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BOURNEMOUTH AIRPORT

CAP 2091 CATEGORISATION

Report to

Bournemouth Airport

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Acoustic Consultants: Expertise in planning and noise, the control of noise and vibration and the sound insulation and acoustic treatment of buildings.

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Contents

Page No.

1.0 INTRODUCTION

To carry out certain regulatory duties, including the assessment of changes to the design of airspace, the Civil Aviation Authority (CAA) requires airports to provide it with noise modelling outputs. CAP 2091[1] specifies the minimum standard of noise modelling accepted by the CAA. This is defined in terms of noise modelling categories, where an airport's category is dependent on the number of people the airport exposes to given levels of airborne aircraft noise.

Bickerdike Allen Partners LLP (BAP) have been instructed by Bournemouth Airport to produce current (2023) and future (2032) summer day and night airborne aircraft noise contours, to assess the population contained within, and consequently to determine the noise modelling category of Bournemouth Airport.

Alongside the resultant noise contours and population counts, this report sets out the methodology and assumptions used in their calculation.

A glossary of acoustic terminology is included in Appendix 1.

This report has been prepared specifically in response to instructions received from Bournemouth Airport and is not intended for any other purpose.

2.0 THE AIRPORT

Bournemouth Airport is located approximately 6 km north-north-east of Bournemouth. West Parley is situated immediately to the west of the airport and Ferndown to the north-west. Hurn forest lies to the north and east where it is bisected by the A338.

The runway is aligned east-west across the centre of the airport site on a bearing of 08/26, and with a length of 2,272 m. The main apron and passenger terminal buildings are located to the south of the runway.

[1] *CAP 2091: CAA Policy on Minimum Standards for Noise Modelling*, Civil Aviation Authority, 2021.

3.0 METHODOLOGY

The noise contours have been calculated using the Aviation Environmental Design Tool (AEDT) version 3g. This software, developed by the US Federal Aviation Administration (FAA), calculates airborne aircraft noise at airports based on aircraft type, operation, route, profile, and terrain where information is available. The calculation methodologies used are compliant with both ECAC Doc 29[2] and ICAO Doc 9911[3].

The physical location of Bournemouth Airport, its runway and thresholds has been taken from the latest edition of the UK Aeronautical Information Publication[4] (AIP), which also details the current aerodrome regulations and noise abatement procedures in place at the airport.

Local topographic data has not been incorporated into the model. All noise contours have been calculated assuming level ground at aerodrome elevation.

The AEDT provides long-term average (10-year) local weather data, which has been used to calculate atmospheric absorption in accordance with SAE ARP 5534[5]. Table 1 gives the weather data for Bournemouth Airport used in this model.

Parameter	10-Year Average Value
Temperature	53.55 °F
Pressure	1014.29 mbar
Relative Humidity	77.77%
Wind Speed	8.09 kt

Table 1: Modelled weather data

The population assessment has used a 2023 postcode database provided by CACI Ltd which is initially based on the latest UK Census data and then updated annually to account for more recent changes.

The remaining model inputs are described in detail in Section 4.0 and are based on data and advice received from Bournemouth Airport.

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[2] ECAC.CEAC Doc 29, 4th Edition, *Report on Standard Method of Computing Noise Contours around Civil Airports*, European Civil Aviation Conference, 2016.
[3] ICAO Doc 9911, 2nd Edition, *Recommended Method for Computing Noise Contours Around Airports*, International Civil Aviation Organization, 2018
[4] https://nats-uk.ead-it.com/cms-nats/opencms/en/Publications/AIP/ (Checked: 28 October 2024)
[5] *ARP 5534: Application of Pure-Tone Atmospheric Absorption Losses to One-Third Octave-Band Data*, SAE International, 2021.

The noise contours are presented in terms of the $L_{Aeq,16h}$ summer day and $L_{Aeq,8h}$ summer night metrics. These are the A-weighted average daytime (07:00 – 23:00) and night-time (23:00 – 07:00) noise levels respectively for the summer period (16th June – 15th September inclusive).

4.0 AIRCRAFT OPERATIONS

4.1 Aircraft Movements

Bournemouth Airport have provided BAP with a log of aircraft movements for the summer period of 2023 which form the basis for the noise contours produced. This section describes how this log of movements was processed for input into the AEDT software.

BAP have also been provided with the total number of movements forecast for the summer period in 2032, which is 22% higher than in 2023. For the purpose of this assessment it has been assumed that the fleet mix remains the same in 2032 as in 2023 and so the number of all 2023 flights have been increased pro-rata by 22%. In practice it is likely that there will be some shift to quieter aircraft over time, although the pace of this change is unknown.

Military movements have been excluded, as is common practice. In summer 2023 there were 177 movements by military aircraft, mainly the BAE Hawk.

4.2 Aircraft Type

The AEDT software includes noise information for many common aircraft types, but it does not include every aircraft type. Therefore, the aircraft type codes used in the log need to be mapped to aircraft types in the AEDT software. For some aircraft, substitutions are proposed by the AEDT software where a similar alternative aircraft type is used to model the actual type. For larger aircraft this generally does not involve a change but for the smaller aircraft, and in particular the general aviation aircraft, some substitutions occur. Where AEDT has no guidance, an aircraft type has been assigned based on the aircraft size and engine details. A full list of the substitutions used by BAP for each aircraft type code used in the log is given in Appendix 2.

4.3 Time Period

The actual time of each movement in the log is given to the nearest minute, in local time. Using this, each movement has been categorised as occurring in the day (07:00-23:00) or night (23:00-07:00) as appropriate. Movements occurring on a boundary between periods have been counted as being in the later period, e.g. a movement occurring at 07:00 would be counted as being in the day period.

4.4 Aircraft Operation

Each movement in the log is categorised as either an arrival, departure or touch and go.

4.5 Runway Usage (Modal Split)

The actual runway used by each aircraft is given in the movement log, and this has been used in the modelling. The average modal split for the year is given in Table 2.

Runway	Percentage of Aircraft Movements
08	17%
26	83%

Table 2: 2023 Modal Split

4.6 Aircraft Routes

The modelled fixed wing aircraft routes are shown in Figure 01. For each runway there is a single arrival route but initially three departure routes; one heading towards Southampton, one heading towards Bovington, and one turning to the south. Based on advice from Bournemouth Airport the departures have been split with 64% heading towards Southampton, 8% heading towards Bovington, and the remaining 28% heading to the south. Touch and gos have been modelled as following a northern circuit off each runway.

Helicopters do not typically follow the same routes as fixed wing aircraft. Therefore, straight arrival and departure routes have been assumed for all helicopter movements. Helicopter circuits have been modelled as a combination of arrival and departure via the straight routes. The modelled helicopter routes are colinear with the fixed wing arrival routes shown on Figure 01.

4.7 Dispersion

For departures, as aircraft do not follow precisely the routes they are assigned to, the AEDT software was used to generate a mean track for each of the initially distinct routes and these mean tracks were then dispersed as described below.

The dispersion model has the common assumption that there are seven "dispersed" tracks associated with each departure route; these comprise the mean track of each route and three sub-tracks either side. The allocation of movements to each track adopted for the contours is as follows:

- 28.2 % departures along the mean track;
- 22.2 % departures along each of the two sub-tracks either side of the main track offset by a distance of 0.71 standard deviations;
- 10.6 % departures along each of the two sub-tracks either side of the main track offset by a distance of 1.43 standard deviations;
- 3.1 % departures along each of the two sub-tracks either side of the main track offset by a distance of 2.14 standard deviations.

This dispersion model is that recommended in ECAC Doc 29[6] (4th Edition, Volume 2). The standard deviations used have been determined by BAP from analysis of similar activity at other airports.

4.8 Flight Profiles

For the departure movements, the AEDT software offers a number of flight profiles for most aircraft types, particularly the larger aircraft types. These relate to different departure weights, which are greatly affected by the length of the flight and consequently the fuel load. In the AEDT software this is referred to as the stage length. As the stage length increases, the aircraft has to depart with greater fuel and so its flight profile is slightly lower than when a shorter stage length is flown.

Stage lengths have historically been defined in increments of 500 nmi up to 1,500 nmi and then in increments of 1000 nmi. More recent AEDT versions, including 3g, also include intermediate stage lengths for most turbofan aircraft types, which halve the size of the increments.

For the 2023 contours, destination airports were given with the aircraft movement data. Stage lengths have been assigned based on the distance of these airports from Bournemouth Airport.

For the touch and go movements, the AEDT software assumes a default altitude of 1,000 ft for the level flight section. The AIP for Bournemouth Airport specifies an altitude of 1,200 ft or 1,500 ft, depending on the size of the aircraft. Custom profiles with an adjusted altitude have been created for the touch and go movements.

[6] ECAC.CEAC Doc 29, 4th Edition, "Report on Standard Method of Computing Noise Contours around Civil Airports". Available at https://www.ecac-ceac.org/documents/ecac-documents-and-international-agreements [Checked: 22/08/2022]

4.9 Movement Totals

Based on BAP's processing of the movement log as described above, there were a total of 6,066.5[7] non-military aircraft movements at Bournemouth Airport in summer 2023. These are summarised in Table 3 where they are split by operation and time period. A full breakdown of the processed movements by aircraft type including military movements is given in Appendix 3.

Aircraft Type	Operation	Number of Aircraft Movements in Log		
		Day	Night	Total
Fixed Wing Aircraft	Arrival	2067	140	2207
	Departure	2127	105	2232
	Touch and Go	1121	0	1121
	Total	5315	245	5560
Helicopters	Arrival	92	1	93
	Departure	93	0	93
	Touch and Go	315	5.5	320.5
	Total	500	6.5	506.5
Grand Total		**5815**	**251.5**	**6066.5**

Table 3: Summary of 2023 Summer Movements by Operation and Period

5.0 RESULTS

Using the methodology and aircraft operation details in Section 3.0 and Section 4.0, current and future summer day and night airborne aircraft noise contours have been produced. These are illustrated in Figures 02 to 05.

The population contained within each contour is summarised in Table 4 below, where the values are cumulative (i.e. including the population in higher value contours).

[7] Half movements can occur due to the way touch and gos are recorded

Noise Contour, dB L_{Aeq}	Population within Noise Contour			
	Summer Day $L_{Aeq,16h}$		Summer Night $L_{Aeq,8h}$	
	2023	2032	2023	2032
45	-	-	2054	3092
48	-	-	169	313
51	5913	7991	27	33
54	2249	3297	0	2
57	169	678	0	0
60	27	27	0	0
63	0	0	0	0
66	0	0	-	-
69	0	0	-	-

Table 4: Population predicted to be exposed to airborne aircraft noise

The population thresholds corresponding to each noise modelling category defined by CAP2091 are reproduced in Table 5.

Category	Population within 51 dB $L_{Aeq,16h}$ or 45 dB $L_{Aeq,8h}$ Noise Contour			
	Lower Threshold	Recommended Minimum Threshold	Mandated Minimum Threshold	Maximum Threshold
A	0	400,000	500,000	None
B	0	160,000	200,000	500,000
C	0	20,000	25,000	200,000
D	0	1,600	2,000	25,000
E	0	0	0	2,000

Table 5: CAP2091 noise modelling category thresholds

The results in Table 4 show that Bournemouth Airport currently falls into Category D and is expected to remain in Category D in the future. It is not expected that Bournemouth Airport will approach the noise exposure thresholds to recommend or mandate Category C modelling.

There are currently no additional requirements for Category D modelling compared to Category E, although the CAA are currently consulting on a separate definition for Category D. The noise modelling detailed in this report has been undertaken to the standard of Category E, the description of which is reproduced from CAP2091 below:

There is no adaptation of the noise model and standardised reference values only are used. The standard ICAO dataset is used (flight profiles, noise data), with no amendments for local effects. Data reported from the modelled airport (rather than track-keeping data) is used to identify the usage of arrival and departure routes for a typical day. The track over the ground for each arrival and departure route is derived from the published coordinates in the UK AIP or as advised by the airport. Dispersion around the nominal track of each such route is based on the dispersion guidance contained in the latest version of ECAC Doc 29.

6.0 SUMMARY

Bickerdike Allen Partners LLP (BAP) have produced current (2023) and future (2032) summer day airborne aircraft noise contours based on inputs provide by Bournemouth Airport.

The population contained within the 51 dB $L_{Aeq,16h}$ and 45 dB $L_{Aeq,8h}$ noise contours has been estimated for both years and this has been used to determine the noise modelling category of Bournemouth Airport as defined by CAP2091.

Bournemouth Airport currently falls into Category D, and this is not expected to change by 2032.

Nick Williams	**David Charles**
for Bickerdike Allen Partners LLP	**Partner**

APPENDIX 1
GLOSSARY OF ACOUSTIC TERMINOLOGY

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The Decibel, dB

The unit used to describe the magnitude of sound is the decibel (dB) and the quantity measured is the sound pressure level. The decibel scale is logarithmic and it ascribes equal values to proportional changes in sound pressure, which is a characteristic of the ear. Use of a logarithmic scale has the added advantage that it compresses the very wide range of sound pressures to which the ear may typically be exposed to a more manageable range of numbers. The threshold of hearing occurs at approximately 0 dB (which corresponds to a reference sound pressure of 2 x 10^{-5} Pascals) and the threshold of pain is around 120 dB.

The sound energy radiated by a source can also be expressed in decibels. The sound power is a measure of the total sound energy radiated by a source per second, in watts. The sound power level, L_w is expressed in decibels, referenced to 10^{-12} watts.

Frequency, Hz

Frequency is analogous to musical pitch. It depends upon the rate of vibration of the air molecules that transmit the sound and is measure as the number of cycles per second or Hertz (Hz). The human ear is sensitive to sound in the range 20 Hz to 20,000 Hz (20 kHz). For acoustic engineering purposes, the frequency range is normally divided up into discrete bands. The most commonly used bands are octave bands, in which the upper limiting frequency for any band is twice the lower limiting frequency, and one-third octave bands, in which each octave band is divided into three. The bands are described by their centre frequency value and the ranges which are typically used for building acoustics purposes are 63 Hz to 4 kHz (octave bands) and 100 Hz to 3150 Hz (one-third octave bands).

A-weighting

The sensitivity of the ear is frequency dependent. Sound level meters are fitted with a weighting network which approximates to this response and allows sound levels to be expressed as an overall single figure value, in dB(A).

Environmental Noise Descriptors

Where noise levels vary with time, it is necessary to express the results of a measurement over a period of time in statistical terms. Some commonly used descriptors follow.

Statistical Term	Description
$L_{Aeq, T}$	The most widely applicable unit is the equivalent continuous A-weighted sound pressure level (LAeq, T). It is an energy average and is defined as the level of a notional sound which (over a defined period of time, T) would deliver the same A-weighted sound energy as the actual fluctuating sound.
$L_{Aeq,16h}$ / $L_{Aeq,8h}$	In the UK, airborne aircraft noise is conventionally calculated for an average summer day (16 hours, 07:00 – 23:00) or night (8 hours, 23:00 – 07:00) over the period 16th June – 15th September inclusive. This tends to over-estimate noise exposure because airports are generally busier during the summer.

Noise Contours

Noise contours are used to depict the long-term noise exposure from many aircraft operations. These are analogous to topographical elevation contours. They show a set of closed lines on a map where locations within each contour line are exposed to noise levels equal to or higher than the contour value. Locations outside each contour line are exposed to noise levels less than the contour value.

APPENDIX 2
AEDT AIRCRAFT TYPE MAPPING

Aircraft Operational Code	Substituted AEDT Aircraft Code	Aircraft Operational Code	Substituted AEDT Aircraft Code
68L	CNA680	BE36	GASEPV
A109	A109	BE40	MU3001
A119	A109	BE76	BEC58P
A139	SA330J	BE9L	DHC6
A189	S76	BN2T	PA31
A320	A320-211	C150	GASEPF
A321	A321-232	C152	GASEPF
A346	A340-642	C172	CNA172
AA5	GASEPF	C177	CNA172
AS35	SA355F	C182	CNA182
AS55	SA355F	C195	GASEPV
AS65	SA365N	C206	CNA206
ASTR	IA1125	C208	CNA208
B06	B206B3	C25B	CNA525C
B212	B206L	C25M	CNA525C
B350	DHC6	C310	BEC58P
B409	B206L	C402	BEC58P
B429	B429	C406	DHC6
B733	737300	C414	BEC58P
B737	737700	C500	CNA680
B738	737800	C510	CNA510
BDOG	GASEPV	C525	CNA525C
BE18	DHC6	C550	CNA55B
BE20	DHC6	C56X	CNA560XL
BE30	DHC6	C62	CNA680
BE33	GASEPV	C650	CIT3
BE35	GASEPV	C680	CNA680

Aircraft Operational Code	Substituted AEDT Aircraft Code	Aircraft Operational Code	Substituted AEDT Aircraft Code
CJ4	CNA525C	FA20	FAL20
CL30	CL600	FA7X	GIV
CL60	CL600	G150	IA1125
CP23	GASEPF	G28	CL601
D62	PA30	G650	G650ER
DA40	CNA182	GLEX	BD-700-1A10
DA42	PA30	GLF4	GIV
DHC1	GASEPF	GLF5	GV
DR40	GASEPF	GLF6	G650ER
E135	EMB145	H25B	LEAR35
E145	EMB145	H25C	LEAR35
E170	EMB170	H269	H500D
E190	EMB190	H47	CH47D
E300	GASEPV	H500	H500D
E50P	CNA510	HR20	GASEPF
E55	CL601	HURI	GASEPF
E55P	CNA55B	JS41	SF340
EA50	ECLIPSE500	LJ35	LEAR35
EC15	SA341G	LJ45	LEAR35
EC20	SA341G	LYNX	S76
EC35	EC130	M20P	GASEPV
EC45	EC130	MCR1	GASEPF
EUPA	GASEPF	P180	DHC6
F260	GASEPV	P28A	PA28
F2TH	CNA750	P46T	GASEPV
F406	DHC6	P51	GASEPF
F900	FAL900EX	P68	BEC58P

Aircraft Operational Code	Substituted AEDT Aircraft Code	Aircraft Operational Code	Substituted AEDT Aircraft Code
PA22	GASEPF	RV9	GASEPF
PA30	PA30	S61	S61
PA31	PA31	S76	S76
PA32	GASEPV	SPIT	GASEPV
PA34	BEC58P	SR20	GASEPV
PC12	CNA208	SR22	GASEPV
PC24	CNA55B	SUBA	GASEPV
PRM1	CNA55B	TBM7	CNA208
PROP	CNA208	TBM8	CNA208
PTS2	GASEPV	TOBA	GASEPV
PUP	GASEPF	TRIN	GASEPV
R44	R44	WASP	A109
R66	R44	YK18	CNA20T
RV4	GASEPV	YK50	BEC58P
RV6	GASEPV	ZZZZ	GASEPF

APPENDIX 3
MODELLED AIRCRAFT MOVEMENTS
2023 SUMMER

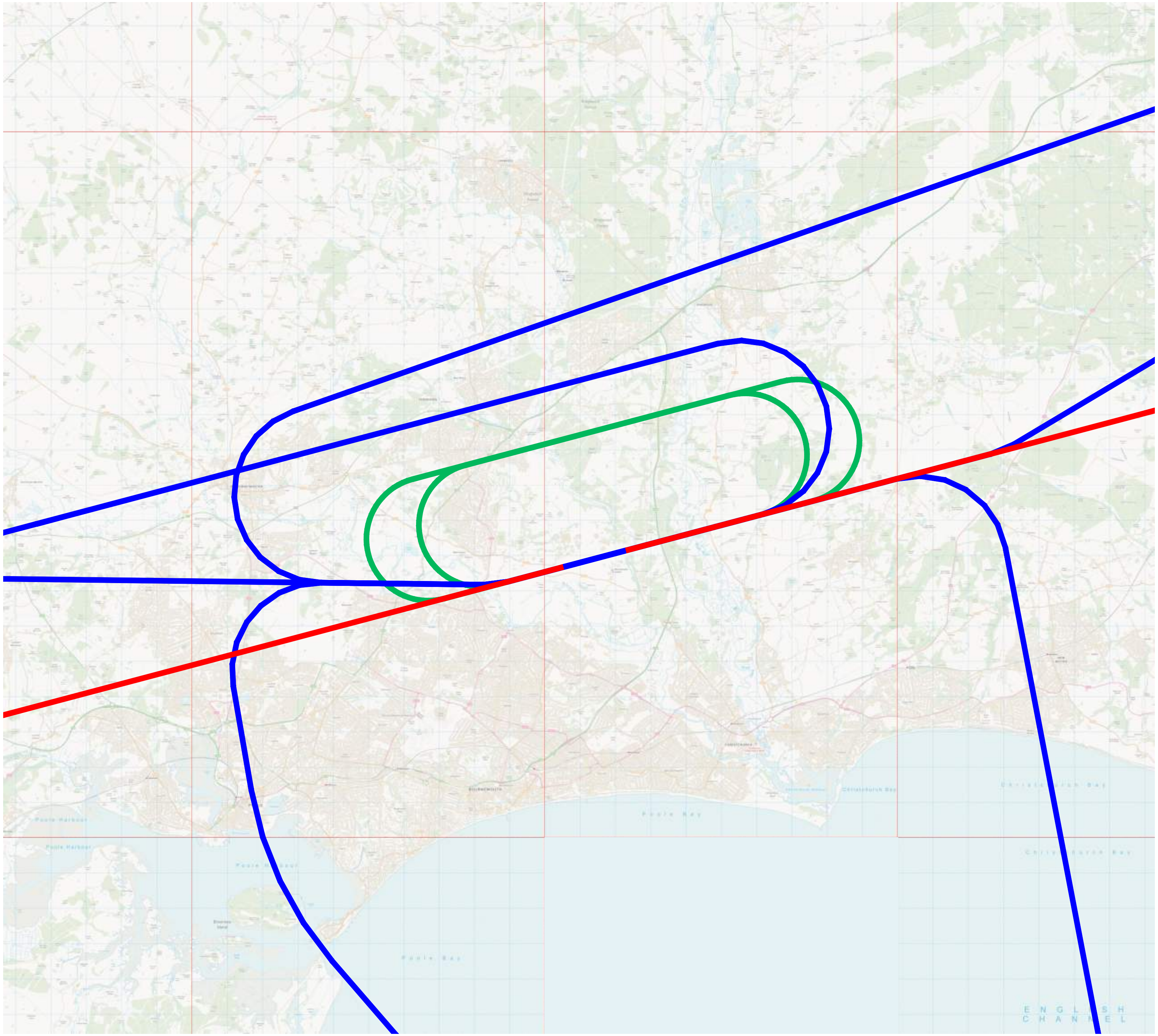
Aircraft Operational Code	Number of Summer Day (07:00-23:00) Aircraft Movements			
	Arrivals	Departures	Touch and Gos	Total
68L	8	8	0	16
A109	20	21	10	51
A119	1	1	0	2
A139	1	1	3	5
A189	1	1	24	26
A320	92	90	0	182
A321	1	1	0	2
A346	52	53	1	106
AA5	2	2	0	4
AS35	1	1	0	2
AS55	2	2	1	5
AS65	3	3	4	10
ASTR	1	1	0	2
B06	2	2	0	4
B212	2	2	0	4
B350	11	11	2	24
B409	0	0	1	1
B429	3	3	12	18
B733	2	4	1	7
B737	2	2	0	4
B738	834	872	1	1707
BDOG	1	1	1	3
BE18	0	1	0	1
BE20	127	135	5.5	267.5
BE30	2	2	0	4
BE33	0	0	1	1
BE35	4	4	3	11
BE36	1	0	0	1
BE40	13	13	0	26
BE76	1	2	0	3
BE9L	3	3	0	6
BN2T	2	2	1	5
C150	1	1	1	3
C152	1	1	0	2
C172	29	29	87	145

Aircraft Operational Code	Number of Summer Day (07:00-23:00) Aircraft Movements			
	Arrivals	Departures	Touch and Gos	Total
C177	0	0	5	5
C182	7	8	8	23
C195	1	1	1	3
C206	14	14	0	28
C208	3	3	3	9
C25B	7	7	0	14
C25M	6	6	0	12
C310	1	1	0	2
C402	1	0	0	1
C406	1	1	0	2
C414	9	10	2	21
C500	3	3	0	6
C510	3	2	0	5
C525	20	20	6	46
C550	8	8	0.5	16.5
C56X	35	38	1	74
C62	1	1	0	2
C650	1	2	1	4
C680	12	12	0	24
CJ4	4	5	0	9
CL30	3	3	0	6
CL60	6	3	3	12
CP23	2	2	2	6
D62	2	2	0	4
DA40	18	21	33	72
DA42	31	31	117	179
DHC1	5	5	1	11
DR40	2	2	0	4
E135	5	6	0	11
E145	2	2	0	4
E170	1	1	0	2
E190	7	7	0	14
E300	3	3	10	16
E50P	0	0	1	1
E55	3	3	0	6

Aircraft Operational Code	Number of Summer Day (07:00-23:00) Aircraft Movements			
	Arrivals	Departures	Touch and Gos	Total
E55P	19	19	0	38
EA50	63	62	80	205
EC15	2	2	0	4
EC20	12	12	105	129
EC35	8	8	111	127
EC45	1	1	0	2
EUPA	18	18	3	39
F260	0	0	1	1
F2TH	4	4	2	10
F406	2	1	2	5
F900	4	4	0	8
FA20	68	69	144.5	281.5
FA7X	4	5	4	13
G150	1	1	0	2
G28	2	1	0	3
G650	10	9	5	24
GLEX	8	10	2	20
GLF4	1	1	0	2
GLF5	8	9	0	17
GLF6	2	0	0	2
H25B	4	5	2	11
H25C	0	1	0	1
H269	1	1	2	4
H47	1	1	13	15
H500	2	2	0	4
HR20	1	2	0	3
HURI	3	3	1	7
JS41	1	1	0	2
LJ35	1	1	0	2
LJ45	5	6	0	11
LYNX	0	0	13	13
M20P	3	4	1	8
MCR1	17	17	0	34
P180	2	2	0	4
P28A	130	132	376	638

Aircraft Operational Code	Number of Summer Day (07:00-23:00) Aircraft Movements			
	Arrivals	Departures	Touch and Gos	Total
P46T	4	3	1	8
P51	1	1	2	4
P68	11	10	16	37
PA22	1	0	3	4
PA30	1	1	0	2
PA31	5	7	1.5	13.5
PA32	15	15	6	36
PA34	6	4	60	70
PC12	41	37	5	83
PC24	3	4	0	7
PRM1	20	21	2	43
PROP	0	1	0	1
PTS2	2	2	3	7
PUP	8	8	15	31
R44	20	19	14	53
R66	5	6	1	12
RV4	2	2	10	14
RV6	2	2	5	9
RV9	21	21	2	44
S61	1	1	0	2
S76	2	2	0	4
SPIT	6	6	2	14
SR20	29	29	2	60
SR22	17	18	3	38
SUBA	0	0	1	1
TBM7	6	7	1	14
TBM8	1	1	0	2
TOBA	4	5	3	12
TRIN	2	2	0	4
WASP	1	1	1	3
YK18	0	0	2	2
YK50	1	1	3	5
ZZZZ	60	61	50	171
Total	**2159**	**2220**	**1436**	**5815**

Aircraft Operational Code	Number of Summer Night (23:00-07:00) Aircraft Movements			
	Arrivals	Departures	Touch and Gos	Total
A109	1	0	0	1
A320	0	2	0	2
B350	0	2	0	2
B733	1	0	0	1
B738	131	94	0	225
BE20	4	1	0	5
C56X	1	0	0	1
CL60	0	1	0	1
E135	1	0	0	1
EC35	0	0	5.5	5.5
G650	1	1	0	2
GLEX	0	1	0	1
GLF6	0	1	0	1
LJ45	1	0	0	1
PC12	0	2	0	2
Total	**141**	**105**	**5.5**	**251.5**



LEGEND:

- Arrival Routes
- Departure Routes
- Touch and Go Routes

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Bournemouth Airport
CAP 2091 Categorisation
Figure 01

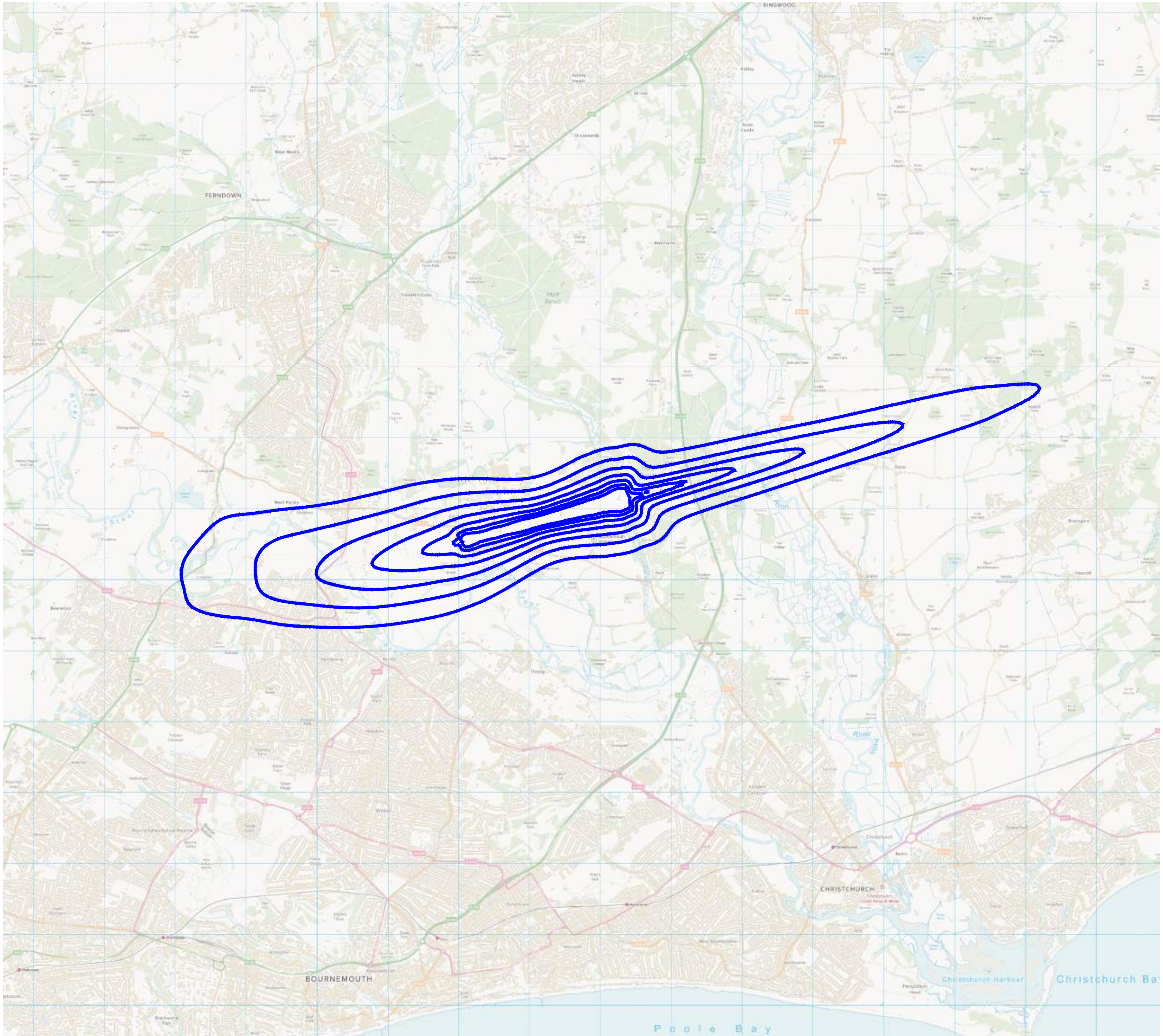
Aircraft Routes

DRAWN: NW CHECKED: DC

DATE: October 2024 SCALE: 1:150,000@A4

FIGURE No:

A11578_01_DR001_1.0



LEGEND:

Noise Contours,
51 to 69 dB $L_{Aeq,16h}$ in 3 dB steps

REVISIONS

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Bournemouth Airport
CAP 2091 Categorisation
Figure 02

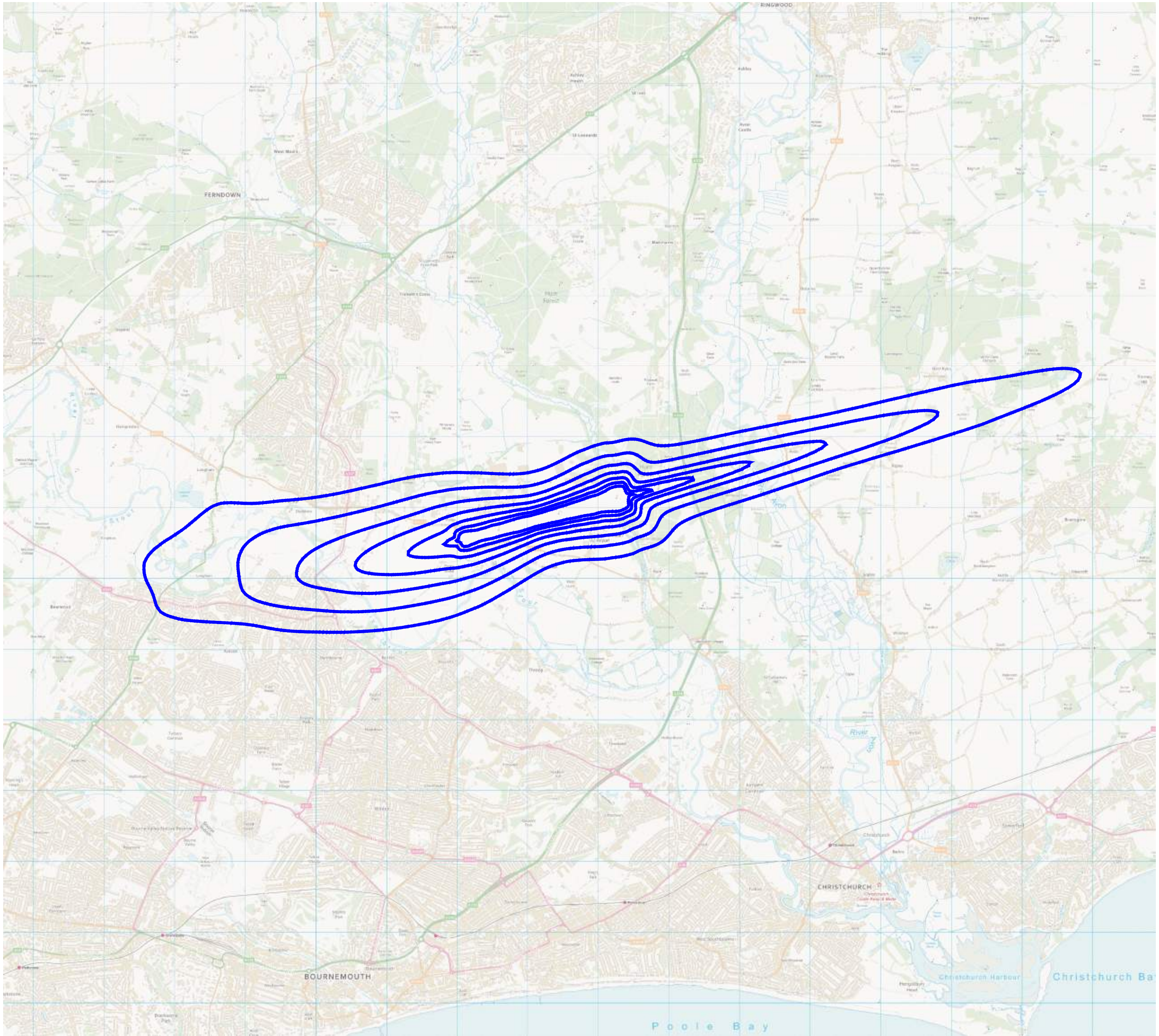
Airborne Aircraft Noise Contours
2023 Summer Day

DRAWN: NW CHECKED: DC

DATE: October 2024 SCALE: 1:75,000@A4

FIGURE No:

A11578_01_DR002_1.0



LEGEND:

Noise Contours,

51 to 69 dB $L_{Aeq,16h}$ in 3 dB steps

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CAP 2091 Categorisation
Figure 03

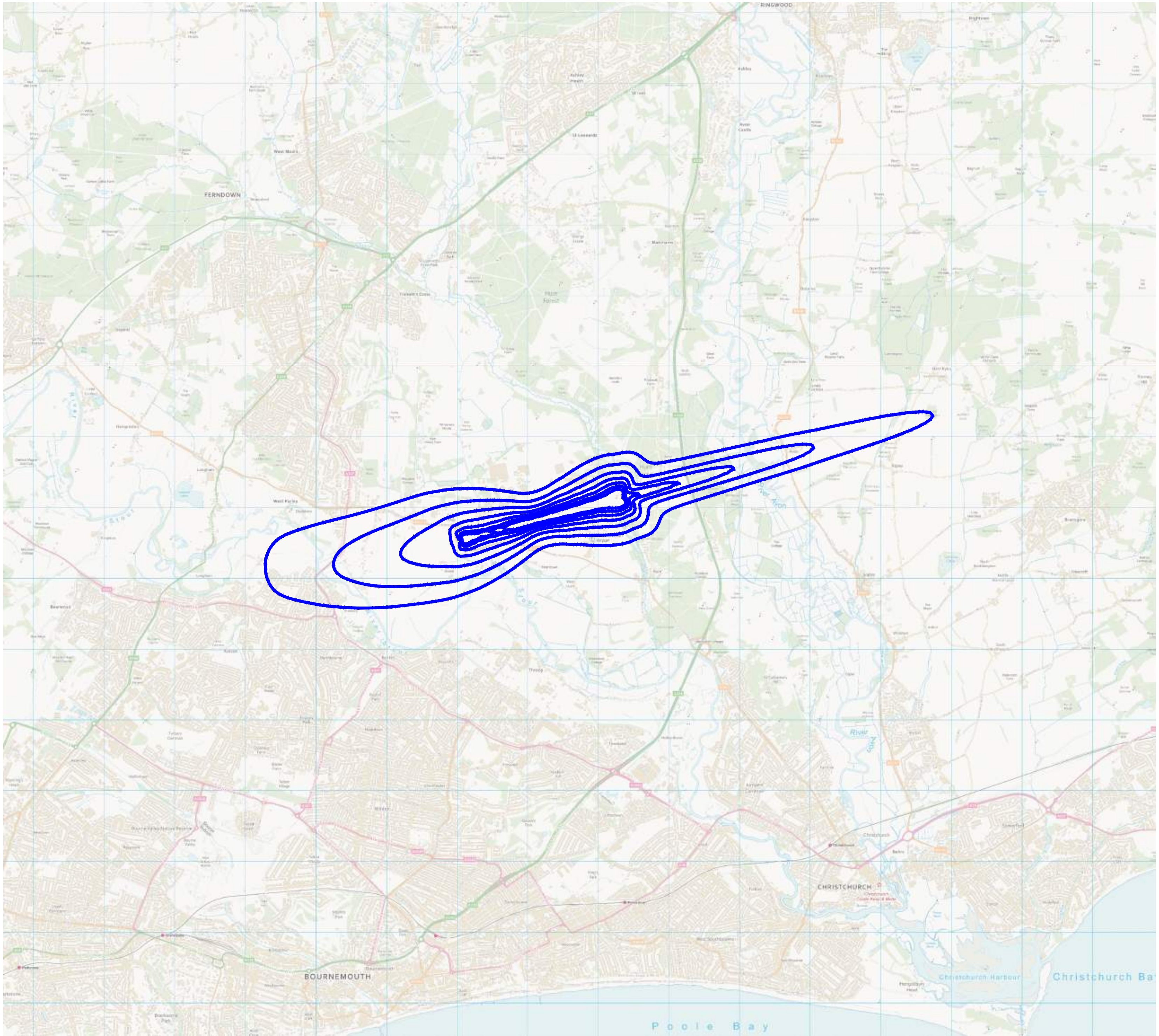
Airborne Aircraft Noise Contours
2032 Summer Day

DRAWN: NW CHECKED: DC

DATE: October 2024 SCALE: 1:75,000@A4

FIGURE No:

A11578_01_DR003_1.0



LEGEND:

Noise Contours,
45 to 63 dB $L_{Aeq,8h}$ in 3 dB steps

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Bournemouth Airport
CAP 2091 Categorisation
Figure 04

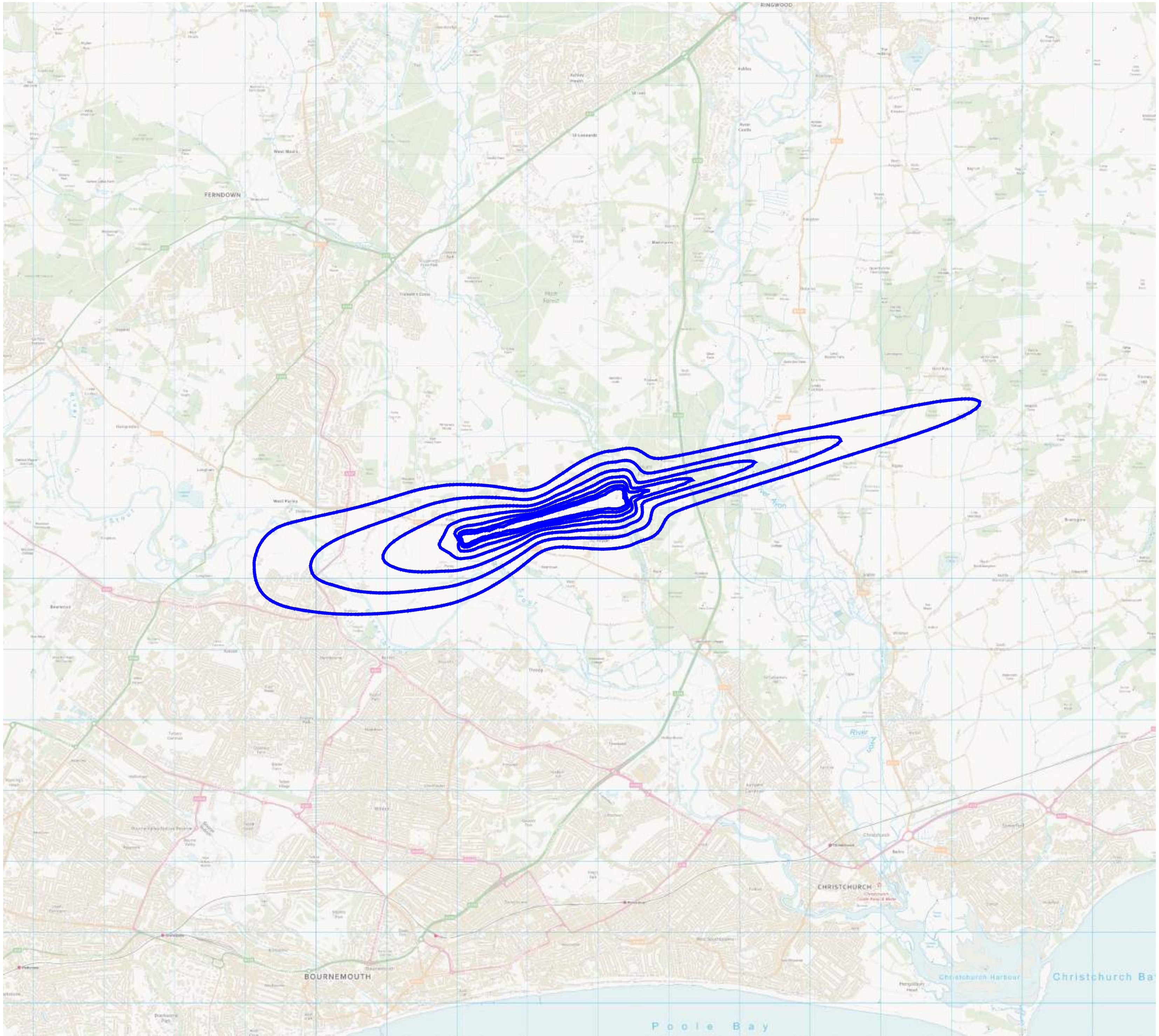
Airborne Aircraft Noise Contours
2023 Summer Night

DRAWN: NW CHECKED: DC

DATE: October 2024 SCALE: 1:75,000@A4

FIGURE No:

A11578_01_DR004_1.0



LEGEND:

Noise Contours,
45 to 63 dB $L_{Aeq,8h}$ in 3 dB steps

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Bournemouth Airport
CAP 2091 Categorisation
Figure 05

Airborne Aircraft Noise Contours
2032 Summer Night

DRAWN: NW CHECKED: DC

DATE: October 2024 SCALE: 1:75,000@A4

FIGURE No:

A11578_01_DR005_1.0