

SUMMARY REPORT NOISE CLIMATE AT TINSLEY GREEN, WEST SUSSEX FEBRUARY 2010 TO FEBRUARY 2011

Client: Gatwick Airport Limited

Report Author : Dr R. Peters <u>Principal Consultant</u>

Tuny HA

Approved by :.

A.V.H. Holdich <u>Director</u>

© Applied Acoustic Design 2011



This document has been prepared by AAD Ltd for the sole use of our client and in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AAD and the Client. Unless otherwise expressly stated in this document, any information provided by third parties and referred to herein has not been checked or verified by AAD. No third party may rely on this document without the prior and express written agreement of AAD.

THE GREEN BUSINESS CENTRE THE CAUSEWAY STAINES MIDDLESEX TW18 3AL

TELEPHONE: 01784 464404 FACSIMILE: 01784 465447

NOISE CLIMATE AT TINSLEY GREEN, WEST SUSSEX, FEBRUARY 2010 TO FEBRUARY 2011: SUMMARY REPORT

This summary Report presents the results from a mobile Noise Monitoring Terminal (NMT) deployed at Tinsley Green in West Sussex by Gatwick Airport Ltd, between 16 February 2010 and 17 February 2011.

The site is approximately 3.5 km east of the airport The noise monitor is located in a paddock next to a house.

It can be seen from typical aircraft tracks for both easterly and westerly take-offs shown below that the aircraft tracks which pass closest to the site are those from aircraft departing to the east and arriving from the east.

The dominant source of noise audible at the site is that from aircraft departing from Gatwick to the east. Other sources of noise which are audible are traffic noise from the M23 motorway, and from the nearby B2036 road, and, when departures are to the west, ground noise from aircraft taxiing prior to take off, and start of roll noise, is also audible.

The Noise monitoring Terminal (NMT) gathers data about the number and level of aircraft noise events, and also data about the total level of noise at the site, on an hourly basis. The hourly values of total noise are a combination of the noise from the aircraft noise events and from all other noise sources, called residual noise.

The monitor was set to operate with a threshold trigger level of 62 dBA, well above the general level of background noise.

The data gathered during the survey is summarised in the Table and graphs below.

Figure 1 shows the day to day variation in numbers of aircraft noise events recorded at the site, determined by wind direction, which determines take-off direction. The comparatively low numbers of events in July is because there were very few easterly departures in that month (The west/east split in July was 97%/3%).

Figure 2 shows variation in the numbers of aircraft noise events throughout the day. The highest numbers per hour recorded at the site occurred each day between 07.00 and 10.00 hours (local time).

Figure 3 shows the difference in average maximum levels of aircraft noise for arrivals and departure events.

Figures 4 and 5 show the average monthly values of noise climate parameters during daytime and night-time. The graphs show that, apart from the average L_{Amax} values where there is very little day/ night variation, for all the other parameters noise levels are significantly higher in the daytime than at night. The effect of the low numbers of events in July is noticeable, but otherwise there is not much variation in the average noise levels from month to month.

Figure 6 shows the variation of average noise climate parameter values over the 24 hour period, indicating, as expected, that the highest levels occur in the daytime, falling in the late evening and night-time periods.

The average levels of aircraft noise from arrivals and departures is shown in Figure 7.

Summary Report: Noise Climate at Tinsley Green, February 2010 to February 2011

Flight paths for a typical day of departures to the West (Arrivals are shown in Red and Departures in Green). The blue dot shows the location of the noise monitor at Tinsley Green.



Flight paths for a typical day of departures to the East (Arrivals are shown in Red and Departures in Green). The blue dot shows the location of the noise monitor at Tinsley Green.



A summary of the main noise related parameters (12 month average for period from 16 February 2010 to 17 February 2011) for the site at TINSLEY GREEN are shown in the Table below:

Survey period	16 February 2010 to 17 February 2011
Aircraft noise event trigger level	62 dBA for 10 seconds
Length of period	12 months (approximately).
Number of aircraft noise events	46500 (approximately)
W/E runway usage: (%W/%E)	Feb 54/46; Mar 65/35; Apl 58/42; May
	46/54; Jun 47/53; Jul 97/03; Aug 86/15;
	Sept 74/26; Oct 61/39; Nov 59/41; Dec
	44/56; Jan 43/57; Feb 35/65
% Arrivals and Departures Events	83 % Departures; 17 % Arrivals
% DAY and NIGHT	91% DAY; 9 % NIGHT
Average maximum noise level of events	Arrivals 65 dBA; Departures 73 dBA;
	Overall 71 dBA
Average total noise level	59 dBA (DAY); 53 dBA (NIGHT)
Average aircraft noise level	57 dBA (DAY); 49 dBA (NIGHT)
Average residual noise level	55 dBA (DAY); 51 dBA (NIGHT)
Daytime level (12 hours)	60 dBA (Total noise); 58 dBA (Aircraft)
Evening level (4 hours)	57dBA (Total noise); 55 dBA (Aircraft)
Day-evening night level (L _{den})	62 dBA (Total noise); 58 dBA (Aircraft)
Background noise (L _{AS90})	51 dBA (DAY); 45 dBA (NIGHT)





Summary Report: Noise Climate at Tinsley Green, February 2010 to February 2011





00148/Tinsley Green/001/rp 15/08/2011







Summary Report: Noise Climate at Tinsley Green, February 2010 to February 2011