



Sections 106 and 299A
Town and Country Planning Act 1990

Interim INM7 Noise Assessment 2026
Predictive Contours July to December 2026

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1. INTRODUCTION

- 1.1 In compliance with the requirements of paragraph 2.5 a), c), d) and e) of the Section 106/299A Town and Country Planning Act 1990 agreement, between Rushmoor Borough Council (RBC) and Farnborough Airport Limited, this report provides details of the outcome of the latest Integrated Noise Model Study run for business aviation operations at Farnborough.

This report covers the first half of 2026 and includes predictive contours for the second half of 2026 based on current forecasting. The INM modelling process was conducted by Bickerdike Allen Partners (BAP), compliance with paragraph 2.5e validation on the model is generally only carried out on the annual assessment.

- 1.2 Paragraph 2.5 of the planning agreement states:

- a) *At the end of the 2nd quarter in each successive year the INM model will be used to produce noise contours based on the preceding 6 months' actual movements and a second set of theoretical contours for the next 6 months*
- c) *These sets of contours shall be supplied to the council no later than 6 weeks after the model has been used.*
- d) *For paragraphs 2.5 a) and c) the INM model shall use a simplified departure track representation and such simplified departure track representations shall be made after inspection of the spread of actual aircraft tracks on site.*
- e) *For paragraphs 2.5 a) and c) the INM model shall include terrain information and at the end of each year the results shall be compared between the individual INM predicted levels with the measured levels determined by the fixed and mobile monitoring points in and around the site.*

This report is intended to address the requirements of paragraph 2.5, a), c), d) and e).

- 1.3 The use of the INM model, to produce noise contours relating to business aircraft movements at Farnborough Airport, assess the noise impact on the surrounding area under existing conditions and the potential impact of the predicted growth of the Airport as permitted by the Planning Agreement.
- 1.4 Civil operations at Farnborough Airport are restricted to 'daytime' hours only (as defined by PPG 24 "Planning and Noise"). The Airport is open from 07:00 to 22:00 hours on weekdays and 08:00 to 20:00 hours on non-weekdays. The modelling process uses representative tracks produced from inspection of real track data, to construct contours that represent the time-averaged noise of operations.
- 1.5 In compliance with clause 2.7 of the Planning Agreement, BAP were selected to conduct the annual noise assessment in January and the interim noise assessment in July. The next annual assessment will be undertaken in January 2027 and will be the annual noise assessment.
- 1.6 For this report modelling was completed for the period January to June 2026, using version 7.0d of the FAA's Integrated Noise Model (INM).
- 1.7 As in previous reports, the contours displayed within this report are referenced against the work commissioned by RBC from Acoustic Technology Ltd during the consideration of the original Airport planning application (2009). The outcome of this work established contours that are referred to in paragraph 2.1a of the Agreement, annotated as the "control contours" within this document.
- 1.8 In accordance with clause 12.1 of the planning agreement, a further reduction in area of the control contours has been applied. The reductions are as follows:

- a 72.5% reduction of the land area within the 55dB(A) $L_{Aeq,16h}$ contour
- a 60.0% reduction of the land area within the 60dB(A) $L_{Aeq,16h}$ contour

The resultant effect on the land area within the control contours is displayed in Table 1.

- 1.9 The period of operation on which this report is based is the period January to June 2026. Aircraft operations during this period consisted of 15,384 movements of the categories required to be included under the Planning Agreement.

2. METHODOLOGY

- 2.1 In accordance with advice from independent acoustic consultants and with the agreement of RBC, INM 7.0d has been used for the noise contour modelling procedure. This is the most recent version of the software and allows helicopter movements to be integrated into the modelling process together with consideration of surrounding terrain.

- 2.2 The core stages of the contour methodology are as follows:

- Preparation of an INM study using relevant data from the latest edition of the UK Aeronautical Information Package, including the dimensions and positioning of the runway.
- Creation of user defined arrival profiles to reflect the steeper 3.5-degree approach in operation at Farnborough Airport.
- Production of simplified departure and arrival track representations following inspection of actual track data from the Aircraft Noise and Operations Management System (ANOMS). Representations include designation of Noise Abatement Procedure tracks and procedure cancellation tracks. Dispersion is applied to these tracks to reflect the variations in routes flown and observed in the actual track data.
- Determination of the split of traffic in terms of runway and operation (06 / 24 and departure / arrival) and the split of departure operations on each of the identified routes. This is achieved from analysis of the Air Traffic Control Movement Logs.
- Summarising the actual movement by aircraft type and then the application of representative INM aircraft types using a substitutions list for those types where noise data is not included within the model.
- Running of the contour model from an INM input using actual data to provide movement numbers for the modelled flight tracks.

Preparation of input files

- 2.3 Flight data used in this study was taken from radar tracks processed by Farnborough Airport's ANOMS. The raw data has been inspected and used to produce representative tracks which are in turn used by the model in the prediction of the noise contours.
- 2.4 INM is primarily designed to deal with commercial air traffic rather than the specialist business aircraft types operating at Farnborough. Aircraft types in operation at Farnborough Airport, if not available within the standard model profiles, are represented by the closest available substitutes on the INM Substitutions List. Where aircraft are not adequately represented by aircraft on the INM Substitutions List, appropriate substitutions are made by reference to engine types. All substitutions used by BAP in this assessment are detailed in Appendix 1.

Predicted Contours

- 2.5 The predicted contours for the period July to December 2026 have been generated using movement data from the preceding six months (representative tracks and aircraft type mix). The predicted number of movements for this period is 16,585 based on forecast information.

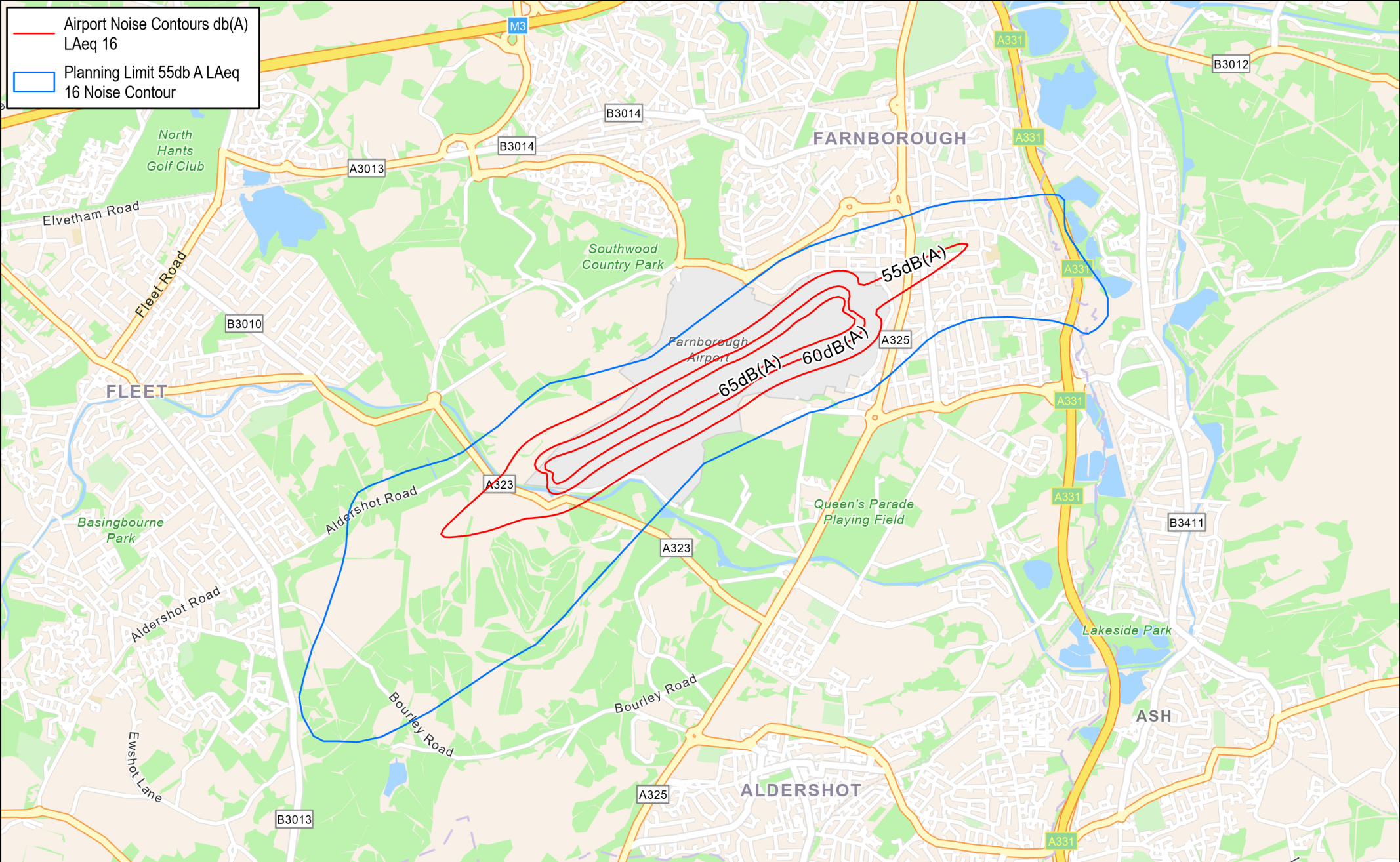
3. RESULTS

3.1 The INM 7.0d contours produced for this reporting period are shown together with the RBC 1997 Planning Contours in Figure 1. Predicted contours using the January to June 2026 fleet and movement mix, are shown in Figure 2. Both contours allow for helicopter movements which are assumed to show the same increase in numbers from the first to the second half of the year. When examining the contours there are several important points to note:

- The planning agreement refers only to 55 and 60dB(A) $L_{Aeq,16h}$ however a third 65dB(A) $L_{Aeq,16h}$ contour has been added for information purposes.
- The contour areas for this reporting period are within the planning permission control contour areas, as amended through clause 12.1 of the planning agreement.
- The predicted contour areas for this reporting period are within the planning permission control contour areas, as amended through clause 12.1 of the planning agreement.
- The contours are based on the assumptions and data inputs as described within this report.
- The contours should be regarded as indicative only and represent time averaged noise levels expressed as dB(A) $L_{Aeq,16h}$. This measure represents the sound energy released as noise varies over time, expressed as an average for the relative time period.
- Control contours included as part of the planning agreement between RBC were theoretical in that they used conceptual aircraft tracks. The contours attached to this document are generated using representative tracks created through inspection of actual radar flight track data.
- Helicopter movements are included in the modelling process of this report, following the use of INM7.0d and advice from independent noise specialists.
- The steeper than standard angle of approach used at Farnborough (3.5 as opposed to 3 degrees) has been allowed for; increasing the modelled height of arriving aircraft.
- The INM modelling process for this report has not been subjected to validation against measured noise levels at the Airport's Noise Monitoring Terminals (NMTs). As demonstrated by the exercise reported at the Public Inquiry in 2010, some of the INM standard aircraft substitutions used older aircraft types which typically overestimate the noise levels of the more modern types operating at Farnborough.

Comparison of total land area within each Noise Contour

3.2 Tables 1 and 2 compare the total land area within each contour for both the "control contours" and the most recently produced actual and predicted contours.



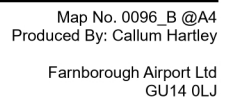


Table 1: Predicted noise contour areas, 20,000 movements at 1997 mix (Control Contours)

dB(A) L _{Aeq,16h}	Predicted 20,000 movements 1997 mix (km ²)	Amended Control Contour Areas as per clause 12.1 of the S106 (29/10/2010) (km ²)
55	9.07	6.58
60	4.03	2.42
65	1.70	n/a

Table 2: Contour areas: Actual Jan – Jun 2026 and Predicted Jul - Dec 2026

dB(A) L _{Aeq,16h}	Actual contour areas Jan to Jun 2026 (km ²)	Predicted contour areas, Jul to Dec 2026 (km ²)
55	2.23	2.34
60	0.95	0.99
65	0.45	0.47

4. CONCLUSION

- 4.1 Contours and predicted contours for this reporting period are within the planning permission area limit. Their size is within the planning consent contours, reflecting the change in aircraft operations on which the modelling process is based, and the allowance for the steeper approaches used.

5.0 SUMMARY

Noise contours for Farnborough Airport have been produced for the first half of 2026, based on the actual movements, and for the second half of 2026, based on the latest forecast. These were produced using the same methodology as that used to produce the actual annual 2025 and forecast annual 2026 noise contours. The areas of the contours are within the planning permission limits.

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Appendix 1

INM 7.0d Substitution List

Key:

Aircraft Operational Code: Operational ATC aircraft type identification (aircraft type code in log)

INM code: Equivalent aircraft code as used by INM programme

Notes:

- Operational codes do not necessarily reflect correct ICAO codes.
- The 20 most common aircraft types have been part of the validation exercise, and have been denoted "Validated". See Appendix 2 for details.

Operational Code	INM Code	Operational Code	INM Code
A220	737700	CRJ7	CRJ9-ER
A318	A319-131	DA40	GASEPV
A319	A319-131	DA42	BEC58P
A320	A320-211	DH8D ^[1]	SD330 / DHC6
ASTR	IA1125	E135N	EMB145
AT72	DO328	E145	Validated
B250	Validated	E190	EMB190
B350	CNA441	E35L	Validated
B733	737300	E50P	CNA510
B734	737400	E545	CNA55B
B735	737500	E550	Validated
B737	737700	E55P	Validated
B738	737800	EA50	ECLIPSE500
BE20	Validated	F2LX	Validated
BE40	MU3001	F2TH	Validated
BE9L	CNA441	F900	F10062
C25A	CNA525C	F9LX	F10062
C25B	CNA525C	FA6X	GV
C25C	CNA525C	FA7X	Validated
C25M	CNA525C	FA8X	F10062
C510	CNA510	FA9X	F10062
C525	CNA525C	G200	CL600
C52A	CNA525C	G280	CL601
C52B	CNA525C	G450	GIV
C550	CNA500	G550	Validated
C56X	Validated	G650	Validated
C650	CIT3	G650ER	Validated
C670	CIT3	GA4C	GIV
C680	CNA680	GA5C	GV
C680A	Validated	GA6C	Validated
C68A	Validated	GA7C	GV
C700	CNA680	GA8C	GV
C750	CNA750	GALX	CL600
CL30	CL601	GL5T	Validated
CL35	Validated	GL6T	Validated
CL60	Validated	GL7T	Validated
CL604	Validated	GL8T	GV
CL605	Validated	GLEX	Validated
CL65	Validated	GLF4	GIV
CL850	Validated	GLF5	Validated
CRJ2	Validated	H25B	LEAR35

Operational Code	INM Code	Helicopters	
Operational Code	INM Code	Operational Code	INM Code
H25C	LEAR35	A109	A109
H750	LEAR35	A109A	A109
H850XP	LEAR35	A119	A109
HA4T	CL600	A139	SA330J
HDJT	CNA510	AS35	SA355F
JS32	DHC6	AS50	SA355F
K100	CNA208	AS55	SA355F
L545	CNA55B	AW169	S76
L550	Validated	B429	B429
LJ35	LEAR35	B505	B206L
LJ40	LEAR35	EC30	EC130
LJ45	LEAR35	EC30	EC130
LJ60	CNA55B	EC35	EC130
LJ75	LEAR35	EC45	B429
P180	SD330	EC55	SA365N
PA28	PA28	H145	B429
PC121	Validated	S76	S76
PC24	Validated	S92	S70
PRM1	LEAR35	SK76	S76
TBM7	CNA208		

^[1] In BAP's experience the suggested INM substitution for the DH8D underpredicts the actual noise levels. Therefore, the DH8D has been modelled with different arrival and departure aircraft types, based on BAP's experience at other airports.

Appendix 2

Validation Adjustments

For each validated aircraft type, the measured noise levels obtained from the airport's permanent noise monitors located at Farnborough College and Tweseldown Racecourse have been compared with the default modelled noise levels at the same locations.

For each aircraft type, an INM aircraft type has been selected along with a multiplier to the number of aircraft movements. This multiplier serves to modify the LAeq noise level, for example a multiplier of 2 will add approximately 3 dB to the noise level for that aircraft type. All the validated types have been modelled at stage length 1, which in most cases is the only option. The selections have been based on minimising the difference between the predicted and measured results at the noise monitors.

The table below shows, for each validated aircraft type, the resulting INM type and multiplier used.

Due to building works on the roofs of Farnborough College a temporary cover was placed over the building where the NMT is located. This resulted in lower measured noise levels while the cover was in place. Therefore, for the validation the measured noise levels for Farnborough College were based only on the period January to June and December 2025, when we understand the cover was not in place. Data for the whole year was used for the Tweseldown Racecourse NMT.

The NMT data for 2024 and 2025 was checked for seasonal variation and no material variation was found, therefore the exclusion of a period of data is not considered significant to the validation. Furthermore, with the exclusion, the resulting adjustments to the multipliers for the individual aircraft types was within the range typically seen due to year-on-year variation, and the overall effect of the 2025 validation adjustments compared to the 2024 validation is estimated to be less than 0.1 dB.

Operational Code	Arrivals		Departures	
	INM Code	Multiplier	INM Code	Multiplier
BE20	CNA441	3.60	CNA441	1.70
C56X	CNA560XL	0.60	CNA560XL	0.40
C68A	CNA680	0.75	CNA750	0.30
CL35	CL601	0.75	CNA560XL	0.45
CL60	CL600	1.40	CNA560XL	0.40
CRJ2	CL601	1.80	CNA560XL	0.80
E35L	EMB145	0.85	F10062	0.35
E550	CNA55B	0.50	CNA55B	0.35
E55P	CNA510	1.55	CNA560XL	0.55
F2TH	CL600	0.90	F10065	0.15
FA7X	F10062	0.65	F10065	0.50
FA8X	F10062	0.55	F10065	0.40
GA6C	GV	0.55	F10065	0.20
GL5T	GV	0.65	F10065	0.45
GL7T	GV	0.90	F10065	0.35
GLEX	GV	0.70	F10065	0.50
GLF5	GV	0.60	F10065	0.40
GLF6	GV	0.65	F10065	0.40
PC12	CNA208	0.90	CNA208	0.35
PC24	CNA55B	0.70	CNA55B	0.55