08:29	33	ATR 72-600	52	57	67
A1	18/04/2024	08:34	46	Airbus A320	59	65	76
A1	18/04/2024	08:35	38	Boeing 737 Max 8-200	55	61	71
A1	18/04/2024	08:46	41	Airbus A320	61	69	77
A1	18/04/2024	08:53	45	Embraer E19	58	65	75
A1	18/04/2024	08:58	44	Boeing 737-8AS	61	70	77
A1	18/04/2024	09:09	41	Boeing 737-8AS	61	66	77
A1	18/04/2024	09:14	44	Airbus A320	59	66	75
A1	18/04/2024	09:19	50	Boeing 737-8AS	61	67	78
A1	18/04/2024	09:21	40	Boeing 737-8AS	59	66	75
A1	18/04/2024	09:22	56	Boeing 737-8AS	58	65	75
A1	18/04/2024	09:25	42	Embraer E19	60	68	76
A1	18/04/2024	09:33	25	Boeing 787-8 Dreamliner	51	58	65
A1	18/04/2024	09:47	40	Boeing 737-8AS	62	67	78
A1	18/04/2024	09:54	34	Boeing 787-10 Dreamliner	63	71	78
A1	18/04/2024	10:02	37	Boeing 737-8AS	58	65	74
A1	18/04/2024	10:24	37	Boeing 777	58	65	74
A1	18/04/2024	10:39	33	ATR 72-600	57	62	72
A1	18/04/2024	10:51	38	Airbus A320	59	67	75
A1	18/04/2024	10:53	33	Boeing 737-8AS	60	66	75
A1	18/04/2024	10:56	30	ATR 72-600	51	57	66
A1	18/04/2024	10:58	25	Airbus A320	53	62	67

1. SELs calculated on the rounded L<sub>Aeq</sub> values measured.

## 2.3 Weather Conditions

Good weather conditions were noted in general during the attended surveys, with winds of less than 5 m/s, no rain and full cloud cover.

## 3 Analysis of Results

### 3.1 $L_{Aeq,16hr}$ Noise Levels

The most recently predicted noise contours for the North Runway operation as per the 2007 planning permission are the compliance contours submitted to Fingal County Council in 2016. Here, the predicted  $L_{Aeq,16hr}$  (07:00hrs to 23:00 hrs) noise contours for Dublin Airport with the North Runway operational can be seen in Figure 3. The noise contours are developed by DAA based on the busiest 92 day period of the year for the airport, 16<sup>th</sup> June to 15<sup>th</sup> September.

Based on the DAA contour maps, Ballyboughal is outside the lowest predicted contour therefore noise from aircraft flyovers would be expected to be significantly below 60 dB  $L_{Aeq,16hr}$ .

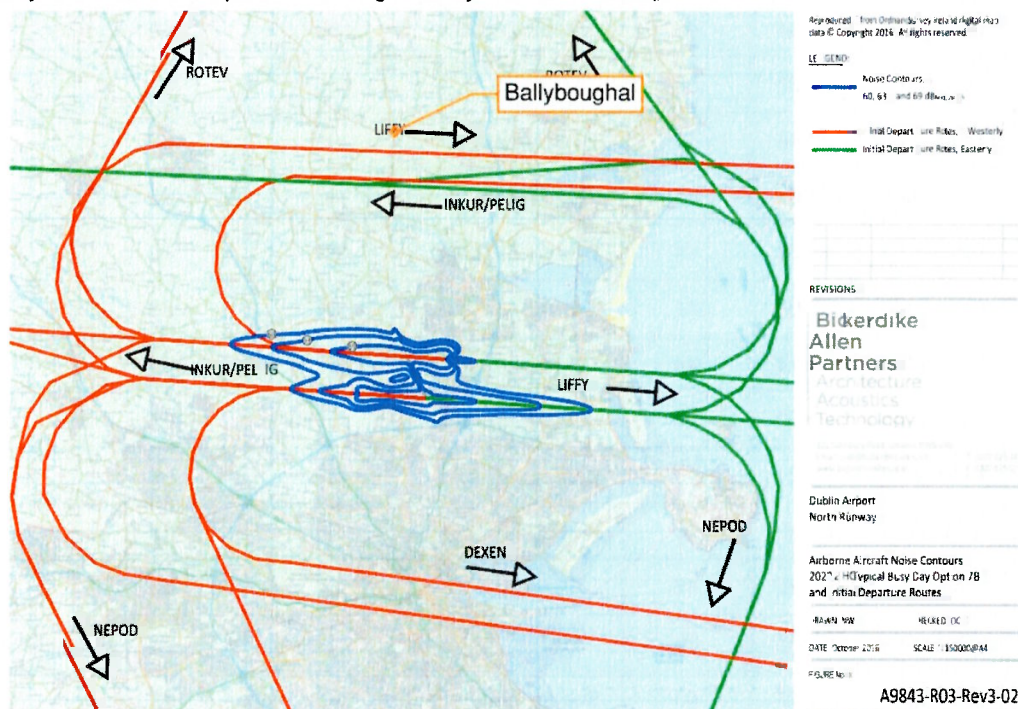


Figure 3: Predicted  $L_{Aeq,16hr}$  (07:00 – 23:00) airport noise contours with North Runway in operation.

Noise contour maps presented in the most recently submitted EIAR supplement by DAA provided to ABP place Ballyboughal outside the lowest predicted noise contour of 51-53 dB  $L_{Aeq,16hr}$  for the 2025 year scenario i.e. aircraft noise below 51 dBA for the year 2025.



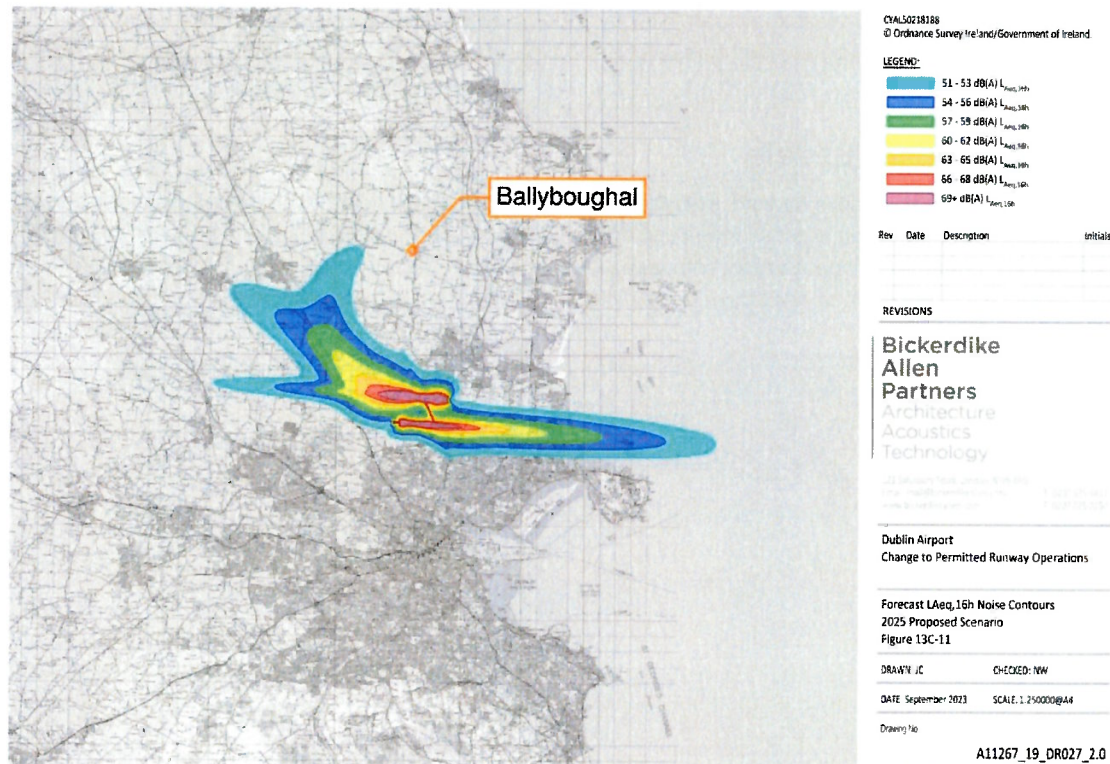


Figure 4: DAA predicted  $L_{Aeq,16hr}$  (07:00 - 23:00) airport noise contours for 2025.

### 3.1.1 Calculation of $L_{Aeq,16hr}$ Noise Levels from SEL Measurements

Based on the SEL measurements undertaken at the monitoring location in combination with the information submitted by DAA to ANCA as part of the response to ANCA's review of the 2022 airport noise emission outlining the number of flights per aircraft type (included in Appendix B) the  $L_{Aeq,16hr}$  noise levels at the residence can be calculated to be compared with the unattended measurement results to confirm validity. The noise level for each aircraft type can be calculated using the following formula and then logarithmically added to predict the daily  $L_{Aeq,16hr}$  level as follows:

$$L_{Aeq} = L_{Ax} - 10 \cdot \log_{10} (d1/d2) + 10 \cdot \log_{10}(N) - 10 \cdot \log_{10}(T)$$

Where:

- $L_{Ax}$  measured SEL
- N number of vehicle movements
- T time (seconds)
- d1 distance from the source to the receiver
- d2 distance from the source to the measurement

A correction was then applied to the results to account for days of Easterly winds which is assumed to be 12 days over the 92 day duration based on WDA's experience and previous monitoring of the North Runway undertaken in 2023. A correction has also been allowed for in that not all aircraft have flight paths over Ballyboughal, and many will continue westerly after taking off, and many will turn south rather than north. Based on the flight path tracking (determined via [https://sbeaney.com/track/v2/dublin\\_flights.html](https://sbeaney.com/track/v2/dublin_flights.html)) an allowance of 50% of aircraft takeoffs flying over Ballyboughal area has been allocated.

Based on the above calculation and the recorded SEL for each aircraft type outlined in Table 2 the predicted  $L_{Aeq,16hr}$  during the 92 day summer period in 2024 will be 52dB(A). Similarly, the 2025  $L_{Aeq,16hr}$  noise level during the 92 day summer period is predicted to also be 52dB(A).

This shows that the noise levels from aircraft flying over Ballyboughal are expected to exceed the predicted  $L_{Aeq,16hour}$  DAA predicted 92 day contour map level at the area which situates Ballyboughal outside the 51dB(A) contour.

### 3.2 $L_{night}$ Noise Levels

There are currently no nighttime takeoffs from the North Runway affecting noise levels at Ballyboughal, however the proposed Relevant Action application will see an increase in night noise at the area. In the year 2025, the  $L_{night}$  noise levels with the proposed night time take offs on the North Runway predict that Ballyboughal will experience noise levels of 40 to 44dB  $L_{night}$ . This is highlighted on the  $L_{night}$  contour map shown in Figure 5.

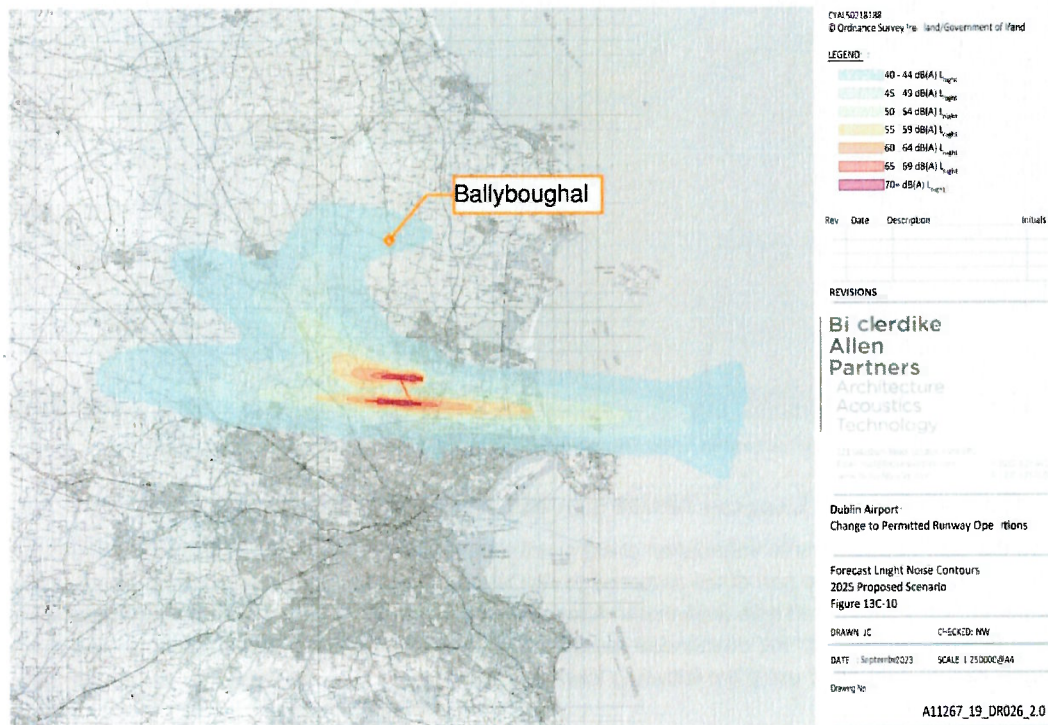


Figure 5: DAA predicted  $L_{night}$  airport noise contours for 2025.

#### 3.2.1 Calculation of $L_{night}$ Noise Levels from SEL Measurements

The  $L_{night}$  noise levels can be predicted based on the measured SEL noise measurements at the monitoring location in combination with the information submitted by DAA to ANCA as part of the response to ANCA's review of the 2022 airport noise emission outlining the number of flights per aircraft type (included in Appendix B). Similarly to the daytime noise level predictions, a correction was applied to the results to account for days of Easterly winds which is assumed to be 12 days over the 92 day duration and a correction has also been allowed for in that not all aircraft have flight paths over Ballyboughal, an allocation of 50% of aircraft takeoffs flying over Ballyboughal area has been allowed.

Based on the above calculation and the recorded SEL for each aircraft type outlined in Table 2 the predicted  $L_{night}$  during the 92 day summer period in 2024 will be 44dB(A). The 2025  $L_{night}$  noise level during the 92 day summer period is predicted to also be 44dB(A).

This is at the upper limit of the range predicted by DAA at Ballyboughal.



### 3.3 Comparison of SEL Noise Levels

Sound exposure level (SEL) contours have been predicted by the DAA and their acoustic consultants Bickerdike Allen in relation to the noise abatement departure procedures (NADP) for the North Runway for the most common aircraft types:

- Boeing 737-800
- Airbus A320
- Airbus A330

The predicted SEL contours are shown for the Boeing 737-800 and Airbus A320 in Figure 6 and Figure 7, respectively.

For the DAA predicted SEL contours for the Boeing 737-800 as shown in Figure 6 below, Ballyboughal currently lies significantly outside the lowest predicted contour of 80dB(A). Based on the recorded noise levels at the monitoring location and calculated SELs as outlined in Table 2, the sound exposure level ranged 74 – 78 dB(A) for the Boeing 737-8AS with a logarithmical average SEL of 77dB(A). Given the extent at which Ballyboughal is predicted outside the 80dB(A) contour, it is suggested that by the recorded noise levels that the noise impact of plane flyovers is higher than the DAA predictions.

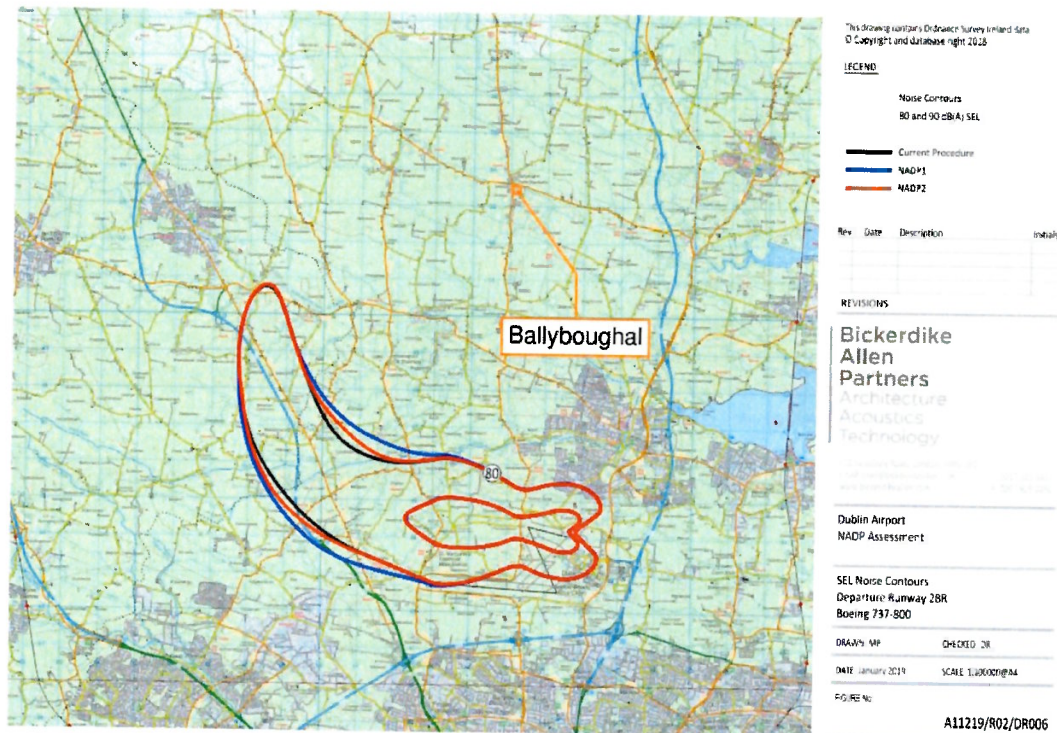


Figure 6: Predicted Sound Exposure Level noise contours for Boeing 737-800 for North Runway operation.

For the DAA predicted SEL contours for the Airbus A320 as shown in Figure 7 below, Ballyboughal again lies significantly outside the 80dB(A) contour for all departure procedures. Based on the recorded noise levels at the area and calculated SELs as outlined in Table 2, the sound exposure level ranged 67 – 77 dB(A) for the Airbus A320 with a logarithmical average SEL of 75dB(A). Given the extent at which Ballyboughal is predicted outside the 80dB(A) contour, it is suggested that by the recorded noise levels that the noise impact of plane flyovers is higher than the DAA predictions.



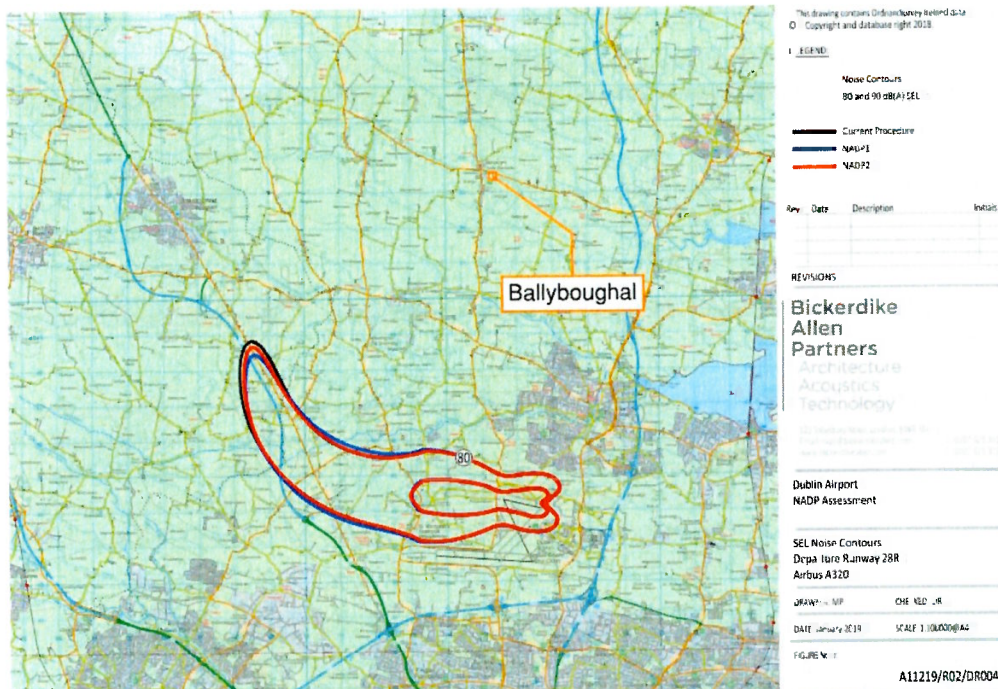


Figure 7: Predicted Sound Exposure Level noise contours for Airbus A320 for North Runway operation .

### 3.4 LAF<sub>max</sub> Noise Levels

Figure 8 and Figure 9 outline the DAA predicted  $L_{Amax}$  noise levels for the Boeing 737-800 and Airbus A320 aircrafts with the operation of the North Runway respectively.

The contours for the Boeing 737-800 aircraft shows Ballyboughal just over 7.5km outside the 70dB  $L_{Amax}$  contour, which is indicative that the noise levels at this location would be significantly lower. Based on the recorded measurements as outlined in Table 2 there was one instance of Boeing 737 aircraft which achieved 70dB(A)  $L_{AFmax}$ , and the average  $L_{AFmax}$  recorded was 66dB(A).

This shows that the maximum noise levels experienced at the Cnoc Dubh estate are negatively affected by the operation of the North Runway.



Figure 8: Predicted  $L_{Amax}$  noise contours for Boeing 737-800 for North Runway operation.

The contours for the Airbus A320 aircraft shows Ballyboughal over 8km outside the 70dB  $L_{Amax}$  contour, which is indicative that the noise levels at this location would be significantly lower. Based on the recorded measurements as outlined in Table 2 the  $L_{AFmax}$  recorded noise levels ranged from 62-69dB(A), with an average  $L_{AFmax}$  recorded was 66dB(A).

Similarly, this also shows that the maximum noise levels experienced at the Cnoc Dubh estate are negatively impacted by the operation of the North Runway.

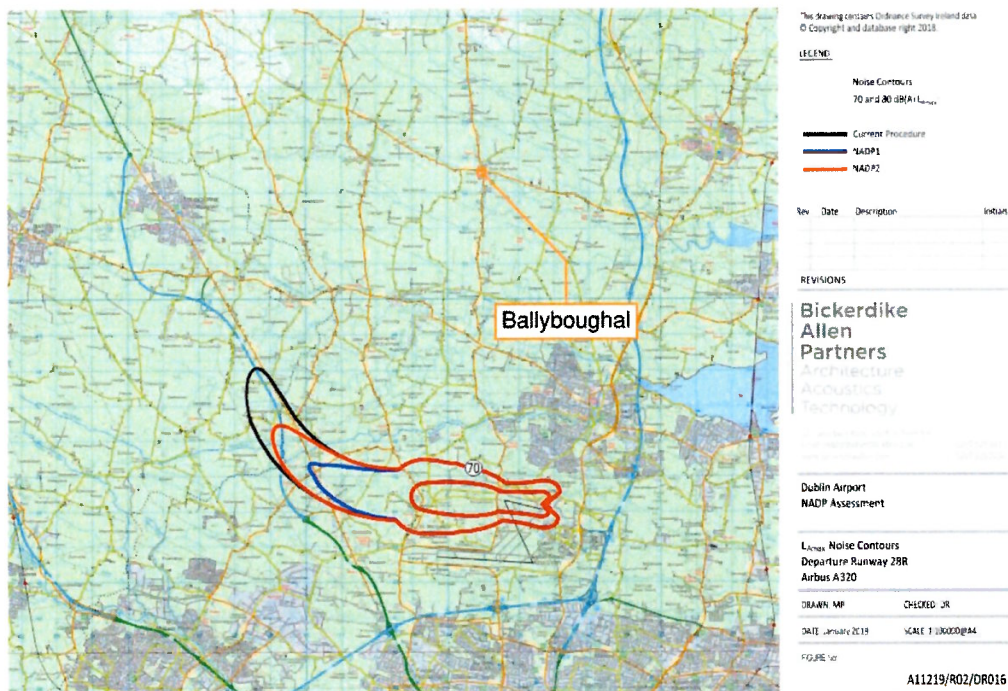


Figure 9: Predicted  $L_{Amax}$  noise contours for Airbus A320 for North Runway operation.



## 4 Conclusion

Following the commencement of operations of the new Dublin Airport North Runway, Wave Dynamics were engaged by Ballyboughal Community Council to undertake sound exposure level measurements at Cnoc Dubh estate, Ballyboughal, Co. Dublin.

The objective of the assessment was to quantify the noise levels from aircraft flyovers in the area following the commencement of the operation of the North Runway. The measured noise levels have been compared with the predicted noise levels from the DAA noise contours. Sound exposure level measurements were taken in the area and thus used to calculate the 92 day average  $L_{Aeq,16hour}$  based on the number of aircraft types over the 92 day period which predicted an  $L_{Aeq,16hour}$  of 52dB(A). The DAA 2025 predicted noise contour situates Ballyboughal approx. 3km outside the 51-53dB(A) contour, therefore daytime aircraft noise levels lower than 51dB(A) would be expected at the site from aircraft noise. The measured noise levels and predicted  $L_{Aeq,16hour}$  value show that the Cnoc Dubh Estate is negatively impacted by aircraft noise and an exceedance of the DAA contours is very likely. Based on the  $L_{Aeq,16hour}$  noise levels at the Cnoc Dubh, it would be expected that the internal noise levels within dwellings would exceed the recommended levels of 35dB(A)  $L_{Aeq,T}$  with the windows open. This is likely to have a significant negative effect on residents being able to enjoy the amenity of their own home in the Summer months where purge ventilation and cooling are likely required.

Based on studies on the reduction in noise levels from outdoor noise to indoor with an open window<sup>1</sup>, an open window will provide approx. 10dB attenuation in noise levels. Based on the measured noise levels, a dwelling with the window open for ventilation is likely to have internal noise levels in the range 45-50dB  $L_{Aeq}$  while aircraft pass. This would be clearly audible within the dwelling.

From the site visit it is evident that there is a significant subjective noise impact, and that aircraft are clearly audible at the Cnoc Dubh estate and are the dominant noise source in the area while flying overhead. The assessment of  $L_{Amax}$  noise levels at the estate indicate that there is likely a significant negative noise impact on the residents of Cnoc Dubh, Ballyboughal. The maximum noise levels measured averaged 66dB(A) for both Boeing 737 and Airbus A320 however the predicted noise contour shows 70dB  $L_{Amax}$  over 7.5km and 8km from the estate respectively.

Sound exposure level measurements for the two most common aircraft types were also compared to the DAA predicted noise contours for the same aircraft types. Despite Ballyboughal being located significantly outside the lowest predicted SEL contour for both aircraft types, there is no specific noise contour for Ballyboughal, which would assume no negative noise impact was predicted here from aircraft flyovers. Considering this, the SEL measurements indicate that the noise from aircraft flyovers is providing a negative noise impact.

It is recommended that the noise levels in the area are verified during the 92-day summer period to confirm the predicted noise levels outlined in this report.

---

<sup>1</sup> [Differences between Outdoor and Indoor Sound Levels for Open, Tilted, and Closed Windows](#)

## Appendix A- Glossary of Terms

Ambient Noise	The totally encompassing sound in a given situation at a given time, usually composed of sound from all the noise sources in the area.
Background Noise	The steady existing noise level present without contribution from any intermittent sources. The A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90 per cent of a given time interval, T ( $L_{AF90,T}$ ).
dB	Decibel - The scale in which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the RMS pressure of the sound field and the reference pressure of 20 micro-pascals (20 $\mu$ Pa).
dB(A)	An 'A-weighted decibel' - a measure of the overall noise level of sound across the audible frequency range (20 Hz – 20 kHz) with A-frequency weighting (i.e. 'A'-weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Hertz	The unit of sound frequency in cycles per second.
$L_{A90}$	A-weighted, sound level just exceeded for 90% of the measurement period and calculated by statistical analysis. See also the background noise level.
$L_{Aeq}$	A-weighted, equivalent continuous sound level.
$L_{AFmax}$	A-weighted, maximum, sound level measured with a fast time-constant - maximum is not peak
$L_{den}$	day-evening-night noise level, the A-weighted, $L_{eq}$ (equivalent noise level) over a whole day, but with a penalty of 10 dB(A) for night-time noise (23:00-07:00) and 5 dB(A) for evening noise (19:00-23:00), also known as the day evening night noise indicator
$R_w$	Weighted sound reduction index - a single number quantity which characterises the airborne sound insulation of a material or building element over a range of frequencies, based on laboratory measurements
SEL	The constant sound level that, if it persisted for 1 second, would provide the same sound energy as the original noise event.

## Appendix B – Volume of Flights per Aircraft Type

The volume of flights per aircraft type have been submitted to DAA by ANCA as part of the response to ANCA's review of the 2022 airport noise emission and are outlined below in Table 3.

Table 3: Volume of each aircraft type over the entire year and over summer period

Aircraft Type	2024						
	Annual Average				Summer Period		
	Annual Day	Annual Eve	Annual Night	Annual 24hr	Summer Day 16hr	Summer Night	Summer 24hr
Airbus A300	0	0	0	0	0	0	0
Airbus A306	597	299	299	1195	262	87	350
Airbus A319	1792	0	0	1792	524	0	524
Airbus A320	39428	11649	4182	55258	14945	1224	16169
Airbus A320neo	4182	1493	299	5974	1661	87	1748
Airbus A321	1792	896	597	3286	787	175	961
Airbus A321neo	6571	0	597	7169	1923	175	2098
Airbus A330	8961	0	896	9857	2622	262	2884
Airbus A330neo	0	0	0	0	0	0	0
Airbus A350	0	0	0	0	0	0	0
ATR 42	0	0	0	0	0	0	0
ATR 72	9558	2390	0	11948	3496	0	3496
BAe 146/Avro RJ	0	0	0	0	0	0	0
Boeing 737-400	597	1195	597	2390	524	175	699
Boeing 737-500	0	0	0	0	0	0	0
Boeing 737-700	0	0	0	0	0	0	0
Boeing 737-800	39726	11350	4480	55557	14945	1311	16256
Boeing 737 MAX	17623	8363	3286	29272	7604	961	8565
Boeing 757	2390	299	299	2987	787	87	874
Boeing 767	1792	1195	597	3584	874	175	1049
Boeing 777	597	0	597	1195	175	175	350
Boeing 777X	597	597	0	1195	350	0	350
Boeing 787	3584	597	597	4779	1224	175	1398
Bombardier CS300	1792	597	0	2390	699	0	699
Bombardier Dash 8	597	0	0	597	175	0	175
Convair 580	0	0	0	0	0	0	0
Embraer E190/195	5078	2390	299	7766	2185	87	2272
Embraer E190-E2	597	0	0	597	175	0	175
HS748A	0	0	0	0	0	0	0
Lockheed C130	0	0	0	0	0	0	0
McDonnell Douglas	0	0	0	0	0	0	0
MD83	0	0	0	0	0	0	0
Piper PA34	0	0	0	0	0	0	0

Aircraft Type	2024						
	Annual Average				Summers Period		
	Annual Day	Annual Eve	Annual Night	Annual 24hr	Summer Day 16hr	Summer Night	Summer 24hr
Shorts SD330/360	0	0	0	0	0	0	0
Other	2390	1195	0	3584	1049	0	1049
<b>Total</b>	150243	44505	17623	212372	56985	5157	62141