

SOUTHERN HIGHLANDS REGIONAL SHOOTING COMPLEX, HILL TOP
Responses to public submissions in respect to modification application to vary conditions of approval
A9, A6 and D4

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SOUTHERN HIGHLANDS REGIONAL SHOOTING COMPLEX, HILL TOP
Responses to public submissions in respect to modification application to vary conditions of approval
A9, A6 and D4

Group 1.

Submissions from members of the public and non-profit community groups of a non-technical nature that object to the proposal on grounds related to social/peaceful amenity, environmental damage and/or object to the shooting facility in general.

Application for Modification	Issue raised in submission	S&R Response
1.1 General	<p>1.1.1 The general terms of objections to the proposal/s made by the respondents in this group concerns the impact on social and environmental amenity of the Hill Top community to 'more guns/more noise' emanating from the 800m range</p>	<p>The proposal does not seek an increase in the use or noise level of the existing 800m rifle range. The application seeks a noise limit that permits the continued use of that range at the level that has been approved in the past..</p> <p>Three of the existing rifle clubs will have increased access to the 800m range once two other rifle clubs move to use the new 500m range. This will not result in an increase in use of the range as the range has been utilised to its full extent in terms of days per week and hours per day.</p> <p>It is not anticipated there will be increased impact on the local community or on the surrounding environment.</p> <p>There are strict environmental and operational conditions imposed on the project. These conditions include regular compliance noise testing and an independent review of the operations of the complex over a number of years.</p>
	<p>1.1.2 Move it elsewhere</p>	<p>The site has been in operation since 1988. The development of the site as a regional shooting complex is subject to strict operational and environment controls. The location of the site was chosen after extensive consideration of other locations. Against a number of considerations, Hill Top was regarded as the most suitable location.</p>
	<p>1.1.3 Amenity effected – loss of peace and tranquility</p>	<p>It is not anticipated that there will be increased impact on the local community or on the surrounding environment resulting from the application.</p>
	<p>1.1.4 Louder noise than previous and larger firearms being used</p>	<p>S&R (Sport and Recreation) believe that there is sufficient evidence to support the submission that the noise level (ie. loudness) experienced at the closest residential boundaries surrounding the 800m range at present is similar to or the same noise level (loudness) that would have been evident since operations commenced.</p>
	<p>1.1.5 Potential health problems from noise and air displacement from large calibre firearms</p>	<p>The application is not to permit the use of louder firearms and therefore is unlikely to generate health issues in the community.</p>

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	<p>1.1.6 New range opening will enable 200 firing points instead of current 7 which will increase the noise level</p>	<p>The 800m range permits up to fifty six (56) separate firing locations (7 lanes x 8 firing mounds). At any one time, only one firing mound (7 shooters) can operate. The new 500m range has only one firing location, permitting up to forty seven (47) participants at any one time.</p>
	<p>1.1.7 Increasing noise limit from 75 to 85 will mean perceived noise will seem like the noise level had doubled</p>	<p>The change in limit is to reflect the current position as to noise emission. There is no increase in noise from the range. The application will not result in a doubling of the received and measured noise level at the closest residential boundaries. In relation to the perception of loudness, the assertion that more firearms/cumulative discharges will produce louder noise is incorrect. This is based on firearm noise levels being assessed under a dB (L) peak hold protocol, not a dB (A) measure. The latter measurement is the general noise descriptor for community noise. In dealing with subjective loudness, the concept of 10dB (A) is taken as a doubling of the sound or a reduction in level to 50% of the particular noise under consideration.</p> <p>The dB (L) peak hold proposal in the application is not a doubling of a sound level.</p>
	<p>1.1.8 Proponent cannot meet the conditions of the existing consent often shooting above the 75dB level (identified in GDH testing 2010)</p>	<p>It is acknowledged that levels of up to 82dB (L) peak hold were recorded by the acoustic consultant engaged by Sport and Recreation to review the initial 2007 GHD assessment. The current noise limit is expressed as a level of 75dB (L) peak hold which was not defined in the consent. The 75dB (L) peak hold level has been referenced back to the ENCM which in turn was based on the National Acoustic Laboratories Hornsby Report where the dB (L) peak hold was defined as a logarithmic average level. Based on recent advice from the E&H, the correct application of the ENCM guideline is to apply an arithmetic average measurement. By using that measurement the maximum noise level from the 800m range, when included with total discharges, would be within a noise limit expressed as 80db (L) peak hold applying the arithmetic average method.</p>
	<p>1.1.9 Range is too close to the village of Hill Top</p>	<p>The range has been at its existing location since October, 1988, being relocated from Welby to permit construction of the Mittagong by-pass road. It was constructed in that location following a development application approved by the local council.</p> <p>The new 500m range is approximately 1km distant to the north-west, further away from the Village.</p>

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	1.1.10 Reduced property value	The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community.
	1.1.11 Potential injury to fauna	The potential injury to fauna will not increase. Any indiscriminate shooting by club members whilst on the range will invoke action by the Range Officer under firearm regulations. The stopbutt captures the vast majority of projectiles.
	1.1.12 Increase in noise levels and no acoustic shelter will cause health issues including depression and anxiety and disturb/impact on fauna, livestock, pets and bushwalkers	The proposal seeks only to regulate noise levels consistent with past use of the site. The range has operated without an existing acoustic shelter since establishment. The potential injury to fauna and to bushwalkers using tracks outside of the designated range danger area will not increase.

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	<p>1.1.13 Measurements have been taken with only one gun firing. More noise will occur when 200 firearms are discharged in the future. Testing needs to cover multiple simultaneous discharges not single discharges.</p>	<p>The compliance testing involved multiple firearms firing & not only one firearm at a time. The E&H requirement for use of an arithmetic average requires multiple shots & may include individual shots. This could be in a relatively short time period (possibly simultaneously). However, the observer at the residential monitoring location would not know what firearms are being used at what location or what time.</p> <p>The multiple simultaneous discharges assertion is not supported by acoustic experts because the assessment of firearms looks to the peak values that occur for a very short period of time. An increase in the number of shots that may be fired over the period of time does not automatically increase the average level. The use of different firearms and firing positions across a nominal firing distance (from the targets) gives rise to a range of noise levels, hence the logic of using an averaging measuring approach. Increasing the number of shots from a firing position provides, on a statistical basis, more data for the determination of an average level.</p> <p>Due to the extremely short rise time associated with the measurement of the peak hold value, it is extremely rare for two shots to occur simultaneously. If it did occur, there could be no increase or a slight increase in the dB (L) peak hold value. Further, due to the variation in noise level from individual firearms and the fact that the peak pressure wave is being measured, the concept of a measurable increase from simultaneous shots is virtually non-existent.</p> <p>For comparison, where under a dB Linear method the level would be significantly lower than the Peak Hold Linear value, assuming that two identical shots occurred at the same time, it would be reasonable to expect a cumulative noise level of 3dB.</p> <p>The submission that more firearms/cumulative discharges will produce louder noise is incorrect. The dB Linear Peak Hold level is not a measure of loudness like the dB (A) level used for general noise. The Linear Peak Hold level measures the absolute pressure wave pulse and has no relationship to a dB (A) fast response level used for the measurement of pool pumps, air conditioning or motor vehicles.</p>

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	<p>1.1.14 Acoustic consultant refutes previous methodology to calculate noise levels and proposes a change to a method only he uses. What makes his methodology right?</p>	<p>The assessment method was not refuted. Rather, reference was made to the apparent lack of understanding by earlier consultants of how firearm noise levels were to be recorded and assessed. The methodology to be used to analyse the noise measurements has now been agreed as the arithmetic average method arising from recent advice from E&H.</p>
	<p>1.1.15 Acoustic consultant is biased and will manipulate numbers, levels and formulae to present noise tolerance levels for the advantage of shooting groups</p>	<p>TAG was engaged by S&R as an independent consultant with unique experience in Australia in the measurement and assessment of firearm noise levels to explain why the initial 2007 noise assessment undertaken by GHD had apparently underreported the actual noise level (loudness) recorded at the closest residential boundaries. TAG was engaged in the first instance to conduct a peer review of the previous assessments on a similar basis to that for councils or the Land and Environment Court. They were then requested to undertake compliance testing. As the work of TAG revealed errors in previous noise measurement methodologies, the actions of TAG are not biased, but demonstrate complete independence. TAG provided consulting services to the Sporting Shooters Association some time ago. S&R understand TAG have provided professional consulting advice to shooting clubs, councils and the NSW Government (2000 Games) under a normal contractual arrangement. No employee/employer relationship existed. Other than the Kiama-Albion Park Rifle Club, TAG has had no past or current involvement with any individual club related to this venue. No conflict of interest is apparent.</p>
	<p>1.1.16 There will be more shooters using the range more frequently, using larger firearms and firearms that fire rapidly such as .50cal BMGs (machine guns)</p>	<p>Use of the 800m range is limited by reference to the small number of lanes and the single static target stopbut. The number of shooters at any one time during approved use days will be similar to past patronage. There has not been nor is there likely to be future provision for higher calibre firearms, including machine guns.</p>

Application for Modification	Issue raised in submission	S&R Response
	1.1.17 Has a fauna study been conducted to determine the effect of 200 guns at 110dB on the 106 protected species of native wildlife living on and around the range?	The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community or wildlife. References in TAG reports to higher level dB measurements relates to firearm noise captured immediately adjacent to the 800m range (at the Transgrid boundary) and along the internal range access track. This enabled a comparison of the actual number of discharges which travelled and were recorded at the closest residential boundaries. Noise levels this close to the discharge points are obviously louder than levels received and recorded at the residential boundaries. That noise level would have been evident at those points from when the range commenced in 1988.
	1.1.18 Inconsistent noise limits of the 800m range is allowed 85dB limit and other ranges are limited to 75dB	The ENMC guideline allow for noise limits and range use to be different for existing and future ranges. S&R consider that the 800m range is an existing range and has always accepted that the 500m range should be categorised and treated as a future range in terms of the ENMC guideline.
	1.1.19 Infrastructure will not deal with increased use numbers (i.e. access road)	The proposed modifications will have a minimal impact on roads in the Hill Top area. A proposal has been put to the local council relating to a maintenance schedule for the unsealed section of Wattle Ridge Road.
	1.1.20 Potential contamination of the water supply from lead in projectiles	Soil and water testing adjacent to the present 800m range during the environmental assessment stage of the project application did not reveal significant contamination as a result of continued use of the range since 1988. The project approval incorporates strict environmental management controls and measures related to soil and water contamination.
	1.1.21 Army use of the range has been noisier than usual range use	The use of the 800m range by military personnel is subject to approval by the Range Management Committee. The military are required to sign a Range User Agreement that requires they comply with civilian use conditions.
	1.1.22 Increased risk of fire – no mains water to the SHRSC	The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community or increase the risk of fire. The conditions of approval for the complex required construction of sedimentation ponds to capture water. This water will be available to assist in bushfire management.

Application for Modification	Issue raised in submission	S&R Response
	1.1.23 No guns	<p>The Hill Top shooting facility has operated effectively since 1988. Operation of the range and use by club members is subject to NSW Firearms Registry approval and oversight. Use of the site for sporting and recreational shooters is a legitimate and appropriate arrangement.</p>
	1.1.24 Flawed testing regime (favourable to shooters)	<p>The compliance testing undertaken by TAG was conducted with reference to appropriate acoustic standards, methods and instrumentation. The Group has extensive experience in assessment, measurement and advice regarding firearm noise.</p>

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Group 2.

Submissions from NSW Government agency, Local Council and a Member of the NSW Legislative Council

Respondent:

The Office of Environment and Heritage (E&H) (Director Metropolitan, Environment Protection and Regulation)

Application for Modification	Issue raised in submission	S&R Response
<p>2.1 Condition of Approval A9 – (Firearm Noise Limits)</p>	<p>2.1.1 E&H (formerly State Pollution Control Commission / EPA) assessed noise from rifle ranges prior to the 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.</p> <p>2.1.2 When the POEO Act was enacted, Local Government became the regulators of shooting ranges in NSW. Since this enactment (1997), the E&H has not reviewed Chapter 164 and doesn't have a current policy on shooting noise. Chapter 164 therefore is useful only for dealing with noise from target shooting ranges.</p> <p>2.1.3 An internal memo from E&H in 1993 outlined how Chapter 164 should be interpreted and advocated an arithmetic averaging approach to noise measurement.</p>	<p>S&R notes that E&H does not have a current policy in relation to noise from firearms.</p> <p>The E&H view is noted.</p>
		<p>S&R understands that the logarithmic average method to assess firearm noise levels was used by the Environmental Protection Authority up to 1993. The terms of an internal 1993 staff memo that the assessment of firearm noise levels was to be undertaken using an arithmetic average method are noted.</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>2.1.4 Chapter 164 did not include any consideration for applying for different noise limits for different ranges within the one premises and current E&H preference with regard to noise limits on Environmental Protection Licences issued by E&H is to specify a single limit that applies to all activities within single premises.</p>	<p>The application of the Chapter 164 guideline by the then Environmental Protection Authority (after it was issued) specifically separated different noise limits for different classification of firearms on a range – just as there are different limits for night versus daytime shooting. There are many EPL's that have an overall noise limit for a site and separate noise limits for components of a site, particularly industrial premises that have old and new plants. Under the guidelines, when the application for the 500m range was made, the 800m range was an existing range. For an overall noise limit to apply, S&R believe the the 85dB (L) peak hold arithmetic average would apply. S&R believe that the present 800m range justifies retention of the existing range classification under the ENCM guideline as it is in operation for sometime before approval was obtained to establish the regional shooting complex. Further, that the 500m range – as a new range – should attract a lower limit.</p>
	<p>2.1.5 Chapter 164 also mentions that 'alterations to existing ranges should incorporate a movement towards the "Future Ranges" figures wherever possible'. Application does not address whether a movement towards "Future Ranges" figures is possible either in terms of reducing noise levels or restricting usage but accompanying letter does note that in the absence of additional noise controls there would be no reduction in noise from existing operations.</p>	<p>S&R believe that the present 800m range justifies retention of the existing range classification under the ENCM guideline as it is in operation for sometime before approval was obtained to establish the regional shooting complex. New ranges are clearly future ranges and use approvals should be based on this category.</p>
<p>2.2 Condition of Approval A6 (d) – (Acoustic Noise Monitoring 800m Range)</p>	<p>2.2.1 Supporting documentation for this request refers to compliance reports prepared by The Acoustic Group that have not been provided to E&H therefore no comment is possible.</p>	<p>Noted. The proposal to seek an additional time period to lodge noise monitoring results was based on the time period taken to analyse the extensive testing undertaken by TAG. In the future the testing regime recommended by S&R will lead to results being available in fourteen days.</p>

Application for Modification	Issue raised in submission	S&R Response
<p>2.3 Condition of Approval D4 – (Acoustic Shelter 800m Firing Point)</p>	<p>2.3.1 If the highest noise levels experienced at residential receiver locations are from the 800m position as suggested by The Acoustic Group, then such a shelter might reduce the highest noise levels.</p>	<p>By reference to the E&H arithmetic average method, the highest noise level from TAG measurements arose from the 200m firing mount, not the 800m firing position. There will be limited noise abatement benefit to the community given that the measure only applies to one firing mound to be used on a rotational basis. The firing position is likely to be in use infrequently. The expenditure of significant public funds for a measure that will have limited benefit is not recommended.</p>

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Respondent:

Wingecarribee Shire Council (Letter and Council Minutes. Report of the Director Environment & Planning – B. Arthur.)

Application for Modification	Issue raised in submission	S&R Response
<p>2.4 General comment</p>	<p>2.4.1 Requested Planning (part of its review process) make suitable arrangements to conduct demonstration of increased noise levels at the complex including Councillors, Council Staff, concerned residents and local member The Hon Pru Goward. Further, that Minister Annesley, Hon Robyn Parker, Hon Brad Hazzard MP, Hon Victor Dominello MP and Hon Greg Pearce MP attend.</p> <p>2.4.2 WSC strongly oppose the modification application. Further, WSC strongly oppose the implementation of the method of assessment and use of log averaging proposed for noise testing.</p> <p>2.4.3 Modification application highlights serious flaws in original proposal and this has resulted in poor planning outcomes that shouldn't be resolved by relaxing operating conditions. Further, the original flaws should warrant a cessation of operations at the SHRSC due to its impact on residents and other recreational users of proximal areas.</p>	<p>The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community, environment or wildlife. The conditions of approval require extensive noise testing at specific times. Additional testing is not thought to be necessary to ensure compliance with the conditions of approval and would be costly to undertake. An inspection of the facility can be undertaken by arrangement with the Range Management Committee. It is also possible to have an observer attend required noise testing events.</p> <p>E&H now advise that the appropriate assessment method to assess firearm noise levels is to use an arithmetic average, not an absolute limit. This will be adopted.</p>
<p>2.5 Condition of Approval A9 – (Firearm Noise Limits)</p>	<p>2.5.1 Proposed increase in noise limits does not have the residents' interests in mind. No consideration is made of what is environmentally acceptable for the residents and assumes Independent Hearing and Assessment Panel (IHAP) would have approved higher noise levels if it had been presented with higher noise data.</p>	<p>S&R believe that the initial noise assessment incorporated within the Environmental Assessment Report was flawed and failed to accurately indicate the true noise level emanating from the 800m range.</p> <p>The application is not to increase the use of the existing 800m range or the use of louder firearms. The intention is to establish a noise level that reflects the existing use of the range.</p> <p>The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community, environment or wildlife. Planning will manage the process on how the current application will be determined.</p>

Application for Modification	Issue raised in submission	S&R Response
	2.5.2 Referred to complaints received by local residents relating to noise emanating from the Hill Top range	Based on advice from the Area Manager, PWG Nattai Area and the Range Management Committee (RMC), it is known that indiscriminate firearm discharges have occurred occasionally outside/inside S&R land holdings by person/s unrelated to the range operator. These discharges are illegal and would be dealt with in a similar way to any other illegal activities.
	2.5.3 No consideration of any mitigation or [f] control measures to reduce noise impact.	Mitigation measures incorporated in the conditions of approval for the regional complex will be considered, if required, once multiple ranges are in use.
	2.5.4 Considers 500m noise level of 75dB (L) peak hold is acceptable. Find it unacceptable that there is consideration of a second noise limit required for 800m rather than one level of acceptable noise.	The application of the Chapter 164 guideline by the then Environmental Protection Authority (after it was issued) specifically separated different noise limits for different classification of firearms on a range – just as there are different limits for night versus daytime shooting. There are many environmental protection licences that have an overall noise limit for a site and separate noise limits for components of a site, particularly industrial premises with old and new plants. S&R believe the present 800m range justifies retention of the existing range classification under the ENCM guideline as it has operated for some time before approval was obtained to establish the regional shooting facility.
	2.5.5 Considers logarithmic averaging of results will produce a result that is lower than maximum levels being heard by residents. Propose the lowering of calculated results would potentially be greater if all shots fired were included in the averaging calculation. Propose this would not be a true measure of dose or impact on residents.	Recorded noise levels analysed using the logarithmic method have now been analysed using the arithmetic average method as determined by E&H.
	2.5.6 Cumulative impact of and dose on residents is not being considered as part of the noise limits.	The initial basis of the ENMC guideline used an 85 dB (L) peak hold level as a logarithmic average maximum as the acceptable community level for shooting seven days a week (Hornsby Rifle Range NAL Report). Cumulative impacts and dose responses were considered in deriving the recommended limit.
	2.5.7 Disagrees with logarithmic average application, believing arithmetic average more appropriate	See comments above (2.5.5) in respect to the E&H position.

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<p>2.6 Condition of Approval A6 (d) – (Acoustic Noise Monitoring 800m Range)</p>	<p>2.6.1 If the noise test/method of measurement of testing compliance for consent condition is changed, noise test monitoring should recommence for the period from the approval and first use of the range and seasonally for one year. Council does not appear to object to extending time period to lodge compliance test results</p>	<p>The present noise monitoring requirements are rigorous and require more testing than other established facilities. Additional testing is required when operation of additional facilities commences. In the circumstances additional testing is not thought to be necessary. S&R will seek to coordinate compliance noise testing for the 800m and 500m ranges to reduce the significant costs incurred in noise testing events.</p>
<p>2.7 Condition of Approval D4 – (Acoustic Shelter 800m Firing Point)</p>	<p>2.7.1 Acoustic shelter should be maintained in order to mitigate noise from ranges from 400m and further. Such structures are also likely to benefit other users of the Wattle Ridge Road precinct, the Bargo State Conservation area and Nattai National Park.</p>	<p>The cost of a moveable barrier covering firing mounds from the 400m position and above, and the questionable acoustic integrity of such barriers to have any real abatement benefit, would prove prohibitively expensive. Further, there will be limited noise abatement benefit to the community by the construction of a shelter at the 800m firing point given that the measure only applies to one firing mound which is used on a rotational basis. The firing position is likely to be in use only every 6-8 weeks. The expenditure of significant public funds for a measure that will have limited benefit is not recommended.</p>

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Respondent:
 David Shoebridge, MLC (The Greens)

Application for Modification	Issue raised in submission	S&R Response
<p>2.8 Condition of Approval A9 – (Firearm Noise Limits)</p>	<p>2.8.1 Changes to acceptable noise levels will mean a doubling of noise for residents</p>	<p>The assertion is not correct based on firearm noise levels being assessed under a dB (L) peak hold protocol, not a dB (A) measure. The latter measurement is the general noise descriptor for community noise. In dealing with subjective loudness, the concept of a 10dB (A) is taken as a doubling of the sound or a reduction in level to 50% of the particular noise under consideration. The dB (L) peak hold proposal in the application is not a doubling of a sound level.</p>
<p>2.9 General comment</p>	<p>2.9.1 Acoustic expert is associated with shooters groups and has frequently been employed by them to represent them in matters relating to noise pollution and compliance</p>	<p>TAG was engaged by S&R as an independent consultant with unique experience in Australia in the measurement and assessment of firearm noise levels to explain why the initial 2007 noise assessment undertaken by GHD had apparently underreported the actual noise level (loudness) recorded at the closest residential boundaries. TAG provided consulting services to the Sporting Shooters Association some time ago. S&R understand the Group provided professional consulting advice under a normal contractual arrangement. No employee/employer relationship existed. Other than the Kiama-Albion Park Rifle Club, TAG has had no past or current involvement with any individual club related to this venue. No conflict of interest is apparent. The principal of TAG has provided similar peer reviews and compliance testing of ranges for non shooting parties, including councils and the NSW government. These evaluations used the same methodology and testing procedures as for the present range.</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>2.9.2 Acoustic expert's method of interpreting guidelines differs from those of three other independent acoustic groups, to the detriment of the amenity of the local residents</p>	<p>E&H advise that the assessment and measurement of firearm noise should be undertaken using an arithmetic average method is now accepted and aligns with the use of an average level proposed by TAG.</p>
	<p>2.9.3 New measurement method will allow more use of the range</p>	<p>The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community, environment or wildlife. Three of the existing rifle clubs will have increased access to the 800m range once two other rifle clubs move to use the new 500m range. This will not result in an increase in use of the range as the range has been utilised to its full extent in terms of days per week and hours per day approvals by the existing five rifle clubs. There are strict environmental and operational conditions imposed on the project. These conditions include regular compliance noise testing and an independent review of the operations of the complex over a number of years.</p>

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	<p>2.9.4 Change to scale of measurement allows a greater level of sound: 85dB that represents a doubling of the sound levels originally approved</p> <p>2.9.5 New method of measurement measures the amount of sound averaged over a period of time, so that periods of heavy and continuous firing can be offset with periods of light or less audible gunfire.</p> <p>2.9.6 Measurement procedures do not take into account frequency of firing over short periods nor what occurs when there is simultaneous firing (ie., repetitive and cumulative firing). Important because two equal sound sources placed next to each other will increase sound by 3dB while ten equal sound sources placed next to each other will increase sound by 10dB. This means (in the latter example) a person with normal hearing will perceive the noise to have doubled.</p> <p>2.9.7 Proposal increases the previous maximum of 10 shooting positions to 224 positions which will result in more than a twentyfold increase in shots fired and therefore in the case of simultaneous firing, a possible quadrupling of the sound intensity.</p>	<p>The dB (L) peak hold proposal is not a doubling of a sound level. Refer to previous response regarding this assertion.</p> <p>E&H advise that the assessment and measurement of firearm noise under the ENMC guideline should be undertaken using an arithmetic average method. S&R accept this basis for future noise assessment.</p> <p>The dB (L) peak hold proposal is not a doubling of a sound level. Refer to previous response regarding this assertion and comments regarding the alleged cumulative and simultaneous impact on firearm noise levels.</p> <p>The assertion is not correct. Refer to previous response regarding the alleged cumulative and simultaneous impact on firearm noise levels.</p>

Application for Modification	Issue raised in submission	S&R Response
	2.9.8 Believes that the proposal relates to a substantially different use of the site	<p>The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community, environment or wildlife</p> <p>Three of the existing rifle clubs will have increased access to the 800m range once two other rifle clubs move to use the new 500m range. This will not result in an increase in use of the range as the range has been utilised to its full extent in terms of days per week and hours per day approvals by the existing five rifle clubs.</p> <p>There are strict environmental and operational conditions imposed on the project. These conditions include regular compliance noise testing and an independent review of the operations of the complex over a number of years.</p> <p>S&R believe that the present 800m range justifies retention of the existing range classification under the ENCM guideline as it has been in operation for some time before approval was obtained to establish the regional shooting facility.</p>
	2.9.9 Suggests proposal would allow more extensive use of the range than would have been possible under the original approval	<p>The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community, environment or wildlife</p> <p>The known noisiest firearm is the 7.62mm centre fire rifle (-308) the most suitable firearm for accuracy over the length of the 800m range. This firearm has been the known noisiest firearm used at this range since it commenced in 1988.</p>
2.10 Condition of Approval D4 – Acoustic Shelter 800m Firing Point)	2.10.1 Requirement for acoustic shelter should be maintained as a changed shooting schedule involving infrequent shooting at the 800m point is not imposed by condition and provides no ongoing protection for residents	<p>There will be limited noise abatement benefit to the community by the construction of a shelter at the 800m firing point given that the measure only applies to one firing mound which is used on a rotational basis.</p> <p>That firing position is likely to be in use only infrequently. The expenditure of significant public funds for a measure that will have limited benefit is not recommended.</p>

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Group 3.

Submissions from professional bodies and members of the public addressing technical issues of the proposal

Respondent:

Julie and Troy Cook

Application for Modification	Issue raised in submission	S&R Response
<p>3.1 General</p>	<p>3.1.1 Argues noise assessments to date do not meet the DG's Environmental Assessment requirements re noise impact upon the adjoining land and ensuring that the proposal does not impact on the amenity of park users.</p> <p>3.1.2 Referred to The Acoustic Group's noise measurements taken at the Transgrid boundary (100 – 130dB+) and potential effect on users of National Park areas</p>	<p>Information provided by S&R has been assessed by Planning. Condition A9 was issued by the Minister following noise assessment advice and reports and internal assessment prepared by officers of Planning.</p> <p>The testing regime adopted by TAG included locating measurement instruments close to the discharge points to ensure that every firearm discharge was recorded (including at the Transgrid boundary). Firearm noise levels at this point would obviously be higher than that recorded at the closest residential boundaries. The noise level at those points would have been similarly evident from when the range commenced in 1988. This was an appropriate assessment and measurement protocol. The highest level recorded on the Transgrid access track was 109dB (L) peak hold.</p> <p>The application is not to increase any potential impact on park users.</p>
	<p>3.1.3 Issues with the proximity of firing points to surrounding National Parks, roads and parks. Asserts 500m range, pistol range and 200m range were moved 100m closer to the National Park under Modification 2 and no environmental impact study for noise was undertaken</p>	<p>The application relates solely to the existing 800m range. No measurement has been undertaken of firearm noise from the 500m range, yet to be commissioned. The realignment of the range closer to Wattle Ridge Road will have minimal impact, if at all, on surrounding park areas.</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>3.1.4 Argues that 1/500th of the guns being used have been tested, one gun at a time. This does not reflect the cumulative impact of the impulsive noise when 150 shooters fire overlapping each other</p>	<p>Refer to Attachments A and B regarding firearms used in compliance noise testing for the 800m range. Compliance noise testing for the 500m range will occur once the range is operational. The testing does not involve one firearm tested at a time. The measurement in the residential area recorded the discharges detected. Whether some discharges overlap or even on the remote possibility were to occur simultaneously, they are reflected in the range levels measured. Repetitive and cumulative firing will not increase the noise measured at the various sensitive receiving locations around the range.</p>
	<p>3.1.5 Higher calibres not tested (NB. Respondents lodged a second submission noting no provision for use certain higher calibre firearms)</p>	<p>There is no requirement to test higher calibre firearms as there is no approval for their use on the 800m range. An earlier range approval that provided an exemption for military use was incorrectly provided. It was revoked by the NSW Firearms Registry at the request of the clubs and a correct replacement licence issued.</p>
	<p>3.1.6 Referred to changes in gun types and sizes and events (2002, 2005, 2007 and 2010) ensuring loudest firearms at the site. Further argues that 338 lapua and .50 cal BMG are now used by the army at the range</p>	<p>Approved firearms and events detailed in licences over the period 2002 – 2010 did not result in those firearms/events being used on the 800m range. Specifically, what appears to be an increase in use of the range in the 2007 range approval was provision for pistol firearms and events. These have not been used on the 800m range (Refer Attachments A and B). Pistol events are typically held over 10m, 25m and 50m distances. The two pistol clubs associated with the SHRSC Inc presently use other range facilities. There is no approval for higher calibre firearms and these have not been used at the range.</p>
	<p>3.1.7 States whilst there are only 7 firing lanes, up to 15 shooters can line up at anyone time at the 800m firing point</p>	<p>Events conducted from the 800m firing position permit seven participants at any one time. However, it is possible for more than seven people to be on the 800m firing mound at any one time.</p>
	<p>3.1.8 Referred to the peaceful enjoyment of using the surrounding national park area. Stated this will be affected by the increased noise level.</p>	<p>The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community, environment or wildlife</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>3.1.9 Stated that S&R can't 'pick and mix' from the ENMC guideline – departure from these guidelines would only be acceptable where the national interest justified it (e.g. during wartime).</p> <p>3.1.10 Submits that compliance testing on the 800m range since 2010 by The Acoustic Group do not comply with consent conditions and cannot be considered representative of the noise and are deemed invalid.</p>	<p>S&R believe that the present 800m range justifies retention of the existing range classification under the ENCM guideline as it has been in operation for some time before approval was obtained to establish the regional shooting facility.</p> <p>Compliance noise testing by TAG has been conducted using appropriate acoustic standards, methods, instrumentation and reference to prevailing weather conditions. TAG reports have identified the impact on noise results of use of varying firing positions and varying firearms. Measuring locations have, in the main, been consistent with the earlier GHD locations. Where they varied, the location did not prejudice the acoustic dynamics in terms of capturing and recording noise levels. The appropriate locations for future noise testing will be identified by GPS means and provided to Planning.</p>
	<p>3.1.11 Refers to non-use of military firearms, shotguns not tested, did not document calibre used. Did not use firearms permitted in the 2007 licence</p>	<p>The number and type of firearms that have been used in compliance noise testing are detailed in Attachments A and B. It includes military firearms. Pistols were not required to be used in testing (even though some were discharged) as they have not been used on the range competitively or for casual use.</p>
	<p>3.1.12 Further argues all compliance noise tests for the 800m range carried out by The Acoustic Group are non-compliant with the consent requirements for the following reasons: Testing did not record ammunition type used – variations result in variation by up to 20 – 25dB. Referred to BMP's that The Acoustic Group did not apply. Questions The Acoustic Group's credentials and provided link to web page that detailed the BMP he should have applied.</p>	<p>TAG consultant fulfilled the requirements of S&R using a rigorous methodology to identify the actual noise levels being generated from and heard from the 800m range. The resulting report and recommendations of the findings for the operator demonstrate no bias or conflict of interests. No contradictory acoustic evidence has been provided to disprove the findings. The subsequent modification application was initiated by S&R to address what it believed was under-reporting of the true noise level.</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>3.1.13 Argues location of tests meant most affected residential boundaries were not tested</p>	<p>Compliance noise testing and the location of sensitive receivers were placed appropriately. The issue of the location of the measuring device adjacent to the property to the north-west of the facility is dealt with elsewhere within the application.</p> <p>Measuring locations have, in the main, been consistent with the earlier GHD locations. Where they varied, the location did not prejudice the acoustic dynamics in terms of capturing and recording noise levels. The appropriate locations for future noise testing will be identified by GPS means and provided to Planning.</p>
	<p>3.1.14 The Acoustic Group has a 'conflict of interest'. Suggests his results cannot be relied upon as 'unbiased and truly representative'.</p> <p>3.1.15 The Acoustic Group was engaged by S&R to get a 'desired result'.</p>	<p>TAG's engagement was to explain why the 2007 noise assessment undertaken by GHD did not reflect the higher noise measurements recorded during subsequent testing. The assessment undertaken identified the reasons for this. TAG was engaged by S&R as an independent consultant with unique experience in Australia in the measurement and assessment of firearm noise levels to explain why the initial 2007 noise assessment undertaken by GHD had apparently underreported the actual noise level (loudness) recorded at the closest residential boundaries.</p> <p>TAG provided consulting services to the Sporting Shooters Association some time ago. S&R understand the Group provided professional consulting advice under a normal contractual arrangement.</p> <p>TAG has provided similar peer reviews and compliance testing of rifle ranges for the Department of Defence and non-shooting bodies, including councils and the NSW Government (2000 Games). S&R understand TAG provided professional consulting advice under a normal contractual arrangement. No employee/employer relationship existed.</p> <p>Other than the Kiama-Albion Park Rifle Club, TAG has had no past or current involvement with any individual club related to this venue. No conflict of interest is apparent</p>
	<p>3.1.16 In the interests of transparency and equity, requests that S&R, Planning and the HTRAG engage a noise consultant who is accountable to the community</p>	<p>S&R is required to follow Government procurement guidelines when inviting proposals for the appointment of an ongoing acoustic consultant for compliance noise testing at the Hill Top facility.</p>

Application for Modification	Issue raised in submission	S&R Response
	3.1.17 Refers to noise complaints lodged with the Council/Police since 2007.	Based on advice from the Area Manager, Nattai Area Office of the Parks and Wildlife Group and the Range Management Committee (RMC), it is known that indiscriminate firearm discharges have occurred occasionally outside/inside S&R land holdings by person/s unrelated to the range operator. These discharges are illegal and would be dealt with in a similar way to any other illegal activities. S&R has received inquiries related to firearm discharges in the vicinity of the range. The more recent sought clarification on use of the range on a Friday, subsequently confirmed as approved use by military personnel under a Range Users Agreement with the RMC.
	3.1.18 Requests Planning independently verify that the licence was not further changed or increased in 2010 from that in 2007 and that the licence be monitored three yearly to ensure the licence enables only what was permissible in the 2007 licence in the future as it existed at the date of consent. Further, requests a copy of the licence to verify details.	A copy of current Firearms Registry licence approval (2010/2013) was provided to the respondent by Planning.
	3.1.19 Requests Planning examine register of usage of the 800m range from June, 2010 to June, 2011	Noted.
	3.1.20 Referred to the 2007 licence that significantly increased use of the range	Approved firearms and events detailed in licences over the period 2002 – 2010 did not result in those firearms/events being used on the 800m range. Specifically, what appears to be an increase in use of the range in the 2007 range approval was provision for pistol firearms and events. These have not been used on the 800m range (Refer Attachments A and B). Pistol events are typically held over 10m, 25m and 50m distances. The two pistol clubs associated with the SHRSC Inc presently use other range facilities. The 2007 range approval had little affect on the use of the range.
3.2 Condition of Approval A9 – (Firearm Noise Limits)	3.2.1 Argues that the noise impact from the 800m range has changed since 1985 and is not unchanged as submitted by S&R – based on changes in the range approvals, firearms and events allowed.	This submission is not supported by reference to Attachments A and B and the comments in 3.1.20 above.

Application for Modification	Issue raised in submission	S&R Response
	<p>3.2.2 Respondent suggested that the 'log average' is unique to The Acoustic Group and not supported by the E&H in its 1993 memo.</p>	<p>The reference to the logarithmic average technique being unique to TAG is incorrect. Since the formulation of the guidelines and prior to 1993, the assessment of firearm noise levels was undertaken by reference to the logarithmic average. The internal 1993 advice provided recently by E&H was the first time S&R were aware the arithmetic average method was to be used.</p>
	<p>3.2.3 Argues any increase in permissible noise levels that at residences can be averaged down to 85 will result in an even high[er] level of noise at the National Parks than that measured to date which is dangerous to users of the National Parks. For this reason, will hearing protection be provided to affected users of the National Parks</p>	<p>The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community, environment or wildlife The E&H advise that the assessment and measurement of firearm noise should be undertaken using an arithmetic average method. On this basis, the present limit is not an absolute measure. Hearing protection for users of the national park is not planned.</p>
	<p>3.2.4 Submits that the 800m range cannot continue to be categorised as an existing range due to participation use and more firearms</p>	<p>S&R believe that the present 800m range justifies retention of the existing range classification under the ENCM guideline as it has been in operation for some time before approval was obtained to establish the regional shooting facility.</p>
	<p>3.2.5 ENCM criteria for 85dB restricts to two days per week (assuming a future range).</p>	<p>Correct, noting that the assessment measure would be arithmetic average.</p>
<p>3.3 Condition of Approval D4 – (Acoustic Shelter 800m Firing Point)</p>	<p>3.3.1 Referred to earth mounds that could be used to lessen noise impact – commented that 'funding restrictions' was not a consideration under the EPA Act.</p>	<p>Earth mounds of sufficient height in metres would be required along the full length of the eastern side of the 800m range with intervening entry/exit points configured at each of the eight firing mounds in such a manner to ensure that the mound provided abatement for the full length of the range. This would be a prohibitive and unjustified expenditure of public funds.</p>
	<p>3.3.2 Submits that the purpose of asking for the increase to 85dB is to accommodate the 'new guns' the clubs knew about</p>	<p>Refer to Attachments A and B regarding approved firearms. The 800m range is essentially for bigbore events. These events require firearms that provide the greatest accuracy over longer distances and have discharge dynamics that do not unduly affect accuracy. The most preferred firearm is the .308.. Larger firearms loose accuracy over the longer distances due to recoil and weight.</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>3.3.3 Submits that the barrel size and calibre of a firearm have an impact on noise by a variation of between 20 – 25dB</p>	<p>The results of compliance noise testing to date reveals different dB (L) peak hold measures across the various firearms tested. Dependent upon the type of firearm used and the position at which firing occurs, there can be a difference in the noise levels measured at the residential locations eg. the rimfire testing from the 100m position was inaudible within the Hill Top village and therefore produced peak hold levels less than 60dB. Whereas, centrefire rifles discharged at the 500m position could at times give levels around 80dB. Therefore, firearm types will produce variations in dB (L) peak hold recordings.</p>
	<p>3.3.4 Submits that there should be one noise limit for the entire complex and that should be 75dB</p>	<p>S&R believe that both existing and future range conditions exist within the complex.</p>
	<p>3.3.5 States that Planning needs to be able to satisfy itself as to which noise was emanating from which range.</p>	<p>Agree. Future compliance noise testing regimes will be structured to ensure that firearm discharge levels from the two ranges will be identifiable.</p>
	<p>3.3.6 Submits that the DG, Planning had the appropriate detail from the GHD noise assessment reports to make a recommendation to the Minister to impose a 75dB noise limit, one that would balance the needs of the shooters and the community</p>	<p>The Environmental Assessment Report lodged in 2008 exclusively focussed on the new ranges to be built and correctly identified them as 'future ranges' under the ENCM guideline. The Report noted that no noise assessments in respect of the new ranges were possible at that time and acknowledged that this should occur once they become operational.</p>
	<p>3.3.7 Refers to the 1993 EPA memo re arithmetic average and argues that the logarithmic average is 'unique to Cooper'</p>	<p>Prior to the 1993 EPA internal memo regarding the assessment of firearm noise levels, S&R is advised that a logarithmic average method was applied. The 1993 internal memo was publicly advised for the first time by the E&H in its response to this application.</p>
	<p>3.3.8 Respondent notes they moved to Hill Top in 1998 and noise was 'relatively quiet'. Now cannot move away from the area as house price has depreciated.</p>	<p>The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community, environment or wildlife</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>3.3.9 Submits that the Army sounds 'like cannons and they are not even using the .338 and .50cal yet'. Averaging at 85dB will enable noise at a level of 100dB+ - dangerous to human hearing</p>	<p>The respondents lodged a second submission after receipt of the current Range Approval, noting that there was no provision for the use of the higher calibre firearms mentioned. The earlier inclusion of those firearms was a misunderstanding by the NSW Firearms Registry. At the request of the clubs, the Registry removed them and issued a revised Range Approval. Military use of the range is subject to the same conditions of approval as applies to civilian use. Firearm noise assessment and measurement uses the dB (L) peak hold method.</p>
	<p>3.3.10 Refers to the two clubs who will relocate their activities from the 800m range which is stated as unenforceable.</p>	<p>S&R acknowledge that with the relocation of two rifle clubs to the new 500m range use of the 800m range by the remaining three rifle clubs will continue at the same level as has been approved in the past. The intention of the clubs regarding ranges to be used for their particular shooting disciplines may vary from time to time. However, range use is subject to approved days per week, approved shooting times each day, available firing positions and events conducted.</p>
	<p>3.3.11 Refers to the IRSA/SSAA (Illawarra Branch) membership numbers – assumes 4,150 shooters per annum from these two groups.</p>	<p>Range use is subject to approved days per week, approved shooting times each day, available firing positions and events conducted. Club membership size will not cause an increased use of the 800m range above these factors.</p>
	<p>3.3.12 Submits that participant use on the 800m range will reduce to 3,000 shooters per year.</p>	<p>Noted.</p>
	<p>3.3.13 Referred to current range calendar for those two clubs.</p>	<p>Noted.</p>
	<p>3.3.14 Stated that there is no ability to monitor or enforce club's use of any range or firing point unless written into the consent.</p>	<p>Condition of Approval D2 (a) requires monitoring of range use. S&R will oversight this aspect of the condition, including requirements in the occupancy arrangement for the SHRSC Inc. Range approvals and requirements under firearm regulations govern operation of the range.</p>
	<p>3.3.15 Submits that movement of these two clubs is irrelevant and misleading and may result in more use of the range and the 800m firing point by other users than was previously undertaken by those two clubs</p>	<p>There will be additional time/spaces on the 800m range when two of the rifle clubs move substantially to use the 500m range. Use of the range is restricted by approved hours per day and days per week, subject to specific approvals by Planning for 'special events'.</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>3.3.16 Contests the claim that competitions at the 800m firing point are for one club only and that use will only occur every eight weeks</p>	<p>Three rifle clubs will primarily continue to use the 800m range after the 500m range commences. They rotate shooting events over a given period. Firing from the 800m mound would normally only occur during the sixth week of the event cycle. That could vary over a longer time period, depending on how events are to be scheduled.</p>
	<p>3.3.17 Comments on the proposed relocation of where noise measuring equipment is placed and of identifying an 'equivalent location'.</p>	<p>The issue of 'equivalent location' in the modification application refers specifically to the rural homestead to the west of the range. The location used by TAG during testing was of an equivalent location to that required pursuant to compliance noise testing under the conditions of approval without entering the property. Its location did not prejudice the subsequent noise monitoring. All locations to be used in future compliance noise testing will be formalised with Planning.</p>
	<p>3.3.18 Submits that testing to date has been 'haphazard' – The Acoustic Group placed receivers in locations that were buffered by residences and bushland instead of placing them at the most affected boundary within 30m of the residences (Rocky Waterhole Road and Starlight Place)</p>	<p>Compliance noise testing by TAG has been undertaken in accordance with instructions from S&R. Measuring locations have, in the main, been consistent with the earlier GHD locations and utilised locations in the public domain (not trespassing on private property) that permits monitoring at any time without advice to any party (as did on one occasion by TAG). TAG identified confusion with GHD identification of Starlight Place. Location A4 was significantly removed from a position 30m from the residence, hence location A4A. The appropriate locations for future noise testing will be identified by GPS means and provided to Planning. TAG refute that the placement of measuring devices at certain locations allowed firearm noise levels to be affected by residences or bushland.</p>
	<p>3.3.19 Offers for the HTRAG to provide liaison between acoustic contractor and residences to gain access during noise testing.</p>	<p>There is no requirement to enter properties to satisfy condition A9, other than the situation with the property to the north-west of the range. This situation is dealt with separately within the application. The actual location at which the measuring device was placed in respect to this property did not prejudice an accurate measurement and could reasonably be used in future compliance noise testing.</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>3.3.20 HTRAG seeks independent monitoring rights and/or to the local council/Planning re use of appropriate guns in compliance testing and placement of receptors due to earlier non-compliance.</p> <p>3.3.21 Argues against there being any avenue for S&R or the acoustic contractor nominating an 'equivalent' location.</p>	<p>S&R do not accept the submission that compliance firearm noise testing has been 'non-compliant'. Future compliance noise assessment criteria will be incorporated in procurement documentation for the appointment of a noise consultant.</p> <p>This proposal relates solely to the residence to the north-west of the property where placement of the measuring device according to the condition requires approval to access the property. The location of residential boundary measuring points will be confirmed with Planning for future compliance noise testing.</p>
	<p>3.3.22 Requires continuation of compliance noise testing on the 800m range</p>	<p>The condition requires continued compliance noise assessment of the 800m range. S&R will seek to coordinate compliance noise testing for both the 800m and 500m over the same testing period. This will require liaison between S&R, the RMC and the contracted acoustic tester.</p>
<p>3.4 Condition of Approval A6 (d) – (Acoustic Noise Monitoring 800m Range)</p>	<p>3.4.1 Supports change of reporting period</p>	<p>Noted.</p>

SOUTHERN HIGHLANDS REGIONAL SHOOTING COMPLEX, HILL TOP
Responses to public submissions in respect to modification application to vary conditions of approval
A9, A6 and D4

Respondent:

Ray and Narelle Collins

Application for Modification	Issue raised in submission	S&R Response
3.5 General	3.5.1 Application for modification to the Application is being made through the current Minister. Shouldn't this be done through Local Council?	S&R are informed that the application was correctly lodged with the Minister for Planning for development approval under Section 75W of the Environmental Assessment and Planning Act.
	3.5.2 Auditor should not only be qualified but fully independent of proponent, shooters or any other interest groups	Noted.
	3.5.3 Users of the range should be responsible for payment of the request fee for modification	S&R was the correct applicant pursuant to Determination of Major Project (06-0232) issued on 1 March, 2010.
	3.5.4 Frequency of testing should be increased due to discrepancies in levels experienced in previous testing settings	The current compliance noise testing regime under condition A9 is a significant and ongoing obligation imposed on S&R. The current regime will provide regularity in the reporting of noise levels from the two ranges and there is no justification to increase testing frequencies.
	3.5.5 The Acoustic Group have not taken on-site testing	TAG's measurements were taken at locations immediately adjacent to the 800m range (on site) in the Transgrid easement and at other locations in Hill Top that satisfy the closest residential boundaries requirement.

Application for Modification	Issue raised in submission	S&R Response
	<p>3.5.6 The Acoustic Group have worked for the Sporting Shooters Association and as such may be biased and not independent</p>	<p>TAG's engagement was to advise S&R on the earlier GHD noise testing methodology and to conduct separate compliance noise testing of the 800m range and provide a factual report on findings. The subsequent reports provided by TAG fulfilled these requirements. Past involvement with shooting associations did not influence the factual reporting of findings and their implications in terms of the A9 noise limit. TAG provided consulting services to the Sporting Shooters Association some time ago.</p> <p>TAG has provided similar peer reviews and compliance testing of rifle ranges for the Department of Defence and non-shooting bodies, including councils and the NSW Government (2000 Games). S&R understand TAG provided professional consulting advice under a normal contractual arrangement. No employee/employer relationship existed.</p> <p>Other than the Kiama-Albion Park Rifle Club, TAG has had no past or current involvement with any individual club related to this venue. No conflict of interest is apparent.</p>
	<p>3.5.7 Proponent has utilised three 'experts' regarding the range and it appears now they have chosen to utilise a consultant who will provide advice in their favour</p>	<p>It is now apparent that earlier noise consultants applied limited experience with measuring and assessing firearm noise, vs general acoustics. The use of dB (L) peak hold and its derivation and application for shooting ranges, requires specialist instrumentation and experience which TAG possesses.</p>
	<p>3.5.8 SHRSC and S&R seem to be ignoring The Acoustic Group's reference to continuing to use the 800m range beyond the 400m firing points 3.5.9 Requests further shooting activities on the 800m range should cease until the possible breach is resolved.</p>	<p>The reported noise levels detailed by TAG at certain firing positions using certain firearms on the 800m range are noted. The present A9 condition does not express how noise assessments are to be undertaken. As advised by the E&H in their recent response to the application, S&R are now aware that the correct interpretation and application of the ENCM guideline in respect to noise assessment is to apply an arithmetic average. Therefore, the present noise limit is not an absolute measure. S&R is advised that when the arithmetic average method is applied and based on the measurements taken there is a low probability that a breach is occurring.</p>

Application for Modification	Issue raised in submission	S&R Response
<p>3.6 Condition of Approval A9 – (Firearm Noise Limits)</p>	<p>3.6.1 Proposed increase in noise limit is logarithmic and exponential not linear (ie, proposed increase is not just 10dB). It is a significant and intolerable increase, perhaps even a doubling of the noise impacts</p> <p>3.6.2 Believes the initial GHD tests provided an appropriate basis to impose the 75dB limit</p>	<p>There is no correlation of a doubling in loudness for a Linear peak hold measurement to that normally allocated to a dB (A) level.</p> <p>The Environmental Assessment Report lodged in 2008 exclusively focussed on the new ranges to be built and correctly identified them as 'future ranges' under the ENCM guideline. The report noted that no noise measurements in respect to the new ranges were possible at that time and acknowledged that this should occur once they become operational.</p>
	<p>3.6.3 Refers to The Acoustic Group's submissions that as the shooters move closer to the target end of the range, the noise impact on residences is less.</p>	<p>In considering the community reaction to noise from a rifle, the National Acoustical Laboratories conducted a socio-acoustic research study into the Hornsby Rifle Range (NAL Report No. 84 February 1981). The report provided a mathematical formula to derive noise contours that show the direction patterns for rifles. It clearly demonstrated that for a constant firing opposition, the contours showed similar distances to each side of the firing with different noise levels being experienced along the line. The report detailed that when the firing position moved along the range towards the target, the resultant noise level at the measured position will automatically change depending on the relationship of the receiving position to the firing position and the direction of the firearms.</p> <p>In other words, there are different levels of noise attenuation for a fixed received location relevant to different firing positions.</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>3.6.4 Proposes that the suggested use of logarithmic averaging is 'convenient subterfuge' to disguise the fact that the range will not be able to meet noise abatement requirement</p>	<p>The former State Pollution Control Commission guidelines were originally based on a logarithmic average for which persons with experience in rifle range noise measurements would be aware. On this basis, the approval limit is not an absolute measure.</p> <p>The E&H advise that the assessment and measurement of firearm noise should now be undertaken using an arithmetic average method. On this basis, the present limit is not an absolute measure.</p> <p>The use of the 800m range will continue to be similar to past use, in that approved firearms and events will not change. Noise levels will not increase above that experienced at present levels. The limit being sought seeks to permit this current noise level measure.</p>
	<p>3.6.5 Referred to the changes in firearms at the 800m range, plus additional shooters, over the years. Argues that this justifies use of the future range category. Contends that the 800m range should be regarded as a future range and have those noise restrictions applied</p>	<p>There has been no significant change in firearm use on the 800m range (Refer Attachments A and B). S&R believe that the present 800m range justifies retention of the existing range classification under the ENCM guideline as it has been in operation for some time before approval was obtained to establish the regional shooting complex. The Attachments also detail approved firearms and events.</p> <p>Correct and consistent with application.</p>
	<p>3.6.6 The additional shooting ranges are future ranges and the noise limit to be applied to those ranges should be that specified in Chapter 164.</p>	
	<p>3.6.7 Should have three experts take noise measurements (on the same day) at the 800m firing point to determine appropriate noise limits, capturing two data sets (one using firearms used prior to 2007 and the second using current firearms) from each firing point on the 800m range, utilising both arithmetic and logarithmic methodologies. Results would be analysed by an independent body such as the National Acoustics Laboratory</p>	<p>The E&H advise that the assessment and measurement of firearm noise should be undertaken using an arithmetic average method. S&R acknowledge this as the appropriate assessment method for future compliance noise testing.</p> <p>Condition A9 provides an appropriate testing regime and procurement requirements to be undertaken by S&R for the engagement of an acoustic consultant to perform future compliance noise testing will detail the testing methodology to be applied.</p> <p>Testing did include firearms used prior to 2007 as they are the same as used currently.</p>

Application for Modification	Issue raised in submission	S&R Response
	3.6.8 Demands application of a blanket future range noise limit of 71dB(L) peak hold (arithmetic average) at SHRSC	<p>Based on advice from the E&H, the ENMC guideline provides for a firearm noise measurement regime based on recorded noise levels assessed using an arithmetic average methodology. This would permit calculation of noise compliance based on total discharges compared with discharges received and recorded at the closest residential boundaries.</p> <p>The current approval provides a noise limit of 75dB (L) peak hold and, at the time, was considered an appropriate limit based on the initial GHD assessment that recorded the loudest noise around 72dB (L) peak hold. It is now known that GHD underreported the noise level due to flawed assessment protocols.</p>
	3.6.9 Believes that the State Pollution Control Commission guidelines are out of date and noise limits should be dropped by 5dB	S&R notes the advice from E&H that when the POEO Act was enacted, Local Government became the regulators of shooting ranges in NSW. Since this enactment (1997), the E&H has not reviewed Chapter 164 and does not have a current policy on shooting noise. E&H state that Chapter 164 is useful only for dealing with noise from target shooting ranges.
3.7 Condition of Approval A6 (d) – (Acoustic Noise Monitoring 800m Range)	3.7.1 Agrees that an extension of lodgement time for a further 7 days is adequate.	S&R will clarify with Planning compliance noise testing requirements (particularly length). Depending on agreement on the extent of the testing regime, this may permit the lodgement of monitoring results within fourteen days.
3.8 Condition of Approval D4 – (Acoustic Shelter 800m Firing Point)	3.8.1 Why only construct an acoustic shelter at one firing point? Why could the shelter not be portable and transported to each firing point being utilised to abate noise?	The construction of an acoustic shelter at the 800m firing point of sufficient standard and size to effectively capture and retain noise from firearm discharges would be at significant cost and provide only periodic noise abatement given the rotational use of this firing mound. Portable shelters could not be constructed with sufficient acoustic dynamics to have any effective noise abatement impact.
	3.8.2 Earth mounds may be preferable to acoustic shelters and should be investigated	Earth mounds of sufficient height in metres would be required along the full length of the eastern side of the 800m range with intervening entry/exit points configured at each of the firing mounds in such a manner to ensure that the mound provided abatement for the full length of the range. This would be a prohibitive and unjustified expenditure of public funds.

Application for Modification	Issue raised in submission	S&R Response
	3.8.3 Appears that louder firearms are used on the shorter ranges	It is assumed that the reference to 'shorter ranges' is to discharges from the 100m firing mound on the 800m range. The known noisiest firearm is the .308 Winchester rifle (centrefire) used extensively by club members for events over longer distances. Rimfire firearms (less noisier) are typically used over shorter distances.

SOUTHERN HIGHLANDS REGIONAL SHOOTING COMPLEX, HILL TOP
Responses to public submissions in respect to modification application to vary conditions of approval
A9, A6 and D4

Respondent:

Dan Brindle (BBC Consulting Planners) – For and on behalf of the Hill Top Residents Action Group

Application for Modification	Issue raised in submission	S&R Response
3.9	<p>3.9.1 The E&H from Dan Brindle, BBC Consulting Partners initially summarises background to the development and the noise limit and compliance testing.</p> <p>3.9.2 Referred to the Statement of Commitments of the applicant regarding the mitigation measures to be considered to lessen noise impacts above the approved limit (acoustic design, restrictions on use of firearms, restricting certain firearms to specific ranges, monitoring new firearms with a potential to be louder than existing firearms to ensure it does not affect the allowable maximum site usage)</p> <p>3.9.3 Notes that applicant's response to non-compliance with the 75dB limit is to change the limit rather than altering operations to restrict firearms used on the site</p>	<p>Noted.</p> <p>S&R acknowledge the terms of the Statement of Commitment (SoC), noting its application is linked to the point that multiple ranges become operational. The present application is in respect to the existing 800m range. Once the 500m range commences and compliance noise testing is undertaken, provisions of the SoC may be required to be considered at that point and depending on firearm noise levels for the 500m range.</p>
		<p>Noise levels exceeding 75dB (L) peak hold limit were recorded at certain firing positions on the 800m range using certain firearms. As the present A9 condition does not qualify how noise assessment tests are to be undertaken, the limit could be regarded as an absolute measure. E&H has advised that the correct measure should be arithmetic average, which permits discharges above 80db (L) peak hold. S&R and Planning are in discussions relating to this matter, given the proposal to endorse the E&H position regarding use of the arithmetic average method to assess firearm noise levels. S&R accept that the correct interpretation and application of the ENMC guideline is to apply an arithmetic average. Therefore, the present noise limit could reasonably be restated other than as an absolute limit. S&R is advised that, based on the last noise testing on the 800m range, noise levels assessed under an arithmetic average methodology would see the overall result within a 80db (L) peak hold criteria when total discharges are taken into account.</p>

Application for Modification	Issue raised in submission	S&R Response
	3.9.4 Regarding the logarithmic argument, refers to the 1993 EPA memo and use of the arithmetic average	S&R notes the recent E&H advice, made available publicly for the first time during its response to the current application, that the assessment and measurement of firearm noise levels should be undertaken using an arithmetic average method. Therefore, the current noise limit could reasonably be restated as other than an absolute measure.
	3.9.5 Notes that the application contains no assessment of the increase in noise annoyance experienced by residents since the regional shooting complex commenced operations following approval	The use of the 800m range has remained constant since the complex commenced operations following approval.
	3.9.6 Regarding the existing range argument, submits that the nature of use of the 800m range is significantly different to the previous use under the development consent of the local council	The proposal seeks only to regulate noise levels consistent with past use of the site and therefore will not increase the impact on the community, environment or wildlife. Three of the existing rifle clubs who will continue to primarily use the 800m range have been using that range since 1988. This will not result in an increase in use of the range as the range has been utilised to its full extent in terms of days per week and hours per day approvals by the existing five rifle clubs.
	3.9.7 Notes that the range opened after the introduction of Chapter 164 and thus at no time was an existing range	The 800m range was an existing relocated range from Welby to allow construction of the Mittagong by-pass. It is similar to the Liverpool Rifle Club relocation in 1991 due to the proposed Badgerys Creek Airport. The then SPCC under the direction of the then Principal Engineer classified the relocated range as an existing range.
	3.9.8 Notes that Chapter 164 states that alterations to existing ranges should incorporate a movement towards the future range figures whenever possible	Correct.
	3.9.9 Argues the approval allows an intensity of use of the existing range that is significantly different to that under the previous consent	The use of the 800m range has remained constant since the complex commenced operations following approval and this level of activity reflects past operations. Variations in range licence approvals in 2007 did not result in any increased firearm use or activity.
	3.9.10 Prior approval permitted only Saturday/Sunday, with maximum of 96 shooters per month, with limits on events and weapons used	Schedule 4 of the Determination of Major Project (06-0232) dated 1 March 2010 incorporates the earlier council consent conditions for the 800m range. Reference in that Schedule is to 20 annual competitions, 4 of which must be held on a weekend. There is no reference to limits on events and weapons.

Application for Modification	Issue raised in submission	S&R Response
	<p>3.9.11 Submits that the 800m range has gone from a small facility with few clubs/members to a regional complex with many more clubs and members, plus provision for special events and substantial change in firearm use, noting firearms changes granted in 2002, 2005 and 2007</p>	<p>Five rifle clubs (members of the SHRS Inc) have been using the 800m range on a rotational basis since 1988 under very limited access (two days per week from 10:00am – 5:00pm) to a range with only seven target lanes. Once the new 500m range is operational, two rifle clubs will substantially move their events to that range, allowing the remaining three rifle clubs to take over the time slots that had been used by those two clubs.</p> <p>Licensing approvals (firearms/events) have remained constant during that time (Refer Attachments A and B), noting that the apparent significant increase in range use in the 2007 range approval related solely to pistol firearms/events. There is no pistol use of the 800m range and no pistol club presence at the range. In effect, there was no change in range use due to the 2007 range approval.</p>
	<p>3.9.12 Rejects submissions that there have been no complaints lodged regarding noise from the range</p>	<p>Firearm discharges in and around the 800m range arise from both approved use of the range and illegal activity by non-club person/s. There is photographic evidence of indiscriminate firearm discharges causing property damage within the range site. Appropriate reports were made to the local Police by the RMC.</p> <p>Since 2006 when S&R assumed responsibility for the site, few complaints have been received regarding excessive noise levels. The most recent was an inquiry as to use of the range on a Friday, later confirmed to be members of the military under an approved Range User Agreement with the RMC.</p> <p>The RMC and the Southern Highlands Rifle Club (former licence holder) state there have been no formal complaints lodged with them by either the local council or the Nattai Area PWG in respect to excessive noise related to approved use of the 800m range.</p>
	<p>3.9.13 Contends that the 75dB limit derives only from the ENCM and not from the results of the 2007 GHD noise assessment results</p>	<p>S&R believe that the 2007 GHD assessment that the noisiest firearm level on the 800m range was recorded at 72dB(L) peak hold at the nearest residential boundaries (confirmed by Norman Disney and Young) had some bearing on the Minister imposing a 75dB (L) peak hold noise limit in Condition A9.</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>3.9.14 The applicant's submissions that the EA 2008 predicted noise from firearms was less than the actual measure noise is irrelevant to the application of the relevant noise criteria determined in accordance with the ENCM</p>	<p>Refer to 3.9.13.</p>
	<p>3.9.15 States that it is wrong and of no relevance to assert that GHD in 2007 failed to accurately record, measure, identify and report the range of noise levels. What they did was try and predict the noise from a future project were it to be approved.</p>	<p>The earlier council consent for the 800m range imposed no firearm noise limit. It was appropriate when the development application was lodged in 2008 for an assessment to be made of the current level of firearm use and noise to allow the consent authority to determine a noise limit (noting at the time that no assessment of noise from the future ranges was possible and would need to occur in the future). In declaring that the loudest noise recorded at a residential location was 72dB (L) peak hold (using incorrect instrumentation), it provided reasonable grounds for Planning to assume that the limitation granted in A9 would recognise the past use of the range and provide a basis for continued use of the range. The GHD declaration was incorrect in that it underreported what was a louder noise level. The A9 condition in its present expression therefore renders use of the range, based on its past and similar future use, as a breach of the condition under certain usage patterns.</p>
	<p>3.9.16 Referred to the Tonin Report which stated that the noise levels from gun fire are much higher than originally predicted, at least at three of the four locations tested.</p>	<p>Refer to the letter provided by TAG in response to the submission from Renzo Tonin & Associates.</p>
	<p>3.9.17 Rejects submissions that the use of the 800m range would be severely restricted by application of the 75dB limit. Refers to the mitigation measures available in the Statement of Commitments</p>	<p>Based on advice from the E&H regarding the interpretation and application of the ENMC guideline that the noise limit should more correctly be applied using an arithmetic average, then the present maximum firearm noise level emanating from the 800m range would fall within current limit. Mitigation measures arising from the SoC may need to be considered once the 500m range becomes operational and following noise assessment after that event.</p>

Application for Modification	Issue raised in submission	S&R Response
	<p>3.9.18 States that the only grounds to depart from the ENMC guideline would be where the national interest justifies it (eg war time)</p>	<p>S&R understand that the use of logarithmic averaging to assess firearm noise levels was used up to 1993. The E&H has now advised of a 1993 internal staff memo that advised the use of an arithmetic average approach in applying the ENCM guideline to assess firearm noise levels.</p>
	<p>3.9.19 States that the acoustic shelter at the 800m firing point should be retained.</p>	<p>There will be limited noise abatement benefit to the community by the construction of a shelter at the 800m firing point given that the measure only applies to one firing mound which is used on a rotational basis. The firing position is likely to be in use only every 6-8 weeks. The expenditure of significant public funds for a measure that will have limited benefit is not recommended.</p>
	<p>3.9.20 States that there is no justification to delete compliance noise testing on the 800m range.</p>	<p>Deletion of future compliance testing is not proposed in the application. S&R will seek to coordinate compliance noise testing for both the 800m and 500m ranges to reduce costs.</p>

SOUTHERN HIGHLANDS REGIONAL SHOOTING COMPLEX, HILL TOP
Responses to public submissions in respect to modification application to vary conditions of approval
A9, A6 and D4

Respondent:

Renzo Tonin & Associates (prepared for Pikes Lawyers)

Application for Modification	Issue raised in submission	S&R Response
<p>3.10</p>	<p>3.10.1 Extensive technical analysis and critique of previous noise assessments undertaken in respect to the operation of the Southern Highlands Regional Shooting Complex.</p>	<p>The technical and related issues raised comprehensively in the report prepared by Renzo Tonin & Associates are reviewed, analysed and commented on by TAG in the report 'Peer Review – Acoustic Report of Renzo Tonin – Southern Highlands Regional Shooting Complex, Wattle Ridge Road, Hill Top' dated 12 September 2011. S&R believe that the Renzo Tonin & Associates Report fails at a number of points to provide sufficient technical grounds to set aside the acoustic advice findings and recommendations provided by TAG.</p>

SOUTHERN HIGHLANDS REGIONAL SHOOTING COMPLEX, HILL TOP
Responses to public submissions in respect to modification application to vary conditions of approval
A9, A6 and D4

Respondent:

Pikes Lawyers – E&H made for and on behalf of the Hill Top Residents Action Group

Application for Modification	Issue raised in submission	S&R Response
3.11	3.11.1	Is a duplicate of the BBC Consulting submission made for and on behalf of the Hill Top Residents Action Group

SOUTHERN HIGHLANDS REGIONAL SHOOTING COMPLEX, HILL TOP
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Group 4.- Submissions from shooting clubs/members

Respondents:

Sporting Shooters Association of Australia – Illawarra Branch

Application for Modification	Issue raised in submission	S&R Response
4.1 Condition of Approval A9 – (Firearm Noise Limits)	4.1.1 Nil – Application Supported	Noted
4.2 Condition of Approval A6 (d) – (Acoustic Noise Monitoring 800m Range)	4.2.1 Nil – Application Supported	Noted
4.3 Condition of Approval D4 – (Acoustic Shelter 800m Firing Point)	4.3.1 Nil – Application Supported	Noted

SOUTHERN HIGHLANDS REGIONAL SHOOTING COMPLEX, HILL TOP

Survey of Club Utilisation

ATTACHMENT A

(NB. These approvals commence from the date that the NSW Firearms Registry assumed responsibility from the Department of Defence for the licensing of rifle ranges in February 1999, having an ongoing responsibility for licensing of pistol ranges in NSW).

Firearm Registry Range Date/Period Approval and to whom	Approved Firearms, showing maximum permitted calibre	Approved events	Firearms used (showing calibre)	Known noisiest firearm used (showing calibre)	Firearm calibre used in noise monitoring (2007 initial assessment & compliance testing)
10/2/1999 to 9/2/2002 (Approval #407598809 – Southern Highlands Rifle Club)	<ul style="list-style-type: none"> * Centre fire rifle up to 11.50mm (.45) * Black powder firearm of a calibre up to .70 * Shotgun up to 12 gauge using not larger than No. 6 shot * Rim fire rifle of a calibre up to 5.6mm (.22) 	<ul style="list-style-type: none"> * Rim fire metallic silhouette discipline matches * Clay target matches * Three position rifle * Field Rifle * General Target Practice 	<ul style="list-style-type: none"> * Sporting and Target Rifles (0.22 rim fire) * Centre fire Sporting & Target Rifles (0.17 – 0.45) * Full bore Standard Target (0.223 & 0.308) * F Class Target Rifles (0.243) * Service Rifles (0.22 – 0.323 (rim fire and centre fire)) * Black powder (0.45 - 0.65) 	Centre fire field rifle 7.62mm (.308 Winchester)	Not applicable
9/2/2002 to 8/2/2005 (Approval #407598809 – Southern Highlands Rifle Club)	<ul style="list-style-type: none"> * As above 	<ul style="list-style-type: none"> * As above, including Bench rest Matches 	As above	Centre fire field rifle 7.62mm (.308 Winchester)	Not applicable
9/2/2005 to 8/2/2008 (Approval #407598809 – Southern Highlands Rifle Club)	<ul style="list-style-type: none"> * As above, with reduction to maximum No 7 shot (Shotgun) 	<ul style="list-style-type: none"> * As above, but variation re General Target practice (Approved Firearms Only) 	As above, plus 12 gauge shotgun	Centre fire field rifle 7.62mm (.308 Winchester)	Not applicable
28/8/2007 to 27/8/2010 (Approval #409605460 – Southern Highlands Regional Shooting Complex Inc)	<ul style="list-style-type: none"> * Air pistols of a calibre up to 4.5mm (.177) * Black powder M/L pistols of a calibre up to 19.05mm (.75) * Rim fire pistols of a calibre up to 5.6mm (.22) * Centre fire pistols of a calibre 	<ul style="list-style-type: none"> * ISSF Matches * Service Pistol * Rim fire Pistol Metallic Silhouette * Black powder M/L Pistol * Clay Target * Simulated Field and 	As above, except Sporting and Target Rifles – (0.17 – 0.22 rim fire).	Centre fire field rifle 7.62mm (.308 Winchester)	.218 .22 .223 .256 .270 .303 .308

Firearm Registry Range Date/Period Approval and to whom	Approved Firearms, showing maximum permitted calibre	Approved events	Firearms used (showing calibre)	Known noisiest firearm used (showing calibre)	Firearm calibre used in noise monitoring (2007 initial assessment & compliance testing)
	<ul style="list-style-type: none"> up to 11.43mm (.45) * Shotguns up to 12 gauge * Air rifle of a calibre up to 5.6mm (.22) * Rim fire rifle of a calibre up to 5.6mm (.22) * Centre fire rifle of a calibre up to 12.5mm (.50) (Excluding High Calibre, High Capacity Firearms, eg. .338 Lapua Magnums .50 cal BMG etc. * Black powder M/L rifles of a calibre up to 19mm (.75) 	<p>Game Shotgun</p> <ul style="list-style-type: none"> * Rim fire Rifle Metallic Silhouette * Three Position Small bore Rifle * Air Rifle Metallic Silhouette * Three Position Air Rifle * Service Rifle * Full bore/Classification Rifle * Field Class Rifle * F Class Full bore Rifle * Three Position Centre fire Rifle * Lever Action Rifle * Big Game Rifle * Bench Rest Rifle (Approved Firearms Only) * Three Position Black powder M/L Rifle * General Target Practice (Approved Firearms Only) 			<ul style="list-style-type: none"> .310 .323 .357 (pistol) .358 .41 .44 (Black powder pistol) .54 (Black powder rifle) 12/16/20 gauge shotgun NB. Australian Defence Force: .223 & .308 rifles (7.62 x 55, larger barrel)
28/8/2010 to 27/8/2013 (Approval # 409605460 – Southern Highlands Regional Shooting Complex Inc	* As above, but with Centre fire rifle of a calibre up to 12.7mm (.50) – correction to metric calibre	* As above	As above	Centre fire field rifle 7.62mm (.308 Winchester)	Firearms tested from the foregoing list, including .308 rifle, .358 rifle and .54 Black powder rifle