



Office of  
Environment  
& Heritage

Contact: Marnie Stewart 9995 6861  
Our reference: DOC11/31913  
Your reference: MP 06-0232 Mod 4

Mr Michael File  
Director, Strategic Assessments  
Department of Planning and Infrastructure  
GPO Box 39  
SYDNEY NSW 2001

Dear Mr File

I refer to your letter dated 14 June 2011 to the Office of Environment and Heritage (OEH) requesting comments on an application submitted by Communities NSW to modify the approved project application for the Southern Highlands Regional Shooting Complex Approved Project MP 06-0232 Mod 4 with regard to firearm noise.

OEH has reviewed the modification application and provides detailed comments in Attachment 1 to assist the Department of Planning and Infrastructure in its assessment of the application.

If you have any queries, please don't hesitate to contact Marnie Stewart, Conservation Planning Officer on 9995 6861.

Yours sincerely

18 JUL 2011

**GISELLE HOWARD**  
Director Metropolitan  
Environment Protection and Regulation  
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Department of Premier and Cabinet

The Department of Environment, Climate Change and Water is now known as the Office of Environment and Heritage, Department of Premier and Cabinet

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## **Attachment 1 - OEH comments on the Southern Highlands Regional Shooting Complex Request for Modification of Approved Project MP 06-0232 Mod 4**

OEH has reviewed the application letter from Communities NSW and the two separate reports prepared by Stephen Cooper of The Acoustic Group and provides the following comments for consideration by Department of Planning and Infrastructure (DoPI).

The following advice is provided to assist the DoPI in its role as consent authority and is based on the information provided to OEH.

### **Request to modify Condition of Approval A9 – (Firearm Noise Limits)**

One of The Acoustic Group reports reviews noise monitoring undertaken by the consultant GHD to assess compliance with the noise limit. GHD's noise monitoring report was not provided to OEH. Mr Cooper concludes, inter alia, that operation of the 800m range "will result in noise levels greater than 75dB(Linear) Peak Hold...when shooting from a firing position greater than 400m". OEH notes that Mr Cooper advocates a logarithmic average approach to assessing compliance with the noise limits, which is discussed further below.

OEH (or its predecessor agencies State Pollution Control Commission / EPA) assessed noise from rifle ranges, prior to enactment of the *Protection of the Environment Operations Act 1997* (POEO Act), using Chapter 164 Noise Control Guideline Target Shooting Ranges (Attachment 2), of the Environmental Noise Control Manual (ENCM), published in 1985. This Manual is no longer in print. Local government authorities became the regulators of shooting ranges in NSW following enactment of the POEO Act, and since this time OEH has not reviewed Chapter 164 and does not have a current policy in relation to shooting noise. Therefore, the Chapter is a useful source of information only for dealing with noise from target shooting ranges.

A memo (Attachment 3) was prepared in 1993 on how this guideline was to be interpreted (for regional offices). Note that the memo advocates an arithmetic averaging approach to assessing compliance with the noise limits, which for a given set of measured levels would result in a calculated level equal to or less, but never more, than the level that would be calculated using the logarithmic averaging approach advocated by Mr Cooper. For example, if the levels of three shots were measured as 70, 75 and 80dB(L), the arithmetic average would be 75dB(L), whereas the logarithmic average would be 77dB(L).

Communities NSW is seeking an increase in its noise limit to 85dB(L) peak hold for usage of the existing 800m range (and no change to the 75dB(L) peak hold limit for usage of the new ranges). Chapter 164 recommends usage should be limited to seven days and one night only per week, for an existing range, for this noise level of 85dB(L) (and four days and no nights for a future range for a level of 75dB(L)). However, Chapter 164 did not include any consideration for applying different limits for different ranges within the one premises, and current OEH preference with regard to noise limits on Environment Protection Licences issued by OEH is to specify a single limit that applies to all activities within a single premises.

Chapter 164 also provides that "alterations to existing ranges should incorporate a movement towards the "Future Range" figures whenever possible". For a level of 85dB(L), it provided that usage of the existing range in accordance with the "Future Range" provisions should be limited to 2 days and no nights per week. Communities NSW does not appear to have explicitly addressed whether a movement towards the "Future Ranges" figures is possible, either in terms of reducing noise levels or in terms of restricting usage, but does state in its application letter "Without any additional noise controls (such as earth mounds along the side of the range which would come at high cost and possible environmental impacts) there would be no reduction in noise from existing operations."



**Request to modify condition of Approval A6 (d) – (Attended Noise Monitoring 800m range)**

The supporting information for this request references compliance reports prepared by The Acoustic Group. OEH has not been provided with these reports, and is therefore unable to comment on the proposed modification to the condition.

**Request to modify Condition of Approval D4 – (Acoustic Shelter 800m firing point).**

Such a shelter would not reduce noise levels associated with shooting from positions greater than 400m (i.e the 500m, 600m, 700m and 800m positions), which Mr Cooper's submission states will result in levels greater than the 75dB(L) limit, other than for the 800 metre position.

If the highest noise levels experienced at residential receiver locations are as a result of shooting from the 800 metre position then such a shelter might reduce these highest noise levels (such that the highest noise levels are then experienced as a result of shooting from, say, the 700m position).

**CHAPTER 164****NOISE CONTROL GUIDELINE****TARGET SHOOTING RANGES**

Air rifle and air pistol competitions are not scheduled since the projectile is not propelled by an explosion.

Such competitions are usually held indoors and seldom present a noise problem. They are lawful sporting activities and the EPA is the responsible authority for any noise investigation.

This guideline specifies criteria for assessing the effect on nearby residences of pistol, rifle or gun club shooting ranges when the propellant is explosive. Criteria may be used for guideline and less stringent figures could be used if site details and topography are very favourable.

Measurement should be made at the worst affected location and consideration should be given to any neighbouring vacant land zoned as residential.

Note that any premises used for competitive shooting where the propellant is explosive are scheduled premises under the Act.

**Times of Day Restrictions**

Daytime operation is considered as being from 10 a.m. to 5 p.m. Night operation normally extends from 5 p.m. to 10 p.m. To cater for special events such as state or national championships or charity shoots, the EPA may consider an extension of the times on both nights in one weekend provided such events occur no more than two or three times a year.

**Restricted Number of Days**

Peak Hold (Linear) readings are taken at the most affected residential boundary. The number of days and nights usage of the range should be limited to correspond with the measured level as shown in the table on page 164-2.

A concession has been made in the case of existing ranges and is included in the table. This may be subject to future review by the EPA.

Alterations to existing ranges should incorporate a movement towards the "Future Range" figures whenever possible.

164-2  
10-5-85

	RESIDENTIAL LEVEL dB (Lin) Peak Hold											
	60	65	70	75	80	85	90 <sup>1</sup>	95	100	105	over 105	
	MAXIMUM USAGE Days (Nights) per wk											
Existing Range Daytime Use	7	7	7	7	7	7	5	4	3	2	1	
Existing Range Night-time Use	3	3	2	2	2	1	-	-	-	-	-	
Future Range Daytime Use	7	5	5	4	3	2	1	-	-	-	-	
Future Range Night-time Use	3	2	1	-	-	-	-	-	-	-	-	

## Environment Protection Authority

TO Regional Managers  
CC DANT, N&T staff  
DATE 25 January 1993

FROM Head Noise Investigations  
FILE 708022

SUBJECT Noise Control Guideline on Shooting Noise

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### PURPOSE

To advise Regional staff of how the Noise Control Guideline on Target Shooting Ranges should be interpreted.

### CURRENT POSITION

1. If measured level is between levels contained in table which days per week band should be used?

The days per week band that applies is the one where the measured level is less than the noise level shown. For example a measured level of 72 dBL for existing range daytime use would fall into the 75 dBL column with 7 days allowed.

2. Is an arithmetic or energy averaging technique used to determine the measured noise level?

Arithmetic averaging is used.

3. How many measurements are required to determine a final noise level?

The number of noise measurements should be sufficient to determine a noise level that is representative of the type of firearm being used. In the past assessments have been based on up to 50 shots. In determining the final noise level, measured levels that are clearly not representative should be excluded. This relies on the person conducting the assessment having a level of acoustic expertise.

The above advice was prepared in response to a request from the National Acoustics Laboratory and in the interest of consistency has been prepared for issuing to all affected staff.

### FUTURE ACTIONS/RECOMMENDATIONS

Please forward this on to your staff who may be involved with assessing noise from target shooting ranges.