George Best Belfast City Airport – 2021 Annual Performance Report

On Compliance with the Requirements of the 2019 Planning Agreement

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1. Introduction

This report has been prepared to meet the requirements of the Planning Agreement (the Agreement) between Belfast City Airport and the Department for Infrastructure (the Department) dated 22 July 2019. Specifically –

Covenant 1.1: To submit the Annual Performance Report by 31st March in each calendar year and within the Annual Performance Report to report on the performance and compliance with the covenants in this Agreement in the preceding calendar year in a form which shall include all the annual reporting requirements contained in this Agreement or as agreed with the Department from time to time and which shall be published on the Company's website.

The report aims to address each of these reporting requirements either directly within the sections of this report or by reference to further reports (or sections of these) which are provided as appendices.

2. Summary of Reporting Requirements

Table 1 summarises the current reporting requirements within the covenants of the Agreement, as understood by Belfast City Airport.

Table 1 – Reporting Requirements

Covenant Reference	Reporting Requirement (summarised)
2.4.2	Written details of every delayed aircraft outside of permitted hours and circumstances for any aircraft during extended hours
2.4.3	Written report of the payments into and out of the Community Fund
6.7.1.1	Noise exposure contours for year x-1* based on actual ATM (air traffic movements) data
6.7.1.2	Forecast noise contours for years x and x+1 based on predicted ATM data
6.7.1.3	Composite graphic superimposing contours for year, x-1, x and x+1
6.7.2	Comparison of the area within the 57 dB $L_{Aeq,\ 16h}$ contours for the cases described in 6.7.1.1 and 6.7.1.2 with a 5.2km2 area
6.7.3	Total number of ATM by aircraft type and actual modal split (for year x-1) and assumed modal split (for years x and x+1) for the cases described in 6.7.1.1 and 6.7.1.2
6.7.4	Number of monthly and annual ATM and a comparison against 48,000 in any period of twelve months
6.7.6	The Quota for year x-1 and a comparison against 4,665
6.7.7	Record of movements by aircraft types not permitted to use the Aerodrome in year x-1 (ie to only accept those which meet the requirements of ICAOC Chap 3, Annex 16 and which are not Marginally Compliant Aircraft)
6.7.8	Record of the use by Aircraft of approaches and climb-outs over Belfast Lough in year x-1

6.7.9	Record of ATM within extended hours and fines administered in year x-1
6.7.10	Log of engine ground runs including time & duration for year x-1
6.7.11	Summary of noise complaints received by the Company, the responses given and the actions taken for year x-1
6.7.12	Review of the degree of adherence to any published noise abatement procedures in operation
6.7.13	Information to verify the accuracy and consistency of the operation of the integrated noise and track keeping system
6.7.14	Evaluation of the data reported including a description of any trends and identification of any relevant features of the Aerodrome operation which may have affected the results
6.7.15	Where the results of the comparison described in 6.7.2 show that the area within the 57 dB $LA_{eq,\ 16h}$ contour of 4.68km2 was exceeded in year x-1 or is likely to be exceeded in year x or x+1, submit (and promptly implement) proposed actions to ensure compliance in year x (and report in the subsequent Annual Performance Report)
6.9	In the Annual Performance Report for 2020, provide data showing the percentage of total arrivals in year x-1 that implemented Continuous Descent Approaches and any agreed improvement
6.11	In the Annual Performance Report for 2020, details of the number and type of departing aircraft breaching the departure noise limits (which are to be introduced by 22 July 2020 along with a mechanism to fine breaches of the limits) and a report of payments into and out of the Community Fund in year x-1
6.12.3	Report regarding compliance with the obligation to ensure the availability of fixed electrical ground power (FEGP) (as described in 6.12 and 6.12.1 to 6.12.2.2 in the Agreement) for year x-1 and agreed actions for improvements (if any) in each Annual Performance Report
7	Include a written report on the operation of a noise insulation scheme

*In this report 'year x-1', 'year x' and 'year x+1' refer to 2021, 2022 and 2023, respectively

3. Reports by Requirement

This section provides a report by each requirement – in the order in which these are covered within the Agreement.

2.4.2 Written details of every delayed aircraft outside of permitted hours and circumstances for any aircraft during extended hours

Details of each delayed aircraft are provided at Appendix 1 - *Extensions Log for 2021*.

During 2021 there were 23 flights during extended hours. Of these, 18 were arrivals and five were departures. The following summarises the delay causes:

- Weather-related including de-icing (5)

- Operations control including - re-routing, diversion, consolidation, aircraft change for reasons other than technical (5)
- Aircraft technical issues (9)
- Staff/crew-related issues including shortage of personnel (4)

Flights during extended hours represented 0.18% of total movements in 2021.

2.4.3 Written report of the payments into and out of the Community Fund

Table 2 shows the payments into and out of the Community Fund in 2021, including a summary of the types of projects receiving funding. This should be viewed in conjunction with Appendix 3 – *Extension & Departure Noise Charges for 2021*.

Table 2 – Community Fund Payments

	£	£
Payments In		
Extensions Jan-Dec		7,825
Extensions over 480		0
Departure Noise Exceedances		500
Subtotal		8,325
Payments Out		
Local schools support (2 schools)	4,250	
Community education initatives (2 initiatives)	43,235	
Community events/awards (1 event; 1 award)	9,999	
Local sports	250	
Local charities/community groups support (2 groups)	3,000	
Subtotal		60,734
Balance		**(52,409)**

6.7.1.1 to 6.7.1.3 Noise Exposure Contours

These are discussed in Section 4 and shown in Figures 2 to 5 of the report prepared by Bickerdike Allen Partners on behalf of Belfast City Airport, provided at Appendix 2 – *Bickerdike Allen Partners Report 2021*.

6.7.2 Comparison of the area within the 57 dB LAeq, 16h contours for the cases described in 6.7.1.1 and 6.7.1.2 with a 5.2km² area

Table 3 shows a comparison of the area within the 57 dB LAeq,16h contour with a 5.2 km² area for 2021 with forecasts for 2022 and 2023. Further details are provided in Section 4 of *Bickerdike Allen Partners Report 2021* (Appendix 2).

Table 3 – Area of the 57 dB LAeq,16h contour compared with a 5.2km² area

Contour Level (dB LAeq,16h)	Area of Daytime Air Noise Contours (km2)			Contour Area Limit (km)2
	2021	2022 (forecast)	2023 (forecast)	
57	2.78	3.96	4.67	5.2

6.7.3 Total number of ATM by aircraft type and actual modal split (for year x-1) and assumed modal split (for years x and x+1) for the cases described in 6.7.1.1 and 6.7.1.2

Total number of ATM by aircraft type for the cases described in 6.7.1.1 and 6.7.1.2 is provided at *Table 1: 2021, 2022 and 2023 Summer Fixed Wing Movements* in Section 2 of *Bickerdike Allen Partners Report 2021* (Appendix 2).

The term 'modal split' refers to the split of movements by runway – at Belfast City Airport this is between Runway 04 (c 040° bearing) and Runway 22 (c 220° bearing). This is generally determined by wind direction as aircraft will take off and land into a headwind to maximise lift - so variation is likely between individual years.

Table 4 shows the actual modal split for 2021 and the long-term average summer modal split for 2017-2021 (the assumed modal split for the cases described in 6.7.1.1 and 6.7.1.2). The actual modal split and the long-term average modal split were used to produce the 2021 contour and the forecast contours respectively, as discussed in Section 3.2 of *Bickerdike Allen Partners Report 2021* (Appendix 2).

Table 4 – 2021 and Long-Term Average Summer Modal Split

Runway	% of Summer Movements			
	2021		2017-2021 Average	
	Arrivals	Departures	Arrivals	Departures
04	49%	52%	32%	36%
22	51%	48%	68%	64%

6.7.4 Number of monthly and annual ATM and a comparison against 48,000 in any period of twelve months

Table 5 shows the monthly ATM in 2020 and 2021 along with the rolling 12-month total from January 2021 onwards – which remained lower than the upper limit of 48,000 movements.

Table 5 – Rolling 12 Month ATM

ATM 2020		ATM 2021		Rolling 12 month ATM
Jan-20	2,418	Jan-21	542	8,589
Feb-20	2,404	Feb-21	288	6,473
Mar-20	800	Mar-21	328	6,001
Apr-20	82	Apr-21	509	6,428
May-20	83	May-21	711	7,056
Jun-20	169	Jun-21	1,234	8,121
Jul-20	412	Jul-21	1,497	9,206
Aug-20	449	Aug-21	1,692	10,449
Sep-20	887	Sep-21	1,525	11,087
Oct-20	1,211	Oct-21	1,553	11,429
Nov-20	660	Nov-21	1,531	12,300
Dec-20	890	Dec-21	1,439	12,849

6.7.6 The Quota for year x-1 and a comparison against 4,665

The Quota Count total for the Quota Period 2021 was 1405.75, which is lower than the upper limit of 4,665. Details of how the Quota Count has been calculated are provided in *Table 9: Summer 2021 Quota Count* in Section 5 of *Bickerdike Allen Partners Report 2021* (Appendix 2) including details of how the Quota Count has been calculated.

6.7.7 Record of movements by aircraft types not permitted to use the Aerodrome in year x-1

In 2021 there were no movements of aircraft that do not meet the requirements of ICAOC Chap 3, Annex 16 or are only marginally compliant. Details are provided in Section 6 of *Bickerdike Allen Partners Report 2021* (Appendix 2).

6.7.8 Record of the use by Aircraft of approaches and climb-outs over Belfast Lough in year x-1

The Agreement requires Belfast City Airport to maintain a bias in favour of approaches and climb-outs by aircraft over Belfast Lough (the 'Lough Bias'). Whilst direction of approach/climb-out is generally determined by wind direction, Air Traffic Control aims to maximise additional opportunities to direct aircraft over Belfast Lough (for example during light wind conditions, if safe to do so) ie departure using runway 04 and arrival using runway 22. Table 6 shows the number of arrivals and departures over both the City and Belfast Lough throughout 2021. There were 6,685 movements over the Lough from a total of 12,849 movements. On average over the

year, 52% of movements were over the Lough, so a bias in favour of arrivals and departures over Belfast Lough was maintained, in compliance with the Agreement.

Table 6 – Arrivals and Departures over the City and Belfast Lough

	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Total
Arrivals over City (04*)	109	49	40	116	155	291	461	301	145	40	151	82	**1,940**
Departures over City (22)	144	91	113	126	189	327	262	512	579	701	590	590	**4,224**
Total over City	*253*	*140*	*153*	*242*	*344*	*618*	*723*	*813*	*724*	*741*	*741*	*672*	***6,164***
Arrivals over Lough (22)	161	95	123	140	198	326	288	545	619	736	615	636	**4,482**
Departures over Lough (04)	128	53	52	127	169	290	486	334	182	76	175	131	**2,203**
Total over Lough	*289*	*148*	*175*	*267*	*367*	*616*	*774*	*879*	*801*	*812*	*790*	*767*	***6,685***
Total ATMs	542	288	328	509	711	1,234	1,497	1,692	1,525	1,553	1,531	1,439	**12,849**
Percentage over Lough	53%	51%	53%	52%	52%	50%	52%	52%	53%	52%	52%	53%	**2021 average 52%**

*Runway in use

6.7.9 Record of ATM within extended hours and fines administered in year x-1

Appendix 3 – *Extension & Departure Noise Charges for 2021* provides a record of ATM within extended hours and associated fines administered.

6.7.10 Log of engine ground runs including time & duration for year x-1

Belfast City Airport operates restrictions on engine ground runs. These are prohibited between 22:30 and 06:00 and require prior approval by Airfield Operations, with further restrictions in place according to location and the power level of runs. All engine ground runs in 2021 complied with these requirements. Details of engine ground run requirements are provided in Appendix 4 – *AOI-07 Aircraft Ground Running and Use of Auxiliary Power Units and Ground Power Units.* A log of engine ground runs is provided at Appendix 5 – *Engine Run Log 2021*. It should be noted that no ground runs were required during August 2021 (as recorded at Appendix 5).

6.7.11 Summary of noise complaints received by the Company, the responses given and the actions taken for year x-1

A summary of noise concerns logged in 2021 is provided at Appendix 6 – *Noise Concerns Summary 2021*. All noise concerns received are acknowledged upon receipt and responded to by letter, email or telephone within 14 days.

Various responses are provided according to the nature of the concern lodged. In the case of general queries, information on the procedures and standards applied at the airport will be provided. In the case of concerns relating to specific noise events, the results of investigation will be provided. In the case of concerns relating to movements during extended hours, our response will include reference to the

relevant requirements of our Planning Agreement and to the guidance issued by the Department of Infrastructure relating to extensions.

In 2021, 53% of concerns were received during July; of these 60% related to two associated track violation occurrences. This issue was addressed with the airline concerned preventing further incidence.

Where applicable, action will be taken to address noise issues and/or make improvements to noise management. This has included dialogue with airlines to ensure effective implementation of the noise abatement procedures in place at the aerodrome.

6.7.12 Review of the degree of adherence to any published noise abatement procedures in operation

Belfast City Airport's noise abatement procedures are published at https://www.aurora.nats.co.uk/htmlAIP/Publications/2020-01-30-AIRAC/html/eAIP/EG-AD-2.EGAC-en-GB.html#AD-2.EGAC. These determine specific paths to be flown by aircraft on departure/arrival to minimise the impact of noise on local populations. 'Track violations' occur when aircraft deviate from these paths. Whilst the incidence of track violations is relatively low, in certain situations adherence to the noise abatement procedures may prove problematic, for example in poor weather conditions. Belfast City Airport reports track violations to Airlines on a monthly basis and maintains dialogue with Airline representatives with the aim of minimising the number of occurrences.

Table 7 summarises the occurrence of track violations in 2021.

Table 7 – Track Violations

Runway	A / D	Number Flights	Number Violations	Percentage
04	D	2203	46	2.1%
04	A	1940	6	0.3%
22	D	4225	14	0.3%
22	A	4481	2	0.0%
	Total	**12849**	**68**	**0.53%**

At only 0.53% of all flights, the number of track violations is well below the target level of 5% set out in the Airport's Environmental Noise Directive Noise Action Plan 2019-2023 *(available at https://www.belfastcityairport.com/our-community/environment/noise)*.

6.7.13 Information to verify the accuracy and consistency of the operation of the integrated noise and track keeping system

Belfast City Airport operates a Noise & Flight Track Monitoring System which provides ongoing data on aircraft movements including noise levels and tracks flown. An ongoing maintenance and support contract has been in place with Topsonic Systemhaus GmbH since 2007 when the system was installed. This includes daily system checks by Topsonic (further details are available on request). Third-party calibration of microphones and monitoring equipment is conducted on a two-yearly basis. A record of current equipment calibration status is provided at Appendix 7 – *Calibration Records 2021*. In 2021, local radar maintenance took place over a period of 62 days in total – over the following periods:

1 to 5 March (five days)
15 to 22 March (eight days)
23 April to 5 May (13 days)
8 to 15 September (eight days)
11 to 27 October (17 days)
15 to 25 November (11 days).

During these periods a secondary radar feed was provided by the nearby Crow Hill installation and the Noise & Flight Track Monitoring System continued to record data on flight movements and noise events.

6.7.14 Evaluation of the data reported including a description of any trends and identification of any relevant features of the Aerodrome operation which may have affected the results

Belfast City Airport has fully complied with the requirements of the Agreement during 2021.

The Airport has continued to provide bi-monthly performance reports to the Department since the Agreement came into effect in July 2019, including details of delayed aircraft using the aerodrome outside permitted hours (06:30 to 21:30) and the circumstances for any aircraft using the aerodrome during extended hours (21:31 to 23:59). The following summarises key data and trends:

- In 2021, delayed flights after 21:30 constituted only 0.18% of all movements
- In 2021, 87% of delays after 21:30 were due to the late arrival of aircraft from another flight or previous sector
- Most delayed flights after 21:30 were on the following routes: Birmingham (22%) and Edinburgh (13%)

In 2021, the COVID-19 pandemic continued to impact on ATM numbers. In 2021 there were only 12,849 ATMs compared with 35,382 in 2019 – the last 'full' pre-

pandemic year. This is reflected in a number of aspects of performance in relation to the Agreement, including the following:

- Whilst the size of the 57 dB LAeq,16h noise contour area increased to 2.78 km^2 in 2021 compared with 0.8 km^2 in 2020, it remained 15.8% smaller than in 2019 (3.3 km^2)
- The Quota Count total for summer 2021 was 1,405.75 - remaining lower than the 2019 total of 2,216.375.

Whilst forecasts have been made with regard to aspects of performance in 2022 and 2023, due to the continuing impact of the COVID-19 pandemic on the aviation sector, there remains a significant degree of uncertainty over future numbers of ATM.

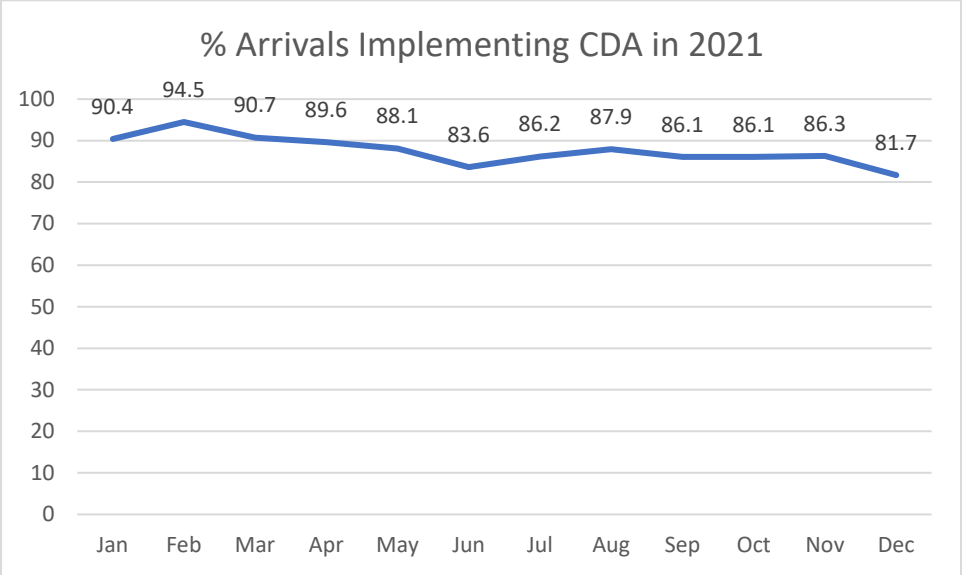
6.7.15 Where the results of the comparison described in 6.7.2 show that the area within the 57 dB LAeq, 16h contour of 4.68km2 was exceeded in year x-1 or is likely to be exceeded in year x or x+1, submit (and promptly implement) proposed actions to ensure compliance in year x (and report in the subsequent Annual Performance Report)

The area within the 57 dB LAeq, 16h contour of 4.68km2 was not exceeded in 2021 and is not likely to be exceeded in years 2022 or 2023. The areas of the 2021 contour and forecast 2022 and 2023 contours are shown in Table 3 (above).

6.9 In the Annual Performance Report for 2021, provide data showing the percentage of total arrivals in year x-1 that implemented Continuous Descent Approaches and any agreed improvement

Continuous Descent Approach (CDA) is an operating technique in which arriving aircraft follow a constant-angle descent (rather than a series of steps) in order to reduce noise and fuel consumption.

The chart below shows the percentage of arrivals implementing Continuous Descent Approaches by month. On average, 87.6% of arrivals in 2021implemented CDA (up from 82.1% in 2020). Subject to safety constraints and the operational requirements of individual aircraft, the Airport will continue to maximise implementation of CDA.



Data provided by NATS (Air Traffic Control provider at Belfast City Airport)

6.11 In the Annual Performance Report for 2021, details of the number and type of departing aircraft breaching the departure noise limits and a report of payments into and out of the Community Fund in year x-1

The following departure noise limits are in place at Belfast City Airport: 83 dB LAsmax for aircraft departing towards the City and 87 dB LAsmax for aircraft departing towards Belfast Lough (as measured by the Airport's noise monitoring terminals). Any breaches of these noise limits will be identified through the Airport's Noise and Track Monitoring System. During 2021 there was one breach of the departure noise limit – on 1 November at 12:50 a Hawker 850XP small jet aircraft departing on 22 runway exceeded the 83 dB LAsmax limit by 0.7 dB(A). Details of the applicable payment into the Community Fund are provided in Table 2 (above) and at Appendix 3 – *Extension & Departure Noise Charges for 2021*.

6.12.3 Report regarding compliance with the obligation to ensure the availability of fixed electrical ground power (FEGP) (as described in 6.12 and 6.12.1 to 6.12.2.2 in the Agreement) for year x-1 and agreed actions for improvements (if any) in each Annual Performance Report

All stands at Belfast City Airport are equipped with FEGP. In 2021, 97% of flights overall used FEGP. Occasions when FEGP was not used were due to the following: aircraft parked in non-standard orientation due to weather; aircraft parked in remote locations for operational reasons; and a period of six weeks when FEGP No. 3 was operating on reduced capacity. Whilst operational and available for use at the stand, FEGP in these cases could not be reached due to aircraft orientation.

FEGP at Belfast City Airport is subject to an ongoing maintenance regime aimed at achieving maximum serviceability.

7 Include a written report on the operation of a noise insulation scheme

At present, no residential dwellings are affected by the level of noise at which a noise insulation scheme must be implemented (ie as defined by the 63 dB LAeq, 16h contour). For this reason, the scheme is not yet operating.

4. Appendices

Appendix 1 - *Extensions Log for 2021*

Appendix 2 – *Bickerdike Allen Partners Report 2021*

Appendix 3 – *Extension & Departure Noise Charges for 2021*

Appendix 4 – *AOI-07 Aircraft Ground Running and Use of Auxiliary Power Units and Ground Power Units*

Appendix 5 – *Engine Run Log 2021*

Appendix 6 – *Noise Concerns Summary 2021*

Appendix 7 – *Calibration Records 2021*