Report on the noise evidence prepared for Appeal by Helioslough Ltd against the refusal for the development of land in and around the Former Radlett Aerodrome, Near St Albans

Appeal Reference APP/B1930/A/07/2045/747/NWF

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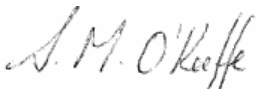

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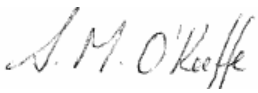

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1 INTRODUCTION

The Appellant has put in a planning application for an SRFI on the site of the Radlett Airfield. The St Albans Council Planning Committee refused this planning application in February 2007 but in May 2007 Appellant's lodged an appeal against this decision. A Public Inquiry will be held in the November 2007. This report reviews the Appellant's noise assessment report on impact of the SRFI on the noise environment of Park Street, Frogmore and Napsbury.

Noise measurements have been taken at the DIRFT site near Daventry and at the site of the proposed development near Park Street. The purpose of the measurements is to provide noise data to check the mathematical models used by The Appellant to assess the change in noise levels at locations close to Radlett Airfield, the site of the proposed development of the SRFI.

A site visit has been made to DIRFT near Daventry to assess what noise measurements should be made at this site. Figure 1.1 is a photograph taken during this visit of warehousing at DIRFT that shows the scale of the buildings that would be built at the Radlett site.

Figure 1.1 Photograph of a DIRFT warehouse complex

There were no objections to the DIRFT development as it links directly to the M1 motorway and is a considerable distance from existing residential areas. The visit has indicated that the DIRFT site is not fully representative of the proposed SRFI near Park Street and that a combination of measurements and analysis is needed to estimate the effect on Park Street and Napsbury residents of the planned SRFI.

Figure 1.2 is an artist's impression of the proposed SRFI at the old Radlett Airfield.

Figure 1.2 Artists impression of Radlett Airfield SRFI reproduced from the Appellants submission document

Park Street and Napsbury residential areas are much closer to the proposed SRFI site compared with the proximity of villages to the existing DIRFT site at Daventry, as shown in Figure 1.3. This map is not fully up-to-date as development of warehousing complexes is continuing at a rapid rate and additional warehouses seem to have been added recently.

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Figure 1.3 Ordnance survey map of DIRFT site at Daventry

Another striking difference between the DIRFT and Radlett Airfield sites is the number of access roads into each site. DIRFT has five major access points running into it compared with just one access point for the planned SRFI on the Radlett Airfield site. This means that existing dwellings close to the access road will be subjected to the noise of 3000 heavy road vehicle movements every 24 hours, one vehicle movement every 30 seconds.

There is one major similarity between the two sites, the major access point for both sites is short dual carriageway (A428) from the M1 in the case of DIRFT and from the A414 in the case of the SRFI planned on the site of the old Radlett airfield. Noise measurements were taken on the A428 during a one-hour period during a weekday to provide measured data for comparison with the predicted noise levels in the Appellant's noise assessment report. Traffic flows were also recorded during this measurement to be able to relate it to the SRFI access road.

The change in noise level between day and night operations of DIRFT was measured from a hotel bedroom (room number 123) window on the first floor of the hotel IBIS. The purpose of this measurement was to establish the difference between the Leq measurements during the day and during the night. Eight hours of measurement data was used to obtain the Leq values.

The DIRFT site is predominantly a road freight terminal; at the moment only 7 trains a week (between Monday and Friday) arrive at the Rail Terminal. All other deliveries and collections are by road. Noise measurements at the rail terminal are therefore difficult to obtain due to the infrequent nature of the freight train service, along with the noise disturbance associated with loading and unloading. Obtaining noise level measurements typical of the Napsbury position was not possible at DIRFT.

Noise measurements were made in Park Street and Frogmore in September and in Napsbury in October to record the present noise levels at these locations for comparison with data provided in the Appellant's noise assessment report.

J & S Consulting has conducted a review of noise assessments undertaken by The Appellant and recent noise legislation in England as part of the proposed activities. The results of these studies are presented in the relevant sections of this report.

2 DOCUMENTS

2.1 Core Documents

CD/2.3	Environmental Statement (Part 3)
CD/2.4	Environmental Statement (Part 4)

2.2 Reference Documents

[RD 1] 2006 No.2238, ENVIRONMENTAL PROTECTION ENGLAND: The Environmental Noise (England) Regulations,

[RD 2] J&S/07/001, Proposal for noise consulting to support STRIFE

2.3 Abbreviations

A	A weighting of measured noise spectrum
C	C weighting of measured noise spectrum
dB	Decibel
DIRFT	Daventry International Rail Freight Terminal
IoA	Institute of Acoustics
L_{eq}	Equivalent Constant Noise Level
MaxL	Maximum recorded noise level during measurement
MaxP	Maximum Sound Pressure Level during measurement
SLM	Sound Level Meter
SPL	Sound Pressure Level
SRFI	Strategic Rail Freight Interchange

3 SUMMARY

3.1 Review of Appellant's Noise Assessment Report [CD/2.3 & CD/2.4]

The Appellant's noise assessment report relies heavily on the use of a non-correlated acoustic model that appears to consistently over predict noise levels. However since there is no formal assessment of the reasons for the over predictions it is concluded that the model is not representative of the existing noise levels.

The use of total noise levels (against the recommendations of the IoA and other knowledgeable bodies) masks the contribution of the different noise sources in the contour plots and hence misses the potential noise hazard of the centralised marshalling yard to the existing development on the former Napsbury Hospital site.

The western perimeter is highlighted as a potential cause for concern. The impact of the marshalling yard on the noise seen by neighbouring properties in Napsbury Park is ignored.

The report does not highlight the proximity of existing dwellings to the SRFI compared to DIRFT. Crick is 1km from DIRFT and at the other side of the M1 motorway and Kilsby is 1.5km from the DIRFT site. The planned SRFI site is less than 400m Napsbury and Frogmore. Since noise levels half with the doubling of distance from the source, the site noise levels associated with the operation of the SRFI are going to be a minimum of 6dB higher than those of the DIRFT site. Furthermore, Napsbury does not have the benefit of large warehouse buildings sheltering it from site noise, unlike Frogmore and Park Street.

It is difficult to assess from the description of the acoustic model whether the following effects have been taken into account in the mathematical model.

- Noise from additional road traffic (especially HGVs) sub-regionally arising from the proposed SRFI
- Additional noise from further freight traffic further along the rail line, especially at anti-social hours especially the effect in Radlett, Borehamwood and Elstree faced by the additional freight trains having to operate through the night to avoid path congestion on the MML

- The starting up of diesel trains early in the morning
- The noise from HGVs parking overnight and starting up (often early in the morning) in residential areas in the vicinity of the development site. (Similar to problems that Potters Bar residents have when awoken when buses are started up at 4am at the Metroline Bus Station in the town)

3.2 J&S Noise Measurements

J&S Consulting undertook noise measurements at the DIRFT site in Daventry to assess the difference between day and night noise levels and to measure the roadside noise next to the A428 access road that runs from the M1 to the DIRFT site.

Noise check measurements were also taken day and night at three of the seven locations used in the Appellant's noise survey. The nighttime noise measurements were all taken from first floor windows on properties in Park Street, Frogmore and Napsbury.

The noise check measurements showed that the noise levels reported in the Appellant's noise assessment report are representative of the area, but the predicted noise levels in the Appellant's noise report do not correlate with these data. Explanations for these discrepancies were associated with façade and acoustic barrier effects that would **not** apply to the J&S noise measurements. It can be concluded that the reason for poor correlation between measured and predicted results is a poor acoustic model.

Difference between day and night noise measurements at DIRFT were 3dB, not the 6dB apparent from the noise analysis results provided by Heliosough. This has a significant impact on the sensitive nighttime predictions.

Noise on the access road to DIRFT was 69dBA L_{eq}, 3 dB higher than indicated in the Appellant's predictions. When this is added to the 3 dB difference between day and night operations noted at DIRFT compared to the planned SRFI, their acoustic model would under-predict by at least 6dB in the vicinity of the access road.

3.3 Safety of conclusions drawn in CD/2.3

I have no confidence in the results of the Appellant's noise assessment report. The lack of correlation of the acoustic model with measured data and the use of total noise contours results in a lack of confidence in the conclusions of the Appellant's noise assessment report.

All J&S measurements taken overnight were obtained from open bedroom windows on the first floors of Toll Cottage, The Vicarage and 15 Lovett Road. These noise measurements do not need to be corrected for 6m barriers or façade effect as they are present in the measurement. They undermine the explanations used in CD/2.3 and CD/2.4 to explain the differences between the existing measured noise levels and those predicted by the acoustic model. There is no foundation for the comparison of the two sets of predicted data to assess the impact of the SRFI on existing noise its vicinity. For all three locations used to collect noise data the change in noise levels between the measured existing noise levels and those predicted for the year 2011 with the SRFI in operation are above 10dBA and would lead to complaints from residents.

The safety of the conclusions is in serious doubt based on the content of their noise assessment report. An independent analysis is required to overcome the limitations of the present report, particularly with respect to the impact of the marshalling yard on the noise levels in Napsbury.

4 REVIEW OF APPELLANT'S REPORT ON THE IMPACT OF THE SRFI ON COMMUNITY NOISE CD/2.3 and CD/2.4

CD/2.3 and CD/2.4 have four major elements:

1. References to noise targets to provide ratings for the effects on the SRFI on the existing dwellings surrounding the site

2. Results of a noise survey to establish the current noise levels close to these dwellings

3. Description of mathematical models of the existing noise environment and that which would apply with the development the proposed SRFI

4. Results of mathematical models of the existing noise environment and that which would apply with the development of the proposed SRFI to predict the change in the noise environment

4.1 Noise Targets (CD/2.3)

Two documents, CD/2.3 and CD/2.4 are presented in the noise assessment report to justify the noise targets, unfortunately they are in conflict over the some of the key aspects of environmental noise.
The noise targets extracted from CD/2.3 are presented in Table 4.1.1 of the report and are reproduced below.

TABLE 7.20.1 - Absolute noise levels versus noise climate

Climate	Day $L_{Aeq,16hr}$	Night $L_{Aeq,8hr}$	Night L_{max}
Good	<55 dB	<45 dB	<60 dB
Reasonable	55 65 dB	45 60 dB	60 85 dB
Poor	>65 dB	>60 dB	>85 dB

Table 4.1.1 Absolute noise level targets extracted from CD/2.3

The selection of L_{Aeq} for the evaluation of absolute noise levels is not very relevant to nighttime noise disturbance. This measure is probably acceptable for continuous noise or one-off events but is too much of an average quantity to be used for sleep disturbance. The peak noise level and the frequency of any impulsive noise at night should also have been taken into account in assessing the impact of the predicted noise environment in the vicinity of the proposed SRFI.

Target changes in noise level are also presented in the report as Table 7.20.2 this is also presented below in Table 4.1.2.

Change in noise level (dBA)	Significance
<3	**None**
3-5	**Minor**
6-10	**Moderate**
>10	**Major**

Table 4.1.2 Noise change targets extracted from CD/2.3

Since predictions are compared with predictions in CD/2.3 and CD/2.4 the conclusions drawn are not representative of the likely differences between the existing noise environment and that after the building of the SRFI.

4.2 Noise Survey (CD/2.3)

CD/2.3 details a noise survey undertaken at dwellings in the vicinity of the proposed SRFI development to provide prediction points in the mathematical model to assess the effect on the noise environment of these control points.

There are 7 locations and the results of the noise survey for the sensitive night time (2300 to 0700) period are presented in a table in CD/2.3 and this table has been extracted from the document.

Location	Typical L_{A90T}	Typical L_{AeqT}	Typical L_{AMAX}
111 Radlett Road (Atholl Cottages)	39 dB	45 dB	58 dB
12 Hampden Place	42 dB	46 dB	54 dB
The Vicarage	39 dB	40 dB	52 dB
Burydell Lane*	42 dB	45 dB	58 dB
Hedges Farm	37 dB	44 dB	55 dB
57 North Cottages	39 dB	48 dB	60 dB
Lovett Road* (former Napsbury hospital site)	40 dB	43 dB	50 dB

* Measurement on one occasion.

Results of noise survey for night time noise reproduced from CD/2.3

Of great concern with respect to the use of this data are the comments regarding the applicability of the results to the mathematical model predictions. The comments from CD/2.3 are provided below.

7.41 The noise levels surveyed would be expected to be lower than those predicted by SoundPLAN (see paragraph below) for various reasons. Firstly, the surveyed levels are at ground floor whereas the predicted levels for night are first floor. Secondly, the surveyed levels are "free-field" whereas the predicted levels are "façade" corrected. Thirdly, the surveyed levels will be reduced in some cases by localised screens, such as fences, that have not been digitised into the prediction model.

7.42 The surveyed levels would be expected to be up to 14 dB lower than the predicted levels for these reasons.

7.43 For assessment purposed it is appropriate to use predicted levels since all of the above variables are constant between "without scheme" and "with scheme" scenarios.

The statement that the mathematical model cannot predict the existing noise environment within 14 dB provides no confidence in the mathematical model, yet it is stated that the only way forward to assess the noise impact of the proposed SRFI is to modify the model to represent the proposed development and use the predicted results to assess the noise impact on the environment.

4.3 Descriptions of mathematical models (CD/2.3 and CD/2.4)

The descriptions of the mathematical models created to predict the noise environment are poor and relate mainly to the assumptions used to create the noise sources.

There is no discussion of the calculation margins expected from the models, apart from the statement 7.42 in CD/2.3 that the measured data is expected to be up to14dB lower than the predictions.

The engineering process associated with the use of mathematical models for predictive purposes is:

1. Create mathematical model of the system
2. Measure test parameters to provide correlation data
3. Correlate model
4. Establish margins of error of the mathematical model
5. Change model to represent the new system
6. Use model to predict behaviour of the new system with the known margins of error added/subtracted from the predicted data

Is it to be assumed from the statements provided in the report that the predicted noise levels are to be quantified with a margin of error of +/-14dB?

The mathematical model has been used to predict the total noise level (Appendix 7.A7 of CD/2.4), this is not a recommended procedure as it ‘masks’ the effects of the different noise sources.

Finally the treatment of the operating noise has been based on an inappropriate British Standard. The marshalling yard should be have been treated as an industrial site.

4.4 Noise levels predicted by the mathematical models (CD/2.4)

The predicted noise levels from the mathematical models are presented in CD/2.4.

For the seven control points obtained from the noise survey it is possible to extract a comparison of the predicted and measured results for the sensitive night time period for the road and rail noise sources dominating the noise environment. This is provided in Table 4.4.1.

Location	Measured L_{eq}	Predicted L_{eq}	Difference
Atholl Cottages	45dBA	57dBA	12dBA
12 Hampton Place	46dBA	56dBA	10dBA
The Vicarage	40dBA	48dBA	8dBA
7 Burydell Lane	45dBA	45dBA	0dBA
Hedges Farm	44dBA	66dBA	22dBA
57 North Cottages	48dBA	63dBA	15dBA
Lovett Road	43dBA	54dBA	11dBA

Table 4.4.1 Comparison of the measured and predicted noise levels at nighttime for the 7 control points

Table 4.4.1 indicates that 6 out of the 7 correlation points are over-predicted by the acoustic model of the existing environment. The over-prediction varies from 8 to 22 dB, outside the 14dB margin of error alluded to in section 7.42 of the noise assessment report. It can be concluded that the noise model is not correlated and therefore cannot be used with any confidence to predict either absolute noise levels or changes in noise level. Table 4.4.2 compares the J&S noise measurements with those predicted by the model once the SRFI is operating in year 2011.

Location	Measured L_{eq}	Predicted L_{eq} with SRFI (2011)	Difference
Toll Cottage – Park Street	38dBA	54dBA	16dBA
The Vicarage - Frogmore	41dBA	57dBA	16dBA
15 Lovett Road - Napsbury	45dBA	58dBA	13dBA

Table 4.4.1 Comparison of the measured and predicted nighttime noise levels

4.5 Detailed comments on CD/2.3 & CD/2.4

1. The noise survey results are not presented in full in the report. This has prevented the comparison of measured data with the J&S results and does not permit any comparison between the measured and predicted noise levels.

2. The noise survey is claimed to have been carried out every 15 minutes but only one of the supplied plots indicates a 15-minute sample rate. All other plots are 30 minute sample rates

3. The marshalling yard should be analysed as an industrial site but the report does not specify the British Standard associated with industrial sites

4. The L_{A90T} results presented in the table of section 7.39 of CD/2.3 are not 'typical', the values presented appear to be the minimum L_{eq} of the data provided in the plots.

5. Some of the data in the results tables of Appendix 7.A7of CD/2.4 do not seem logical and could be edit and paste errors in the document

6. The categorisation of the noise during the day and night in the second table of Appendix 7.A7 of CD/2.4 is based entirely upon predicted data that is acknowledged as over-predicting the existing environment by up to 14dB. This table presents a totally misleading view of the existing noise conditions enjoyed by these locations. Table 4.4.1 of this report, a summary of existing measured noise levels, confirms that all the measured locations have a good to reasonable noise climate at the moment.

7. The report does not contain any significant discussion of the results of the analysis or explanations for any of the discrepancies in the predicted results, either between measured and calculated noise levels or between calculated noise levels with and without the SRFI.

8. The contour maps provided in CD/2.4 are total noise from all sources and do not permit the assessment of individual contributions from the different sources.

9. There is an over-reliance on the prediction of noise levels by the acoustic model being much higher than measured values. Unfortunately this simply reinforces the need to understand why the model is unable to predict the noise environment, an obvious conclusion is that the acoustic model is incorrect.

10. Noise measurements at DIRFT indicate only a 3dB difference between day and night noise levels (L_{eq}) and a 3dbA higher road noise level associated with the access road. This could make a 6 dB difference to the prediction of noise in the vicinity of the access road.

11. The conclusion that the west side of the site is of greatest concern with respect to noise impact overlooks the fact that the marshalling yard is very close to the existing development and is likely to be the most affected by the proposed SRFI due to the impulsive nature of the machinery operating in the marshalling yard. This is further complicated by the fact that the classification of the marshalling yard should be an industrial site.

12. It is difficult to assess from the description of the acoustic model whether the following effects have been taken into account in the mathematical model.

- Noise from additional road traffic (especially HGVs) sub-regionally arising from the proposed SRFI
- Additional noise from further freight traffic further along the rail line, especially at anti-social hours especially the effect in Radlett, Borehamwood and Elstree faced by the additional freight trains having to operate through the night to avoid path congestion on the MML
- The starting up of diesel trains early in the morning
- The noise from HGVs parking overnight and starting up (often early in the morning) in residential areas in the vicinity of the development site. (Similar to problems that Potters Bar residents have when awoken when buses are started up at 4am at the Metroline Bus Station in the town)

5 J&S CONSULTING NOISE MEASUREMENTS

5.1 Details of noise measurement equipment and surveys

The noise meter used by J&S Consulting to perform the noise surveys is a B&K SLM Type 2236, serial number 1815107.The SLM was always mounted on a tripod and a wind shield was attached to the microphone.

The SLM has a data logging facility which was employed to continuously log the following three parameters every 10 seconds:

L_{eq} over the 10-second logging period
MaxP over the 10-second logging period
MaxL over the 10-second logging period

On completion of the measurement the overall results available from the measurement were stored into one of the 40 available memories in the SLM and the logged data downloaded to a PC. A typical overall measurement is presented below for the first 36 minutes of a one-hour measurement in Burydell Lane on 3rd September 2007 commenced at 10:15 in the morning.

SLM Type 2236
SETTINGS:

F 20-100 dB
RMS: A Peak: C

RECORD NO.: 1
---
03 Sep 2007 10:15:40
Elapsed Time 0000:36:04
Pauses 0
Overload 0.0 %

MaxP 93.6 dB – Maximum peak noise level since last reset
MaxL 70.8 dB - Maximum SPL since last reset
MinL 40.3 dB - Minimum SPL since last reset

L_{eq} 49.7 dB – Equivalent continuous SPL dBA

SEL 83.0 Db – Sound Exposure Level IEC 804 (dBA)

LEPd (Te= 7h30) 49.4 dB – Individual's daily exposure to noise based on 7.5 hours

Calibration of the SLM was carried out before and after each measurement. The calibrator is a B&K Acoustical Calibrator Type 3231, Serial Number 1723746, 94dB at 1000Hz.

A record of all activities was kept for each measurement on a log sheet that is provided in Section 9 of this document.

5.2 Details of measurement locations

Measurement 1: One-hour measurement on the public footpath at the end of Burydell Lane on 3rd September commencing at 10:15.

Measurement 2: One-hour measurement on the public footpath at the end of Burydell Lane on 3rd September commencing at 22:15.

Measurement 3: Six hour measurement made from open window of first floor bedroom of the IBIS hotel adjacent to the access road to East DIRFT commencing at 13:15 on 5th September 2007.

Measurement 4: Six hour measurement made from open window of first floor bedroom of the IBIS hotel adjacent to the access road to East DIRFT commencing at 23:00 on 5th September 2007.

Measurement 5: One hour measurement on the A428, 200m from the IBIS hotel roundabout 7.5m from the road side in the direction of the M1 on 6th September commencing at 10:30. Traffic flows were monitored during this measurement.

Measurement 6: Eight hour measurement from open first floor window of Toll Cottage on Burydell Lane commencing at 10:00 on 27th September 2007.

Measurement 7: Eight hour measurement from open first floor window of Toll Cottage on Burydell Lane commencing at 23:00 on 27th September 2007.

Measurement 8: Eight hour measurement from open first floor window of The Vicarage in Frogmore commencing at 10:00 on 28th September 2007.

Measurement 9:Eight hour measurement from open first floor window of The Vicarage in Frogmore commencing at 23:00 on 28th September 2007.

Measurement 10: Fifty minute measurement on footpath in Lovett Road on the opposite side of the road to the houses commencing at 10:45 1st October 2007.

Measurement 11: Seven and a half hour measurement from an open bathroom window at 12 Lovett Road commencing at 22:00 1st October 2007.

The location of the hotel at DIRFT and the location of the measurement on the A428 are shown in Figure 5.2.1. The arrowhead illustrating the measurement point on the A428 is on the wrong side of the road. It could not be placed more accurately on the picture..

The measurement points in the vicinity of the SRFI development are the same as three of those used in the Appellant's noise survey. For completeness the map of these locations has been extracted from the Appellant's report and is presented as Figure 5.2.2. The noise check measurements were taken at Burydell Lane, The Vicarage and Lovett Road.

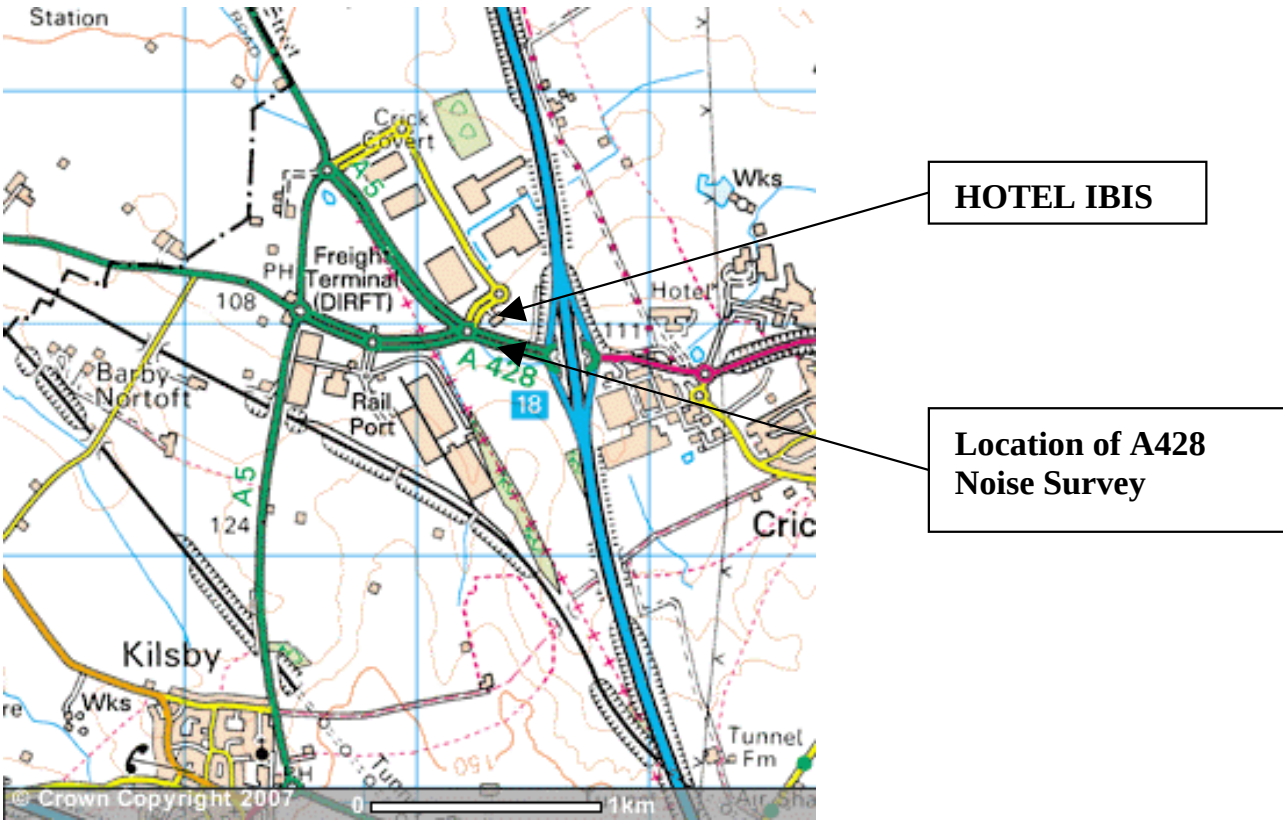

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Figure 5.2.1 Ordnance survey map showing location of Hotel Ibis and A428 Noise Survey

The hotel bedroom, room 123, was on the northwest face of the hotel, on the first floor, alongside the access road to East DIRFT. It was approximately 75m from this access road.

The location for the A428 noise survey was on the north side of the A428, approximately 200m from junction 18 of the M1.

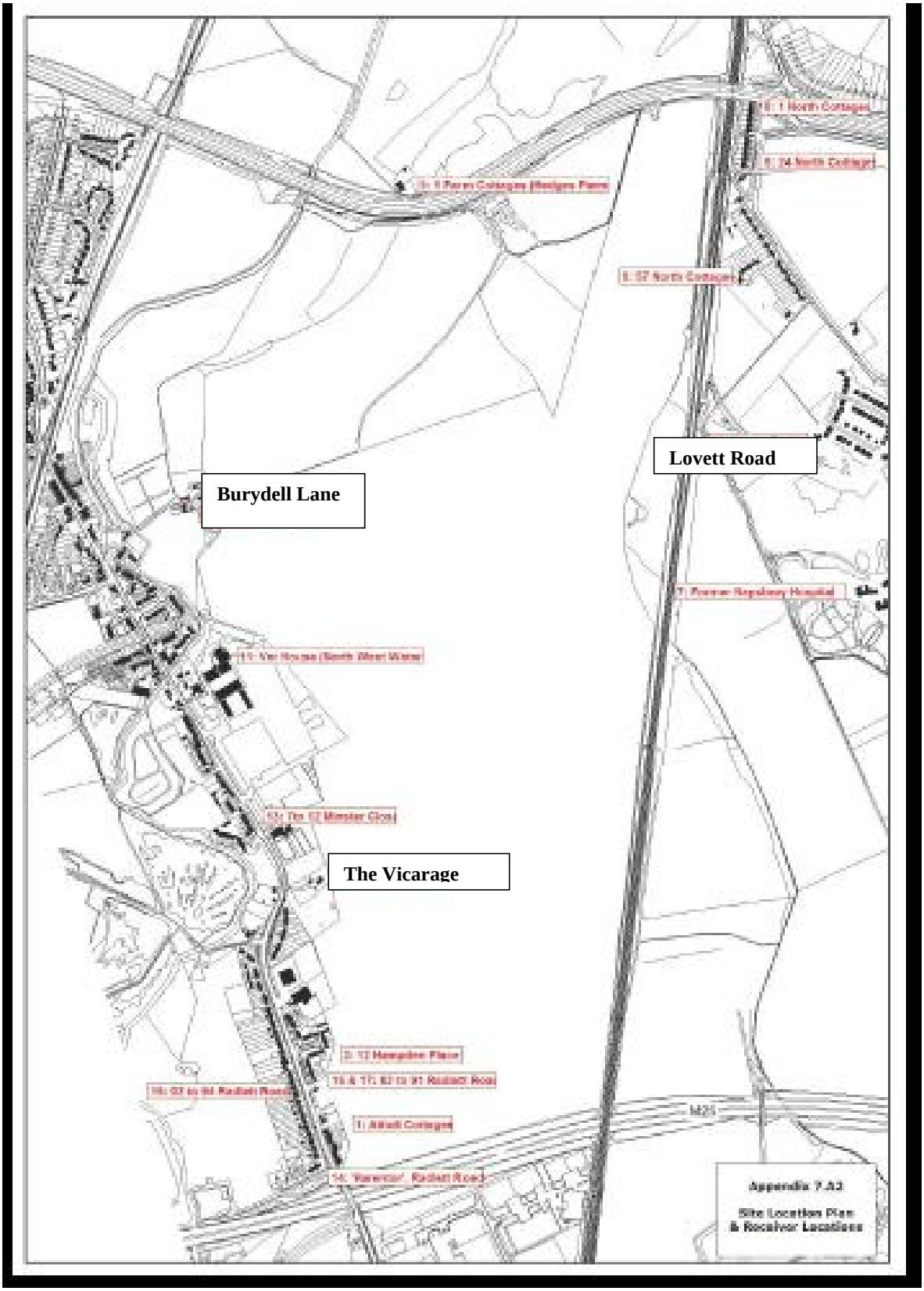

Figure 5.2.2 Map of measurement locations used in noise check measurements reproduced from CD/2.4

Results of noise measurements

Table 5.3.1 presents the recorded overall results from the noise measurements.

Measurement	Measured L_{eq}	MaxP	MaxL
1 – Burydell day	51dBA	73dBA	91dBC
2 – Burydell night	43dBA	78dBA	105dBC
3 – Ibis hotel day	61dBA	85dBA	109dBC
4 – Ibis hotel night	58dBA	80dBA	100dBC
5 – A428 day	69dBA	81dBA	103dBC
6 – Toll Cottage day	46dBA	80dBA	105dBC
7 – Toll Cottage night	38dBA	67dBA	82dBC
8 – The Vicarage day	51dBA	75dBA	103dBC
9 – The Vicarage night	41dBA	63dBA	88dBC
10 – Lovett Road day	50dBA	72dBA	101dBC
11- Lovett Road night	45dBA	65dBA	99dBC

Table 5.3.1 summary of the overall results from the noise measurements

The plots of the logged data for the sensitive nighttime period in Burydell Lane and at The Vicarage in Frogmore are presented in the Section10 of this report.

The results of the noise measurements at Toll Cottage and The Vicarage are consistent with those provided in the Appellant's noise assessment document confirming that their measured values are reliable for the L_{eq} noise levels at the seven control points.

The measurements taken at DIRFT show that the difference between day and night operation of the DIRFT site are 3dB, not the 6 dB provided by the uncorrelated acoustical mathematical models of the planned SRFI site.

Furthermore the measured L_{eq} on the access road to the DIRFT site was 69dBA, compared to 66dBA predicted by the Appellant's analysis. The observed traffic flows over the one-hour measurement are detailed below.

Number of vehicles per hour on the eastbound A428 carriageway was 510
Number of vehicles per hour on the westbound A428 carriageway was 480
Number of HGVs per hour on the eastbound A428 carriageway was 165
Number of HGVs per hour on the westbound A428 carriageway was 135

The average number of HGV vehicle movements during the 1-hour measurement was 150, which corresponds to 3600 HGV movements per day, very similar to that expected at the SRFI. The A428 noise measurement is therefore representative of the access road to the SRFI and indicates that the predicted noise levels are 3dB lower than those occurring at DIRFT.

6 REVIEW OF UK NOISE LEGISLATION

There have been no significant changes in UK noise legislation since the issue of documents references in CD/2.3, apart from RD(2) that calls for noise mapping of areas that may be affected be major developments in built-up areas.

The SRFI should fall into the above category and as a consequence should be mapped not only to provide the required data before the development of the SRFI but also to supply much needed correlation data for the noise modelling that is currently lacking from the Appellant's noise assessment report.

7 CONCLUSIONS

7.1 The predicted noise levels presented in the Appellant's noise assessment report have been made using an acoustic model that has not been correlated with measured data. As a consequence confidence in the predictions is low and no effort has been made to estimate the margins of error.

7.2 Statements regarding the existing noise climate at dwellings in the vicinity of the proposed SRFI are misleading and not representative of the existing noise climate.

7.3 Noise contours presented in the Appellant's noise assessment document are based on total noise, a practice not supported by the IoA as this method of presentation masks the contributions of the various noise sources responsible for the total noise.

7.4 The by-pass road running along the west side of the proposed SRFI is stated not to take more that 3% of traffic entering the site, but noise levels in the contour plots are of the same order as the primary access road connecting the SRFI to the orbital road that takes 97% of site traffic.

7.5 The difference between day and night operations of the SRFI is shown to be 6 dBA but measurements at DIRFT indicate on 3dBA based on LA_{eq}.

7.6 Measured noise levels on the access road to DIRFT, the A428, show noise levels of 69dBA (LA_{eq}) but the noise contours on the SRFI access road are less than 66dBA. The traffic flows on the A428 were monitored during the measurement and were similar to predicted traffic flows into the proposed SRFI.

7.7 [RD1] implies that industrial developments of the size of the SRFI in built-up residential areas be assessed in terms of noise impact by a comprehensive noise mapping survey to establish the current noise climate. The SRFI development should be subject to such a noise mapping.

8 RECOMMENDATIONS

8.1 An independent noise analysis of the existing noise environment, verified by test measurements, should be undertaken by a qualified body.

8.2 Based on a successfully correlated acoustic model, the noise impact of the SRFI should be assessed to establish the contributions to the noise climate due to the additional noise sources introduced by the SRFI.

8.3 A study of the noise impact due to the marshalling yard noise on the Napsbury Park housing development at night should form a critical part of any independent noise analysis. This study should treat the marshalling yard as an industrial site.

8.4 A full noise survey, based on the recommendations set out in [RD1] should be carried out to determine the existing climate of the area in and around the old Radlett Airfield.

9 J&S TEST LOG

J&S CONSULTING LTD	NOISE SURVEY
DATE:	CONSULTANT:

SURVEY DETAILS
LOCATION:
SOURCE:

NOISE EQUIPMENT INFORMATION		
INSTRUMENT	MODEL: 2236	SERIAL NO.: 1815107
CALIBRATION DATE:	PRE-CAL BY PISTON	POST CAL BY PISTON
BATTERY CHECK (Y/N)	PHONE 94dB (Y/N):	PHONE: 94dB (Y/N):
CALIBRATOR SERIAL NO.: 2309444		

SAMPLING INFORMATION & RESULTS					
Response: _F_FAST __SLOW			Windscreen: Yes		
Time	Log details	Readings			Source details/Comments
		L_{eq}	MaxL	MaxP	

OTHER INFORMATION:

Signed:
Date:

10 NIGHT TIME NOISE PLOTS FROM J&S NOISE SURVEYS

Figure 10.2.1 Nighttime noise levels logged during survey at Toll Cottage, Burydell Lane

Figure 10.2.2 Nighttime noise levels logged during survey at The Vicarage, Frogmore

Figure 10.2.3 Nighttime noise levels logged during survey at Lovett Road

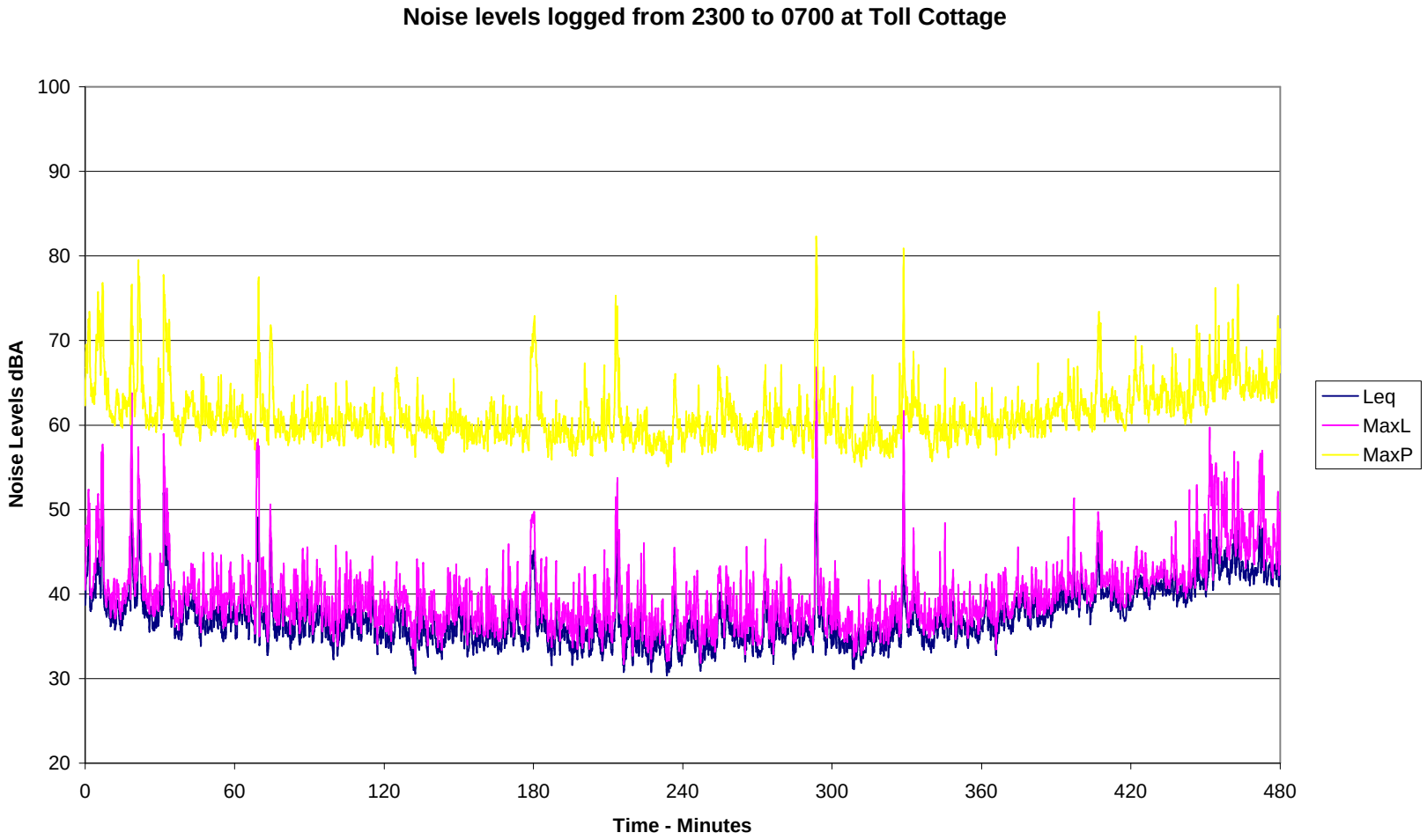

Figure 10.2.1 Nighttime noise levels logged during survey at Toll Cottage; Burydell Lane commenced 20th September 2007

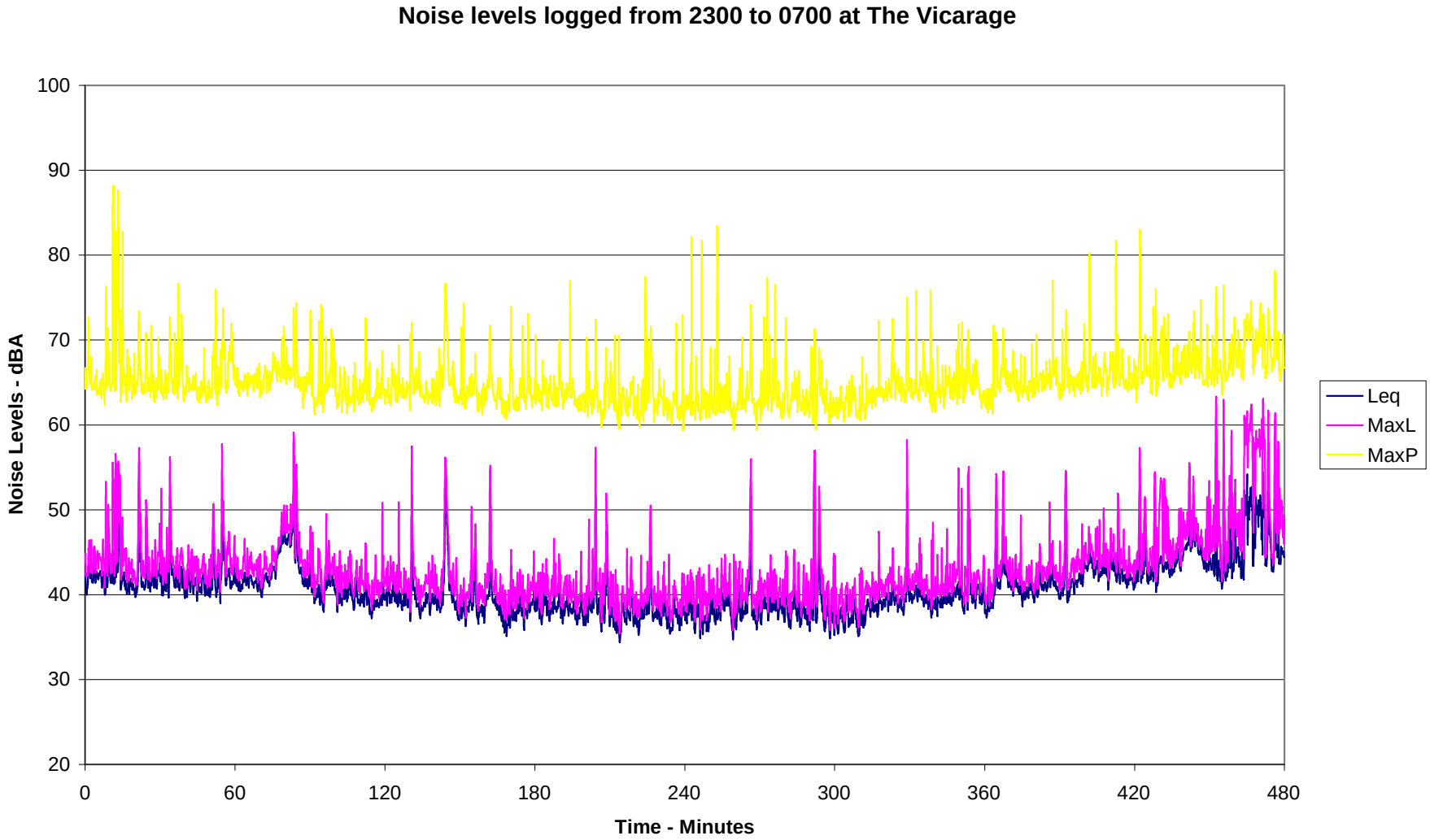

Figure 10.2.2 Night time noise levels logged during survey at The Vicarage; Frogmore commenced 21st September 2007

Noise levels logged from 2200 to 0530 at Lovett Road

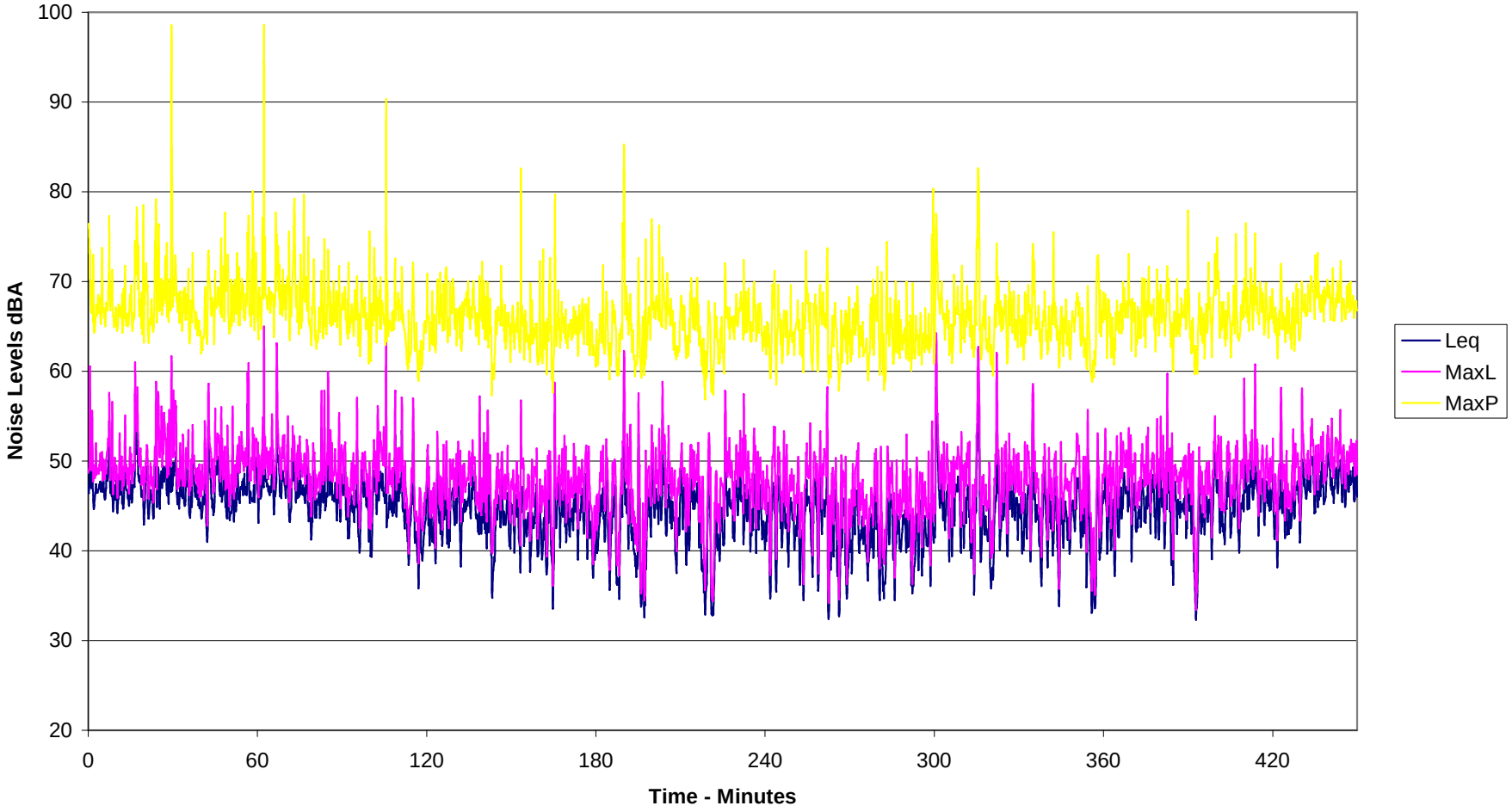

Figure 10.2.3 Night time noise levels logged during survey at Lovett Road commenced 1st October 2007

11 QUALIFICATIONS AND EXPERIENCE

11.1 Qualifications

1968 B.Sc. (Spec) Mathematics (London)

1971 M.Sc. Noise & Vibration (ISVR Southampton)

11.2 Experience

1968-1973 HSA Brough

Aircraft noise prediction and measurement
Prediction of fatigue life of aircraft structures in a noise environment

1973-1977 Perkins Engines Peterborough

Engine noise prediction
Engine noise measurement and control

1977-1990 S.D.R.C. London / Hitchin

Noise and vibration consultant specialising in:-

Engine noise prediction and measurement
Measurement and prediction of interior noise in cars
Aircraft noise prediction
Structural response under noise excitation

11.3 Current profession

Noise and vibration consultant working for J & S Consulting Limited

Numerous technical papers have been published on the prediction and measurement of diesel engine and vehicle noise. Lectures have been given on noise and vibration topics at several international and national conferences.