S. 37

File With _____

SECTION 131 FORM

Appeal NO:_ABP 314485-22 **Defer Re O/H**

☐

TO:SEO

Having considered the contents of the submission ~~dated~~/ received 14/10/22

from St. Margaret's The Ward Residents Group. 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 raised

E.O.: _____ **Date:** 18/10/22.

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: _____ **Task No:** _____

Allow 2/3/4weeks – BP_____

EO: _____ **Date:** _____

AA: _____ **Date:** _____

File With Byrne

CORRESPONDENCE FORM

Appeal No: ABP -314485-22

M & McDonnach

Please treat correspondence received on 14/10/22 **as follows:**

1. Update database with new agent for Applicant/Appellant _____	
2. Acknowledge with BP 20	**1. RETURN TO SENDER with BP** _____
3. Keep copy of Board's Letter ☐	2. Keep Envelope: ☐
	3. Keep Copy of Board's letter ☐

Amendments/Comments

St. Margaret's The Ward Residents Group response to appeals

4. Attach to file	**RETURN TO EO** ☑
(a) R/S ☐ (d) Screening ☐	Cory
(b) GIS Processing ☐ (e) Inspectorate ☐	
(c) Processing ☐	

	Plans Date Stamped ☐
	Date Stamped Filled in ☐
EO: Cory Lacy	**AA:** Pete B
Date: 14/10/22	**Date:** 18/10/22

Karen Byrne

From: Liam O'Gradaigh <logradaigh@hotmail.com>
Sent: Friday 14 October 2022 12:20
To: Appeals2
Subject: Case Number: ABP-314485-22
Attachments: StMargaretsTheWardResidents.docx

Dear ABP,
On behalf of St Margarets The Ward Residents Group, please find attached a submission on other appeals lodged for the above case number.

Many thanks
Liam O'Gradaigh
086-0662280

St Margarets The Ward
Residents Group
c/o Ward Cross
The Ward
Co Dublin

Case Number: **ABP-314485-22**
FCC Ref #: F20A/0668

Dear An Bord Pleanála,

Many thanks for the letter dated the 19th of September from An Bord Pleanála inviting submissions/observations from the St Margarets The Ward Residents Group on other appeals lodged for the above case number. Please find attached our submission in this regard.

Based on these appeals lodged with An Bord Pleanála, I request that An Bord Pleanála as part of their assessment of the application:

1. Rigorously defend the existing planning conditions imposed by An Bord Pleanála in 2007
2. Scrutinise the noise contours and noise modelling as schools and pre-schools are being subjected to extremely high levels of noise which were not predicted by the daa's modelling
3. Compare the FAA's INM software and AEDT software to understand differences with real noise measurements
4. Ensure the noise models are calibrated with real noise measurements from the North Runway
5. Ensure that any proposed NQS has a movement limit in line with UK airports, and appropriate narrow bands to ensure noise is not being underestimated
6. Ensure the noise levels do not exceed 45 dB LAmax more than 10 times in bedrooms
7. Investigate the discrepancies between the EPA's funded report on Environmental Transport Noise in Ireland and the daa's statistics and how the

daa's noise population statistics are low relative to European counterparts and how the number of Highly Annoyed and Highly Sleep Disturbed do not match the EPA's report, given the same Round 3 END input dataset

Further commentary on the issues raised in the appeals can be found in the following sections.

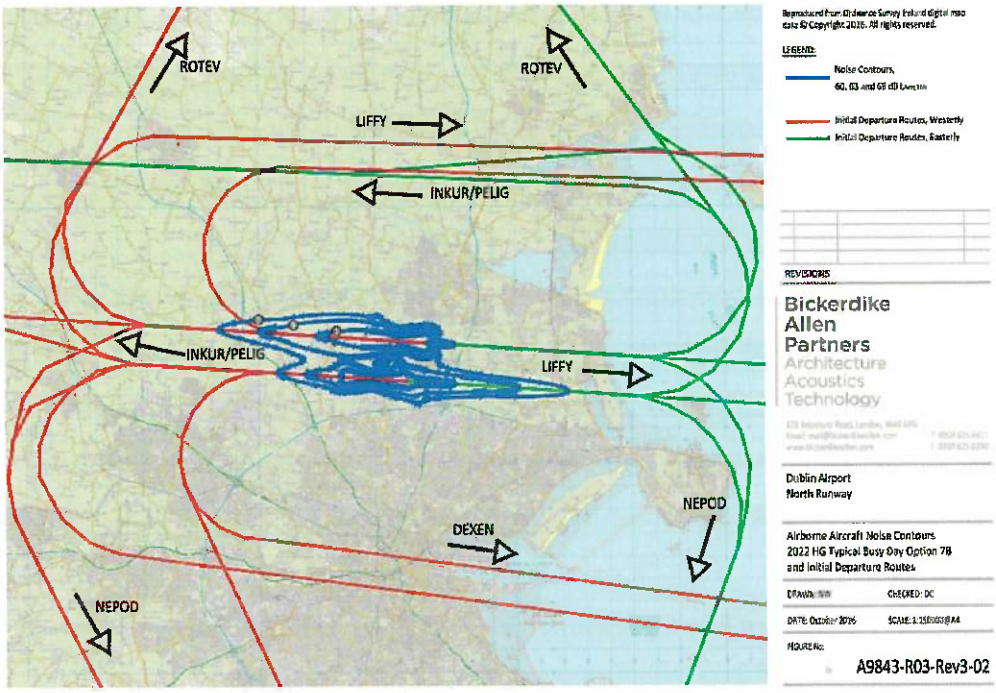
Yours sincerely
Liam O'Gradaigh
(On behalf of St Margarets The Ward Residents Group)

Non-adherence to An Bord Pleanála planning conditions of 2007

The appeal by SMTW Environmental DAC makes reference to the non-adherence to An Bord Pleanála planning conditions of 2007. It states that the daa are:

- Continuing to fly over 65 aircraft at night since the North Runway opened on August 24th, contravening Condition 5
    - *"On completion of construction of the runway hereby permitted, the average number of night time aircraft movements at the airport shall not exceed 65/night (between 2300 hours and 0700 hours) when measured over the 92 day modelling period as set out in the reply to the further information request received by An Bord Pleanála on the 5th day of March, 2007.*

      ***Reason**: To control the frequency of night flights at the airport so as to protect residential amenity having regard to the information submitted concerning future night time use of the existing parallel runway".*
- Flying divergent flight paths on the North Runway for Westerly operations contravening the EIS of 2007
- Divergent flight paths currently in operation do not align with EIAR for this current planning application that is under appeal
- 30-degree divergence was not proposed in the 2016 consultation
- Condition 3 of planning does not allow for dual runway departures under Option 7b
- Flight paths used in Insulation Scheme approved by Fingal County Council in 2016, based on 2007 planning permission, show straight out operations



- Departures on North Runway on August 25-27th and all dates of westerly departures since opening are showing divergent routes contravening the planning permission from 2007

A planning enforcement warning letter has been sent by Fingal County Council to the daa but the daa are still flying divergent routes on the North Runway in contravention of planning. An Bord Pleanála needs to robustly defend its planning conditions and

ensure full compliance. What is the purpose of An Bord Pleanála if its planning conditions are completely ignored? The daa is making a mockery of the planning system.

The effects of aircraft noise on children:

In the appeal by Mr Conor Kennedy in his appeal states that since 2007 there have been more publications that confirm the detrimental effect of disrupted sleep on human health, notably, the academic performance of school children. Mr Kennedy quotes a paper by Basner et al, 'Aviation Noise Impacts: State of the Science' (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5437751/). This paper has a section titled 'Children's Learning'. In the conclusion it states that:

"*There is sufficient evidence for a negative effect of aircraft noise exposure on children's cognitive skills such as reading and memory, as well as on standardized academic test scores. Evidence is also emerging to support the insulation of schools that may be exposed to high levels of aircraft noise.*"

In the appeal by SMTW Environmental DAC, they include a noise medical report from Professor Thomas Muenzel, 'Dublin_Airport_Noise_Medical_Report.pdf'. Section 4.4 of this report is titled 'Aircraft noise and cognitive development disorders in children'. This section discusses the NORAH study and lists the specific findings of the study:

- Reading skills: The results show that with a continuous increase in the sound level (LAeq, 08-14h) of 10 dB (A) the acquisition of reading competence deteriorates by an average of one month. The children with an aircraft noise-associated noise exposure of 59 dB (A) are therefore about two months behind the children in their schools with an average aircraft noise-associated noise exposure of 39 dB (A).
- Anterior Skills: No connection was found between aircraft noise and the linguistic precursor skills of reading, such as speech perception and auditory memory.
- Well-being: The students rate their physical and psychological well-being less positively as the continuous noise level rises.

The appeal by Mr Terence Murphy also makes reference to aircraft noise and children's health:

"*The original decision set down conditions to give some protection to severe noise which will have a very serious effect on the health and wellbeing of the residence and children of the areas affected. It is known that severe noise is damaging to*

children's health and wellbeing, so the lawful onus is on both the DAA and parents to protect children from adverse health problems"

LAmax levels:

The appeals by Sheila Hand & Others and by Sheelagh Morris (MFGM) include a longitudinal study by Bickerdike Allen Partners (BAP) on predicted LAmax and SEL noise levels from the new North Runway. The noise levels have been predicted at eight points from the end of the runway 28R, ranging from 0.5km to 4km in 0.5k increments. BAP used the FAA's INM version 7.0d software for the prediction of both departures and arrivals. The same software was used for the Fingal County Council noise zones for planning.

Arrivals and departures were modelled using straight routes, along the extended centreline of the North Runway. Noise levels were predicted for aircraft types B737-800, A320, B737 MAX8, A330-300, A380 and B737-200. Validation of some of the aircraft types was conducted using real noise measurements from noise monitors.

In section 3 of the study, the LAmax and SEL figures are presented:

The L_{Amax} and SEL noise levels rounded to the nearest decibel are given in Tables 2 and 3 below.

Operation	Aircraft Type	Noise Level, dB L_{Amax}							
		0.5 km	1.0 km	1.5 km	2.0 km	2.5 km	3.0 km	3.5 km	4.0 km
Departure	Airbus A320	86	83	78	78	77	77	76	76
	Airbus A330-300	91	90	89	88	87	83	82	81
	Airbus A380	89	88	87	86	85	84	83	83
	Boeing 737 Max8	87	84	81	79	78	77	77	76
	Boeing 737-800	90	87	83	81	80	80	79	79
	Boeing 737-200	96	94	93	92	90	87	86	85
Arrival	Airbus A320	94	90	87	85	83	81	80	79
	Airbus A330-300	97	93	90	87	86	84	83	82
	Airbus A380	95	91	89	87	85	83	82	81
	Boeing 737 Max8	94	90	87	85	83	81	80	79
	Boeing 737-800	94	90	87	85	83	81	80	79
	Boeing 737-200	94	90	88	86	84	82	81	80

Table 2: L_{Amax} Noise Levels at Assessment Locations

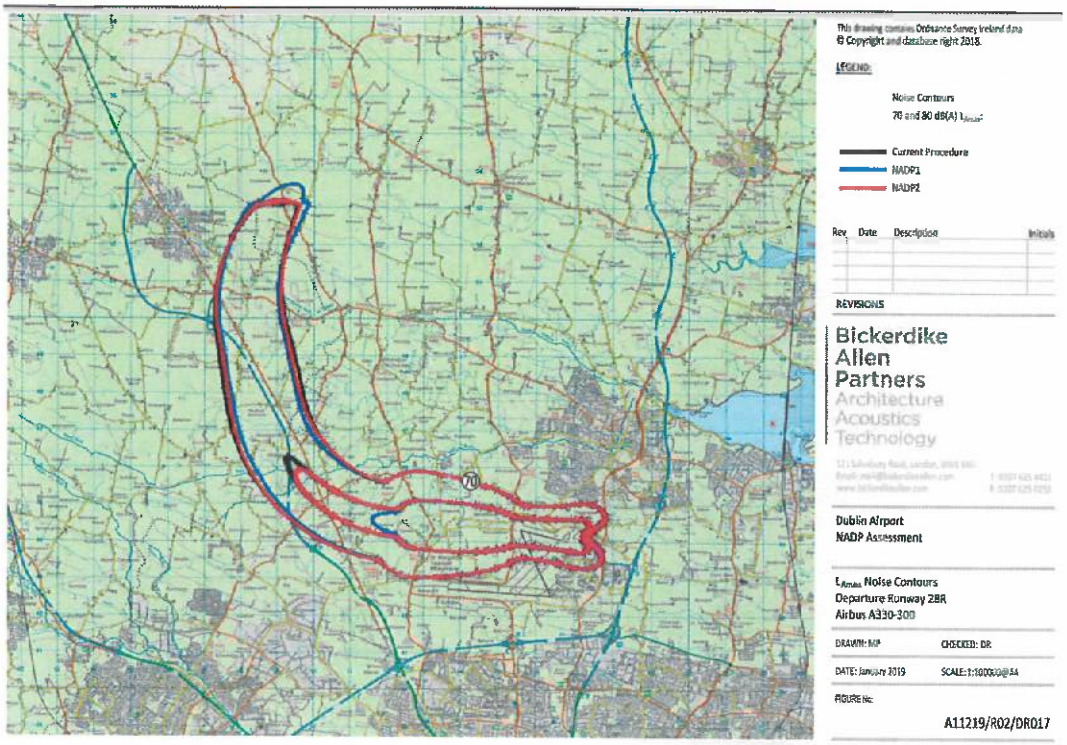
Operation	Aircraft Type	Noise Level, dB(A) SEL							
		0.5 km	1.0 km	1.5 km	2.0 km	2.5 km	3.0 km	3.5 km	4.0 km
Departure	Airbus A320	94	92	89	88	87	87	86	86
	Airbus A330-300	99	98	97	96	95	92	91	90
	Airbus A380	97	96	95	94	93	92	92	91
	Boeing 737 Max8	95	93	89	88	87	86	85	85
	Boeing 737-800	97	95	92	90	89	88	88	87
	Boeing 737-200	104	103	101	100	97	95	94	93
Arrival	Airbus A320	99	96	94	92	90	89	89	88
	Airbus A330-300	101	99	97	95	94	93	92	91
	Airbus A380	100	98	96	94	93	92	91	91
	Boeing 737 Max8	96	94	92	91	90	89	88	87
	Boeing 737-800	97	95	93	91	90	89	88	88
	Boeing 737-200	97	95	94	93	91	90	90	89

Table 3: SEL Noise Levels at Assessment Locations

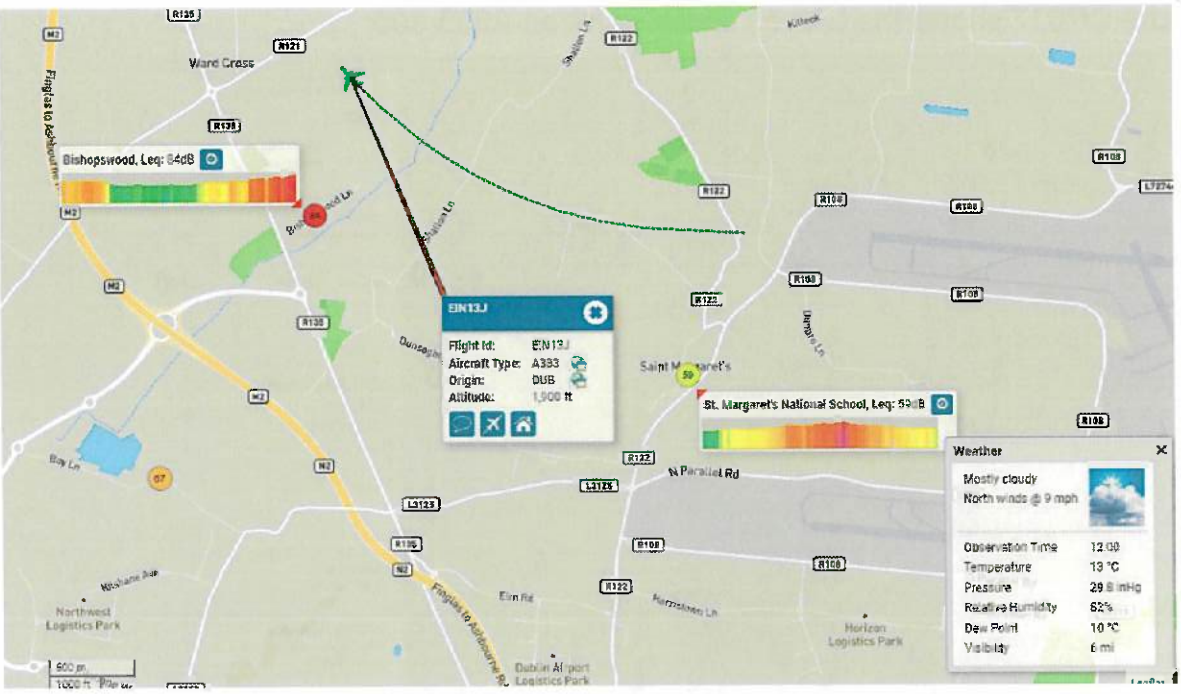
For the B737 MAX8 aircraft, LAmax levels of 76 dB were predicted for departures 4km from the end of the North Runway, assuming a straight-out departure route. For arrivals 4km from the end of runway, noise levels of 79 dB LAmax were predicted for aircraft of type B737 MAX8.

In a document submitted by the daa to ANCA in June 2021, 'https://www.fingal.ie/sites/default/files/2021-06/nr-anca-response_v1.0_0.pdf', LAmax contours are provided for A320, A330-300, B737-800 and A320 aircraft types.

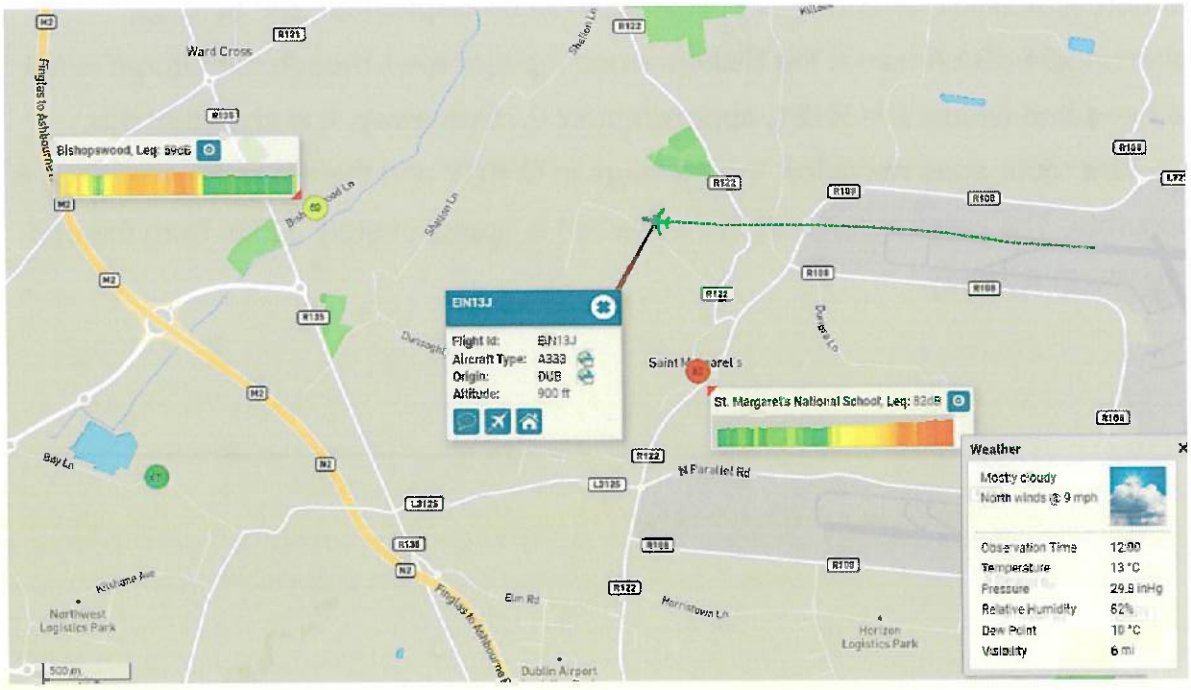
Figure DR017 shows the LAmax contours for an A330-300:



And here is a WebTrak example of flight EIN13J on September 29th at 12:20 registering 84 dB LAmax at the Bishopswood monitor even though the aircraft is not overhead and is near the R121, approximately 0.75km away. It is clear that the departure route does not follow the contours in DR017 and therefore the modelling is inaccurate. The noise monitor at Bishopswood is approximately 3.2km from the end of the North Runway.



Moments earlier on its departure route, flight EIN13J registered 82 dB LAmax at the St Margarets National School monitor.



Noise measurements:

In relation to aircraft noise from the North Runway and its effects on children, a technical note was prepared by Dr Eoin King from NUI Galway (Appendix A). In the assessment, Dr King noted that the LAeq16 results were in excess of 60dB at a playschool directly under a flight path from the North Runway. This playschool (Tippy Toes) was not included in any insulation programme by the daa. Condition 6 of the North Runway's planning conditions state that the scheme shall include all schools and registered pre-schools predicted to fall within the contour of 60dB LAeq16 within twelve months of the opening of the runway:

> 6. Prior to commencement of development, a scheme for the voluntary noise insulation of schools shall be submitted to and agreed in writing by the planning authority (in consultation with the Department of Education and Science). The scheme shall include all schools and registered pre-schools predicted to fall within the contour of 60 dB LAeq 16 hours within twelve months of the planned opening of the runway to use and, in any event, shall include Saint Margaret's School, Portmarnock Community School, Saint Nicholas of Myra, River Meade and Malahide Road schools. The scheme shall be designed and provided so as to ensure that maximum noise limits within the classrooms and school buildings generally shall not exceed 45 dB LAeq 8 hours (a typical school day). A system monitoring the effectiveness of the operation of the scheme for each school shall be agreed with the planning authority and the results of such monitoring shall be made available to the public by the planning authority.
>
> **Reason:** To protect the amenities of schools in the area.

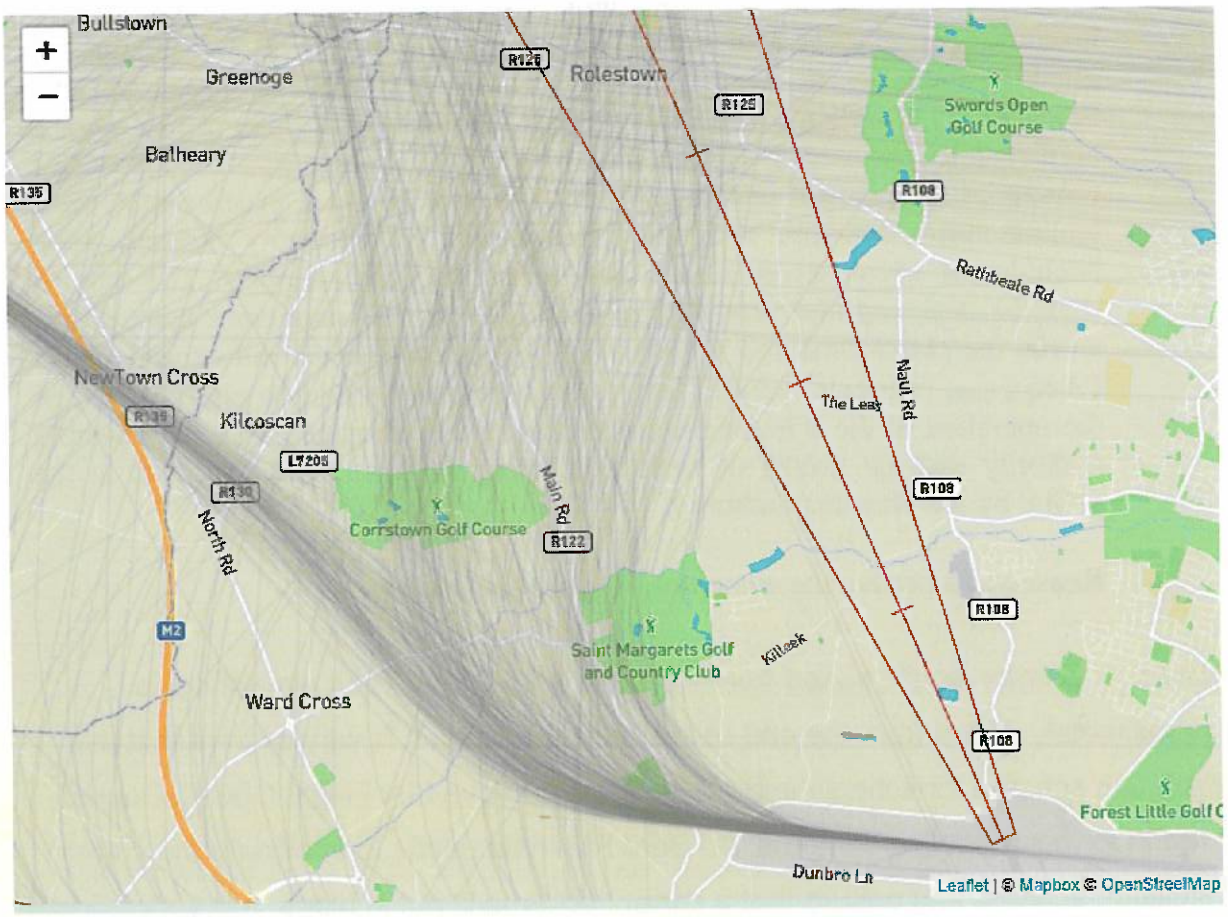
Individual LAmax results varied from 73dB to 84dB. Tippy Toes playschool is approximately 4.7km from the end of the North Runway. It is very evident that the insulation scheme for schools and playschools approved by Fingal County Council used incorrect modelled contours. An Bord Pleanála needs to invalidate the current insulation scheme and ensure that a correct scheme is put in place. It is very evident that the insulation scheme was modelled using straight out flight routes which are not compliant with current North Runway operations.

Dr King concluded that:

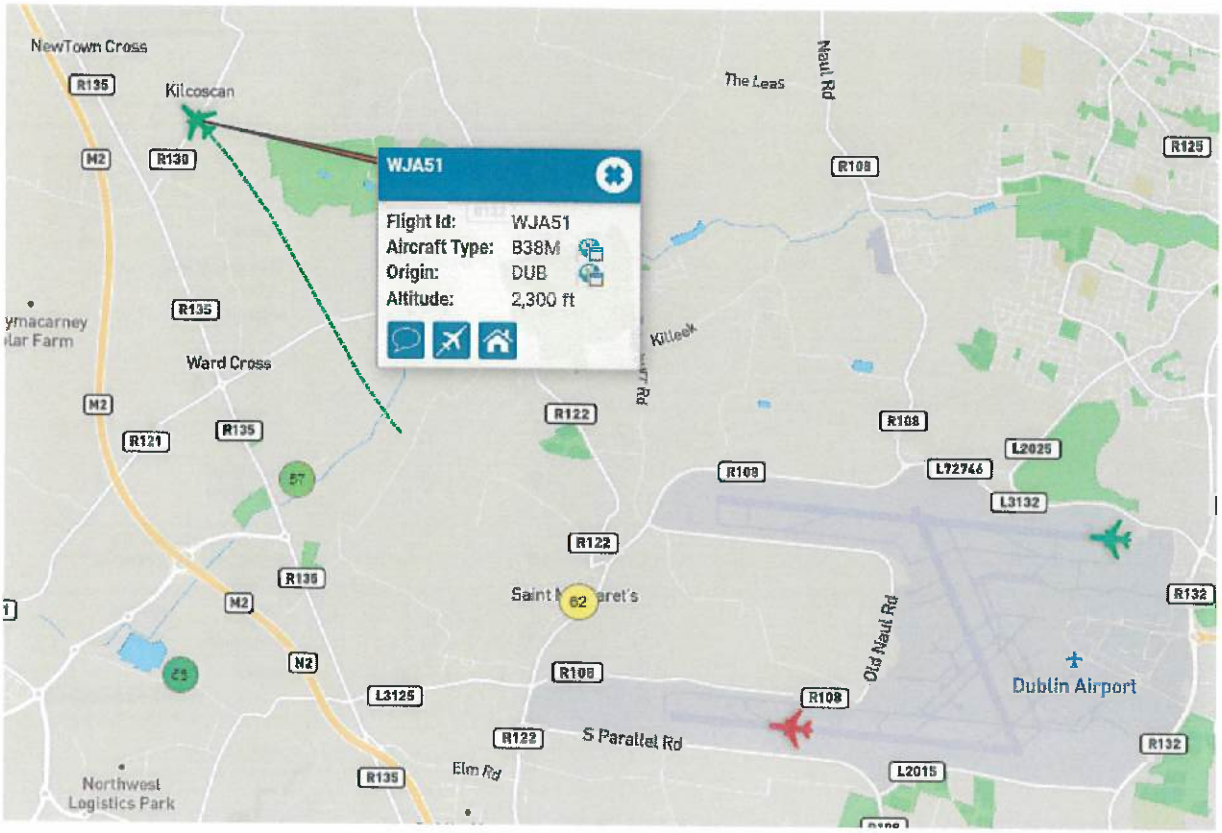
"***In my professional opinion, the noise impact assessments carried out to assess operations of the North Runway are erroneous and need to be reviewed as a matter of urgency.***"

It is also of concern that Kilcoskan National School is within 0.5km of Tippy-Toes playschool. Kilcoskan National School (https://www.kilcoskanns.ie/home/) has two autistic units. Autistic children are particularly sensitive to noise and since the opening of the North Runway, aircraft have been flying directly over the school at low altitude.

Here are departures off the North Runway in a Westerly direction from Oct 3rd to Oct 10th. Note the runway was only used from 9am – 1pm during this period. It is very evident how the Kilcoskan area is overflown by a large number of aircraft, similar to Tippy Toes.



Here is a WebTrak replay of flight WJA51 at 09:25 on Oct 10th overflying Kilcoskan NS at an altitude of 2300ft:



The contours for the noise insulation scheme were modelled by BAP using straight out flight paths. As a result, both Tippy Toes and Kilcoskan NS were excluded from the scheme as they were outside the 60dB LAeq16 contours modelled with straight out flight paths.

An Bord Pleanála need to rectify this serious issue with the schools insulation schemes and ensure that children and in particular autistic children are not left exposed and vulnerable to high levels of aircraft noise. An Bord Pleanála needs to liaise with the HSE and Department of Education to ensure these children's health is prioritised.

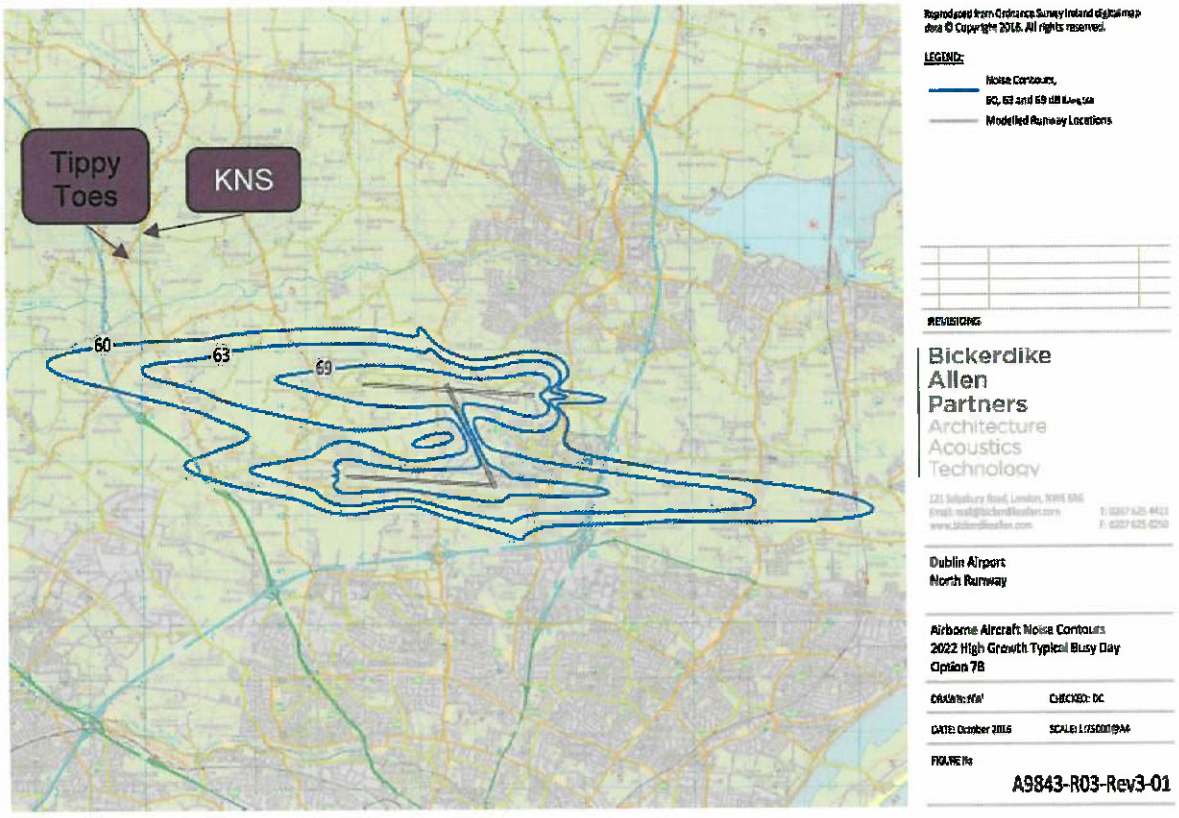
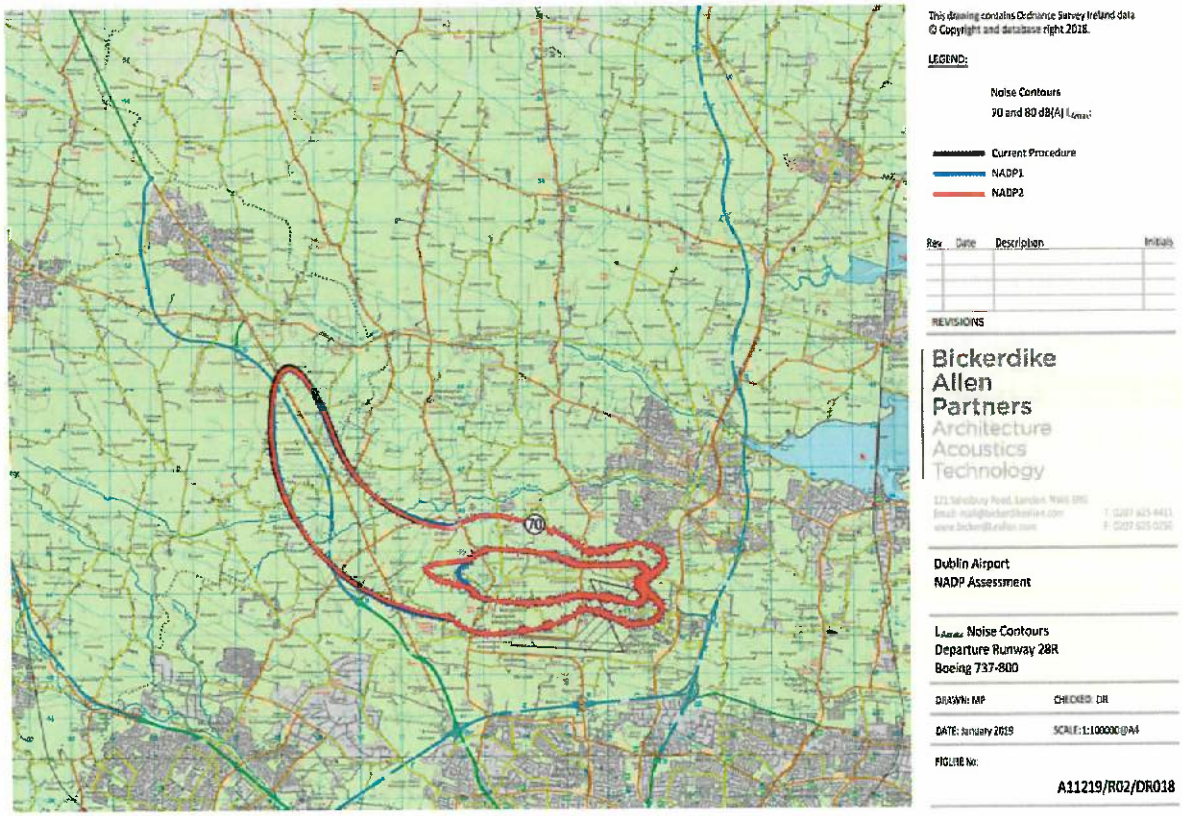


Figure DR018 is the LAmax contours for a 737-800 departing on 28R



The 80dB contour extends just outside the grounds of Dublin Airport. This conflicts with the longitudinal study which shows that the 737-800 has a LAmax of 80dB up to 3kms from the end of runway, and 79dB up to 4km away. Therefore, the results from the Relevant Action planning application are lower compared to the longitudinal study. This is repeated with other aircraft types such as the A320 (DR016).
Points to consider for An Bord Pleanála:

- Why there are significant differences between the LAmax values of the longitudinal study and the Relevant Action application?
- Why there are significant differences between the real recorded LAmax values from the North Runway operations and the predictions in the Relevant Action application?
- BAP used the FAA's AEDT version 2d SP2 software for the Relevant Action application. They previously used the FAA's INM version 7.0d software for the longitudinal study and Fingal County Council's Noise Zones. An Bord Pleanála need to investigate why the AEDT software is producing different results from the INM software and from real noise measurements.
- BAP created custom "USER" profiles broadly based on NADP2 procedures with a lower initial trust than maximum on takeoff. Because of the divergent routes, the feedback from pilots is that extra trust needs to be provided to handle the divergence. The modelling needs to be thoroughly examined.
- The AEDT software was validated (https://www.fingal.ie/sites/default/files/2021-08/20210723-a11267_19_rp035_4.0-noise-information_anca-rfi-incl.-figures-red.pdf) using results from noise monitors 1, 2 and 20 between January and December 2018. Note this is based on straight out routes so the validation of the North Runway divergent departure routes could not be properly achieved if using data from the South Runway.

The noise modelling goes to the heart of the Relevant Action planning and the anomalies found in real measured values since the North Runway opened versus predicted values needs to be forensically examined. These are significant noise differences questions the entire noise modelling presented in the Relevant Action.

Noise Quota Scheme

The Noise Quota Scheme/System is referenced in a number of the appeals. The appeal by Sheelagh Morris (MFGM) states that *"a noise quota system does not equate with actual noise from an aircraft and cannot be considered as like with like when you are awoken from sleep or prevented for going to sleep"*.

The appeal also makes the point that the NQS "*has a noise quota count of zero – 0 for EPNdB up to 81 dB. So as many ATMs can take off and land with the 0 figure*".

The appeal mentions a number of deficiencies with noise quota systems and that *"it is misleading to equate a 3dB reduction with a halving of 'annoyance', even for the individual event. EPNdB is a measure of 'noise energy' and it is by no means certain that a halving of noise energy results in a halving of noise heard by the human ear, despite the name*".

The appeal highlights that if planes rated at 96 EPNdB were replaced with planes rated at 95 EPNdB then twice as many could be flown without affecting the noise quota, based on the daa's proposed NQS. A similar point was made in the proof of evidence of Mr Dani Fiumicelli on behalf of North Somerset Council in the appeal by Bristol Airport Limited to increase capacity from 10mppa to 12mppa. On page 139, section 9.12, Mr Fiumicelli discusses how an aircraft rated at 90.1 EPNdB would result in a QC of 1, whereas an aircraft rated at 95.9 EPNdB would result in a QC of 2. The difference of 5.8 dB represents almost a four-fold difference in noise energy, but a difference in QC of only 1. "*This can lead to an underestimation of the size of the night-time noise contours and therefore people affected, although the aircraft may comply with the QC system*".

In section 9.13, Mr Fiumicelli proposes bands of 1 dB steps (as used at London City Airport) to overcome this underestimation of noise.

The bands are listed in a draft condition proposal:

Noise Level Band EPN dB	Quota Count (QC) Classification
>102	16
101 – 101.9	8
100 – 100.9	6.7
99-99.9	5.4
98 – 98.9	4
97- 97.9	3.4
96 – 96.9	2.8
95 – 95.9	2
94 – 94.9	1.7
93 – 93.9	1.4
92 – 92.9	1
91 – 91.9	0.83

90 – 90.9	0.69
89 – 89.9	0.5
88 – 88.9	0.42
87 – 87.9	0.34
86 – 86.9	0.25
85 – 85.9	0.21
84 – 84.9	0.17
83 – 83.9	0.125
82 – 82.9	0.085
81 – 81.9	0.045
80 – 80.9	0.025
<80	0.0125

Note the condition also includes an aircraft movement limit in parallel with the NQS as is the norm in the UK.

The draft proposal also includes 100% insulation costs for properties located in the > 54 dB LAeq16 and > 45 db LAeq8 contours, including suitable alternative means of ventilation and prevention of overheating to all habitable rooms and kitchens used for dining.

Also, importantly the condition states:

"*The noise insulation scheme shall be based on a survey of each affected property and be designed to achieve within the context of the individual properties the recommended day and night internal LAeq,t noise levels from BS 8223:2014 without any 5 decibel uplift; and* ***an LAmax due to aircraft noise intrusion of no more than 45 dBA in bedrooms between 2300 and 0700 hrs no more than 10 times.***"

An Bord Pleanála needs to guarantee that any NQS matches the real noise situation on the ground and that a movement limit is used in parallel and that the bands are small enough so as not to underestimate the noise effects.

An Bord Pleanala needs to ensure that internal LAmax noise levels in bedrooms do not exceed 45 dBA more than 10 times in the night-time period

EPA

In section 7.7 of the appeal by SMTW Environmental DAC, reference is made to the EPA's 2020 report, Ireland's Environment An Integrated Assessment 2020. It states that "*noise complaints around Dublin Airport have become a more significant issue in recent years, with the Dublin Airport Authority logging 1453 noise-related complaints in 2018*".

The EPA also funded research into environmental transport noise and culminated in the report – Environmental Transport Noise and Health: Evidence from Ireland (Noise-Health) (https://www.epa.ie/publications/research/environment--health/Research_Report_423.pdf).

The EPA report makes a recommendation to reconsider the population exposure statistics for aircraft noise in Ireland as the data diverges dramatically from international comparisons and appears underreported. An Bord Pleanála needs to engage with the EPA and the authors of the report to understand these claims of underreporting of noise. It is also worth highlighting that the figures for the number of people highly annoyed and highly sleep disturbed presented in this report do not match the figures presented in the Relevant Action by the daa. This report uses the same 2016 Round 3 END dataset as is used by the daa, yet the calculation of HA and HSD figures do not match. An Bord Pleanála needs to rigorously assess what these differences are, as these values have not been validated by ANCA and their consultants.

Appendix A

Memo: **Technical Note on the assessment of noise impact from night-time operations at Dublin Airport for Tippy Toes Playschool and Afterschool**

Author: Dr. Eoin King

Date: September 29th, 2022

All views and opinions presented in this technical note are entirely my own. I have not received payment from any party to produce this technical note. It is entirely independent.

Introduction

In 2007, the airport authority for Dublin Airport (DAA) was granted planning permission to build a new runway. This permission included several planning conditions, including operating restrictions during the night-time due to noise considerations. The plans for the new runway were then put on hold due to the economic downturn, but in 2016, with increasing passenger numbers, the plans were revived.

In December 2020 the DAA submitted a planning application to the Planning Authority seeking to amend those 2007 conditions associated with night-time operating restrictions. The application was then referred to the Aircraft Noise Competent Authority (ANCA) for an assessment of the associated noise impact, and in June 2022 ANCA issued a regulatory decision, which approved some changes to the 2007 Planning conditions.

This technical report attempts to summarise what effect these changes may have on the operations of Tippy Toes and the children who attend.

As noted in paragraph 13.3.7 of the EIAR, "*The Relevant Action specifically relates to controls at activity at night, however the effect on movements is not confined to the night period, as for example an aircraft that becomes able to arrive at night may then depart during the following day. The L_{den} metric also takes into account activity at night so both it and the L_{night} metric respond to changes in activity at night and so are considered directly relevant*". Thus, any changes to operations of the airport regarding night-time movements, may have a direct effect on the acoustic environment at Tippy Toes during school hours.

In order to establish the likely impact, the existing baseline noise environment must first be established.

Noise Measurements

Unattended noise monitoring was carried out at the premises adjoining Tippy Toes on Saturday 24th September between the hours of 00:00hrs and 13:30 hrs (Figure 1). Noise levels were logged every second, and data was used to calculate the $L_{Aeq,\ 30min}$ for each half hour period. Results clearly show aircraft operations over the test location, and the $L_{AF,max}$ and *SEL* for each movement could also be calculated. The meter was calibrated before use, and calibration was checked after completion.

Figure 1: Noise Monitor in place at premises adjacent to Tippy Toes

Measurement Results

Figure 2 presents $L_{Aeq,\ 30min}$ results during the measurement period. Operations on the North Runway began just after 9am, and finished just after 12:30. This is clearly evident in measurement results. It can be seen that operations at the North Runway cause the $L_{Aeq,\ 30min}$ to increase from approximately 49dB(A) to 60dB(A).

Figure 2: Results of Noise measurement campaign. Aircraft movements began at 9am

Measurements logged in one second intervals were also cross reference with aircraft movements reported by an independent flight tracking website (flightradar24.com). By comparing the timestamp in results and flight profiles, it was possible to assign an aircraft type to each noise event recorded during the measurement campaign. The $L_{AF,max}$, $L_{Aeq,T}$ and the *SEL* of each event could then be calculated (Table 1).

Time	LAFmax	LASmax	Duration of flyover, T seconds	Laeq,T dB	SEL	Aircraft
9/24/22 9:10	80	77	41	71	87	B738
9/24/22 9:12	76	73	38	69	85	A320
9/24/22 9:14	80	77	52	70	88	B738
9/24/22 9:25	77	73	40	66	82	B738
9/24/22 9:36	76	74	44	68	85	B738
9/24/22 9:38	80	77	39	71	87	B788
9/24/22 10:02	77	72	26	67	81	737-max
9/24/22 10:04	80	78	47	71	88	737-max
9/24/22 10:12	76	73	46	68	85	A320
9/24/22 10:29	80	78	35	71	87	B788
9/24/22 10:32	77	74	48	68	85	A320
9/24/22 10:55	79	76	37	70	86	A320
9/24/22 11:05	76	70	47	63	80	B738
9/24/22 11:12	76	73	43	66	82	A320
9/24/22 11:14	77	74	41	68	84	A320
9/24/22 11:16	73	68	33	62	77	ATR 72-600
9/24/22 11:21	75	72	45	66	83	B738
9/24/22 11:28	79	76	38	71	87	Embraer E190LR
9/24/22 11:32	77	75	42	69	85	A320
9/24/22 11:38	84	81	35	73	88	B787-9 dreamliner
9/24/22 11:48	79	76	41	70	87	B738
9/24/22 11:49	78	75	41	69	85	A320
9/24/22 11:56	81	78	42	71	87	B738
9/24/22 12:06	77	75	46	68	85	A320
9/24/22 12:15	78	76	47	69	86	A320
9/24/22 12:17	81	77	42	71	88	757-224
9/24/22 12:26	73	70	29	64	79	B753
9/24/22 12:30	75	70	36	67	83	B764
9/24/22 12:35	78	76	36	70	85	B738
9/24/22 12:43	76	73	50	67	84	A320
9/24/22 12:55	81	79	64	73	91	A330

Table 1: Details of individual noise events and identified aircraft

It is noted that the SEL for each aircraft movement is mostly in excess of 85dB(A) and in one case was in excess of 90dB, while $L_{AF,max}$ levels range from 73-84 dB(A), at this location which is ~4.5km from Dublin Airport.

Observations on Measurement Results

- The actual number of departures from the North Runway were between 11 and 20 per hour during the survey. Not all North Runway departures fly over the playschool as some diverge much earlier and turn away from the school. The number of hourly departures aligns with the DAA figures for flights in the 2022 westerly operation scenario. However, by 2040 assuming the passenger cap is removed the hourly departures will have increased to by over 30 per hour during school hours.
- As a conservative estimate, assuming a simple increase based on the following:

$$X = 10log_{10}\left(\frac{N_{future\ flights/hr}}{N_{current\ flights/hr}}\right)$$

an increase of between 3 and 5dB to overall noise levels may be expected.

- It is noted the noise levels recorded on site are in excess than what was originally predicted in the assessment of noise impact from operations on the North Runway for a typical busy day and submitted to Fingal County Council as a compliance record for the School Insulation scheme that DAA operate (Figure 3).

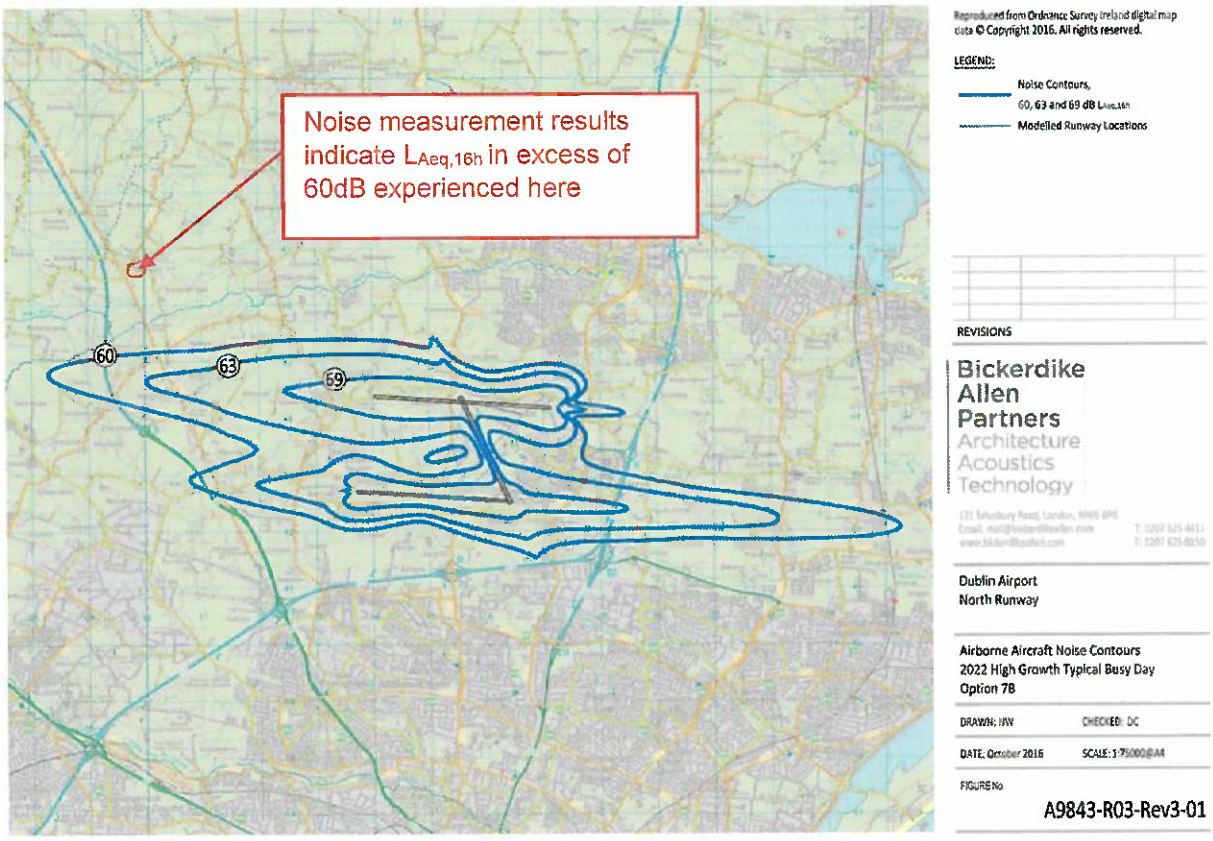


Figure 3: Results of Noise measurement campaign compared to predicted impact (Source: Compliance submission from DAA to Fingal to confirm the school insulation scheme)

- The source of these errors should be identified and rectified in order to produce meaningful impact assessments. While a detailed error assessment is beyond the scope of this report, an attempt has been made to identify the source of error. Upon a consideration of the projected operations of the North Runway contained in the EIAR, compared to the existing operations, it is evident that aircraft movements are not as were initially planned. This is immediately evident when the actual flight paths are considered (Figure 4), here it is clear that Tippy-Toes Playschool and Afterschool is now directly underneath a flight path.

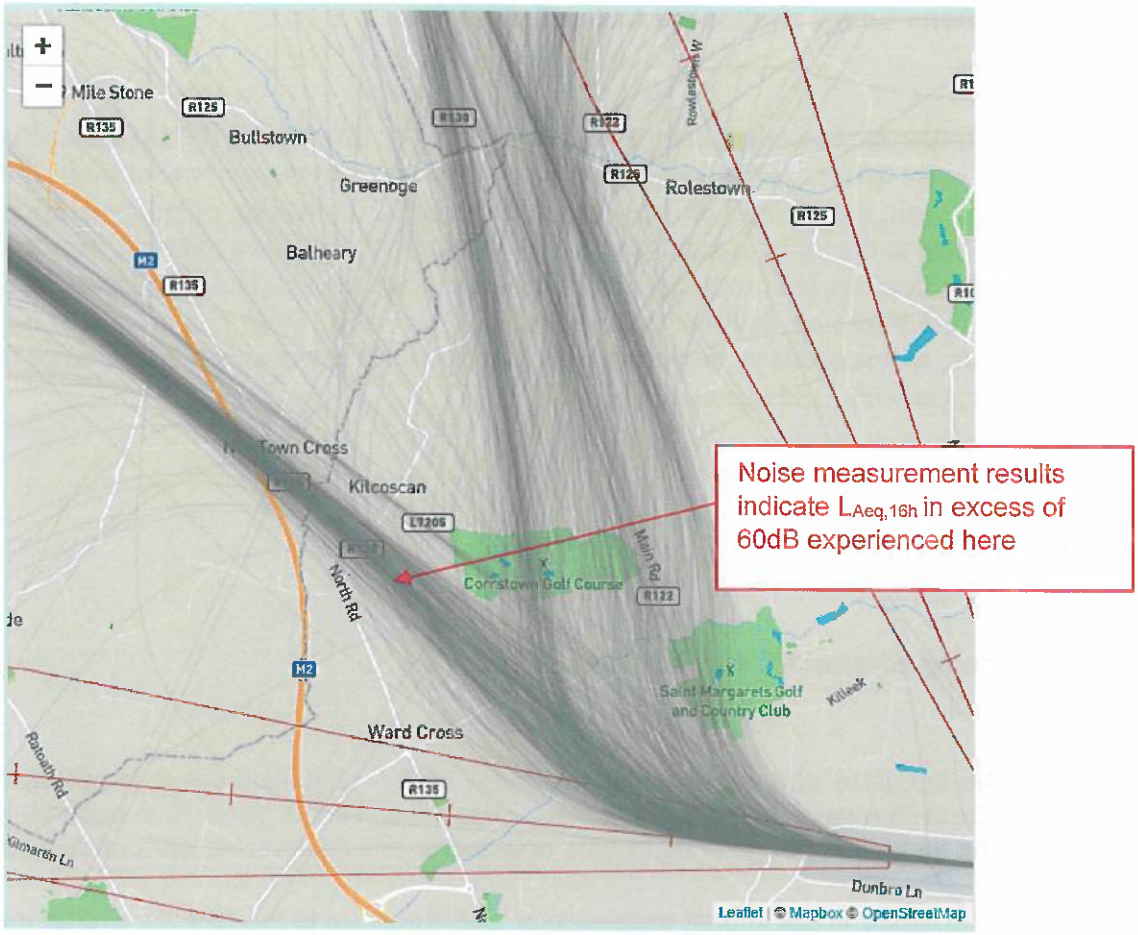


Figure 4: Flight Paths from North Runway – it is noted that Tippy-Toes Playschool and Afterschool is now directly underneath a flight path.

- Another potential source of error is the model itself. It is worth noting that the measured L_{AFmax} recorded for individual aircraft movements (Table 1) significantly exceed those predicted by DAA in their response to ANCA's request for further information[1]. In the response document, modelling suggests that an L_{AFmax} value exceeding 80dB would not be experienced at locations greater than approximately 2.5km from the North Runway, yet measurement presented with the current report show that L_{AFmax} values exceeding 80 dB are regularly experienced at a premise approximately 4.5km away. This would reinforce the conclusion that the noise assessments conducted to date are erroneous.

[1] https://www.fingal.ie/sites/default/files/2021-06/nr-anca-response_v1.0_0.pdf

Observations on the Night-time Noise Quote

Separate to the measurement campaign carried out for this report, it should be noted that the proposed noise quota system does not include an accompanying movement limit. If there is no movement limit, any aircraft movement with a noise classification of below 81dB EPNL will not contribute to the 'noise quota', despite the fact that it is a noise generating movement. Thus, this could ultimately lead to unlimited night-time operations at Dublin Airport, which would have a direct effect on daytime operations. The use of a Noise Quota system alone is not appropriate, and it needs to be operated in parallel with a Movement Limit, as in the case in Heathrow, Gatwick, and Stansted.

Overall Conclusions

The following conclusions may be drawn:

- No accurate and complete assessment of the acoustic impact of operations at the North Runway has been conducted. Therefore, it is not possible to accurately quantify the impact a change in night-time operations will have on the surrounding community.
- The errors in the impact assessment are likely due to the fact the aircraft movements are not operating as was initial planned in the EIAR. The flight paths are entirely different from those planned, and it has led to the Tippy Toes Playschool and Afterschool premises being directly under a flight path.
- An increase in night time movements will likely lead to an increase in daytime movements, as the operational capacity of the airport will be increased. This will increase noise levels in the surrounding community, such area including the location of the Tippy Toes Playschool and Afterschool premises.
- The proposed noise quota will allow for unrestricted night-time movements for aircraft with a noise classification of below 81dB EPNL, despite the fact that these aircraft would still result in noise generating movements.

In my professional opinion, the noise impact assessments carried out to assess operations of the North Runway are erroneous and need to be reviewed as a matter of urgency.