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Proposed Residential Subdivision
18-50 Mayne Drive
Westdale

ACOUSTIC REPORT




Client:
[redacted]

Reference:
1023129 R01C 18-50 Mayne Drive Westdale ACN.docx

Date Issued:
1 February 2024

Document Information

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Date	Revision	Author	Reviewer	Manager
25/01/24	R01A	[redacted]		
30/01/24	R01B			
01/02/24	R01C			

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TABLE OF CONTENTS

TABLE INDEX

FIGURE INDEX

1. Introduction

This report is in response to a request by [redacted] for an aircraft noise assessment of a proposed residential subdivision located at 18-50 Mayne Drive, Westdale. To facilitate the assessment, AS2021:2015 was utilised to assess aircraft noise impacting the site and determine any treatment requirements.

2. Site Description

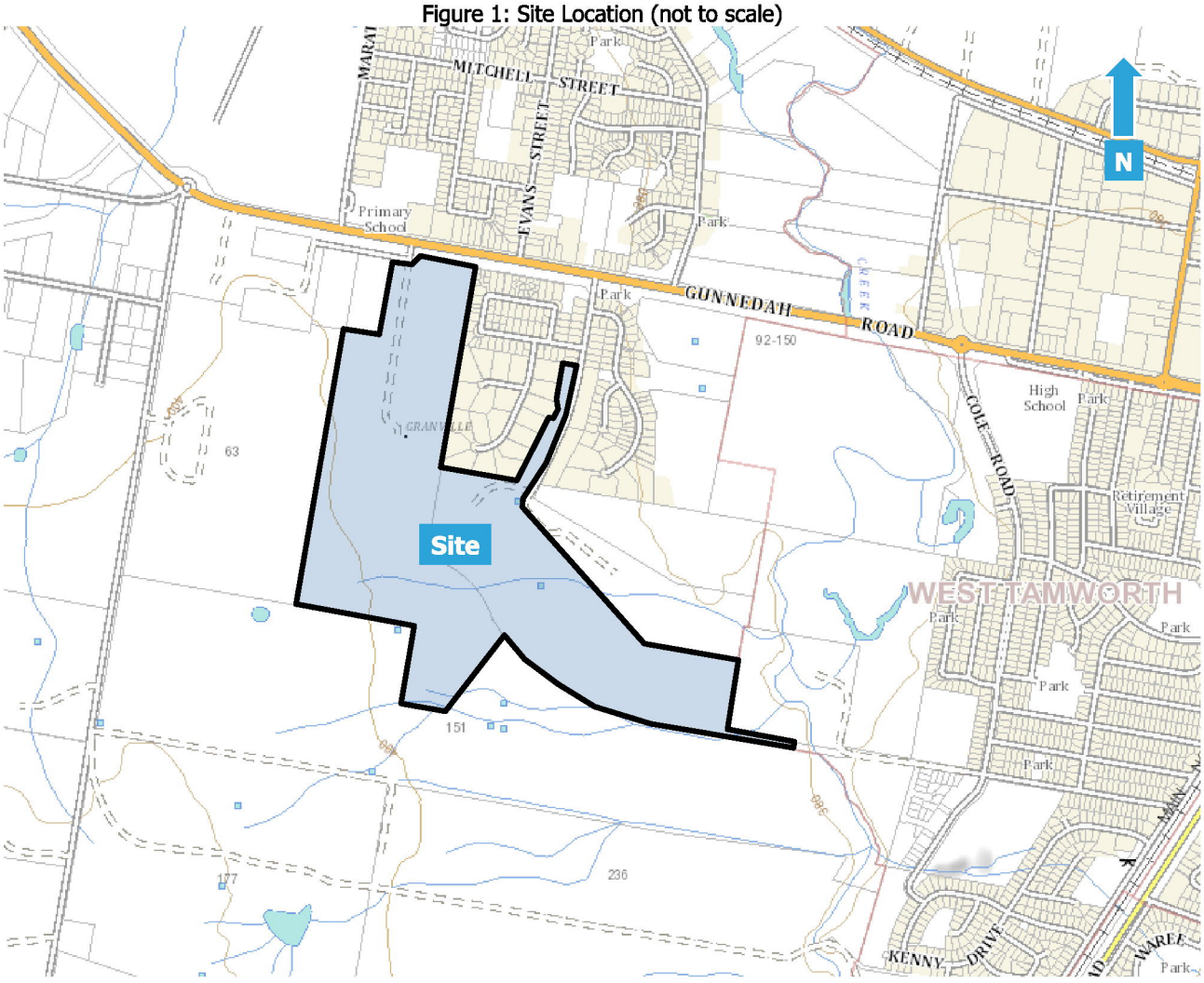
2.1 Site Location

The site is described by the following:

18-50 Mayne Drive & 236 Gunnedah Road, Westdale
Lot 1 on DP1017953 & Lot 5 on DP1036984

Refer to Figure 1 for site location.

Figure 1: Site Location (not to scale)



A comprehensive site survey was conducted on the 15th January 2024 and identified the following:

a) The site is located in a RU4 Primary Production Small Lots as defined in the Tamworth Regional Local Environmental Plan 2010.
b) The surrounding area consists of residential land uses.
c) Tamworth Regional Airport is located approximately 2 kilometres north west of the site.

2.2 Proposal

The proposal is to subdivide the existing lots to be used for future residential purposes. No residential dwellings are proposed for the site at this stage, therefore this assessment provides indicative aircraft noise impacts at various grid locations throughout the site, with a more detailed assessment to be conducted later for individual dwellings once floor plans and elevations are available, if identified as requiring an assessment.

Refer to the Appendices for development plans.

2.3 Acoustic Environment

The surrounding area is primarily affected by noise from the surrounding road network and aircraft fly overs from Tamworth Regional Airport.

3. Noise Criteria

To determine the appropriate noise criteria to be applied, a review of Tamworth Regional Council's planning policies was conducted.

3.1 Tamworth Regional Council

The site is located within Tamworth Regional Council's local government area, the criteria from the Tamworth Regional Council Local Environmental Plan 2010 (LEP) is applied. Section 7.7, *Development in areas subject to aircraft noise* states the following:

"(2) Before determining a development application for development to which this clause applies, the consent authority –

(a) must consider whether the development will result in an increase in the number of dwellings or people affected by aircraft noise, and

(b) must consider the location of the development in relation to the criteria set out in Table 2.1 (Building Site Acceptability Based on ANEF Zones) in AS2021-2000, Acoustics-Aircraft noise intrusion-Building siting and construction, and

(c) must be satisfied that the development will meet AS 2021-2000, Acoustics-Aircraft noise intrusion-Building siting and construction with respect to interior noise levels for the purposes of-

(i) if the development will be in an ANEF contour of 20 or greater – centre-based child care facilities, education establishments, entertainment facilities, hospitals, places of public worship, public administration buildings or residential accommodation, and

(iii) if the development will be in an ANEF contour of 25 or greater – business premises, hostels, hotel or motel accommodation, office premises or retail premises."

Therefore, further reference is made to AS 2021:2015.

3.2 Aircraft Noise Criteria

Based on the proximity of the site to the closest runway at Tamworth Regional Airport, the following indoor noise limits for new or expanded residential dwellings apply, as per AS 2021:2015:

Table 1: Aircraft Noise Residential Criteria

Building Type and Activity	Indoor Design Sound Level dB(A)
Houses, home units, flats, caravan parks:	
Sleeping areas, dedicated lounges	50
Other habitable spaces	55
Bathrooms, toilets, laundries	60

4. Aircraft Noise Assessment

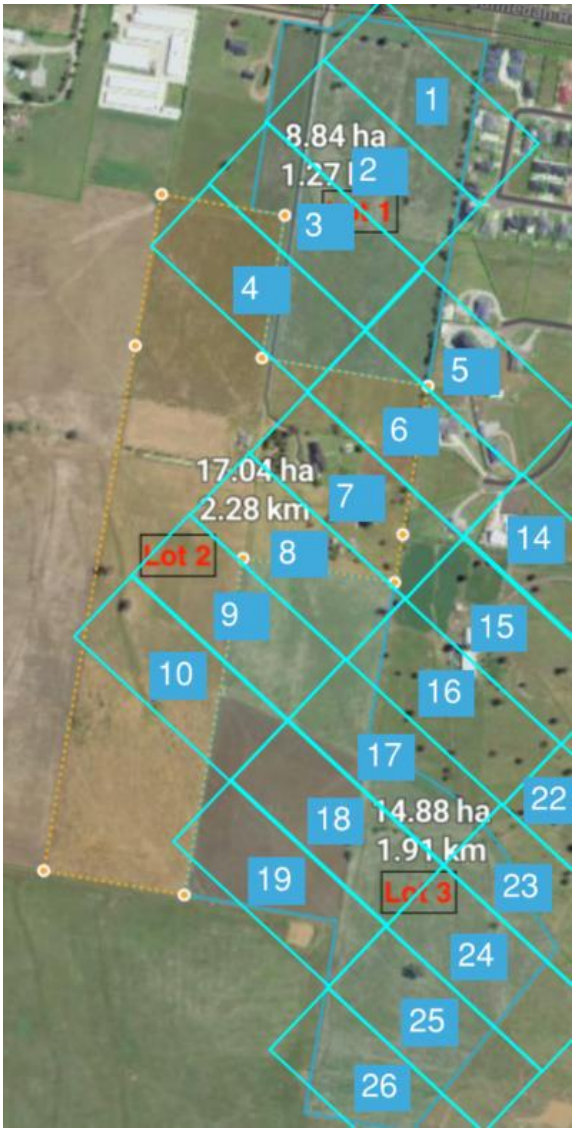
4.1 Site location

The site is affected by noise from operations on the 12L/30R runway at Tamworth Regional Airport. Aircraft movements operating from runways 12R/30L, 18/36 and 06/24 are not likely to have a significant impact on the development, therefore only Runway 12L/30R was assessed.

4.2 Site layout

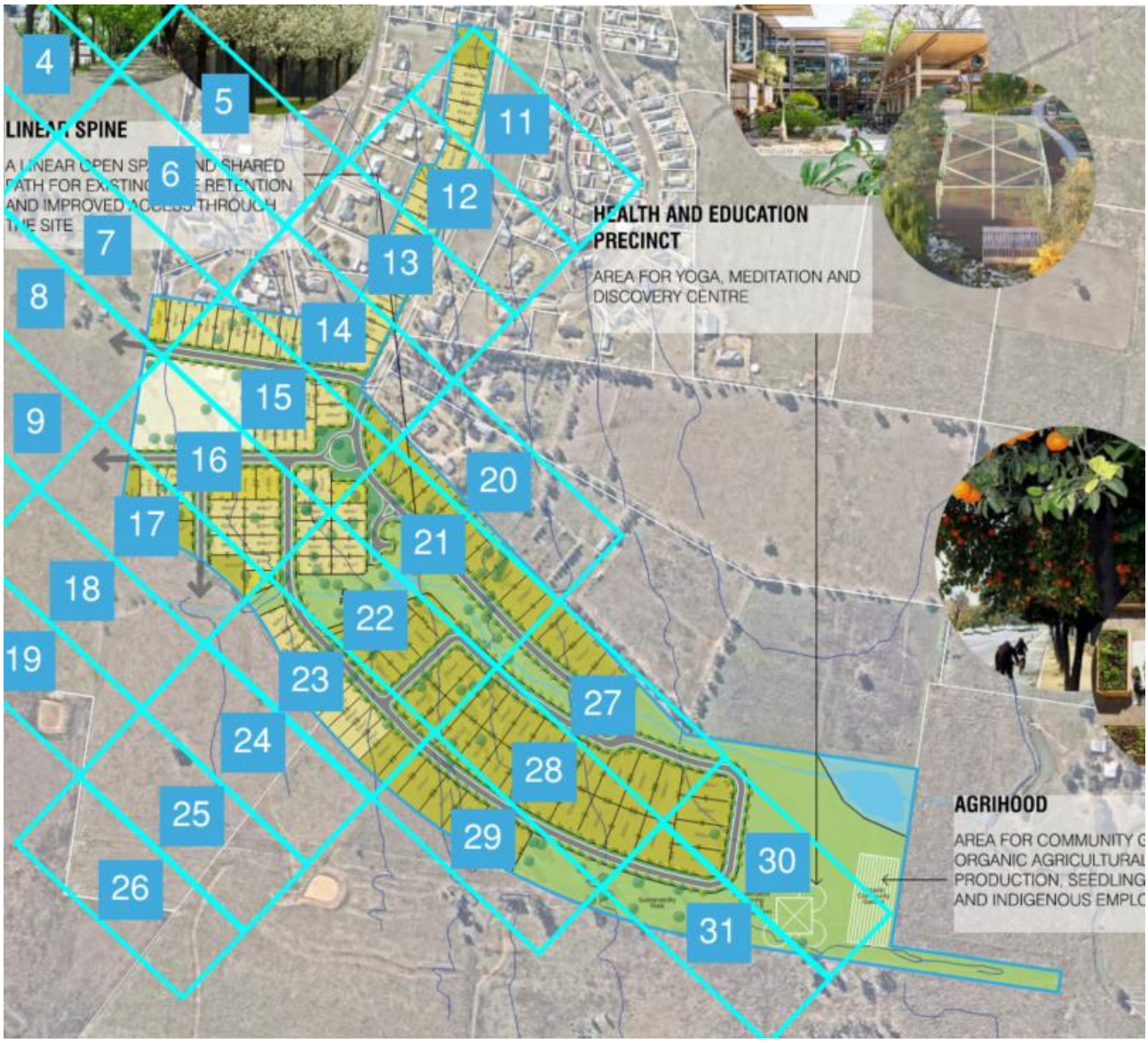
Given the size of the proposed subdivision, for the purposes of the assessment the site has been divided up into various grids so as to allow for a more comprehensive approach. Grid sizes have been determined using the intervals specified in AS2021:2015 (250m for DL and DT, 100m for DS). The grid layout used within the assessment is as follows:

Figure 2: Grid Layout - 236 Gunnedah Road



Note that Lot 2 is proposed to be used as a buffer zone (as informed by the client) and has not been considered as part of the assessment.

Figure 3: Grid Layout - 18-50 Mayne Drive



Note that if a proposed lot is located over two grid areas, the highest noise impact between the two should be utilised.

4.3 Site coordinates

The following dimensions have been determined in accordance with AS2021:2015;

Table 2: Site Coordinates Runway 12L/30R landing/takeoff

Grid Number	DS, sideline distance (m)	DL, landing distance (m)	DT, takeoff distance (m)	HS, elevation of site (m)	HA, elevation of airport (m)
1	450	2430	4630	392	400
2	350	2430	4630	394	400
3	250	2430	4630	400	400
4	150	2430	4630	402	400
5	250	2694	4894	394	400
6	150	2694	4894	395	400
7	50	2694	4894	399	400
8	50	2694	4894	399	400
9	150	2694	4894	400	400
10	250	2694	4894	402	400
11	450	2965	5165	385	400
12	350	2965	5165	384	400
13	250	2965	5165	396	400
14	150	2965	5165	390	400
15	50	2965	5165	393	400
16	50	2965	5165	394	400
17	150	2965	5165	397	400
18	250	2965	5165	399	400
19	350	2965	5165	401	400
20	150	3200	5400	388	400
21	50	3200	5400	392	400
22	50	3200	5400	392	400
23	150	3200	5400	391	400
24	250	3200	5400	394	400
25	350	3200	5400	396	400
26	450	3200	5400	398	400
27	50	3456	5656	384	400
28	50	3456	5656	384	400
29	150	3456	5656	388	400
30	50	3720	5920	383	400
31	50	3720	5920	383	400

4.4 Aircraft noise levels – AS2021:2015

Using the site coordinates, the maximum noise levels for the various types of aircraft are calculated in accordance with AS2021:2015. Table 3 provides a summary of the maximum noise levels, with more detailed analysis provided in the Appendices.

Table 3: Aircraft Noise Levels – AS2021:2015 Runway 12L/30R

Grid Number	Noise level dBA Lmax(slow)		
	Departure	Arrival	Maximum Noise Level
1	89	75	89
2	90	79	90
3	91	82	91
4	92	86	92
5	90	82	90
6	91	86	91
7	91	88	91
8	91	88	91
9	91	86	91
10	90	82	90
11	88	75	88
12	89	78	89
13	90	82	90
14	90	85	90
15	91	88	91
16	91	88	91
17	90	85	90
18	90	82	90
19	89	79	89
20	90	85	90
21	91	87	91
22	91	87	91
23	90	85	90
24	90	82	90
25	89	78	89
26	88	75	88
27	86	86	86
28	86	86	86
29	86	84	86
30	86	84	86
31	86	84	86

Refer to Section 5 for further recommendations.

5. Recommendations

Aircraft noise building treatments are typically determined in accordance with Australian Standard 2021:2015 "*Indoor Design Sound Levels for Determination of Aircraft Noise Reduction*".

The maximum noise levels from aircraft departures/arrivals presented in Section 4 are predicted to exceed the noise criteria for all future untreated residential dwellings located within grid numbers 1-31, therefore an acoustic assessment is required for all new dwellings within the development in order to achieve the appropriate acoustic building standards through the design process.

All future residential dwellings will require an individual assessment to determine minimum façade treatments and will require a ventilation system that provides fresh air from outside in accordance with National Construction Code 2019 requirements and AS1668.2 to allow doors and windows to be closed.

6. Conclusion

An aircraft noise assessment was conducted for the proposed residential subdivision located at 18-50 Mayne Drive, Westdale and potential subdivision at 236 Gunnedah Road, Westdale. Indicative maximum noise levels have been provided for locations across the site, which highlighted the need for further assessment during the design and DA stage for all new dwellings. Through the implementation of appropriate acoustic treatment of glazing, façade and structural materials, the development is predicted to achieve the minimum noise criteria. If you should have any queries please do not hesitate to contact us.

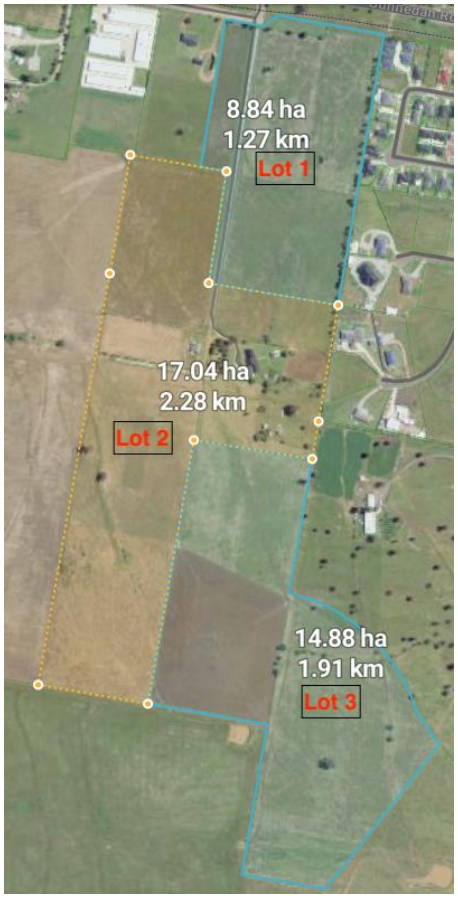
Report Prepared By

Acoustic Consultant

acousticworks)))

7. Appendices

7.1 Development Plans



7.2 AS2021:2015 Calculations

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
1	717-200	Boeing 717-200	75	64
	737-8FE	Boeing 737-800	84	72
	767-338	Boeing 767-300	89	75
	CL-600-2B16	Bombardier CL600	63	62
	EMB-135LR	Embraer 145 ER	69	63
	1900D	Beech 1900D	65	68
	DHC-8-102	Bombardier Dash 8-100	58	60
	DHC-8-202	Bombardier Dash 8-300	60	60
	DHC-8-315	Bombardier Dash 8-300	60	60
	DHC-8-402	Bombardier Dash 8-300	60	60
	208B	Cessna 208	70	70
	340B	Saab 340	69	66
	58	Beech BARON 58P	72	64
	GA10	Generic 1-engine FP prop	64	54
	GA-8	Generic 1-engine FP prop	64	54
	PA-28R-201	Piper PA-28	65	45
	Maximum noise level		89	75
			89	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
2	717-200	Boeing 717-200	76	67
	737-8FE	Boeing 737-800	86	75
	767-338	Boeing 767-300	90	79
	CL-600-2B16	Bombardier CL600	65	66
	EMB-135LR	Embraer 145 ER	70	66
	1900D	Beech 1900D	66	71
	DHC-8-102	Bombardier Dash 8-100	59	63
	DHC-8-202	Bombardier Dash 8-300	61	63
	DHC-8-315	Bombardier Dash 8-300	61	63
	DHC-8-402	Bombardier Dash 8-300	61	63
	208B	Cessna 208	71	72
	340B	Saab 340	70	69
	58	Beech BARON 58P	73	67
	GA10	Generic 1-engine FP prop	66	56
	GA-8	Generic 1-engine FP prop	66	56
	PA-28R-201	Piper PA-28	68	48
	Maximum noise level		90	79
			90	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
3	717-200	Boeing 717-200	77	71
	737-8FE	Boeing 737-800	87	79
	767-338	Boeing 767-300	91	82
	CL-600-2B16	Bombardier CL600	68	70
	EMB-135LR	Embraer 145 ER	72	70
	1900D	Beech 1900D	67	74
	DHC-8-102	Bombardier Dash 8-100	60	66
	DHC-8-202	Bombardier Dash 8-300	61	66
	DHC-8-315	Bombardier Dash 8-300	61	66
	DHC-8-402	Bombardier Dash 8-300	61	66
	208B	Cessna 208	72	75
	340B	Saab 340	71	72
	58	Beech BARON 58P	74	70
	GA10	Generic 1-engine FP prop	67	59
	GA-8	Generic 1-engine FP prop	67	59
	PA-28R-201	Piper PA-28	70	52
	Maximum noise level		91	82
			91	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
4	717-200	Boeing 717-200	78	76
	737-8FE	Boeing 737-800	88	83
	767-338	Boeing 767-300	92	86
	CL-600-2B16	Bombardier CL600	71	75
	EMB-135LR	Embraer 145 ER	73	74
	1900D	Beech 1900D	68	77
	DHC-8-102	Bombardier Dash 8-100	60	70
	DHC-8-202	Bombardier Dash 8-300	62	70
	DHC-8-315	Bombardier Dash 8-300	62	70
	DHC-8-402	Bombardier Dash 8-300	62	70
	208B	Cessna 208	73	79
	340B	Saab 340	71	75
	58	Beech BARON 58P	75	73
	GA10	Generic 1-engine FP prop	68	63
	GA-8	Generic 1-engine FP prop	68	63
	PA-28R-201	Piper PA-28	72	56
	Maximum noise level		92	86
			92	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
5	717-200	Boeing 717-200	77	71
	737-8FE	Boeing 737-800	86	79
	767-338	Boeing 767-300	90	82
	CL-600-2B16	Bombardier CL600	68	70
	EMB-135LR	Embraer 145 ER	71	70
	1900D	Beech 1900D	67	73
	DHC-8-102	Bombardier Dash 8-100	59	66
	DHC-8-202	Bombardier Dash 8-300	61	66
	DHC-8-315	Bombardier Dash 8-300	61	66
	DHC-8-402	Bombardier Dash 8-300	61	66
	208B	Cessna 208	71	75
	340B	Saab 340	70	72
	58	Beech BARON 58P	72	70
	GA10	Generic 1-engine FP prop	66	59
	GA-8	Generic 1-engine FP prop	66	59
	PA-28R-201	Piper PA-28	69	52
	Maximum noise level		90	82
			90	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
6	717-200	Boeing 717-200	78	75
	737-8FE	Boeing 737-800	87	82
	767-338	Boeing 767-300	91	86
	CL-600-2B16	Bombardier CL600	71	74
	EMB-135LR	Embraer 145 ER	72	74
	1900D	Beech 1900D	67	77
	DHC-8-102	Bombardier Dash 8-100	60	69
	DHC-8-202	Bombardier Dash 8-300	61	69
	DHC-8-315	Bombardier Dash 8-300	61	69
	DHC-8-402	Bombardier Dash 8-300	61	69
	208B	Cessna 208	72	78
	340B	Saab 340	70	75
	58	Beech BARON 58P	73	73
	GA10	Generic 1-engine FP prop	67	62
	GA-8	Generic 1-engine FP prop	67	62
	PA-28R-201	Piper PA-28	71	56
	Maximum noise level		91	86
			91	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
7	717-200	Boeing 717-200	78	79
	737-8FE	Boeing 737-800	88	84
	767-338	Boeing 767-300	91	88
	CL-600-2B16	Bombardier CL600	72	78
	EMB-135LR	Embraer 145 ER	73	78
	1900D	Beech 1900D	67	79
	DHC-8-102	Bombardier Dash 8-100	60	72
	DHC-8-202	Bombardier Dash 8-300	61	72
	DHC-8-315	Bombardier Dash 8-300	61	72
	DHC-8-402	Bombardier Dash 8-300	61	72
	208B	Cessna 208	72	81
	340B	Saab 340	70	78
	58	Beech BARON 58P	73	75
	GA10	Generic 1-engine FP prop	68	65
	GA-8	Generic 1-engine FP prop	68	65
	PA-28R-201	Piper PA-28	72	59
	Maximum noise level		91	88
			91	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
8	717-200	Boeing 717-200	78	79
	737-8FE	Boeing 737-800	88	84
	767-338	Boeing 767-300	91	88
	CL-600-2B16	Bombardier CL600	72	78
	EMB-135LR	Embraer 145 ER	73	78
	1900D	Beech 1900D	67	79
	DHC-8-102	Bombardier Dash 8-100	60	72
	DHC-8-202	Bombardier Dash 8-300	61	72
	DHC-8-315	Bombardier Dash 8-300	61	72
	DHC-8-402	Bombardier Dash 8-300	61	72
	208B	Cessna 208	72	81
	340B	Saab 340	70	78
	58	Beech BARON 58P	73	75
	GA10	Generic 1-engine FP prop	68	65
	GA-8	Generic 1-engine FP prop	68	65
	PA-28R-201	Piper PA-28	72	59
	Maximum noise level		91	88
			91	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
9	717-200	Boeing 717-200	78	75
	737-8FE	Boeing 737-800	87	82
	767-338	Boeing 767-300	91	86
	CL-600-2B16	Bombardier CL600	71	74
	EMB-135LR	Embraer 145 ER	72	74
	1900D	Beech 1900D	67	77
	DHC-8-102	Bombardier Dash 8-100	60	69
	DHC-8-202	Bombardier Dash 8-300	61	69
	DHC-8-315	Bombardier Dash 8-300	61	69
	DHC-8-402	Bombardier Dash 8-300	61	69
	208B	Cessna 208	72	78
	340B	Saab 340	70	75
	58	Beech BARON 58P	73	73
	GA10	Generic 1-engine FP prop	67	62
	GA-8	Generic 1-engine FP prop	67	62
	PA-28R-201	Piper PA-28	71	56
	Maximum noise level		91	86
			91	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
10	717-200	Boeing 717-200	77	71
	737-8FE	Boeing 737-800	86	79
	767-338	Boeing 767-300	90	82
	CL-600-2B16	Bombardier CL600	68	70
	EMB-135LR	Embraer 145 ER	71	70
	1900D	Beech 1900D	67	73
	DHC-8-102	Bombardier Dash 8-100	59	66
	DHC-8-202	Bombardier Dash 8-300	61	66
	DHC-8-315	Bombardier Dash 8-300	61	66
	DHC-8-402	Bombardier Dash 8-300	61	66
	208B	Cessna 208	71	75
	340B	Saab 340	70	72
	58	Beech BARON 58P	72	70
	GA10	Generic 1-engine FP prop	66	59
	GA-8	Generic 1-engine FP prop	66	59
	PA-28R-201	Piper PA-28	69	52
	Maximum noise level		90	82
			90	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
11	717-200	Boeing 717-200	74	64
	737-8FE	Boeing 737-800	83	72
	767-338	Boeing 767-300	88	75
	CL-600-2B16	Bombardier CL600	63	63
	EMB-135LR	Embraer 145 ER	68	64
	1900D	Beech 1900D	65	68
	DHC-8-102	Bombardier Dash 8-100	58	60
	DHC-8-202	Bombardier Dash 8-300	59	60
	DHC-8-315	Bombardier Dash 8-300	59	60
	DHC-8-402	Bombardier Dash 8-300	59	60
	208B	Cessna 208	69	70
	340B	Saab 340	67	66
	58	Beech BARON 58P	70	65
	GA10	Generic 1-engine FP prop	62	54
	GA-8	Generic 1-engine FP prop	62	54
	PA-28R-201	Piper PA-28	65	46
	Maximum noise level		88	75
			88	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
12	717-200	Boeing 717-200	75	67
	737-8FE	Boeing 737-800	85	75
	767-338	Boeing 767-300	89	78
	CL-600-2B16	Bombardier CL600	65	66
	EMB-135LR	Embraer 145 ER	70	66
	1900D	Beech 1900D	65	70
	DHC-8-102	Bombardier Dash 8-100	58	62
	DHC-8-202	Bombardier Dash 8-300	60	62
	DHC-8-315	Bombardier Dash 8-300	60	62
	DHC-8-402	Bombardier Dash 8-300	60	62
	208B	Cessna 208	70	72
	340B	Saab 340	68	69
	58	Beech BARON 58P	71	67
	GA10	Generic 1-engine FP prop	64	56
	GA-8	Generic 1-engine FP prop	64	56
	PA-28R-201	Piper PA-28	67	48
	Maximum noise level		89	78
			89	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
13	717-200	Boeing 717-200	76	71
	737-8FE	Boeing 737-800	86	78
	767-338	Boeing 767-300	90	82
	CL-600-2B16	Bombardier CL600	68	70
	EMB-135LR	Embraer 145 ER	71	70
	1900D	Beech 1900D	66	73
	DHC-8-102	Bombardier Dash 8-100	59	66
	DHC-8-202	Bombardier Dash 8-300	60	66
	DHC-8-315	Bombardier Dash 8-300	60	66
	DHC-8-402	Bombardier Dash 8-300	60	66
	208B	Cessna 208	71	75
	340B	Saab 340	69	72
	58	Beech BARON 58P	72	70
	GA10	Generic 1-engine FP prop	65	59
	GA-8	Generic 1-engine FP prop	65	59
	PA-28R-201	Piper PA-28	69	52
	Maximum noise level		90	82
			90	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
14	717-200	Boeing 717-200	77	75
	737-8FE	Boeing 737-800	87	81
	767-338	Boeing 767-300	90	85
	CL-600-2B16	Bombardier CL600	70	73
	EMB-135LR	Embraer 145 ER	72	73
	1900D	Beech 1900D	66	76
	DHC-8-102	Bombardier Dash 8-100	59	68
	DHC-8-202	Bombardier Dash 8-300	61	68
	DHC-8-315	Bombardier Dash 8-300	61	68
	DHC-8-402	Bombardier Dash 8-300	61	68
	208B	Cessna 208	71	77
	340B	Saab 340	69	74
	58	Beech BARON 58P	73	72
	GA10	Generic 1-engine FP prop	66	61
	GA-8	Generic 1-engine FP prop	66	61
	PA-28R-201	Piper PA-28	70	55
	Maximum noise level		90	85
			90	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
15	717-200	Boeing 717-200	77	78
	737-8FE	Boeing 737-800	87	84
	767-338	Boeing 767-300	91	88
	CL-600-2B16	Bombardier CL600	72	77
	EMB-135LR	Embraer 145 ER	72	77
	1900D	Beech 1900D	67	79
	DHC-8-102	Bombardier Dash 8-100	59	71
	DHC-8-202	Bombardier Dash 8-300	61	71
	DHC-8-315	Bombardier Dash 8-300	61	71
	DHC-8-402	Bombardier Dash 8-300	61	71
	208B	Cessna 208	72	80
	340B	Saab 340	69	77
	58	Beech BARON 58P	73	75
	GA10	Generic 1-engine FP prop	67	64
	GA-8	Generic 1-engine FP prop	67	64
	PA-28R-201	Piper PA-28	71	58
	Maximum noise level		91	88
			91	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
16	717-200	Boeing 717-200	77	78
	737-8FE	Boeing 737-800	87	84
	767-338	Boeing 767-300	91	88
	CL-600-2B16	Bombardier CL600	72	77
	EMB-135LR	Embraer 145 ER	72	77
	1900D	Beech 1900D	67	79
	DHC-8-102	Bombardier Dash 8-100	59	71
	DHC-8-202	Bombardier Dash 8-300	61	71
	DHC-8-315	Bombardier Dash 8-300	61	71
	DHC-8-402	Bombardier Dash 8-300	61	71
	208B	Cessna 208	72	80
	340B	Saab 340	69	77
	58	Beech BARON 58P	73	75
	GA10	Generic 1-engine FP prop	67	64
	GA-8	Generic 1-engine FP prop	67	64
	PA-28R-201	Piper PA-28	71	58
	Maximum noise level		91	88
			91	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
17	717-200	Boeing 717-200	77	75
	737-8FE	Boeing 737-800	87	82
	767-338	Boeing 767-300	90	85
	CL-600-2B16	Bombardier CL600	70	74
	EMB-135LR	Embraer 145 ER	72	74
	1900D	Beech 1900D	66	76
	DHC-8-102	Bombardier Dash 8-100	59	69
	DHC-8-202	Bombardier Dash 8-300	61	69
	DHC-8-315	Bombardier Dash 8-300	61	69
	DHC-8-402	Bombardier Dash 8-300	61	69
	208B	Cessna 208	71	78
	340B	Saab 340	69	75
	58	Beech BARON 58P	73	72
	GA10	Generic 1-engine FP prop	66	62
	GA-8	Generic 1-engine FP prop	66	62
	PA-28R-201	Piper PA-28	70	55
	Maximum noise level		90	85
			90	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
18	717-200	Boeing 717-200	76	71
	737-8FE	Boeing 737-800	86	78
	767-338	Boeing 767-300	90	82
	CL-600-2B16	Bombardier CL600	68	70
	EMB-135LR	Embraer 145 ER	71	70
	1900D	Beech 1900D	66	73
	DHC-8-102	Bombardier Dash 8-100	59	66
	DHC-8-202	Bombardier Dash 8-300	60	66
	DHC-8-315	Bombardier Dash 8-300	60	66
	DHC-8-402	Bombardier Dash 8-300	60	66
	208B	Cessna 208	71	75
	340B	Saab 340	69	72
	58	Beech BARON 58P	72	70
	GA10	Generic 1-engine FP prop	65	59
	GA-8	Generic 1-engine FP prop	65	59
	PA-28R-201	Piper PA-28	69	52
	Maximum noise level		90	82
			90	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
19	717-200	Boeing 717-200	75	67
	737-8FE	Boeing 737-800	85	75
	767-338	Boeing 767-300	89	79
	CL-600-2B16	Bombardier CL600	65	66
	EMB-135LR	Embraer 145 ER	70	66
	1900D	Beech 1900D	65	70
	DHC-8-102	Bombardier Dash 8-100	58	62
	DHC-8-202	Bombardier Dash 8-300	60	62
	DHC-8-315	Bombardier Dash 8-300	60	62
	DHC-8-402	Bombardier Dash 8-300	60	62
	208B	Cessna 208	70	72
	340B	Saab 340	68	69
	58	Beech BARON 58P	71	67
	GA10	Generic 1-engine FP prop	64	56
	GA-8	Generic 1-engine FP prop	64	56
	PA-28R-201	Piper PA-28	67	49
	Maximum noise level		89	79
			89	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
20	717-200	Boeing 717-200	77	74
	737-8FE	Boeing 737-800	87	81
	767-338	Boeing 767-300	90	85
	CL-600-2B16	Bombardier CL600	70	73
	EMB-135LR	Embraer 145 ER	72	73
	1900D	Beech 1900D	66	75
	DHC-8-102	Bombardier Dash 8-100	59	68
	DHC-8-202	Bombardier Dash 8-300	61	68
	DHC-8-315	Bombardier Dash 8-300	61	68
	DHC-8-402	Bombardier Dash 8-300	61	68
	208B	Cessna 208	71	77
	340B	Saab 340	69	74
	58	Beech BARON 58P	73	72
	GA10	Generic 1-engine FP prop	66	61
	GA-8	Generic 1-engine FP prop	66	61
	PA-28R-201	Piper PA-28	70	55
	Maximum noise level		90	85
			90	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
21	717-200	Boeing 717-200	77	77
	737-8FE	Boeing 737-800	87	83
	767-338	Boeing 767-300	91	87
	CL-600-2B16	Bombardier CL600	72	76
	EMB-135LR	Embraer 145 ER	72	76
	1900D	Beech 1900D	67	78
	DHC-8-102	Bombardier Dash 8-100	59	71
	DHC-8-202	Bombardier Dash 8-300	61	71
	DHC-8-315	Bombardier Dash 8-300	61	71
	DHC-8-402	Bombardier Dash 8-300	61	71
	208B	Cessna 208	72	79
	340B	Saab 340	69	76
	58	Beech BARON 58P	73	74
	GA10	Generic 1-engine FP prop	67	63
	GA-8	Generic 1-engine FP prop	67	63
	PA-28R-201	Piper PA-28	71	57
	Maximum noise level		91	87
			91	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
22	717-200	Boeing 717-200	77	77
	737-8FE	Boeing 737-800	87	83
	767-338	Boeing 767-300	91	87
	CL-600-2B16	Bombardier CL600	72	76
	EMB-135LR	Embraer 145 ER	72	76
	1900D	Beech 1900D	67	78
	DHC-8-102	Bombardier Dash 8-100	59	71
	DHC-8-202	Bombardier Dash 8-300	61	71
	DHC-8-315	Bombardier Dash 8-300	61	71
	DHC-8-402	Bombardier Dash 8-300	61	71
	208B	Cessna 208	72	79
	340B	Saab 340	69	76
	58	Beech BARON 58P	73	74
	GA10	Generic 1-engine FP prop	67	63
	GA-8	Generic 1-engine FP prop	67	63
	PA-28R-201	Piper PA-28	71	57
	Maximum noise level		91	87
			91	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
23	717-200	Boeing 717-200	77	75
	737-8FE	Boeing 737-800	87	81
	767-338	Boeing 767-300	90	85
	CL-600-2B16	Bombardier CL600	70	73
	EMB-135LR	Embraer 145 ER	72	73
	1900D	Beech 1900D	66	76
	DHC-8-102	Bombardier Dash 8-100	59	68
	DHC-8-202	Bombardier Dash 8-300	61	68
	DHC-8-315	Bombardier Dash 8-300	61	68
	DHC-8-402	Bombardier Dash 8-300	61	68
	208B	Cessna 208	71	77
	340B	Saab 340	69	74
	58	Beech BARON 58P	73	72
	GA10	Generic 1-engine FP prop	66	61
	GA-8	Generic 1-engine FP prop	66	61
	PA-28R-201	Piper PA-28	70	55
	Maximum noise level		90	85
			90	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
24	717-200	Boeing 717-200	76	71
	737-8FE	Boeing 737-800	86	78
	767-338	Boeing 767-300	90	82
	CL-600-2B16	Bombardier CL600	68	70
	EMB-135LR	Embraer 145 ER	71	70
	1900D	Beech 1900D	66	73
	DHC-8-102	Bombardier Dash 8-100	59	65
	DHC-8-202	Bombardier Dash 8-300	60	65
	DHC-8-315	Bombardier Dash 8-300	60	65
	DHC-8-402	Bombardier Dash 8-300	60	65
	208B	Cessna 208	71	75
	340B	Saab 340	69	71
	58	Beech BARON 58P	72	69
	GA10	Generic 1-engine FP prop	65	59
	GA-8	Generic 1-engine FP prop	65	59
	PA-28R-201	Piper PA-28	69	52
	Maximum noise level		90	82
			90	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
25	717-200	Boeing 717-200	75	67
	737-8FE	Boeing 737-800	85	75
	767-338	Boeing 767-300	89	78
	CL-600-2B16	Bombardier CL600	65	66
	EMB-135LR	Embraer 145 ER	70	66
	1900D	Beech 1900D	65	70
	DHC-8-102	Bombardier Dash 8-100	58	62
	DHC-8-202	Bombardier Dash 8-300	60	62
	DHC-8-315	Bombardier Dash 8-300	60	62
	DHC-8-402	Bombardier Dash 8-300	60	62
	208B	Cessna 208	70	72
	340B	Saab 340	68	69
	58	Beech BARON 58P	71	67
	GA10	Generic 1-engine FP prop	64	56
	GA-8	Generic 1-engine FP prop	64	56
	PA-28R-201	Piper PA-28	67	49
	Maximum noise level		89	78
			89	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
26	717-200	Boeing 717-200	74	64
	737-8FE	Boeing 737-800	83	72
	767-338	Boeing 767-300	88	75
	CL-600-2B16	Bombardier CL600	63	63
	EMB-135LR	Embraer 145 ER	68	63
	1900D	Beech 1900D	65	68
	DHC-8-102	Bombardier Dash 8-100	58	60
	DHC-8-202	Bombardier Dash 8-300	59	60
	DHC-8-315	Bombardier Dash 8-300	59	60
	DHC-8-402	Bombardier Dash 8-300	59	60
	208B	Cessna 208	69	70
	340B	Saab 340	67	66
	58	Beech BARON 58P	70	65
	GA10	Generic 1-engine FP prop	62	54
	GA-8	Generic 1-engine FP prop	62	54
	PA-28R-201	Piper PA-28	65	46
	Maximum noise level		88	75
			88	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
27	717-200	Boeing 717-200	76	76
	737-8FE	Boeing 737-800	86	82
	767-338	Boeing 767-300	86	86
	CL-600-2B16	Bombardier CL600	70	75
	EMB-135LR	Embraer 145 ER	71	75
	1900D	Beech 1900D	65	77
	DHC-8-102	Bombardier Dash 8-100	58	69
	DHC-8-202	Bombardier Dash 8-300	60	69
	DHC-8-315	Bombardier Dash 8-300	60	69
	DHC-8-402	Bombardier Dash 8-300	60	69
	208B	Cessna 208	71	78
	340B	Saab 340	68	75
	58	Beech BARON 58P	72	73
	GA10	Generic 1-engine FP prop	65	62
	GA-8	Generic 1-engine FP prop	65	62
	PA-28R-201	Piper PA-28	70	56
	Maximum noise level		86	86
			86	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
28	717-200	Boeing 717-200	76	76
	737-8FE	Boeing 737-800	86	82
	767-338	Boeing 767-300	86	86
	CL-600-2B16	Bombardier CL600	70	75
	EMB-135LR	Embraer 145 ER	71	75
	1900D	Beech 1900D	65	77
	DHC-8-102	Bombardier Dash 8-100	58	69
	DHC-8-202	Bombardier Dash 8-300	60	69
	DHC-8-315	Bombardier Dash 8-300	60	69
	DHC-8-402	Bombardier Dash 8-300	60	69
	208B	Cessna 208	71	78
	340B	Saab 340	68	75
	58	Beech BARON 58P	72	73
	GA10	Generic 1-engine FP prop	65	62
	GA-8	Generic 1-engine FP prop	65	62
	PA-28R-201	Piper PA-28	70	56
	Maximum noise level		86	86
			86	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
29	717-200	Boeing 717-200	76	74
	737-8FE	Boeing 737-800	85	80
	767-338	Boeing 767-300	86	84
	CL-600-2B16	Bombardier CL600	69	73
	EMB-135LR	Embraer 145 ER	71	73
	1900D	Beech 1900D	65	75
	DHC-8-102	Bombardier Dash 8-100	58	67
	DHC-8-202	Bombardier Dash 8-300	60	67
	DHC-8-315	Bombardier Dash 8-300	60	67
	DHC-8-402	Bombardier Dash 8-300	60	67
	208B	Cessna 208	70	77
	340B	Saab 340	68	73
	58	Beech BARON 58P	72	71
	GA10	Generic 1-engine FP prop	65	61
	GA-8	Generic 1-engine FP prop	65	61
	PA-28R-201	Piper PA-28	69	54
	Maximum noise level		86	84
			86	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
30	717-200	Boeing 717-200	75	75
	737-8FE	Boeing 737-800	85	80
	767-338	Boeing 767-300	86	84
	CL-600-2B16	Bombardier CL600	69	74
	EMB-135LR	Embraer 145 ER	70	74
	1900D	Beech 1900D	65	76
	DHC-8-102	Bombardier Dash 8-100	58	68
	DHC-8-202	Bombardier Dash 8-300	59	68
	DHC-8-315	Bombardier Dash 8-300	59	68
	DHC-8-402	Bombardier Dash 8-300	59	68
	208B	Cessna 208	70	77
	340B	Saab 340	67	74
	58	Beech BARON 58P	71	72
	GA10	Generic 1-engine FP prop	64	61
	GA-8	Generic 1-engine FP prop	64	61
	PA-28R-201	Piper PA-28	69	55
	Maximum noise level		86	84
			86	

Grid Number	Model	Representative aircraft	Noise level dBA Lmax(slow)	
			Departure	Arrival
31	717-200	Boeing 717-200	75	75
	737-8FE	Boeing 737-800	85	80
	767-338	Boeing 767-300	86	84
	CL-600-2B16	Bombardier CL600	69	74
	EMB-135LR	Embraer 145 ER	70	74
	1900D	Beech 1900D	65	76
	DHC-8-102	Bombardier Dash 8-100	58	68
	DHC-8-202	Bombardier Dash 8-300	59	68
	DHC-8-315	Bombardier Dash 8-300	59	68
	DHC-8-402	Bombardier Dash 8-300	59	68
	208B	Cessna 208	70	77
	340B	Saab 340	67	74
	58	Beech BARON 58P	71	72
	GA10	Generic 1-engine FP prop	64	61
	GA-8	Generic 1-engine FP prop	64	61
	PA-28R-201	Piper PA-28	69	55
	Maximum noise level		86	84
			86	