

ATTACHMENT 6

MOTORCYCLE CLUB NOISE ASSESSMENT

**Report to:
Mr Wayne Newton
Blue Rock Motorcycle Club**

***ENVIRONMENTAL NOISE ASSESSMENT FOR
MOTOR CROSS CIRCUIT***

**Report No: 00/0216
October 2000**

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EXECUTIVE SUMMARY

Measurements of noise emanating from Lot Y769, C/A 9G Parish of Narracan, Coach Rd Yallourn referred to as the Community Motor Cross Circuit track have been made at the rear of 40 Fairway Drive in the residential area located at Yallourn Heights.

Based on background noise measurements made in the same area, estimates of the environmental Noise Limits were determined for the region based on the Planning permit issued and also in accordance with the ANZEC Draft Technical Basis Assessment of Noise Impact from Motor Sports.

The results of noise measurements at the rear of the residential premises over a time period were as follows:

Day Period:	(0700-1800 hours).	56.0 dB(A) L90 45.7 dB(A)
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The above measurements were affected by extraneous noise at approximately 09.48.44 and also again at 11.00.21. This extraneous noise elevated the LEQ readings to 56.0 dB(A). Possible cause could have been mowing of lawns in the vicinity. The minimum reading established for this period was 41.5 dB(A).

Operation of the bikes did not start until 1120. Hand measurements taken at the rear of the premises at approximately 1140 did not differ to any extreme above the measurements taken at 0930.

Background Measurements taken at the rear of the premises before the Motor Cross riders started were:

RESPONSE	TEST 1
dbA	42.6
dbLin	41.2
12.5	
16	
20	14.4
25	19.1
31.5	26.9
40	24.2
50	21.3
63	23.7
80	36.8
100	30.6

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125	29.7
160	30.0
200	28.8
250	29.6
315	34.1
400	36.2
500	40.8
630	40.6
800	40.1
1K	37.9
2K	36.9
2.5K	34.9
3.15K	35.7
4K	34.6
5K	38.3
6.3K	32.8
8K	25.0
10K	21.2
12.5K	19.6
15K	14.1
20K	13.1

Measurements taken at the rear of the premises at approximately 1140 whilst the Motor Cross riders were in action were as follows:-

RESPONSE	TEST 2
dbA	45.7
dbLin	45.1
12.5	
16	
20	14.5
25	19.7
31.5	26.9
40	25.2
50	21.6
63	23.9
80	36.2
100	30.6
125	29.1
160	30.4
200	29.2
250	29.6
315	34.7
400	36.8
500	41.3
630	41.4

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800	41.1
1K	37.3
2K	36.3
2.5K	35.5
3.15K	35.2
4K	34.9
5K	39.3
6.3K	31.8
8K	27.0
10K	23.2
12.5K	19.9
15K	14.7
20K	13.5

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1.0 INTRODUCTION

Mr Wayne Newton requested HAZCON Pty Ltd to carry out an environmental noise assessment to measure background noise levels in Fairway Drive, Yallourn Heights. The assessment was carried out in line with the Planning Permit supplied and also in accordance with the ANZEC Draft Technical Basis Assessment of Noise Impact from Motor Sports.

Measurements were carried out on 28th October 2000 at the rear of 40 Fairway Drive, Yallourn Heights in order to determine existing noise levels.

2.0 SCOPE

The scope of work involved:-

- Assessment of the background noise levels at Yallourn Heights and measurements at the property when the bikes were operating. These measurements were taken in line with the Planning Permit supplied and also in accordance with the ANZEC Draft Technical Basis Assessment of Noise Impact from Motor Sports.
- Preparation of a written report assessing the background noise levels and frequency analysis of the measured noise.

3.0 METHODOLOGY

3.1 Statutory Requirements

Residents in the Melbourne Metropolitan area are protected from intrusive noise through the requirements of Victorian Government Gazette No.S31 State Environmental Protection Policy (Control of Noise from Commerce, Industry and Trade) No.N-1 (SEPP N-1). For country areas, the Environment Protection Authority has also issued Information Bulletin No. N3/89 -"Interim Guidelines for Control of Noise from Industry in Country Victoria".

Noise limits are set under the Policy for residential premises for the day (0700h to 1800h) evening (1800h to 2200h), night (2200h to 0700h), weekends etc. with the lowest limits normally being required at night. The Noise Limits are based upon the land use zonings in the area as defined by the relevant planning authority and on the

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background noise levels in areas where they are unusually high or low. Hence, in order to determine Noise Limits, background noise measurements are required.

The Noise Limit acts as a guide but it should be noted that even when noise levels meet with Noise Limits there is still a possibility of annoyance at residential premises.

3.2 Background Noise Measurements

Background noise monitoring was carried out at the rear of the residential property located at 40 Fairway Drive on the 28 October 2000. Background measurements were taken as being typical of the noise in this area.

In summary, the results of noise monitoring were as follows:

Date of Monitoring	Measured Background Noise Level, dB(A),L ₉₀		Note: Wind was very strong and fluctuating on the day
	Day (0700h to 1800h)	During Bike Operation	
28-10-2000	42.6	45.7	
	42.6	45.7	
	42.4	45.4	
	44.8	48.2	
	44.3	47.8	
	41.7	43.6	
Arithmetic Average (3 lowest)	43	46	

Note that extraneous noise affected the results of the daytime period on the stationary monitor set up in the paddock. The extraneous noise during the day was probably due to a lawn mower operating in the near vicinity.

It should also be noted that in order to obtain a better indication of background noise levels for a particular area, long term noise monitoring (for say 2 to 6 months), as well as hourly wind data should be collected. The above serves as a preliminary indication of the background noise levels. To be conservative, the average of the three lowest levels for each period was taken.

3.3 Noise Limit

Based on the land use zoning maps of the area, the following was determined under State Environment Protection Policy No. N-1.:

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Partial Influencing Factor for 140m diameter circle plus Partial Influencing Factor for 400m diameter circle
 Total Influencing Factor 0.250

The Zoning Level can be determined based on the above. The following determines the Noise Limit based on the procedure set out in State Environment Protection Policy No. N-1.

<i>Period</i>	<i>Measured Background Level, dB(A), L₉₀</i>	<i>Zoning Level, dB(A)</i>	<i>Background Level Description</i>	<i>Noise Limit dB(A)</i>
Day	45.7	50	Neutral	46

The above calculations show our estimates of the Noise Limit for the affected property in Fairway Drive. The exact Noise Limit can only be determined by an officer of the Environment Protection Authority and only after extensive monitoring of background noise and wind data.

We also note that generally, in country areas it would be more appropriate to design for lower noise levels at residential areas (say 3 to 5dB(A) above background, or even to below background noise levels in some cases).

3.4 Industry Noise Measurements

Measurements were carried out on 28 October, 2000, for day measurements. The measurements were made at the rear of the premises located at 40 Fairway Drive, Yallourn Heights. (Approximately 6m from back fence). Measurements were made in the free field at a height of 1.5m above ground.

Brief handheld measurements were made, as well as a digital recording at each measurement position. The recordings were later analysed and a 1/3 octave band spectrum obtained for the measurements. All instruments were calibration checked both before and after measurements.

The noise measured was generally broadband, steady state noise and did not vary significantly during the measurement period. It was noted that the noise level at the above location was indicative of most of the affected residential premises.

Weather conditions were very windy during the measurements, the wind also fluctuated broadly. The temperature ranged from 10°C to 18°C.

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4.0 ANALYSIS RESULTS

The results of measurements are shown in the Executive Summary. The results are shown as Measuring Parameters and 1/3 octave band spectrum.

The 1/3 octave band spectrum gives us an indication of the character of the noise. The spectrum indicates that the majority of the energy is distributed between 400Hz and 4000Hz and that there is no significant tonal character associated with the noise.

The measurement results can be taken as the Effective Noise Level at the residential area:- no adjustments are required for tonal, intermittency, or duration characteristics.

5.0 DISCUSSION/CONCLUSIONS

The following summarises the results of measurements and their compliance or otherwise with the Noise Limit.

Measurements taken at the property both before and during the bike operations showed no discernible difference in the readings on the given day. Note that it was very windy on the day of the measurements and on a still day the results may vary. Measurements taken complied with the requirements as stated on the Planning permit issued

Note that extraneous noise affected the results of the monitor that was set up in the paddock at the rear of the premises located at 40 Fairway Drive, Yallourn Heights. These extraneous measurements had nothing to do with the operations of the Motor Cross bikes.

Paul Erbs
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