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Julie Mitchell
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Copy by email to Developmentmanagement@wiltshire.gov.uk

12 March 2024

RE: Planning Application PL/2023/11131 – Objection

Dear Ms Mitchell,

Thank you for the opportunity to comment on the applicant's new planning application, after the refusal to grant permission to application 20/07444/FUL.

We note that the application is broadly the same as the previous application, albeit the applicant claims to have addressed the three reasons for refusal given for their first application. We have reviewed the latest application and documents provided by the applicant, and we wish to object to the new application.

Our objection is due to an unacceptable increase in noise. As this is effectively a re-hash of the original application, we include our original objection letters and the independent analysis of the original noise "assessment" as appendices, much of which remains applicable. We would re-iterate similar comments to last time:

Applicability of the noise assessment

- We note that whilst the applicant seeks to run the school between 9am to dusk (or 6pm, whichever is earlier), that the applicant and the noise report compare predicted SNLs to "comparative" background noise assessment undertook on Wednesday 18th and Thursday 19th November 2020. The comparative background noise assessment however does not match the period that would be affected (9am to 6pm) and includes the morning rush hour (7am to 9am). It also was taken on a work day, and not on a Saturday when traffic is lighter and therefore the background noise lower – this seeks to demonstrate a lower increase in noise by the school, than the reality that will occur. It is not unreasonable to assume that the greatest level of shooting activity (including the competitions) will be on a Saturday, and therefore comparative noise measurements should be made against the same day/time window.
- The applicant continues to rely on the wrong methodology to support their application:
    - Theoretical calculations over actual noise survey of fixed locations during a competition (or with similar number of simultaneous guns)
    - Even if theoretical calculations were acceptable, the assessment has continued to:
        - use the wrong ISO standards
        - use 10m contour, over more accurate 1-2m contour levels
        - assume an ISO absorption of 1 based on the ground being "soft"

- The report is inconsistent in presenting data – we note that the attached noise maps (VA3312/NM1) apparently "assumes all traps are in use at the same time" (but does not provide granularity of **predicted** SNL below 60dBA, which is important as 55dBA is considered the threshold) whereas table 6.1 provided immediately after specifies that it is the "Summary of expected noise levels **For Single Guns**" – the applicant therefore has not actually stated what the predicted noise would be for multiple guns at NSR1, our house – the table may mislead the reader into believing that it would only be a maximum of 53dBA. As noted in the report prepared by Acoustic Consultants Limited that we sourced to critically assess the original application, "Noise levels will increase when multiple stands are used simultaneously", which due to the size of the operation will certainly occur (especially on competition days). It is therefore not reasonable to only assess against Single Gun usage.
- A limited noise survey undertaken in July 2022 is referenced, but details are not provided. We note that the gunfire on the day of that assessment was a single gun, and not comparable to the applicant's proposed usage.
- The applicant seeks to have moveable shooting locations and direction. This undermines the noise assessment provided in the application as this is based on a specific potentially favourable arrangement. Should the application proceed, we would ask that fixed shooting locations/directions be enforced that minimise the noise impact at Arundel Farm.

Scope of application

The applicant seeks to gain permission to run the commercial enterprise six days a week (Monday to Saturday) from 9am to dusk (or 6pm whichever is earlier). The applicant would also host approximately 24 competition days a year where it is hoped to attract 100-120 guns to sometimes be run for charity. We note again that CIEH's CTS report states in section 5 that:

> *"where noise levels are measured or predicted to exceed the levels given in Section 6 of this guidance,*
> *then restricting shooting to the following times may provide a suitable remedy:*
> ***i.*** *Mondays to Fridays: 09.00 to 18.00 with a* ***maximum cumulative duration of 4 hours***
> *ii.* *Saturdays: 10.00 to 18.00 with a* ***maximum cumulative duration of 3 hours***
> *iii.* *Sundays: 10.00 to 14.00 with a* ***maximum cumulative duration of 3 hours***
> *On those sites* ***where shooting occurs on more than 28 days within any calendar year*** *it may, in some circumstances, be appropriate to further restrict the times of operation and/or the number of days per week and/or weeks per year that shooting may take place."*
> - *CTS report, Section 5.3*
>
> *"In order to protect noise sensitive areas it is recommended that* ***any 'major event' should not be staged more frequently than once in any 28 day period****. A 'major event' might be a regional, national or international competition, or any other event which might attract in excess of 50% more participants than would normally use the shoot. In such cases, notification to surrounding occupiers of land and to the local authority should be regarded as essential and additional measures to reduce the impact on noise sensitive premises should normally be taken."*
> - *CTS report, Section 5.3*

The competitions that are proposed certainly would constitute a major event when comparing the usual volume expected weekdays to the number of guns expected at the event. 24 times a year, if spread evenly, would equate to an event every 15 days, well in excess of no more than once in any 28 day period. For some context, without any limitations, each participant may fire between 100-200

shots during the competition, so 120 competitors could lead to 12,000 to 24,000 shots over a proposed 6 hour period. This equates to a shot every 0.9-1.8 seconds for six hours, every fortnight.

Whilst we object to the planning application, we would also object to planning consent being provided with the extensive opening hours requested, and the high frequency of major events. If planning permission is granted, we would request that more reasonable days/hours of use and major events is mandated via relevant conditions.

Yours sincerely

Paul Hook **Dr Alison Hook**

Mr. Paul Hook
Arundel Farm,
Allington,
Wiltshire,
SP4 0BT

[redacted]

ACL Reference: 9170/SP
Date: 2nd August 2021

Dear Mr Hook,

20/07444/FUL - Change of use of land to clay pigeon shooting school, stationing of portable office and toilet blocks, use of farmyard as car parking

As requested, we provide our comments in respect to the above noted planning application. The comments below review the Venta Acoustic noise report dated 30 July 2020 submitted with the planning application, and includes references to other documents submitted with the application.

This review has been completed by Stephen Peliza BSc (Bath), MSc (Bristol), CEng, MIOA, MCIBSE who is a Consultant at Acoustic Consultants Limited with over 40 years' experience in noise control including clay target shooting and gun firing range sites.

1. Development Proposals

The proposal currently is to establish a clay pigeon shooting school with fifteen fixed stands as indicated on page three, Insert 2: Revised Layout, of the Kernow Countryside Consultants Limited document dated July 2021 "Noise Management Plan" (NMP), at Beacon Hill Farm. The westward facing the stands are provided with noise bunds, otherwise the stands fire northwards.

The following figures provide the red line site plan and shooting stand location available on the Wiltshire planning website on the date of this letter.

Figure 1: site location red line plan

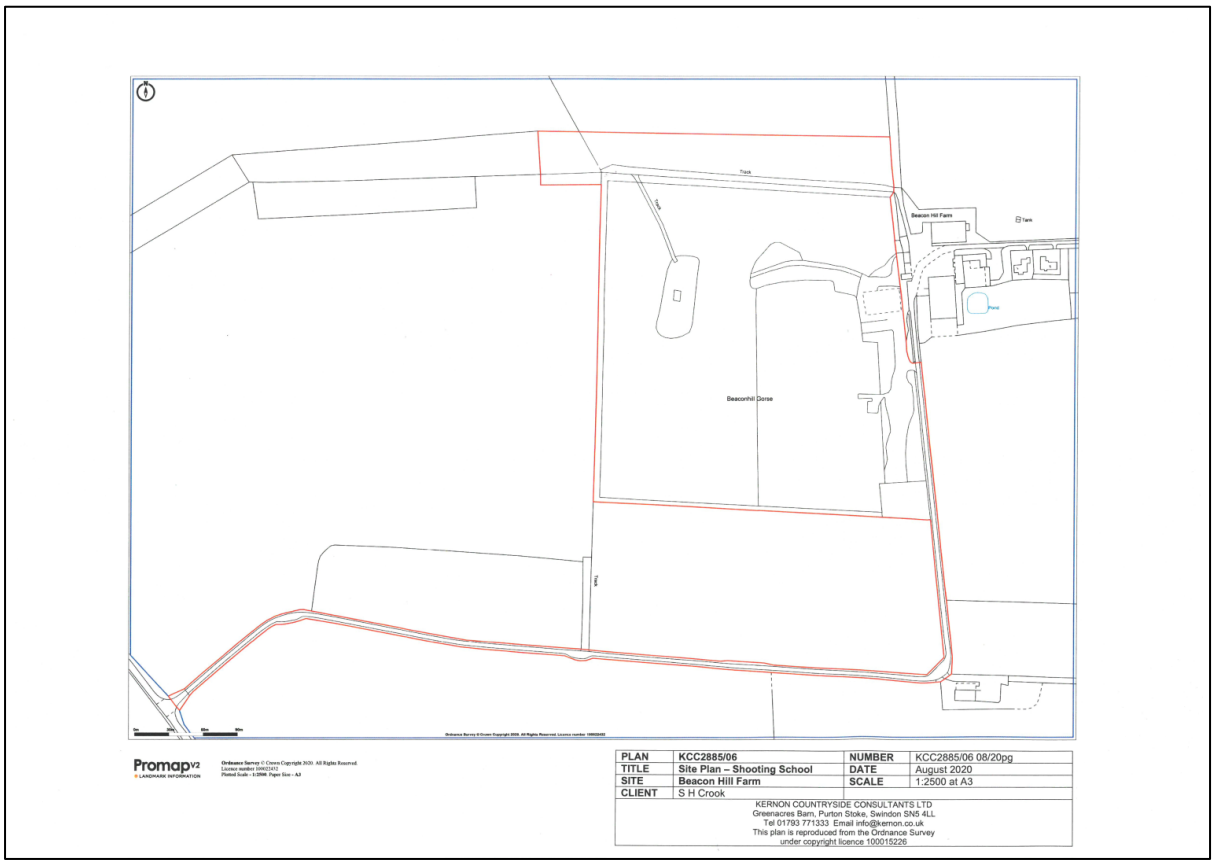
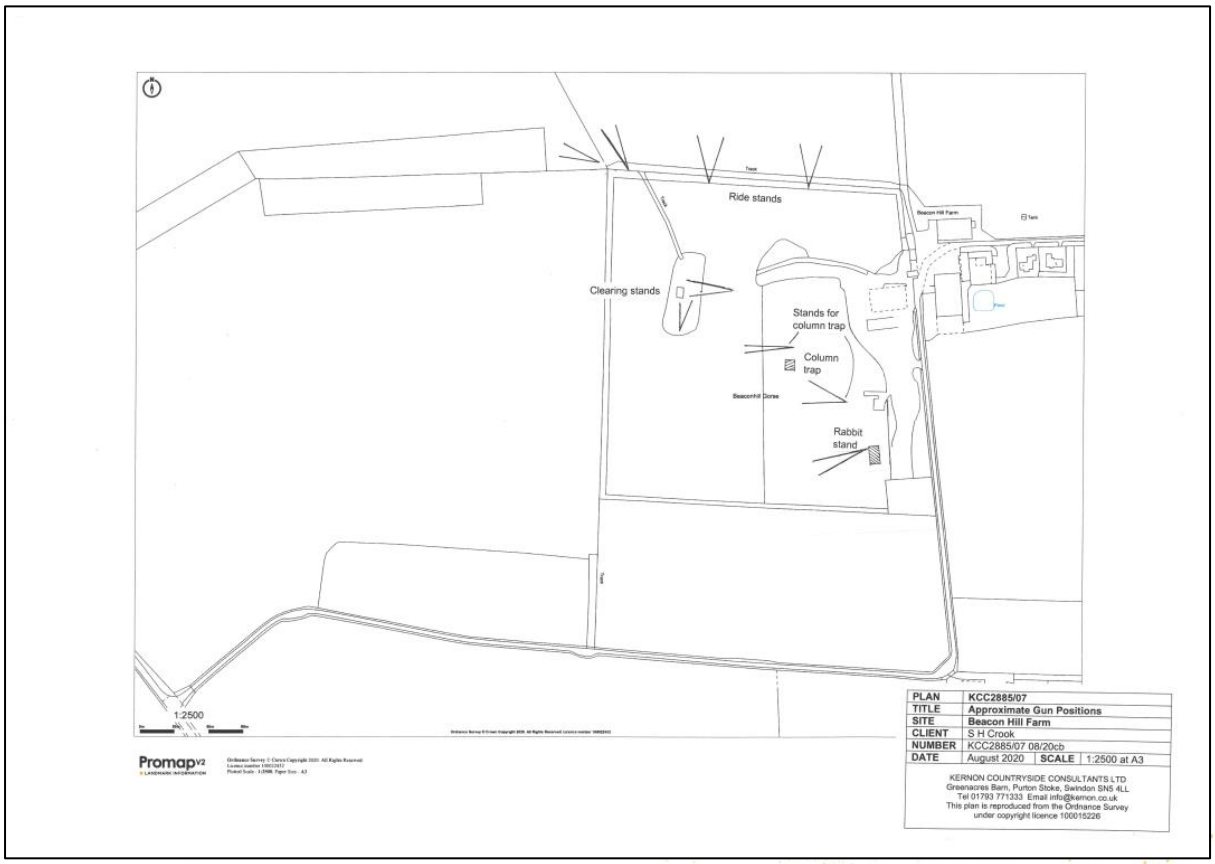


Figure 2: "Approximate gun positions" drawing



According to this NMP there are proposed to be 18 (or 24) charity shoot or open meeting days per year. It states:

"These will be: (i) Open Days, usually one per month, with shooting taking place between 09.00 and 15.00; (ii) Charity shoot events, usually either a morning (09.30 to 14.00) or afternoon (12.30 to 18.00) event, 6 per year. These could be any day of the week."

The demand for the shooting school training is seasonal according to the Kernow Countryside Consultants Limited document dated July 2021 entitled "Further comments regarding noise, hours of use etc". It states;

"Typically January and February are expected to be at about 10% of capacity, with March at about 20% of capacity. Demand then rises from April, building to a peak in September and October at (based on experience from his previous school) about 80% of capacity. November and December is typically circa 60% of capacity until after the Christmas holidays, at which point it falls down to about 10%. 4.4 The school is also shut for about 25 days between October and January."

The proposed hours of use are from 09.00 to 16.00 (November to February), and 09.00 to 18.00 (March to October), from Mondays to Saturdays, with no use on Sundays.

The number of shots fired are given as;

"4.6 In terms of numbers of shots, at 80% capacity in September/October, daily shots fired on weekdays are expected to be about 1,100 – 1,300 (being two people under tuition every hour plus a few people practicing). On Saturdays shot numbers are expected to be 2,000 to a maximum capacity of 2,600 shots. These numbers fall considerably in other months as per the expected level of use described above.

4.7 On Open Days, being one Saturday per month between 09.00 and 15.00, typically 8,000 cartridges will be shot. Entries are taken 09.00 to 14.00, so shooting is finished by 15.00. A few people may practice after this

4.8 On Charity Shoot Days, expected to be 6 days per year, with 25 teams of 4, about 10,000 cartridges will be used between the hours of 09.30 and 14.00, or 12.30 and 18.00 (either a morning or afternoon, but not both together)."

This, at the worst case, can result in 1625 shots daily per shooting school weekday and 2600 shots daily on Saturdays, with 8,000 daily shots on Open Days and 10,000 shots daily on Charity Days.

2. Planning and Noise

National Planning Policy Framework

The National Planning Policy Framework (NPPF) was published in March 2012 and revised in July 2021. Section 15 entitled 'Conserving and enhancing the natural environment' addresses noise as a requirement of planning. Paragraph 174 states:

"174. Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.

Paragraph 185 states:

"185. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life
b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and
c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation. "

The document does not prescribe any assessment methodology or criteria to assess the adverse effect of noise.

Noise Policy Statement for England

The NPPF refers to the Noise Policy Statement for England (NPSE). This was published in March 2010 and aims to provide clarity regarding current policies and practices to enable noise management decisions to be made within the wider context, at the most appropriate level, in a cost-effective manner and in a timely fashion and applies to all forms of noise including environmental noise, neighbour noise and neighbourhood noise.

The NPSE sets out the long-term vision of Government noise policy. This long-term vision is supported by three noise policy aims which are as follows:

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

avoid significant adverse impacts on health and quality of life;
mitigate and minimise adverse impacts on health and quality of life; and
where possible, contribute to the improvement of health and quality of life."

The NPSE introduces the concept of "Significant adverse" and "Adverse" impacts of noise which relate to the noise policy aims. These are applied as follows:

NOEL – No Observed Effect Level - This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

LOAEL – Lowest Observed Adverse Effect Level - This is the level above which adverse effects on health and quality of life can be detected.

SOAEL – Significant Observed Adverse Effect Level - This is the level above which significant adverse effects on health and quality of life occur. With regard to where there is potential for noise impact it states the following in relation to the second noise policy aim:

"The second aim of the NPSE refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development (paragraph 1.8). This does not mean that such adverse effects cannot occur."

The NPSE does not provide any assessment criteria for the noted effect levels and each case must be considered on its own merits. The NPSE does, however, emphasise that in dealing with noise, Local Planning Authorities are required to take a balanced approach in considering the benefits of development against any adverse effects which arise. Paragraph 2.18 of the NPSE is particularly relevant in this respect and states:

"There is a need to integrate consideration of the economic and social benefits of the activity or policy under examination with proper consideration of the adverse environmental effects, including the impact of noise on health and quality of life. This should avoid noise being treated in isolation in any particular situation, i.e. not focusing solely on the noise impact without taking into account other related factors."

The planning need is outside the scope of noise and acoustics and will need to be considered by others.

Planning Practice Guidance, Noise

The Planning Practice Guidance (NPPG) on noise, referred to here, is based on the current version (July 2019) as provided on the Planning Guidance Website. It states that *"Noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment."*

The document provides generic guidance on how to determine the impact of noise and what factors could be a concern. It includes the option types to mitigate any adverse effects of noise stating that there are four broad types of mitigation. These are engineering, layout, using planning conditions or obligations and noise insulation.

Paragraph 5 of the NPPG provides a table identifying the effect level and examples of effect relating to the impact effect levels provided in the NPSE. The table is duplicated below. The table does not provide any objective assessment which equates to the noted effect levels.

Table 1: NPPG Noise – Perception of Effect Levels

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not Present	No Effect	No Observed Effect	No specific measures required
Present and not intrusive	Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g., turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour and/or attitude, e.g., avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g., regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g., auditory and non-auditory	Unacceptable Adverse Effect	Prevent

3. Clay Target Shooting: Guidance on the Control of Noise, Published January 2003

The most relevant guidance on noise from Clay Target shooting is provided within the CIEH "Clay Target Shooting guidance on the control of noise" document published in January 2003. Within section 1 of the introduction the document states:

"The general principles expressed in this guidance will be of relevance at all forms of clay target shooting sites. Whilst following this guidance cannot confer immunity from legal proceedings, compliance may be helpful in demonstrating that the best practicable means has been applied in order to control noise from the activity. The guidance should help in striking an appropriate balance between the rights of those who wish to pursue leisure and sporting interests and the rights of those who seek the peaceful enjoyment of neighbouring land.

This guidance is divided into seven sections with eight appendices. It is intended to be of assistance, for example, in assessing the ways in which the management and pattern of use of a clay target shooting site may be adapted to minimise or prevent intrusive noise. Alternatively, where a new shooting location is being considered, the guidance can be used to determine what practical noise control measures should be applied. Further, it includes a standardised methodology for the measurement of noise from clay target shooting and suggested criteria that will assist with the assessment of the impact of clay target shooting noise at dwellings."

4.4 Directionality

The propagation of sound from a shotgun is directional with the noise "footprint" around a firing point being roughly pear shaped - noise levels in the direction of shooting being much greater than noise levels at the same distance to the sides and rear. Shooting high into the air will also cause a wide dispersion of sound. The propagation of sound from a shotgun is a complex process and simple noise predictions (e.g. based on the inverse square law) can produce erroneous results.

Since the propagation of sound from a shotgun is directional, the general shooting orientation should normally be away from the location of noise sensitive premises. This consideration may have to override any preferred orientation to avoid shooting into the sun. Shooting organisers should use careful selection of shooting positions and orientation in order to minimise impact on noise sensitive premises.

Noise Criteria

Appendix A5.11 entitled 'Setting limits' provides guidance on the factors to be considered when agreeing noise limits from a shoot. It states:

"A5.11 Setting limits

Any limits set will be a matter for local negotiation, but should normally be set according to the following guidelines:

(a) The limit shall take the form of a mean SNL of x dB, not to be exceeded.
(b) x will depend on local circumstances, but would normally be expected to fall somewhere in the range 55 to 65 dB.
(c) Factors that should be considered in selecting x are:

- *the locality and general background noise levels;*
- *on which day(s) of the week shooting occurs;*

- *at which time(s) of day(s) e.g. morning, afternoon, evening;*
- *the intensity of shooting – e.g. number of shooting days per year;*
- *the type of shoot – e.g. 28 day or with planning approval;*
- *the rate of fire.*

Note 1: Planning permission should not normally be granted for a major shoot if the mean SNL exceeds 55dB where the background level is less than 45dB.

Note 2: Individual tuitions that last for no more than a couple of hours in total are generally acceptable up to a maximum SNL of 65dB during weekdays between the hours of 10am to 5pm.

Note 3: SNL values of around 65dB and are likely to evoke a strong adverse community response. The shoot should take active steps to achieve a very significant reduction in mean SNL and/or to make a commensurate reduction in the number of hours that they shoot per week.

Note 4: It would be unusual to consider the levels at premises within the grounds of the shoot."

The definition of a major shoot is as follows:

"A major shoot will have planning permission or is seeking to get it and operate on more than one day a week, have a number of stands, or holds major events."

The application site meets all of the definitions of a major shoot and should be considered such.

Determining the Shot Noise Level

The CIEH guidance states the following regarding measurements to determine the Shot Noise Level of a major shoot.

"A5.9 Calculation of a mean shooting noise level

(a) The mean SNL is the arithmetic average of individual SNL values. The number of individual SNL values to be used, and the shooting conditions they should represent, depends on the specific purpose of the measurements. For example, when assessing a major shoot that has planning permission, a reasonable number of measurements should be made over a period of several months. Alternatively, when measurements are conducted in support of an assertion that there is not a noise problem, it is particularly important that measurements are made with a positive wind vector.

(b) When calculating the mean SNL, one of the procedures below should be followed, as appropriate:

(i) Determine the mean SNL from five separate events for a shoot that has planning permission over a period of several months, or

(ii) Determine the mean SNL from two separate events for a shoot that is operating under "the 28 day rule",

or

(iii) Determine the mean SNL for a shoot that is seeking planning permission. One or two measurements would be appropriate for a small shoot, whilst four or five would be the appropriate number for a major shoot operating on more

that one day a week, having a number of stands, or intending to hold major events."

The guidance does not give an alternative method of calculating the Shot Noise Level other than by measurement.

4. Venta Acoustics Noise Report

The Venta Acoustic noise report dated 30 July 2020 (Report Reference VA3312.200730.NIA) provides noise assessment of proposed noise from the shooting on existing noise sensitive residential development. We provide our comments on the report as follows, with heading taken from the Venta Report.

1. Introduction

The report states that noise survey was not undertaken due to current Covid 19 epidemic affecting road traffic. The epidemic had some impact on traffic noise levels but it would have been possible to carry out a noise survey for indicative information purposes.

In the "Clay Target Shooting: Guidance on the Control of Noise" under, A5.11 Setting limits it states;

"Note 1: Planning permission should not normally be granted for a major shoot if the mean SNL exceeds 55dB where the background level is less than 45dB."

In our experience, we would expect the background noise levels at some of the noise sensitive dwellings to be less than 45 dB(A).

It would have been possible to undertake a noise survey and the absence of this information does not allow a fully informed decision to be made with regard to noise impact.

Variations in road traffic due to the pandemic would not impact on the measured noise levels of shooting noise although these too have not been measured. The pandemic is not a valid excuse for not measuring shot gun noise levels and this is addressed further in our comments. It is our opinion that shooting noise could have been measured and this is essential when determining the noise impact of a Major Shoot.

2. Guidance

The report refers to "Clay Target Shooting: Guidance on the Control of Noise". We agree that this is the most relevant guidance document.

We disagree with the last sentence which states *"Noise impact for this type of activity is therefore difficult predict (SIC) and definitive noise thresholds cannot be applied."*

If Venta consider this document an unsuitable assessment tool, the report does not propose any other more suitable guidance assessment methodology. The guidance in the "Clay Target Shooting: Guidance on the Control of Noise" has been used satisfactorily as an appropriate standard for many years.

5. Noise Propagation Modelling.

Noise modelling of shooting noise has been used in lieu of site measurements. Site monitoring is the only suitable methodology as per the guidance in the "Clay Target Shooting: Guidance on the Control of Noise" and with regard to noise predictions the guidance states "*The propagation of sound from a shotgun is a complex process and simple noise predictions (e.g. based on the inverse square law) can produce erroneous results.*

However, in this section we provide our comments on the modelling option.

The report states that the noise prediction has used the Cadna modelling software which is based on "ISO 9613-2:1996(EN) Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation. ". This specifies an engineering method for calculating the attenuation of sound during propagation outdoors in order to predict the levels of environmental noise at a distance from a variety of sources. However, it is not aimed at addressing impulsive and complex sounds such as those from gunshots.

Instead, the more relevant standard, which is not incorporated into the CadnaA modelling software is "ISO 17201-3:2019, Acoustics — Noise from shooting ranges — Part 3: Sound propagation calculations." This document provides guidance for sound propagation calculation of impulsive sounds from shooting ranges. This document does recommend a complex methodology in which gunfire source data can be adapted for use with ISO 9613-2 to obtain a general survey for the sound exposure levels to be expected in the neighbourhood around shooting ranges. There is no mention of this in the Venta report.

Notwithstanding the above comments, there is insufficient data provided to enable a review of the modelling. This is because there is no data on the "source noise levels" and no information at all on how they have been arrived at. It states simply that "*Source noise levels have been based on sound power levels and sound directivity as measured on other sites. The source data is based on side-by-side shotguns using 28g cartridges"*. Source noise levels can vary significantly when using different cartridges, guns and shooting direction relative to the monitoring location, as well as other factors.

The local terrain data imported into the model uses "*10 m height contours*". We consider that this will not provide adequate prediction accuracy and that 1 or 2 metre contour level should have been used as a minimum.

As such we do not consider the expected mean shotgun noise levels (SNL dB (A)) in Table 5.1 to provide an adequate or reliable prediction accuracy to enable an assessment to be made.

6. Discussion

The most sensitive residential property addressed in the report is Arundel Farm, Allington, Wiltshire. The Venta predictions indicate that the worst case the SNL will exceed the mean SNL of 55 dB(A).

The study does not address the most sensitive residential properties to the east of the site which are about 160 metres away from shooting locations.

The report suggests that mean SNL levels slightly above 55 dB(A) would generally be acceptable because the sound of gunfire from several MOD bases is not necessarily out of context. However, the report does not provide any information on the sound level frequency and duration of the MOD gunfire and provides no data such as a noise survey to support this statement.

7. Mitigation

This section provides generic information on noise barrier options.

It then states that "*The suitability of this would need to be assessed for sight lines etc. required when shooting, and if this were to be investigated, it is recommended that on site tests are undertaken to maximise the potential mitigation available*."

This raises the question which is why did the study not in the first instance include site tests with temporary barriers (such as straw bales) to carry out a reliable assessment following the "Clay Target Shooting: Guidance on the Control of Noise" which would then assist the planning process to make an informed decision.

Furthermore, the section does not definitively determine the required height of these barriers and as this is a permanent feature of the application may require planning consent in its own right.

8. Conclusion

The section states that the predicted shooting noise levels are assessed against the guidance in the Clay Target Shooting: Guidance on the Control of Noise.

However, due to the use of noise prediction rather than measurement, the lack of detail in both the source data and prediction method, and the type of prediction method we would question the reliability and accuracy of the predicted shot noise levels.

5. Summary of Review

We summarise our review of the Venta report as follows;

The review considers that the modelling software used is not suitable to address the impulse gunfire noise and the Venta report does not provide any detailed information on the source noise levels used in the modelling.

The report fails to comment on the intensity of the gunfire which could arise on the site. This is a major issue since the number of daily shots (excluding Sundays) can total between 1,625 and 10,000 events as the worst case.

Th report fails to assess the potentially most sensitive residential properties to the East of the shooting locations.

The report only addresses one stand being in use at a time. Noise levels will increase when multiple stands are used simultaneously.

The report does recommend that site tests be carried out to establish the effect of site layout and noise barriers. It does not, however, follow this methodology in its assessment.

The failure to carry out an environmental site noise monitoring survey is a major omission.

In order to carry out a noise assessment, a noise survey following the guidance of the "Clay Target Shooting: Guidance on the Control of Noise" would be considered a necessary option. This includes measurements of background sound levels and shot noise levels at the noise sensitive receptors.

In conclusion, the study does not provide enough information to enable the planning process to make an informed decision. In our opinion, the report also underestimates the expected impact of the proposed operations.

I trust this is of assistance.

Best Regards

Stephen Peliza BSc (Bath), MSc (Bristol), CEng, MIOA, MCIBSE
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for Acoustic Consultants Ltd



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6 April 2021

RE: Planning Application 20/07444/FUL – Objection

Dear Ms Mitchell,

Further to our original letter of 13 October 2020, we note that the applicant has submitted additional documents to support the planning application.

We have reviewed these documents, in concert with the original plans, and wish to raise/re-raise the following objections.

Acoustic reports/noise management

We note that the applicant recognises that NSR1, our property, would be adversely affected by the application and have proposed some minor changes. However, we still have concerns about the development from a noise perspective and we are not convinced that the acoustics report provides a position from which the application can be objectively judged. We note the following:

Real world vs modelled noise measurements

Venta Acoustics measured real world traffic noise measurements from within the vicinity of our home, measuring LAeq,T on 17 and 18 November, with results of 47 dB between 07:00 – 23:00 and 41 dB between 23:00 (with LA90 44dB between 07:00 – 18:00).

The applicant could have removed some level of ambiguity as to real world noise from shotgun fire, by taking the opportunity to measure noise levels during a test shoot from the same location, to compare against both:

- The modelled results
- Our own real-world measurements of **71.6-80.9 dBA** from the front of our property, and **59.0dBA – 60.3dBA** from the rear of the property during a six round test shoot.

However, the applicant chose not to do so. As such we are asked to rely upon the applicant's theoretical model, which based on our own real world data does not appear a fair reflection of reality and significantly understates the noise pollution to be created.

Model limitations

Per our original letter we believe there are flaws inherent in this model, and for brevity refer you to the following sections of such letter:

- Absorption level of land (A1a)
- Discharge height of guns (A1b) (we note that Kernon now acknowledge in section 4.3 of their noise management plan that the guns would be discharged above ground level at the rabbit stand, but Venta's model is still based on ground level + 1.6m)
- Layout of shoot is not fixed, and the model is calculated on the most favourable layout. (A1c)
- Our actual noise measurements (B1)

Comparison of existing to modelled noise

Venta's updated report states:

"At NSR1, although the sound of gun shots is likely to be less than 5dB above the background for the northern half of stands, noise from the southern stands is predicted to be above the traffic noise levels, in a limited number of instances being more than 10dB above the background noise levels and would be expected to be clearly heard outside of properties."

We note that Venta's real world existing background noise is 44dB between 07:00 to 18:00 hours. Comparing against this, it is clear four of the eight stands will generate at least 11-14dB additional noise, which we would not consider to be "in a limited number of instances".

Additionally, this is not a like-for-like comparison – the proposed shooting hours are 09:00 to 18:00, whereas the comparison is against 07:00 to 18:00 existing road noise, which includes the morning rush hours and per the attached charts in Venta's report can be seen to be higher volume than the remainder of the day. On that basis it is clear that the existing background noise between 09:00 to 18:00 will actually be lower than 44dB. Venta's report therefore underestimates the volume increase.

Days & hours of operation

Whilst we are glad that the applicant has now suggested limited their planning request hours of operation, we note that these would still allow up to 54 hours of shooting each week (9-6, six days a week). Kernon's rebuttal of the MoD's objections, reference seven clay shooting sites in Wiltshire listing their opening hours. We note that at face value, maximum opening hours at comparable sites are all lower than the applicants:

Shoot school	**Opening hours**	**Maximum hours per week**
Barbury Shooting School	9am – 4pm	49
Hugo Vincent Shooting School	10am – 4.45pm	47.25
Hilldrop Shoot	9am – 4pm (April – Sept)	49
Oakwood Shooting Ground	11am – 2pm	21
Urchfont Clay Pigeon Shoot	10am – 12pm	14
Widdington Shoot	10am – 6pm (Thursday-Saturday) 10am – 2pm (Sundays)	28
Woodfarm Clay Shooting	10am – 4pm 10am – 1pm (Sundays)	39

However the opening hours listed in the table (taken from Kernon's rebuttal) appear inaccurate, and mislead as to maximum opening hours of existing sites. Per the websites of the shoots listed:

- Barbury Shooting School limits opening on Saturdays until 3pm, and Sundays and Bank holidays to noon. Actual maximum **44 hours a week**.
- Oakwood Shooting Ground is only open alternate Saturdays – not 7 days a week. Actual maximum **3 hours a fortnight**.
- Urchfont Clay Pigeon Shoot – opening hours are Sunday only, not 7 days a week. Actual maximum **2 hours a week**.
- Woodfarm Clay Shooting – closed Monday, Tuesday, Thursday. Friday (tuition only by arrangement) and Saturday shoots by arrangement. Actual maximum **21 hours a week**.

Kernon's letter of 15 March does now acknowledges paragraph 4.2 of the **Chartered Institute of Environmental Health's ("CIEH") Clay Target Shooting: Guidance on the control of Noise (2003) ["CTS"]** report, but fails to address concerns within section 5 of the same report which we have raised in our letter of 12 October but repeat here to reconfirm our concerns.

> *"where noise levels are measured or predicted to exceed the levels given in Section 6 of this guidance,*
> *then restricting shooting to the following times may provide a suitable remedy:*
> ***i.*** *Mondays to Fridays: 09.00 to 18.00 with a **maximum cumulative duration of 4 hours***
> *ii.* *Saturdays: 10.00 to 18.00 with a **maximum cumulative duration of 3 hours***
> *iii.* *Sundays: 10.00 to 14.00 with a **maximum cumulative duration of 3 hours***
> *On those sites **where shooting occurs on more than 28 days within any calendar year** it may, in some circumstances, be appropriate to further restrict the times of operation and/or the number of days per week and/or weeks per year that shooting may take place."*
>
> - *CTS report, Section 5.3*

Per our letter of 12 October noise levels measured at our property exceeded Section 6 levels significantly.

> *"In order to protect noise sensitive areas it is recommended that **any 'major event' should not be staged more frequently than once in any 28 day period**. A 'major event' might be a regional, national or international competition, or any other event which might attract in excess of 50% more participants than would normally use the shoot. In such cases, notification to surrounding occupiers of land and to the local authority should be regarded as essential and additional measures to reduce the impact on noise sensitive premises should normally be taken."*
>
> - *CTS report, Section 5.3*

> ***"Events would be held 24 times per year**. These would be charity shoot days or competitions. These will take place mostly between April and October (**2 or 3 per month**) with 1 (max 2) per month November to March. These would have shooting hours of 09.30 to 16.30 for the competition, to allow for safety briefings at 09.00 and prize giving 16.30 – 17.30, to be shut by 18.00."*
>
> - *Kernon's Noise Management Plan*

Whilst we object to the planning application in its entirety, we would also object to planning consent being provided with such extensive opening hours and with such high frequency of events, especially

over weekends and public holidays, and would note that comparable shoots have much more limited opening hours.

Summary

In summary, we strongly object to this application for change of use. The change of use would affect our quality of life significantly, with the noise effects of the shots and traps being substantially above that which is acceptable, such that a noise nuisance would certainly be caused.

Yours sincerely

Paul Hook MPhys, Oxon, FCA

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13 October 2020

RE: Planning Application 20/07444/FUL – Objection

Dear Ms Mitchell,

We write to object to the Planning Application for a proposed development of "Change of use of land to clay pigeon shooting school, stationing of portable office and toilet blocks, use of farmyard as car parking", application number 20/07444/FUL

Our home, Arundel Farm, is listed by the Applicant's acoustic consultants, Venta Acoustics ("Venta"), as "NSR 1 (South)" and is purportedly the nearest residential property according to Venta and Kernon Countryside Consultant Limited's ("Kernon") supporting statement.

Our objections all relate to noise pollution and quality of life, however a larger overriding objection to this application is that some of the information provided by the applicant in the application, the acoustic report, and the supporting statement by Kernon contradict each other, contain onerous omissions, or utilise objectionable assumptions to support the application. These issues do not allow any true analysis or understanding of the proposal and their effects on the surrounding area, and the residents. We would therefore request that the planning application committee either reject the application due to these issues, or return the application for clarification on multiple points – we do not believe the application can be approved when there are as many issues with the application as we shall list.

However, based on our own observations we also object to the application as it stands.

We have broken this letter into sections to consider the various concerns the documents submitted with the application have raised:

A – Inconsistencies, inaccuracies & assumptions

1. Venta Acoustic's report – unreasonable assumptions
2. Residential properties 1, 2 & 3 Beacon Hill Farm
3. Kernon's supporting statement – employment

B – Objections based on information provided

- Actual noise levels
- Scope of application and permissions sought

Section A – Inconsistencies, inaccuracies & assumptions

A1 - Venta Acoustics

We note several assumptions made by Venta's report which we dispute to be reasonable. In fact, one of these assumptions is demonstrably at odds with the facts submitted within the application. These assumptions would all appear to benefit the applicant by assuming a best-case scenario for noise reduction. Without access to the full modelling assumptions used, we can only comment on the assumptions noted in the report, most of which are plainly in preference to the purchaser of the report, the applicant, and the one "assumption" which is at odds with the facts submitted in Kernon's supporting document:

a) **Section 5 – *"It is assumed that the land is soft (absorption level of 1 in ISO 9163) between the source and receivers"***

Whilst the land is mainly agricultural, there are hard standings and buildings on site, neither of which would be considered soft for sound transmission. Additionally, soil during the winter can become very hard with frost/ice. Presumably "soft land" would be considered to dampen sound transmission, so leads to a theoretical output of noise which is unlikely to fit the real-world scenario the site would produce.

b) **Section 5 – Paragraph 6 explains that the model has been calculated based on guns being discharged *"…. with a discharge height of 1.6m above ground level*"**

Photos 4 & 5 in the supporting statement by Kernon clearly show that the rabbit stand will be several metres above ground. Estimating the height of the stand based on the person photographed in Photo 4, it would be more reasonable to assume the stand is circa 4m in height, so discharges are envisioned to be made with a height of 5m to 6m above ground.

We note that section 1.4 of Appendix A of Venta's report recognises that noise travels further and with less abatement the further above ground it is, due to the "effective screen height" (or lack thereof). Given that Venta's report concludes that the worst noise pollution would be due to the rabbit stand, but has based their calculations on a discharge height which is factually inaccurate, the report is moot, and doesn't allow for understanding of the true expected noise levels to be suffered.

This demonstrable false "assumption" clearly benefits the applicant by modelling a favourable scenario which just does not exist in fact.

c) **Section 4 notes that the modelling has been based on a particular layout given within the report.**

The report states that *"following initial modelling and advice, the stands have been arranged to avoid guns discharging in the direction of the nearest noise sensitive dwelling to the south at the bottom of a slope. This is considered to minimise the noise impact on the surrounds"*

It is noted that the planning application supporting statement by Kernon states in section 2.8 that the proposed shootings stands and trap mounts, as modelled by Venta, are not permanent and that *"over time, the trap positions will be amended, as that provides variety and helps keep regulars interested. For that reason the application seeks a change of use over the land area, not any fixed trap stands"*

The two statements in concert indicate that Venta's model has been prepared on a best-case scenario optimised to show the minimum noise transmission possible according to the theoretical model, but that the applicant is seeking carte blanche to arrange the shoot as they wish. As an example, it is noted that the rabbit stand has been faced perpendicular to the direction of NSR1 in the model – it can only be conjectured how much higher the SNL decibel rating would be if the applicant were to choose to move the trap further south such that shots were fired towards NSR1, but by Venta's own admission that the current model is based on an optimised solution, it clearly would be higher. This further undermines the validity of the report.

d) Section 6 states that "No stands are predicted to result in sound levels above 65dB(A)"

Unless Venta have modelled all permutations of stand/trap orientations and positions, which by lack of inclusion in the application we have to presume they either have not, or wished not to include them, then it is incorrect of Venta to state in section 6 that "No stands are predicted to result in sound levels above 65dB(A)" – this cannot be stated without the caveat that this is only correct based on the one, optimised, scenario considered, using assumptions of soft ground, and shots being fired at ground level but not on the raised platforms actually to be used.

e) Chartered Institute of Environmental Health's ("CIEH") *Clay Target Shooting: Guidance on the control of Noise (2003)* ["CTS"]

Venta have referenced from CIEH's CTS report when it benefits the applicant, but have neglected various other findings of the report whereby the application appears less favourable.

i. Venta have sought to diminish the noise pollution of the proposal by referencing theoretical daytime traffic noise levels (rather than interestingly actual traffic noise levels, which could easily have been measured at various times of day at the four NSR sites referenced). This is not in line with CIEHs own report which states that in relation to the effects on noise annoyance

"BRE found no effect from background noise in their data"

i.e. the existing road noise is irrelevant to noise disturbance, noise disturbance is not a matter of measuring the increase in decibels from existing noise, but just the mean SNL from the source.

ii. Additionally CIEHs CTS states in section 4.2 that:

*"Where shooting takes place on mainly flat open land in the absence of significant sound reflecting media (e.g. rock faces, major roadways, woodland areas, substantial pools or lakes, large buildings), a noise buffer zone of at least 1.5 kilometres in the general direction of shooting and not less than 1 kilometre in the rearward arc is advisable. Preferably there should be no line of sight between the noise source and any noise sensitive areas. Where substantial topographical features interrupt the line of sight, reduced separation distances may be acceptable. Shooting should nevertheless not normally take place with separation distances of less than 1 kilometre in the direction of shooting except under **very** exceptional circumstances which have been fully discussed **and** agreed with the local authority and any affected residents."*

N.B. the emphasis in the quote is the reports own and not added.

It is noted that affected residents have not agreed, contrary to the reports strongly worded and emphasised advice, and that the applicant has not committed to not firing in the direction of NSR1 which is less than 1km away.

f) **Mitigation in Section 6 – Discussion**

This section attempts to mitigate for the noise created above 55db(A) by referencing the MOD bases in the area. Firstly, whilst there are MOD bases in the area, there are no shooting ranges within 1km of Arundel Farm, unlike the proposal. Secondly, to attempt to conflate the MOD's legitimate need to train military, (which is done further away), with a proposed for-profit-business nearer by is disingenuous. To conclude that *"It is therefore expected that the sound levels … above 55dBA would generally be acceptable"* is specious and optimistic.

In the same section, Venta again attempts to mitigate the additional noise by reference to a significantly lower **consistent** background noise of the A303. However, even ignoring CIEHs CTS report that shows existing background noise is irrelevant, the table in Venta's Appendix A 1.3 notes that the theoretical (and optimistic) low gain they calculated in noise (9dBA increase from 49 to 58) at NSR1 would be detected by a human ear to be "Up to a doubling" of loudness and is considered "significant".

A2 – Residential properties 1, 2 & 3 Beacon Hill Farm

We note that both Venta's acoustic report, and Kernon's supporting statement have neglected to consider the impact of the proposed development on the three residential properties within less than 100m of the site.

Kernon's report briefly dismisses these three residential properties in paragraph 1.1 and paragraph 5.6 stating *"There are three dwellings on the farm owned by the farm and let on short-term arrangements, and therefore they will not be adversely affected because their occupants can expect the noise"*

We do not believe it is sufficient to so lightly dismiss the effects on these three separate council tax registered residential properties and believe that due consideration by the planning committee needs to be given to the effects on the inhabitants there, who over time will change. Therefore the proposal needs to consider the effect on potential future owners/tenants as well as any existing inhabitants. The Supreme Court ruled in *Coventry & Ors. Vs. Lawrence & Anr. (2014) UKSC 13* that an aggrieved resident who moved to a property several years after a stock car and speed racing track had been in operation, still had legal rights, so the applicant should not dismiss future occupants' potential concern on the basis that they *"can expect the noise"*.

Venta's report does not consider these inhabitants or residential properties at all, however looking at the (disputed) noise heat map, it would appear that their calculations show noise levels would lie between 75-80db(A).

A3 – Kernon/Application – employment

Kernon's supporting document contains positive statements regarding future employment due to the proposal to support the application made, that are inconsistent with the application submitted. The document claims in section 4.2.1 that there will be employment benefits due to the change, claiming "*employment benefits:*

- *2 full-time workers;*
- *3 – 4 regular 2 – 3 days per week workers;*
- *up to 6 further periodic workers."*

However Section 18 of the application answers the question "*Are there any existing employees on the site or will the proposed development increase or decrease the number of employees?"* in the negative.

Given the conflicting information, we believe that the planning committee cannot rely on this assertion of benefits to local employment.

Section B – Objections

B1 – Noise levels

As we were not convinced by Venta's theoretical model, we utilised a friend with a shotgun to take half a dozen shots from the proposed location of the rabbit stand (with the applicant's permission) on Thursday 1st October, whilst we measured sound levels using a calibrated sound level meter (±1.5dBA).

We took the readings from two different locations to gauge for our own benefit indicative noise levels we might expect.

The first four readings were taken from the north side of Arundel Farm/NSR1 (least protected) and the readings taken were **80.9dBA, 74.3dBA & 72.1dBA, 71.6dBA**

Two further readings were taken from the south side of the property near to the shelter of the house building, which we perceive to be the most protected outdoor section of the property. These two readings were **60.3dBA and 59.0dBA.**

We measured background sound levels to be circa 48-49dBA.

We note that all readings of discharge noise were above the SNL calculation Venta provided of 58dBA, the ones to the north of the property being between 14 – 23dBA higher than Venta's predictions, and some 23-32 dBA higher than background sound. As previously noted, per Venta's Appendix A s1.3, human perception of sound roughly equates an increase of 10dBA to be a doubling in volume, a 23dBA increase would be perceived as more than quadrupling the volume and is considered "Very substantial", a 32dBA increase would be a perceived as an increase of more than eight times.

The volume of the shots would clearly substantially negatively affect the quality of life we would have at the property.

B2 – Scope of application

The applicant is not attempting to accommodate their neighbours sufficiently. Kernon's supporting document notes that the application would allow for the school to run:

- 7 days a week
- No specified hours of use
- 24 times a year to hold competitions with up to 100-120 guns for a 6 hour period

Referencing against CIEHs CTS report shows that the proposals are well outside of their recommendations contained within section 5:

"In order to protect noise sensitive areas it is recommended that any 'major event' should not be staged more frequently than once in any 28 day period. A 'major event' might be a regional, national or international competition, or any other event which might attract in excess of 50% more participants than would normally use the shoot. In such cases, notification to surrounding occupiers of land and to the local authority should be regarded as essential and additional measures to reduce the impact on noise sensitive premises should normally be taken."

The competitions that are proposed certainly would constitute a major event when comparing the usual volume expected weekdays to the number of guns expected at the event. 24 times a year, if spread evenly, would equate to an event every 15 days, well in excess of no more than once in any 28 day period.

For some context, without any limitations, each participant may fire between 100-200 shots during the competition, so 120 competitors could lead to 12,000 to 24,000 shots over a proposed 6 hour period. This equates to a shot every 0.9-1.8 seconds for six hours, every fortnight.

"where noise levels are measured or predicted to exceed the levels given in Section 6 of this guidance, then restricting shooting to the following times may provide a suitable remedy:

(i) Mondays to Fridays: 09.00 to 18.00 with a maximum cumulative duration of 4 hours
(ii) Saturdays: 10.00 to 18.00 with a maximum cumulative duration of 3 hours
(iii) Sundays: 10.00 to 14.00 with a maximum cumulative duration of 3 hours

On those sites where shooting occurs on more than 28 days within any calendar year it may, in some circumstances, be appropriate to further restrict the times of operation and/or the number of days per week and/or weeks per year that shooting may take place."

Actual noise readings taken show that the volumes will exceed the levels in Section 6 very significantly, and therefore (if approved), operation should be limited to the hours mentioned, with maximum duration of 4 hours weekday and 3 hours weekends.

Summary

In summary, we strongly object to this application for change of use. The change of use would affect our quality of life significantly, with the noise effects of the shots and traps being substantially above that which is acceptable, such that a noise nuisance would certainly be caused.

Yours sincerely

Paul Hook MPhys, Oxon, FCA

Dr Alison Hook BmBCh, Oxon, MRCGP, DRCOG

Appendices

Appendix A – Chartered Institute of Environmental Health – Clay Target Shooting (Jan 2003)

CLAY TARGET SHOOTING

GUIDANCE ON THE CONTROL OF NOISE



Chartered Institute of Environmental Health

Published January 2003

CONTENTS

		Page
	Preface	4
	Foreword	5
1.0	**Introduction**	6
1.1	Limitation in scope	6
2.0	**Planning and nuisance legislation**	7
2.1	Planning control	7
2.2	Statutory nuisance	8
3.0	**Clay target shooting**	9
3.1	Introduction to the sport	9
3.2	Types of shoot	9
3.3	Basic site requirements	9
3.4	Types of clay targets	10
3.5	Traps	10
3.6	Guns	10
	3.6.1 Over-Under	11
	3.6.2 Semi-Automatic	11
	3.6.3 Side-by-Side	11
3.7	Cartridges	11
4.0	**Using site design to minimise noise impact**	12
4.1	Minimum safety zone	12
4.2	Noise buffer zone	12
4.3	Topography	13
4.4	Directionality	13
4.5	Noise sensitive premises and other noise sensitive locations	14
4.6	Prevailing weather conditions	14
4.7	Presence of tree belts	14
5.0	**Using site management to minimise noise impact**	15
5.1	Site information sheet	15
5.2	Liaison with local residents	15
5.3	Restriction on times of operation	15
5.4	Number of shooting stands	16
5.5	Number of entrants	16
5.6	Use of low noise cartridges	16
5.7	Use of noise barriers	17
5.8	Weather conditions	17
6.0	**Noise measurement and assessment**	18
6.1	Measurement and Assessment	18
6.2	Information and Advice	19
	6.2.1 Shooting Associations	19
	6.2.2 Local Authorities	19
	6.2.3 Environmental and Conservation Bodies	19

	Appendices	19
1)	Extracts from the Environmental Protection Act 1990	21
2)	The concept of nuisance	23
3)	Clay target shooting disciplines	26
4)	Example site information sheet	27
5)	Measurement of clay target shooting noise	28
6)	Further information	35
7)	Bibliography	36
8)	Acknowledgements	37

PREFACE

This guidance has been produced by the Chartered Institute of Environmental Health (CIEH) having commissioned the services of the Building Research Establishment Ltd (BRE) to provide editing support and the methodology of measurement. It describes how noise from clay target shooting can occur and provides advice on methods to minimise or prevent annoyance and intrusion. The guidance includes details of a recommended method for the measurement and subsequent assessment of clay target shooting noise produced by BRE and derived from research sponsored by the Department of the Environment (DOE), now the Department for Environment, Food and Rural Affairs (DEFRA).

FOREWORD

The management of the environmental impact of leisure activities is of growing importance, especially in rural areas. Positive actions are required if sustainable development of the countryside is to be achieved. During 1993, in response to growing complaints about noise from clay target shooting, the DOE reviewed the planning legislation applicable to such activities. Subsequently, it decided not to recommend changes but instead encouraged interested parties to develop a voluntary code of practice to control noise. More recently the Office of the Deputy Prime Minister (formerly the DTLR) having undertaken a "consultation on possible changes to the Use Classes Order and temporary uses provisions", has announced no change in those provisions citing existing legislative provision being adequate to deal with problems that arise.

The environmental impact of leisure activities was also examined by the Environment Committee of the House of Commons during the 1994/95 parliamentary session. The Committee felt that the ability of people to enjoy all forms of leisure appropriate to the countryside should not be constrained unless there were pressing reasons for restricting particular activities. It commented that the planning system had an important role to play in minimising any adverse impacts, but acknowledged that the system was not in itself able to counter all pressures which might arise. The Committee felt that the planning system should provide a more positive approach to dealing with difficult activities by encouraging good management practice.

It was against this background that a consultation draft of this document was launched in November 1997. Comments on the consultation draft, and the findings of the BRE research, have been taken into account during the prolonged preparation of this revised guidance note; it now updates and supercedes that consultation draft.

The CIEH, representing the regulators, with technical support from BRE, has produced this guidance in order to help enforcement officers and other interested parties resolve the conflicts that often arise between shoot operators and their neighbours. It is intended that it should provide a basis for discussion and negotiation between all parties on measures that can be taken to control noise from clay target shooting.

The CIEH advocates consultation and discussion with all parties in relation to the control of noise and we believe that this document provides a strong basis for good local decisions to be reached.

Graham Jukes
Chief Executive
Chartered Institute of Environmental Health

January 2003

1. INTRODUCTION

This guidance is intended to be used by those with a regulatory interest in controlling noise from clay target shooting activities principally local authorities. It may also be helpful to clay target shoot operators, owners, managers, those wishing to organise *ad hoc* events and to those with other interests in the sport whether in a professional or recreational capacity.

Two forms of shooting ground or site are typically encountered, namely:

i) those operating regularly by virtue of an express planning permission or established use.
ii) those operating less frequently under the provisions of the Town and Country Planning (General Permitted Development) Order 1995, which, subject to certain constraints, currently permits up to 28 days usage per annum of given land without the need for an application to the Planning Authority. This may include locations used for "one-off" isolated events, such as may be organised for charity purposes.

The general principles expressed in this guidance will be of relevance at all forms of clay target shooting sites. Whilst following this guidance cannot confer immunity from legal proceedings, compliance may be helpful in demonstrating that the best practicable means has been applied in order to control noise from the activity. The guidance should help in striking an appropriate balance between the rights of those who wish to pursue leisure and sporting interests and the rights of those who seek the peaceful enjoyment of neighbouring land.

This guidance is divided into seven sections with eight appendices. It is intended to be of assistance, for example, in assessing the ways in which the management and pattern of use of a clay target shooting site may be adapted to minimise or prevent intrusive noise. Alternatively, where a new shooting location is being considered, the guidance can be used to determine what practical noise control measures should be applied. Further, it includes a standardised methodology for the measurement of noise from clay target shooting and suggested criteria that will assist with the assessment of the impact of clay target shooting noise at dwellings.

1.1 Limitation in scope

The scope of this guidance is limited to clay target (pigeon) shoots. It should not be taken as having any application to other outdoor shooting events or other gun club activities.

Most of the guidance is provided in a general way. This is because local circumstances differ and consequently more or less restrictive controls may be appropriate in certain cases. In particular, where a shooting ground or site has been used for several years without giving rise to complaints, there may be no need for changes. Where specific criteria (e.g. distances, times or noise levels) are given these have been derived from experience and are not intended as precise rules to be routinely applied to every shooting ground or site.

The guidance does not deal with safety issues in detail nor is it intended that it should override any restrictions or requirements that may be imposed under any statutory provisions.

2. PLANNING AND NUISANCE LEGISLATION

In general terms, local authorities have powers and duties that control the use and development of land, or activities, which may be in conflict with other users or which may create a nuisance.

The Town and Country Planning Act 1990, the Town and Country Planning (General Permitted Development) Order 1995, and the Environmental Protection Act 1990 are applicable to clay target shooting and are referred to below.

The general provisions of the Health and Safety At Work etc. Act 1974 are also relevant in relation to the duties and obligations of site operators, owners and users in respect of ensuring the health, safety and welfare of the general public as well as employees and those entering upon shooting grounds.

2.1 Planning control

Planning control is primarily concerned with the type and location of new development and with changes of use or the intensification of use of land. The Town and County Planning Act 1990 defines "development" as being "the carrying out of building, engineering, mining or other operations in, on, over or under land or the making of any material change in the use of any building or other land."

Locally prepared Development Plans provide the main guidance to local authorities in making planning decisions and as such they provide the principal means of reconciling conflicts between development and the protection of the local environment. Development Plan proposals must be subject to a suitable and sufficient environmental appraisal, defined in Planning Policy Guidance Note 12 (PPG12 - DETR) as "the process of identifying, quantifying, weighing-up and reporting on the environmental and other costs and benefits of the measures which are proposed.". Advice on development which may have a noise impact is contained in Planning Policy Guidance Note 24 (PPG24 - DETR).

Currently, clay target shooting may occur on land without the need for express planning permission. The Town and Country Planning (General Permitted Development) Order 1995 allows the activities set out in the table below to take place at up to the specified number of days during any calendar year without formal consent:

Activity	**In SSSIs**	**Elsewhere**
Markets	14 days	14 days
Motor sports	Nil	14 days
Clay target shooting	*Nil*	*28 days*
War games	Nil	28 days
All others (including helicopters)	28 days	28 days

Permitted temporary use of land – the '28 day rule'

A local planning authority can make a direction under Article 4 of the Town and Country Planning (General Permitted Development) Order 1995 withdrawing permitted development rights and requiring a planning application, however Appendix D of Circular 9/95 advises that such rights should be withdrawn only in exceptional circumstances. The circular explains that such action will rarely be justified unless there is reliable evidence to suggest that development is likely to take place which could damage an interest of acknowledged importance and which should therefore be brought within full planning control in the public interest. Any application for planning permission made necessary because of a direction under Article 4 must be considered on its merits in the normal way.

Clay target shooting sites that require planning permission may have quantitative limits on noise emission applied in the form of attached conditions. Planning conditions may also include, for example, restrictions on days and times of use, and may prevent any alterations to the structure, layout and orientation of shooting stands, screens etc. on the site without the prior consent of the planning authority. The guidance in this document may assist with drafting suitable planning conditions.

Irrespective of whether a clay target shooting site has full planning consent or is operating under the '28 day rule' it is possible that any new and permanent works, such as the erection of stands or noise barriers, will require planning permission.

2.2 Statutory nuisance

The Environmental Protection Act 1990 is the principal Act under which noise control will be applied to a shoot. Part III of the Act provides the legal basis for the prevention of the occurrence or recurrence of a statutory noise nuisance by a local authority or by a private individual.

If, in the opinion of the authority, a statutory nuisance exists from the operation of the shoot, the Act requires that a statutory notice be served upon the person responsible. The notice may constrain the operation of the shoot so that a noise nuisance no longer exists. Failure to comply with the requirements of such a notice is a criminal offence and upon conviction individuals are liable to a maximum fine of £5,000. If the shoot is operated as a business, then a maximum fine of £20,000 can be levied though defence of using the 'best practicable means' may be available.

More detailed information on the Environmental Protection Act and the concept of nuisance is provided in Appendix 1 and Appendix 2.

3. CLAY TARGET SHOOTING

3.1 Introduction to the sport

Clay target shooting is the sport of shooting at flying targets, known as clay pigeons or clay targets, with a shotgun. The terminology commonly used by shooters often relates to times past, when live pigeon competitions were held. Although such competitions were made illegal in 1921, a target is still called a 'bird', a hit is referred to as a 'kill' and the machine which projects the targets is known as a 'trap'.

Clay target shooting is currently enjoyed by a wide cross-section of the community as a leisure pursuit. It is also a governed and regulated competitive sport. The sport has grown quickly in recent years, under encouragement by the government for rural communities and farmers to diversify. Noise from the sport can cause disturbance and annoyance to others, even at a considerable distance from where shoots take place.

3.2 Types of shoot

In addressing the management of noise from clay target shooting it is essential to have an understanding of the different ways in which the sport may be practised. Different configurations of the sport may create their own problems on a site or require specific remedies.

Clay target shooting has at least 20 different forms of regulated competition called disciplines. These disciplines can be roughly categorised in three main groups: Trap, Skeet and Sporting. Some of the more common clay target shooting disciplines are Down the Line (DTL), English Skeet and English Sporting.

Some of these clay target shooting groups and disciplines are described in more detail in Appendix 3.

3.3 Basic site requirements

As the sport grows in popularity, so the demand for sites and facilities increases. Due to the nature of the sport, clay target shooting sites tend to be located in fairly remote rural areas. The main issues to consider when deciding upon a suitable location are the safety of the public and the potential disturbance from noise.

There will be different requirements for facilities and infrastructure at permanent shoots, temporary sites and special events. However, whatever the nature of the shoot it is essential to consider the effect the activity may have on occupiers of adjacent land.

The minimum area required for a new clay target shooting site is between 2 and 4 hectares (about 5 to 10 acres) with a minimum safety zone of 300 metres in front of the shooting stands in the general direction in which shooting takes place. Within this safety zone there must not be any places to which the public has access such as public highways, footpaths and bridleways, etc. Shooting close to overhead electrical and telecommunication cables must also be avoided.

As a general rule, where there are no other constraints, site operators will prefer shooting to be oriented towards the North to avoid interference from the sun.

The Trap and Skeet disciplines require an area of level ground with clear and unobtrusive backgrounds of uniform nature. The Sporting disciplines are best suited to wooded and undulating terrain and attractive natural features are always desirable, especially water, trees, hills etc.

Typical site facilities may include a shelter and refreshments area (e.g. clubhouse/marquee, etc), toilets, good access for motor vehicles to the site and adequate car parking facilities.

3.4 Types of clay targets

The targets used for the sport are usually in the shape of an inverted saucer made from a mixture of pitch and chalk designed to withstand being thrown from traps at very high speeds but at the same time being easily broken when hit by just a few very small lead alloy pellets shot from a gun.

There are several types of targets which are used for the various disciplines. However, only the standard 110mm target is used in all of the trap and skeet disciplines. Sporting shoots feature the full range of targets (except ZZ) to provide the variety which is the hallmark of the discipline.

The main types of clay targets are described in the figure below.

STANDARD: The most commonly used target of all, must be 110 (± 1) mm overall diameter and 25- 26 mm in thickness.

MIDI: Same saucer shape as the standard but with a diameter of only 90mm.

MINI: As its name indicates, this is like a flying "Aspirin" at only 60mm in diameter and 20mm in thickness.

BATTUE: A very thin, flat, wafer of a target of about 100mm diameter which flies very fast and falls off very suddenly.

RABBIT: A standard sized (but thicker) flat target in the shape of a wheel designed to run fast along the ground.

ZZ (HELICE): This is a plastic, standard sized target attached to the centre of a 2-blade propeller of different colour designed to zig-zag in flight in a totally unpredictable manner.

Types of clay targets

3.5 Traps

These are purpose made, spring loaded devices specially designed to launch the different types of targets through distances of up to 100 metres. They vary from the very simple, hand cocked, hand loaded and hand released types to the highly sophisticated, fully automatic variety which can hold up to 400 targets in their own magazine and are electrically operated and released by remote control, either by the pressing of a button or by an acoustic system activated by the shooter's voice. Target speeds and trajectories can be easily modified and varied to suit the discipline or type of shooting required.

3.6 Guns

A shotgun, as defined by law, is a smooth barrelled gun, not being an airgun, with a barrel length of 24 inches or more and not exceeding 2 inches in diameter. For formalised clay target events, the maximum permitted bore of shotguns is 12, equivalent to 0.729 inches (18.5 mm). Barrel lengths vary from 26 to 32 inches.

Any type of gun of up to 12 gauge is capable of being used to shoot clay targets but there are three main types of shotgun which are suitable for clay shooting as described below.

3.6.1 Over-Under

By far the most popular used by regular participants in the sport, this gun has its two barrels one above the other, usually with just a single trigger which can be selected to fire either barrel first. Within this type there are three sub-groups of specification i.e. trap, skeet and sporting. Trap guns are generally heavier and longer barrelled (normally 30" or 32") designed to shoot slightly above the point of aim. Skeet guns are usually lighter and faster handling with barrel length from 26" to 28", while Sporting models most often come with barrel lengths of 28", 30" and 32", according to preference.

3.6.2 Semi-Automatic

This is a single barrelled gun capable of firing several rounds in quick succession, but which requires the shooter to press the trigger for each shot. The current shotgun law requires these guns to be limited to a maximum capacity of 3 cartridges. Due to their firing mechanism they are fairly easy to handle and their low recoil makes them particularly popular.

3.6.3 Side-by-Side

The original and traditional game shooting gun, with its barrels placed alongside each other in a horizontal plane, is generally a lighter gun with double triggers. Few side-by-sides are used for clay target-shooting.

3.7 Cartridges

One of the many roles that the governing bodies have to fulfil is the setting of technical rules for the conduct of competitions in the various disciplines under their jurisdiction. These include, amongst many others, defining the technical specifications of the cartridges to be used. Cartridges may have differing specifications based on target range, speed and breakability of target.

4. USING SITE LOCATION TO MINIMISE NOISE IMPACT

In order completely to avoid any likelihood of noise annoyance it will be necessary to locate the shoot so that the sound of gun fire, and any other sound associated with the shoot, is inaudible at all noise sensitive premises. Owing to the nature of the sound involved, however, the chances of finding such a location are remote.

The decision on where to locate a shoot will probably be the most important decision taken and therefore should include careful consideration of all the factors involved in order to minimise noise impact. A number of physical factors, including minimum separation distances, local topography, source directionality and the location of any noise sensitive premises should shape this decision. These factors are discussed in this section.

In addition to the physical factors, other factors such as permanency, frequency of use, intensity of use and whether the site is a new site or an existing site will have a bearing on the noise impact of the shoot. These factors are discussed in Section 5.

4.1 Minimum safety zone

Shoot organisers should have a large scale plan (1:10,000) showing the location of all shooting stands and all known public highways, footpaths, bridleways, waterways and other public rights of way in the vicinity. Further advice on the location of public rights of way can normally be obtained from the local authority department (which may be part of the district or county council) responsible for their maintenance and protection.

Organisers should note that the public have a right to use such highways, footpaths, bridleways and waterways unfettered and must ensure the safety of users and must avoid any likelihood of falling shot or clays becoming a danger to the public.

No shooting should take place in the direction of any public right of way (or any building with public access) that is within 300 metres of the shooting position.

In order to warn members of the general public that some shooting noise may be experienced, all footpaths, bridleways, waterways and all other areas or buildings where the public may have access within 1 kilometre radius of the shoot are recommended to have prominent signs displayed by the organisers indicating the existence of the shoot.

4.2 Noise buffer zone

As mentioned above, a minimum safety zone of 300 metres in the general direction of shooting should always be provided for safety reasons. However, a much larger buffer zone will be required to protect noise sensitive premises and other noise sensitive areas.

The size of noise buffer zone required will depend on local circumstances and on the level of shooting noise transmitted to noise sensitive areas. The advice given below is based on experience and is intended to offer practical guidance on the typical size of a noise buffer zone, rather than precise enforceable distances.

Where shooting takes place on mainly flat open land in the absence of significant sound reflecting media (e.g. rock faces, major roadways, woodland areas, substantial pools or lakes, large buildings), a noise buffer zone of at least 1.5 kilometres in the general direction of shooting and not less than 1 kilometre in the rearward arc is advisable. Preferably there should be no line of sight between the noise source and any noise sensitive areas. Where substantial topographical features interrupt the line of sight, reduced separation distances may be acceptable. Shooting should nevertheless not normally take place with separation distances of less than 1 kilometre in the direction of shooting except under very exceptional circumstances which have been fully discussed and agreed with the local authority and any affected residents.

It should also be noted that, under normal circumstances, as the noise buffer zone decreases in size, so the frequency and duration of events may also need to be decreased.

4.3 Topography

Topographical features such as hills, embankments, cuttings and depressions can, on occasion, afford substantial protection against noise due to the physical screening effect they offer and the interruption of line of sight between the noise source and noise sensitive premises. Therefore, where such topographical features are present the siting and orientation of a shooting ground should seek to take advantage of them. Care needs to be taken, however, to ensure that a topographical feature does not worsen the situation. For example, the sound of gunfire can be reflected off acoustically hard surfaces such as rock faces, sides of valleys, lakes, ponds, disused buildings etc., thus increasing noise levels or causing echoes which appear to increase the number of shots being fired. In these circumstances an improvement in the situation may be obtained by shooting away from such topographical features.

Useful sound attenuation can be obtained where shooting takes place below normal ground levels, for example by utilising quarries. However, in such circumstances particular attention will need to be given to the internal features of the quarry to ensure that acoustic echoes are not produced.

When shooting is to take place in the proximity of prominent hills or valleys, an individual assessment of likely sound propagation will normally be required. In these circumstances early discussion with an acoustic consultant is recommended.

4.4 Directionality

The propagation of sound from a shotgun is directional with the noise “footprint” around a firing point being roughly pear shaped - noise levels in the direction of shooting being much greater than noise levels at the same distance to the sides and rear. Shooting high into the air will also cause a wide dispersion of sound. The propagation of sound from a shotgun is a complex process and simple noise predictions (e.g. based on the inverse square law) can produce erroneous results.

Since the propagation of sound from a shotgun is directional, the general shooting orientation should normally be away from the location of noise sensitive premises. This consideration may have to override any preferred orientation to avoid shooting into the sun. Shooting organisers should use careful selection of shooting positions and orientation in order to minimise impact on noise sensitive premises.

4.5 Noise sensitive premises and other noise sensitive locations

Noise sensitive premises typically include residential properties, churches, offices, hospitals, nursing homes, schools, and colleges. The proximity of such noise sensitive premises and any other noise sensitive areas should always be a prime concern when considering suitable site locations.

In addition, farm buildings, particularly those housing young animals, may also be considered to be noise sensitive premises in some situations. The sound of gunfire may be distressing to wild and domestic animals during certain periods (e.g. mares in foal, ewes at lambing). Alternative views have been expressed about whether or not wild birds and animals adjust to the sound of gunfire.

Given the potential sensitivity of wild and domestic animals and birds at sites adjacent to or included within shoot areas, it is advisable that shoot organisers or their representatives discuss with the owner(s) of surrounding land and with wildlife preservation bodies or nature conservation officials the particular times when animals are likely to be unusually sensitive, and arrange for a temporary suspension or reduction in activities as necessary.

4.6 Prevailing weather conditions

Wherever possible, prevailing local atmospheric conditions should be taken into account when determining shoot location and orientation. This is because atmospheric conditions have a major influence on sound propagation and, under certain conditions, can significantly increase distances over which sound are audible.

Prevailing winds in the direction of noise sensitive areas should be an important consideration and certain sites may need to have special restrictions applied for certain wind directions and strengths. If other circumstances permit, it would be advisable to arrange for the general shooting direction to be orientated towards the prevailing wind as this will reduce the total distances over which sound travels.

4.7 Presence of tree belts.

In general trees offer little sound attenuation unless the tree belts are sufficiently deep as to give some sound reduction due to the distance involved. Trees can also be responsible for undesirable echoes and sound scattering effects. If it is felt, in a particular location, that a deep dense belt of trees may offer attenuation, this will require a thorough evaluation over varying weather conditions before final decisions are made and any conditions set.

5. USING SITE MANAGEMENT TO MINIMISE NOISE IMPACT

Good site management can go a long way to alleviating complaints or, better, preventing them from arising in the first place. Shoot organisers are strongly advised to consult with the relevant local authority departments (particularly Environmental Health and Planning departments) before setting up a new shoot and when making changes to an existing shoot. Adjacent local authorities should liase effectively with one another where there is a possibility that the noise may impact across administrative boundaries.

The following paragraphs give examples of ways of using site management to minimise the impact of noise from clay target shooting.

5.1 Site information sheet

Basic information about the operation of the site should be contained in a written document. The document should be made available to the local authority, police and local residents so that if complaints are made or, if it is necessary for the authorities to visit the site, it is clear who they need to speak to in order to deal with issues raised. A copy of the document should always be available on site. An example site information sheet suitable for this purpose is included at Appendix 4.

5.2 Liaison with local residents

It is extremely important that shoot organisers maintain a positive relationship with their immediate neighbours, both landowners and local residents. Many complaints can be avoided simply by keeping neighbours informed of activities on the site. It is also important that having informed residents of plans, they are not changed without good reason. In particular, residents should always be advised as soon as possible, and at least 28 days in advance, of any planned major event.

It is also advisable, where appropriate, that the Clerk of the Parish Council is briefed since residents who want to find out information, particularly in rural communities, are likely to approach the Clerk in the first instance.

5.3 Restriction in times of operation

A restriction in the times of operation of the shoot is a particularly useful control over the noise impact. However, any such restrictions must be justifiable and must take into account the likelihood of excessive noise at noise sensitive premises. It is difficult to give guidance that is applicable to all situations as restrictions may need to vary depending, for example, on the season and upon the frequency and duration of use as well as the level and potential effect of the noise. A restriction in times of operation should always be applied in the light of local circumstances and following consultation between the local authority, the shoot operator and affected persons.

If the shoot is located where there are no noise sensitive premises within approximately 2 kilometres and/or complaints have not been received about a site and are not anticipated, then constraints on shooting times are unnecessary. There may however be ancillary noisy activities connected with the shoot, for example noise associated with motor vehicle access

which may affect noise sensitive premises and which may require separate restrictions even though the shooting noise itself may not cause a problem.

Where justified complaints of noise have been received or are anticipated by the local authority, or where noise levels are measured or predicted to exceed the levels given in Section 6 of this guidance, then restricting shooting to the following times may provide a suitable remedy:

(i) Mondays to Fridays: 09.00 to 18.00 with a maximum cumulative duration of 4 hours

(ii) Saturdays: 10.00 to 18.00 with a maximum cumulative duration of 3 hours

(iii) Sundays: 10.00 to 14.00 with a maximum cumulative duration of 3 hours

On those sites where shooting occurs on more than 28 days within any calendar year it may, in some circumstances, be appropriate to further restrict the times of operation and/or the number of days per week and/or weeks per year that shooting may take place.

Restrictions may also need to be applied on Christmas day, Remembrance Sunday and Bank Holidays, or for other religious or special public days of significance to the community surrounding the shoot.

In order to protect noise sensitive areas it is recommended that any 'major event' should not be staged more frequently than once in any 28 day period. A 'major event' might be a regional, national or international competition, or any other event which might attract in excess of 50% more participants than would normally use the shoot. In such cases, notification to surrounding occupiers of land and to the local authority should be regarded as essential and additional measures to reduce the impact on noise sensitive premises should normally be taken.

5.4 Number of shooting stands.

The number of shooting stands in use at any one time may be a significant factor in the overall shooting noise levels. Restrictions on the number of shooting stands in use at any one time may be necessary to reduce noise impact. Each shoot will need to be individually assessed and stand numbers discussed between the shoot operators and local authority.

5.5 Number of entrants.

Restrictions on the maximum number of entrants or the maximum number of rounds of 25 for each entrant at an event may also be useful in reducing the noise impact. Each shoot will need to be individually assessed and the number of entrants discussed between the shoot operators and local authority.

5.6 Use of low noise cartridges.

Shotgun cartridges available in gunshops are used for clay target shooting. Certain limitations as to the shot size and the weight of the shot load are enforced by the sports controlling bodies for use in events. Different types of cartridge may produce a different noise footprint and restrictions to specific cartridge type may be of use in the control of noise from the shoot. Subsonic 'lower noise' cartridges with observed feet per second velocity of 850 - 1000 are less noisy in the direction of fire than 'game' or 'clay' cartridges. However, competitive shoots does not use subsonic cartridges.

5.7 Use of noise barriers.

On permanent grounds and sites where problems of noise intrusion are experienced, the provision of purpose built noise barriers to redirect, absorb and screen sound may offer a solution. The effectiveness of a barrier will depend upon its length, height, construction mass, sound absorption properties and position relative to the noise source and receptor. When considering the use of a noise barrier, the following general principles apply:

a) Locate barriers as close to the noise source as is possible

b) Barrier structures should have an acoustically "soft" finish (e.g. soil, sand, straw baling, proprietary sound absorption products) on surfaces facing the noise source.

c) The effective height of barriers can be enhanced, for the Sporting disciplines, if the shooting position is located in a trench or dugout whereby gun muzzles project only slightly above ground level.

d) As a working approximation, the length of a barrier should be at least five, and preferably ten, times its height.

e) Individual barriers should preferably be arranged around two or more sides of a given shooting stand to form an enclosure.

f) Where individual barriers or enclosures are utilised on a shooting ground or site, substantial peripheral embankments can provide further useful sound attention.

It should be noted that most permanent noise barriers will normally require planning permission from the Local Authority. Therefore, prior to the provision of any structures or barriers consultations should always be held with the relevant Environmental Health and Planning departments. The performance of any barrier is influenced by the local topography and this will need to be considered when predicting the effect of any barrier or bund. The design and construction of some forms of noise barrier may require specialist advice from an acoustic consultant and an engineer.

5.8 Weather conditions

Local weather conditions can affect the propagation of sound. It has already been stated that prevailing wind direction should be taken into account when determining site location and shoot orientation. Effective site management will also involve responding to the weather conditions on a particular day, for example, a strong wind may elevate noise levels downwind, and a dense hard covering of snow will provide an acoustically "hard" surface which will cause reflection of sound waves and hence raise noise levels.

Where weather conditions on a particular day are so severe as to cause increased noise levels at noise sensitive premises and the layout of the shoot cannot be altered to take this into account, the shoot organiser should give consideration to cancellation of the event.

6. NOISE MEASUREMENT AND ASSESSMENT

6.1 Measurement and Assessment

Measurement and social survey work completed by BRE during 1997 and papers presented at the IOA conference during that year provides a basis for guidance on acceptable noise limits to be applied in the vicinity of residential premises. The guidance measures noise from clay target shooting using the Shooting Noise Level (SNL) index. Both the index and the measurement method are described in more detail in Appendix 5.

The BRE research suggests that there is no fixed shooting noise level at which annoyance starts to occur. Annoyance is less likely to occur at a mean shooting noise level (mean SNL) below 55 dB(A), and highly likely to occur at a mean shooting noise level (mean SNL) above 65dB(A). The likelihood of annoyance at levels within this range will depend upon local circumstances and some of the factors that may need to be considered are given in Appendix 5.

The research work by BRE found that there was a need for further study of the effect of background noise on annoyance due to shooting. BRE found no effect from background noise in their data but most of the measurements were made in situations where the shooting noise levels were well in excess of background. Closer examination of sites with relatively higher background levels is necessary before the role of background noise in relation to annoyance can be better understood.

To quote directly from the research conclusions:

"For a given exposure level, community annoyance was found to vary significantly between shoots, but no particular shoot characteristics or socio-demographic variables were seen to be associated with the degree of annoyance. There is some suggestion in the data that different sensitivities exist in different communities and that this affects annoyance, but the causes of differing sensitivities are not clear.

At shooting noise levels below the mid 50's dB(A) there is little evidence of significant levels of annoyance at any site, whereas for levels in the mid to high 60's, significant annoyance is engendered in a majority of sites. For levels in between however, the extent of the annoyance varies considerably from site to site. Thus a level of, say, 60 dB(A) may be deemed acceptable at one site, but not at another."

It should be stressed that noise 'annoyance' is not the same as noise 'nuisance' and that the assessment of whether the noise experienced at noise sensitive premises is a nuisance will be a judgement based on a number of factors (including those given in Appendix 2). However, the level of noise experienced will usually be an important factor in any assessment of noise nuisance due to clay target shooting and it is intended that the methodology included at Appendix 5 will allow agreement to be reached on setting appropriate noise limits.

6.2 Information and Advice

6.2.1 Shooting Associations

There is a recognised controlling body for the sport in the UK. Clubs which are affiliated to that body are required to abide by conditions pertinent to the good rule and governance of the sport. Such associations publish a wide range of informative leaflets addressing health and safety issues and the provision of site facilities. Information about such bodies can be accessed readily through the internet.

6.2.2 Local Authorities

Local Authorities should be able to provide a wide range of advice and information to shoot organisers to help them to conduct their undertaking within the law and with the minimum of inconvenience to others. This advice is generally available free of charge, but if a charge is payable this will be confirmed in advance.

Local Authorities, usually through their Environmental Health departments, will be able to advise on all matters relating to noise control, food hygiene, sanitation and health and safety. Planning departments will advise on matters relating to planning permission and land use. Information may also be available on conservation and wildlife bodies through Leisure departments or Countryside sections. County or Unitary Councils will be able to advise on highways, footpaths, bridleways etc. The Police should be contacted for advice on firearms licensing.

6.2.3 Environmental and Conservation Bodies

Shoot organisers will be able to obtain considerable information about the area immediately surrounding their shooting ground from local environmental and conservation bodies. They will be able to advise on the sensitivity of the natural environment and any constraints that are placed upon an area because of environmental or conservation considerations.

In the first instance shoot organisers should contact the local branch of the organisation. Where there is no local branch, contact should be made with either the national or regional headquarters.

Further details of useful sources of information are given in Appendix 6.

APPENDICES

APPENDIX 1 - Extracts from the Environmental Protection Act 1990 - Part III Statutory Nuisances Noise

APPENDIX 2 - The Concept of Nuisance

APPENDIX 3 - Clay Target Shooting Disciplines

APPENDIX 4 - Example Site Information Sheet

APPENDIX 5 - Measurement of Clay Target Shooting Noise

APPENDIX 6 - Sporting Environmental and Conservation and Advisory Bodies

APPENDIX 7 - Bibliography

APPENDIX 8 - Acknowledgements

APPENDIX 1

Extracts from the Environmental Protection Act 1990 - Part III/Noise Act 1996 Statutory Nuisances: Noise

Section 79

(1) The following matter constitutes a "statutory nuisance" for this part of the Act -

g noise emitted from premises so as to be prejudicial to health or a nuisance, with the exception of premises occupied on behalf of the Crown for naval, military or air force purposes etc.

(2) and it shall be the duty of every local authority to cause its area to be inspected from time to time to detect any statutory nuisances which ought to be dealt with under section 80 (summary proceedings for statutory nuisances), and where a complaint of a statutory nuisance is made to the local authority by a person living within its area, to take such steps as are reasonably practicable to investigate the complaint.

(7) "noise" includes vibration;

"premises" includes land, and any vessel unless powered by steam reciprocating machinery.

Section 80

(1) Where a local authority is satisfied a nuisance exists, or is likely to occur or recur, in the area of authority, the local authority shall serve a notice ("an abatement notice") imposing all or any of the following requirements -

(a) requiring the abatement of the nuisance or prohibiting or restricting its occurrence or recurrence;

(b) requiring the execution of such works, and the taking of such other steps, as may be necessary for any of those purposes, and the notice shall specify the time or times within which the requirement of the notice are to be complied with.

(2) The Abatement Notice shall be served -

(a) on the person responsible for the nuisance; or

(c) where the person responsible for the nuisance cannot be found or the nuisance has not yet occurred, on the owner or occupier of the premises.

(3) The person served with the notice may appeal against the notice to a Magistrates' Court within the period of twenty one days beginning with the date on which he/she was served with the notice.

(4) If a person on whom an Abatement Notice is served, without reasonable excuse, contravenes or fails to comply with any requirements or prohibition imposed by the notice, he/she shall be guilty of an offence.

(5) Except in a case falling within subsection (6), a person who commits an offence under subsection (4) shall be liable on summary conviction to a fine not exceeding level 5 on the standard scale (£500) together with a further fine of an amount equal up to one tenth of that level for each day on which the offence continues after the conviction.

(6) A person who commits an offence under subsection (4) on industrial, trade or business premises, as defined in section 79 (7), shall be liable on summary conviction to a fine not exceeding £20,000.

(7) In any proceedings for an offence under subsection (4) in respect of a statutory nuisance it shall be a defence to prove that the best practical means, as defined in section 79 (9), were used to prevent, or counteract the effects of, the nuisance.

NOTE: The defence of best practicable means in subsection (7) is only available where the nuisance arises on industrial, trade or business premises.

Section 81

(1) Where more than one person is responsible for a statutory nuisance section 80 shall apply to each of those persons whether or not what any one of them is responsible for would by itself amount to a nuisance.

(2) Where a statutory nuisance which exists or has occurred within the area of a local authority, or which has affected any part of that area, appears to the local authority to be wholly or partly caused by some act or default committed or taking place outside the area, the local authority may act under section 80 as if the act or default were wholly within that area, except that any appeal shall be heard by a Magistrates' Court having jurisdiction where the act or default is alleged to have taken place.

(3) Where an Abatement Notice has not been complied with the local authority may, whether or not they take proceedings for an offence under section 80 (4), abate the nuisance and do whatever may be necessary in execution of the notice.

[Noise Act 1996

Section 10

(7) The power of a local authority …..to abate….a statutory nuisance….includes power to seize and remove any equipment which it appears to the authority….has been used in the emission of the noise in question.

(8) A person who wilfully obstructs any person exercising any powers conferred under….subsection (7) is liable on summary conviction to a fine not exceeding level 3 on the standard scale.

Sch
3 (1) where a person is convicted of a noise offence the court may make….a "forfeiture order"…. .

(4) A forfeiture order operates to deprive the offender of any rights in the equipment to which it relates.]

(4) Any expenses reasonably incurred by a local authority in abating, or preventing the recurrence of; a statutory nuisance under subsection (3) may be recovered by them from the person by whose act or default the nuisance was caused and, if that person is the owner of the premises, from any person who is for the time being the owner thereof; and the court may apportion the expenses between persons whose acts or defaults the nuisance is caused in such manner as the court consider fair and reasonable.

(5) If a local authority is of opinion that proceedings for an offence under section 80 (4) above would afford an inadequate remedy in the case of any statutory nuisance, they may take proceedings in the High Court for the purpose of securing the abatement, prohibition or restriction of the nuisance, and the proceedings shall be maintainable notwithstanding the local authority have suffered no damage from the nuisance.

Section 82

(1) A Magistrates' Court may act under this section on a complaint made by any person on the grounds that he/she is aggrieved by the existence of a statutory nuisance.

(2) If the Magistrates' Court is satisfied that the alleged nuisance exists, or that although abated it is likely to recur on the same premises, the court shall make an order for either or both of the following purposes:-

(a) requiring the defendant to abate the nuisance, within a time specified in the order, and to execute any works necessary for that purpose;
(b) prohibiting a recurrence of the nuisance, and requiring the defendant, within a time specified in the order to execute any works necessary to prevent the recurrence;
and may also impose on the defendant a fine not exceeding level 5 on the standard scale. (£500)

(4) Proceedings for an order under subsection (2) shall be brought -

(a) except in a case falling within (b) or (c) below, against the person responsible for the nuisance;
(c) where the person responsible for the nuisance cannot be found, against the owner or occupier of the premises.

(5) Where more than one person is responsible for a statutory nuisance, subsections (1) to (4) shall apply to each of those persons whether or not what any one of them is responsible for would by itself amount to a nuisance.

(6) Before instituting proceedings for an order under subsection (2) against any person, the person aggrieved by the nuisance shall give to that person such notice in writing of his intention to bring the proceedings as is applicable to proceedings in respect of a nuisance of that description and the notice shall specify the matter complained of.

NOTE: The notice of bringing proceedings in respect of a statutory noise nuisance shall be not less than three days.

(8) A person who, without reasonable excuse, contravenes any requirement or prohibition imposed by an order under subsection (2) shall be guilty of an offence and liable on summary conviction to a fine not exceeding level 5 (£500) on the standard scale together with a further fine of an amount equal to one-tenth of that level for each day on which the offence continues after conviction.

(9) In any proceedings for an offence under subsection (8) in respect of a statutory nuisance it shall be a defence to prove that the best practicable means were used to prevent, or counteract the effect of, the nuisance.

NOTE: The defence of best practicable means under subsection (9) is only available where the nuisance arises on industrial, trade or business premises.

(11) If a person is convicted of an offence under subsection (8), a Magistrates' Court may, after giving the local authority in whose area the nuisance has occurred an opportunity of being heard, direct the authority to do anything which the person convicted was required to do by the order to which the conviction relates.

(12) Where on the hearing of proceedings for an order under subsection (2) it is proved that the alleged nuisance existed at the date of making of the complaint, then, whether or not at the date of the hearing it still exists or is likely to recur, the court shall order the defendant (or defendants in such proportions as appears fair and reasonable) to pay to the person bringing the proceedings such amounts as the court considers reasonably sufficient to compensate him/her for any expenses properly incurred by him/her in the proceedings.

APPENDIX 2

THE CONCEPT OF NUISANCE

For any noise to constitute a statutory nuisance, it must either be likely to cause injury to health or amount to a nuisance at common law.

- "...likely to cause..." means probably likely, not just possibly likely.

- "Health" means disease rather than accidental physical injury.

- nuisances at common law are of two types - public and private nuisances. Public nuisances may at the same time be private nuisances.

- for a nuisance to be a public nuisance, it must, as a matter of fact, affect a sufficient number of people for them to constitute a whole class of the population. Alternatively, it must be so widespread in its range or indiscriminate in its effects that it would be unreasonable to expect any private person to take action to stop it.

- the sort of effect on people which could amount to a public nuisance includes obstruction, inconvenience or offence, provided that, as a matter of fact, it is sufficiently severe.

- nevertheless, a noise not adding measurably to background levels but obtrusive and out of character with the area may amount to a statutory nuisance.

- private nuisances are different; based on the maxim "so use your property as not to injure your neighbour's", they comprise damage arising from some unlawful interference with a person's use of his land. A person affected must therefore have some legal interest in the land, eg. as owner or tenant, and the source of the nuisance must lie outside it.

- distinguish nuisances, which are examples of indirect interference, from trespasses, which involve direct interference.

- nuisances may, but do not necessarily involve negligence.

- its effect aside, the activity giving rise to the nuisance may be quite lawful.

- the interference complained of must be unreasonable and substantial; the law implies a degree of "give-and-take" between neighbours - between the right of one occupier to use his land as he likes and the right of his neighbour to live in peace, nor is it concerned in any event with trifles - the "de minimis" rule. Mere annoyance is probably not enough to constitute a nuisance nor do questions of individual taste or preference come into it.

- as a matter of law, the ordinary use of land is incapable of amounting to a private nuisance.

- what is unreasonable will be a matter of fact, depending on the circumstances. A particular noise at midday may be reasonable yet if repeated at midnight, not be. Some things are inherently noisy but must still be done; where in such circumstances noise is truly inevitable, it will not be unreasonable.

- the consent of the person affected is not to be implied by his "coming to the nuisance" but in the case of an "amenity" nuisance, such as noise, the character of the neighbourhood will be relevant to what is reasonable; "what would be a nuisance in Belgrave Square would not necessarily be so in Bermondsey." This does not hold true, however, where physical damage is caused, for example, by vibration.

- a private nuisance is nevertheless made lawful, twenty years after the person affected became aware of it if he acquiesces to it throughout that period.

- what would otherwise be nuisances, caused inevitably in the course of an activity enabled by statute, will not be so since they will not be unlawful.

- the duration of a noise or its frequency of occurrence if it is intermittent are factors relevant to how substantial an interference is. They will not be conclusive, however; a single occurence may be a nuisance whereas something repeated may still not be.

- abnormal sensitivity on the part of a person or property affected by an alleged nuisance is to be ignored in assessing reasonableness; the standard to be applied is of the notional "ordinary man".

- nuisance is a matter of so-called "strict liability" - the person responsible need not be at fault except if some act of nature is blamed and need not have forseen the consequences of his act etc.

- the intention of the person causing a nuisance is usually irrelevant but malice may turn a reasonable act into an unreasonable one.

- it is not necessary for officers of a local authority to witness an alleged nuisance in order to be satisfied of its existence; the evidence of a third party, if sufficiently cogent, is enough.

- once a local authority is reasonably satisfied that a statutory nuisance exists or is likely to occur or recur, it has a duty to serve an abatement notice on the person(s) believed to be responsible. Strictly, there is no discretion in this, although it will need to keep in mind the “best practicable means” defence where a nuisance relates to industrial, trade or business premises.

- “best practicable means” is interpreted by reference to the following provisions:

  (a) “practicable” means reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to the financial implications;

  (b) the “means” to be employed included the design, installation, maintenance and manner and periods of operation of plant and machinery, and the design, construction and maintenance of buildings and structures;

(c) the test is to apply only so far as compatible with any duty imposed by law;

(d) the test is to apply only so far as compatible with safety and safe working conditions, and with the exigencies of any emergency or unforeseeable circumstances;

- in circumstances where a code of practice under section 71 of the Control of Pollution Act 1974 (noise minimisation) is applicable, regard shall also be had to guidance given in it.

- a person may commit a nuisance as part of a group of persons, even where their own contribution may be insufficient alone.

- statutory notices can be enforced other than by prosecution, i.e. by work in default, but if a local authority decides to go to court it must prove every element of its case beyond reasonable doubt. That does not mean beyond any shred of doubt. Before prosecuting, however, it should consider three things:

  (a) whether there is a likelihood (not a certainty) of success;
  (b) whether the likely penalty justifies it, and
  (c) whether there is a public interest in doing so.

APPENDIX 3

CLAY TARGET SHOOTING DISCIPLINES

Trap

Targets are thrown either as singles or doubles from one or more traps situated some 15m in front of the shooter and generally away from the firing point at varying speeds, angles and elevations. The most common disciplines in this group are: Down-the-Line (DTL), Single Barrel, Double Rise, Automatic Ball Trap (ABT), Olympic Trap, Double Trap and Universal Trench.

Down The Line

Also known as DTL, this is a popular clay shooting discipline. Targets are thrown up to a distance of 45 to 50 metres at a fixed height of approximately 2.75m and with a horizontal 'spread' of up to 22 degrees either side of the centre line. Each competitor shoots at a single target in turn, but without moving from the stand until they have all shot at five targets. Then they all move one place to the right, and continue to do so until they have all completed a standard round of 25 birds. Variations of this discipline are: Single Barrel, Double Rise and Handicap-by-Distance.

Skeet

Skeet is a word of Scandinavian origin, though the discipline originated in America. Targets are thrown in singles and doubles from 2 trap houses situated some 40 metres apart, at opposite ends of a semicircular arc on which there are seven shooting positions. The targets are thrown at set trajectories and speeds. The main discipline in this group are English Skeet, Olympic Skeet and American (NSSA) Skeet.

Sporting

This group contains the English Sporting discipline which has the sport's biggest following. Where the previous two groups only use standard targets, in Sporting there is an infinite variety of stands. Targets are thrown in a great variety of trajectories, angles, speeds, elevations and distances and the discipline was originally devised to simulate live quarry shooting, hence some of the names commonly used on Sporting stands; Springing Teal, Driven Pheasant, Bolting Rabbit, Crossing Pigeon, Dropping Duck, etc. Disciplines in this group include English Sporting, International (FITASC) Sporting, Super Sporting and Compak Sporting.

APPENDIX 4

EXAMPLE SITE INFORMATION SHEET

Site Name …..	
Site Managed by:	Site Owned By:
Club meeting times and yearly staging of events:	In the event of an emergency contact …..
Club Secretary/Chairman: Address: Telephone No:	Ordnance Survey Map/Diagram of Site Boundary
Shooting disciplines available:	
Rules of Membership:	Standard of behaviour required:
Noise reduction requirements:	Person to whom any complaint should be addressed: Address: Telephone No:
Local Police Station Address: Contact Officer:	
Local Environmental Health Department Address: Chief Officer:	
Planning Department Address: Contact Officer: Planning reference (if applicable):	

APPENDIX 5

MEASUREMENT OF CLAY TARGET SHOOTING NOISE

A5.1 Aim

The basic aim of measurement is to obtain a series of shot level readings, each corresponding to successive shots. As far as possible these readings should be unaffected by any other noises occurring during the measurement period. Each shot level (see definitions) should correspond to the maximum A-weighted sound pressure level caused by the shot using time weighting F; or, alternatively, the maximum value caused by the shot in a continuous series of short Leq ($L_{Aeq,\ 100ms}$ or $L_{Aeq,\ 125ms}$) measurements. These methods will generally produce very similar values for a given series of shots. From the shot level readings, the shooting noise level, *SNL*, (see definitions) can be calculated.

A5.2 Measuring equipment

(a) The components of the measurement system shall conform to type 1 of BS EN 60651.
(b) The calibrator shall conform to type 1 of BS 7189.
(c) The complete measurement system shall have traceable calibration to either National or International Standards.
(d) The interval between verification of the complete measurement system shall not exceed two years.
(e) The measurement system shall measure A-weighted and time weighted F instantaneous sound pressure level; or a continuous series of short Leq ($L_{Aeq,\ 100ms}$ or $L_{Aeq,\ 125ms}$) measurements.
(f) Preferably the system shall also be capable of producing a permanent record of the time history of the sound pressure level L_{pA} or $L_{Aeq,\ 100ms}$ or $L_{Aeq,\ 125ms}$ measurements series.

A5.3 Site selection

(a) Measurements should be made out of doors in the vicinity of residential premises on the most exposed aspect and at least 3.5 m from reflecting surfaces other than the ground.
(b) Measurements should normally be made at a height of 1.2 to 1.5 m above ground.
(c) The measurement position(s) should be as near as reasonably practical to the curtilage of the residential premises and be representative of the shooting noise level near the premises.

A5.4 Precautions against interference

(a) Precautions should be taken to avoid potential sources of interference, including:
- wind passing over the diaphragm of the microphone
- rain on the windshield or nearby surfaces
- electrical interference which can be caused in the sound level meter by, for example, power cables, transformers, radio transmitters and mobile phones.

(b) Windshields should always be used, these being generally effective up to windspeeds of 5 m/s. Measurements should not be made during rain or when wind speeds measured at the microphone exceed 5 m/s.

A5.5 Representative measurement periods

3.6.1 For an existing shoot

(a) Measurements shall be made during a regular event or a major event.

Note 1: Each day of a major event can be considered separately
Note 2: If there is weekend shooting it should be included in any assessments.

For a new shoot or a variation to a shoot

(a) Measurements may be made during a regular event, a specially set up event or a test shoot.
(b) The shoot organisers should ensure that conditions (shooting and environmental) during any test shoot are representative of those that would occur during normal operation. The shoot organisers should note that it is in their interest to ensure a representative test shoot as they may be required to ensure similar levels are not exceeded should planning permission be granted.
(c) The type of cartridge, gun, standing position, direction of shooting and the elevation of the muzzle should be representative of the type of shooting that will take place.
(d) The number of shots fired during a test shoot shall exceed 25. For a small shoot 60 shots, and for a major shoot significantly more (160) would not be unreasonable. The shots should be fired within a 30 minute period.
(e) If measurements have been made on a weekday, and the shoot organisers are seeking permission to shoot at the weekends, then this should be taken into consideration.

Note: It is the responsibility of the shoot to set up a realistic test shoot since they may be held to the resulting levels at a later date.

A5.6 Measurement protocol

(a) The measurement duration shall be a continuous 30 minute period during shooting.
(b) A calibrator shall be applied to the microphone of the measurement system before measurement commences. The sensitivity of the measurement system shall be adjusted if required, and the sound pressure level due to the calibrator recorded.
(c) At the end of the measurement period the calibrator shall be re-applied, and if the sensitivity of the system has changed by more than 0.5 dB the measurements shall be discarded.
(d) The measurement system shall be set so that it displays and records the A-weighted, *F* time weighted, instantaneous sound pressure level; or a continuous series of short Leq ($L_{Aeq,\ 100ms}$ or $L_{Aeq,\ 125ms}$) measurements.
(e) If a time history of the level is being recorded, it should be marked/annotated contemporaneously so that the noise of the individual shots can be differentiated from other noise sources.
(f) The wind speed and direction relative to the shoot and measurement locations shall be noted. Use of either an anemometer or the Beaufort wind scale is acceptable.
(g) Any significant change in wind direction should be noted also. Measurements should normally be made with a positive wind vector (see definitions).

Note: In deciding if the noise level is acceptable, it is important that there is a positive wind vector. However, if the noise is unacceptably high with a non-positive wind vector, it will not be acceptable with a positive wind vector.

A5.7 Corrections to recorded levels

(a) At most sites it is inevitable that some recorded levels will correspond to a combination of shot noise and other noises occurring at the same time. It is important to try to correct for the effect of the other noises, to get the best estimate of actual shot levels. All recorded levels can be thought of as equivalent to the logarithmic sum of the actual shot level and the contemporaneous residual noise level (see definitions). Therefore, if the contemporaneous residual noise level can be estimated reasonably well, it can be logarithmically subtracted from the recorded level to get the best estimate of the shot level (see definitions for relevant equation).
(b) If the recorded level exceeds the estimated contemporaneous residual noise level by more than 10 dB, no such subtraction is necessary. If the exceedance is between 6 dB and 10 dB (inclusive), the subtraction is necessary. If the exceedance is less than 6 dB the shot should not be included in any calculation of the shooting noise level (see below), but may still be counted as a recorded shot.
(c) The contemporaneous residual level can often be estimated by inspecting the levels just before and just after the shot in question, and visually interpolating between them to the nearest dB or so. Figures 1 to 3 help illustrate the way contemporaneous residual noise levels need to be taken into account. In Figure 1 the residual noise level is relatively steady and most of the louder shots are unaffected since the recorded levels are more than 10 dB above the residual level. Figure 2 is a time expansion of the first 10 minutes of Figure 1 and clearly shows two double shots marked s6, s7 and s10, s11. Such double shots can be considered as two separate shots if there is more than a 6dB fall in level between the shots. However, a correction to the second shot in the double may be required.
(d) The measurements shown in Figure 3 were made at the same location but with a negative wind vector. The recorded levels are less than 10 dB above a relatively steady residual noise level and so will need to be corrected to obtain the shot levels. In cases where the residual level appears to be relatively steady, it may be appropriate to use an $L_{A90,\ T}$ value (see definitions) calculated over the measurement period as an estimate of it.

Note: Manual readings are only likely to be practical if the sound level meter has a maximum hold facility, however, if manual readings have been made directly from a sound level meter in the absence of any record of the time history, shot levels shall only be obtained where the recorded levels are seen to exceed the residual noise level between shots by more than 10 dB. Manual readings are likely to result in a lower shooting noise level because one or more of the loudest shots may not have been recorded.

A5.8 Calculation of shooting noise level (*SNL*)

(a) The *SNL* is defined as the logarithmic average of the 25 highest shot levels, from the shoot in question, over the 30 minute measurement period. The shot levels will have been obtained from recorded levels corrected where necessary for residual noise.

A5.9 Calculation of a mean shooting noise level

(a) The mean *SNL* is the arithmetic average of individual *SNL* values. The number of individual *SNL* values to be used, and the shooting conditions they should represent, depends on the specific purpose of the measurements. For example, when assessing a major shoot that has planning permission, a reasonable number of measurements should be made over a period of several months. Alternatively, when measurements are conducted in support of an assertion that there is not a noise problem, it is particularly important that measurements are made with a positive wind vector.

(b) When calculating the mean SNL, one of the procedures below should be followed, as appropriate:
(i) Determine the mean *SNL* from five separate events for a shoot that has planning permission over a period of several months, or
(ii) Determine the mean *SNL* from two separate events for a shoot that is operating under "the 28 day rule", or
(iii) Determine the mean *SNL* for a shoot that is seeking planning permission. One or two measurements would be appropriate for a small shoot, whilst four or five would be the appropriate number for a major shoot operating on more that one day a week, having a number of stands, or intending to hold major events.

A5.10 Reporting of Results

The following information should be reported:

(a) Description of shoot.
(b) Measurement time.
(c) Mode of operation.
(d) Location of measurement positions and their relationship to shoot location. This should include details of the microphone height above ground level, the topography of intervening land, and reflecting surfaces such as buildings.
(e) Instrumentation system used including type, manufacturer serial number and verification dates.
(f) Operational test using reference signal or calibrator.
(g) Weather conditions including general wind condition.
(h) Date, day of the week and time of measurement.

A5.11 Setting limits

Any limits set will be a matter for local negotiation, but should normally be set according to the following guidelines:

(a) The limit shall take the form of a mean *SNL* of ***x*** dB, not to be exceeded.
(b) ***x*** will depend on local circumstances, but would normally be expected to fall somewhere in the range 55 to 65 dB.
(c) Factors that should be considered in selecting ***x*** are:
- the locality and general background noise levels;
- on which day(s) of the week shooting occurs;
- at which time(s) of day(s) e.g. morning, afternoon, evening;
- the intensity of shooting – e.g. number of shooting days per year;
- the type of shoot – e.g. 28 day or with planning approval;
- the rate of fire.

Note 1: Planning permission should not normally be granted for a major shoot if the mean *SNL* exceeds 55dB where the background level is less than 45dB.

Note 2: Individual tuitions that last for no more than a couple of hours in total are generally acceptable up to a maximum *SNL* of 65dB during weekdays between the hours of 10am to 5pm.

Note 3: *SNL* values of around 65dB and are likely to evoke a strong adverse community response. The shoot should take active steps to achieve a very significant reduction in mean *SNL* and/or to make a commensurate reduction in the number of hours that they shoot per week.

Note 4: It would be unusual to consider the levels at premises within the grounds of the shoot.

A5.12 Definitions

Shot level L_{shot}
The maximum A-weighted sound pressure level caused by the shot using time weighting F; or, alternatively, the maximum value caused by the shot in a continuous series of short Leq measurements (i.e. $L_{Aeq,\ 100ms}$ or $L_{Aeq,\ 125ms}$). Where the recorded level does not correspond to the shot level because of the effect of other noise sources it is denoted below as L'_{shot}.

The shot level L_{shot} can be obtained from the recorded level L'_{shot} by logarithmically subtracting the contemporaneous residual noise level $L_{A,r}$, according to the equation below.

$$L_{shot} = 10*\lg((10^{\wedge}(L'_{shot}/10))-(10^{\wedge}(L_{A,r}/10)))$$

Residual noise
All noise other than that from the shots being measured.

Contemporaneous residual noise level $L_{A,r}$
The approximate A-weighted sound pressure level of the residual noise occurring at the same time as the shot whose level is to be determined.

Positive wind vector
A positive wind vector occurs when the wind is blowing directly from the shoot towards the measurement site, plus or minus forty-five degrees. For example, if the residential premises are due east of a shoot then measurements made with the wind blowing in the arc between South West and North West have a positive wind vector.

Recorded shot
A recorded shot is one identifiable from a time history record and/or from a set of measurements.

Shooting Noise Level SNL
The logarithmic average of the 25 highest shot levels from the shoot in question, over the 30 minute measurement period, calculated according to the equation below. The shot levels will have been obtained from recorded levels corrected where necessary for residual noise.

$$SNL = 10*\lg(((10^{\wedge}(L_{shot,1}/10)) + (10^{\wedge}(L_{shot,2}/10)) + \ldots.(10^{\wedge}(L_{shot,25}/10)))/25)$$

where $L_{shot,1}$ to $L_{shot,25}$ are the 25 highest shot levels.

Note: It should be clearly understood that the *SNL* is not equivalent to an $L_{Aeq,\ 30minute}$

$L_{A90,T}$
The A-weighted sound pressure level of the noise at the measurement position that is exceeded for 90% of a given time interval, *T* (usually 30 minutes), measured using a time weighting F.

Major shoot
A major shoot will have planning permission or is seeking to get it and operate on more that one day a week, have a number of stands, or holds major events.

Major event
A major event would typically consist of a regional, national or international competition, or a sponsored or other event that may attract in excess of 50% more participants than would normally use the shoot.

A5.13 Example calculations

i. Example calculation of Shooting Noise Level

This example shows the calculation of the SNL and the mean SNL in a situation where the shots are more than 10 dB over the contemporaneous residual level.

Reference number of shot	Recorded shot level L'_{shot}	Recorded shot levels L'_{shot} sorted in descending order	Shot level L_{shot}	10^(L_{shot} /10)
	(dB)	(dB)	(dB)	
1	63.4	70.7	70.7	11748976
2	61.9	70.2	70.2	10471285
3	64.6	69.4	69.4	8709636
4	61.0	68.3	68.3	6760830
5	61.0	68.1	68.1	6456542
6	68.3	67.4	67.4	5495409
7	69.4	67.3	67.3	5370318
8	60.4	67.2	67.2	5248075
9	63.5	67.2	67.2	5248075
10	66.9	66.9	66.9	4897788
11	67.2	65.8	65.8	3801894
12	63.9	65.7	65.7	3715352
13	62.9	64.7	64.7	2951209
14	64.7	64.6	64.6	2884032
15	65.7	64.3	64.3	2691535
16	68.1	63.9	63.9	2454709
17	67.2	63.5	63.5	2238721
18	62.4	63.5	63.5	2238721
19	63.5	63.4	63.4	2187762
20	62.3	63.4	63.4	2187762
21	61.3	62.9	62.9	1949845
22	62.0	62.4	62.4	1737801
23	65.8	62.3	62.3	1698244
24	60.8	62	62	1584893
25	67.4	61.9	61.9	1548817
26	60.6			
27	70.2			
28	70.7			
29	64.3			
30	67.3			
31	63.4			

Table 1 Example of calculation of SNL

Table 1 shows the 31 marked shots in Figure 1. In this example all the shots are more than 10 dB over the contemporaneous residual level; consequently the shot levels and recorded shot levels are the same.

The *SNL* is the logarithmic average of the 25 highest shot levels and equals 66.3 dB.

If, for example, the *SNL* calculated in the same way on four other occasions was, 63.8, 67.3, 62.9 and 65.4 then the mean Shooting Noise Level (mean SNL) would be the arithmetic average of these five SNLs and would equal 65.1 dB.

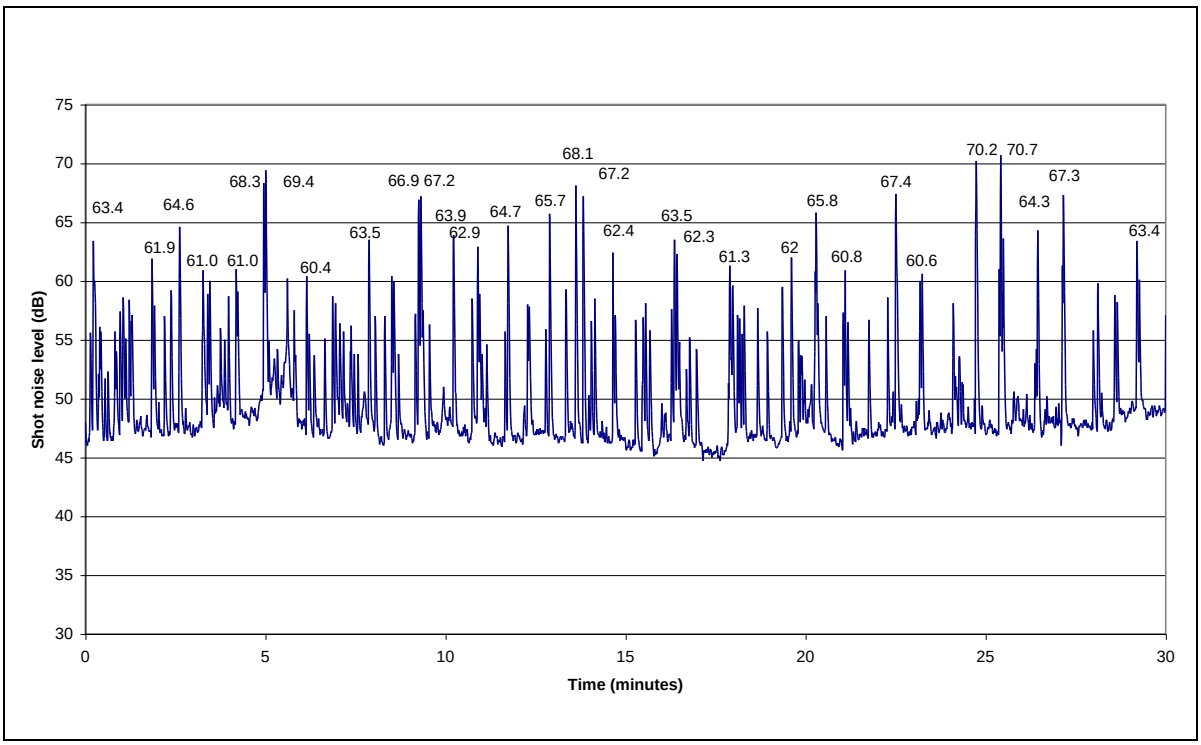

Figure 1: 30min time history of shot noise levels, louder shots marked

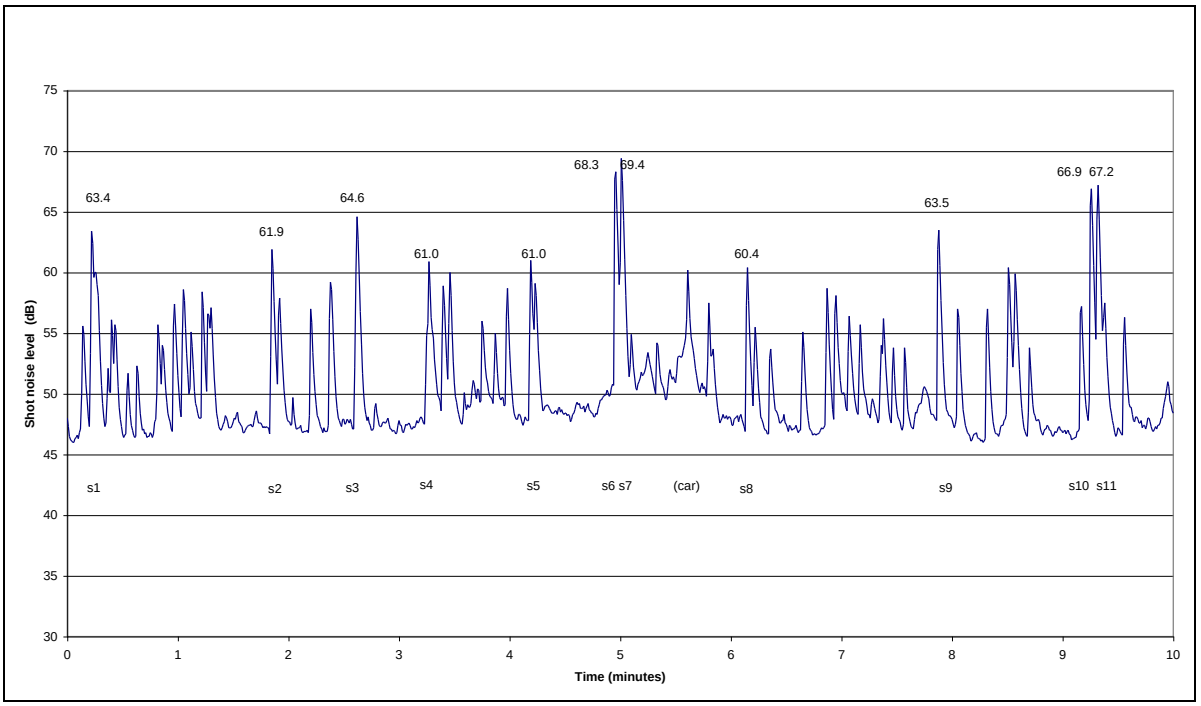

Figure 2: 10min time history of recorded shot levels, louder shots marked (expanded first 10min from Fig 1)

ii. Example calculation of shot level where correction is required

In this example the contemporaneous residual level has been determined as 42.1 dB on the basis of $L_{A90,\ 30min}$. The example uses a sample of 16 shots recorded in a 3.5 minute period to illustrate the correction of the recorded shot levels for contemporaneous residual level. Table 2 shows the 16 marked shots in Figure 3. Shots 2 and 6 (marked with an *) are less than 6 dB over the contemporaneous residual level and would not be included in any subsequent calculation of SNL. Note that the subsequent calculation of SNL will use the 25 loudest shots over a 30 minute measurement period.

Reference number of shot	Recorded shot level L'_{shot}	Residual noise level $L_{A,r}$	Shot level L_{shot}
	(dB)	(dB)	(dB)
1	48.9	42.1	47.9
2	46.7*	42.1	*
3	48.5	42.1	47.4
4	48.7	42.1	47.6
5	49.6	42.1	48.7
6	46.9*	42.1	*
7	48.6	42.1	47.5
8	49.2	42.1	48.3
9	49.0	42.1	48.0
10	48.3	42.1	47.1
11	48.8	42.1	47.8
12	49.2	42.1	48.3
13	48.7	42.1	47.6
14	49.1	42.1	48.1
15	49.4	42.1	48.5
16	48.9	42.1	47.9

Table 2: Example of calculation of shot level with correction for contemporaneous residual level

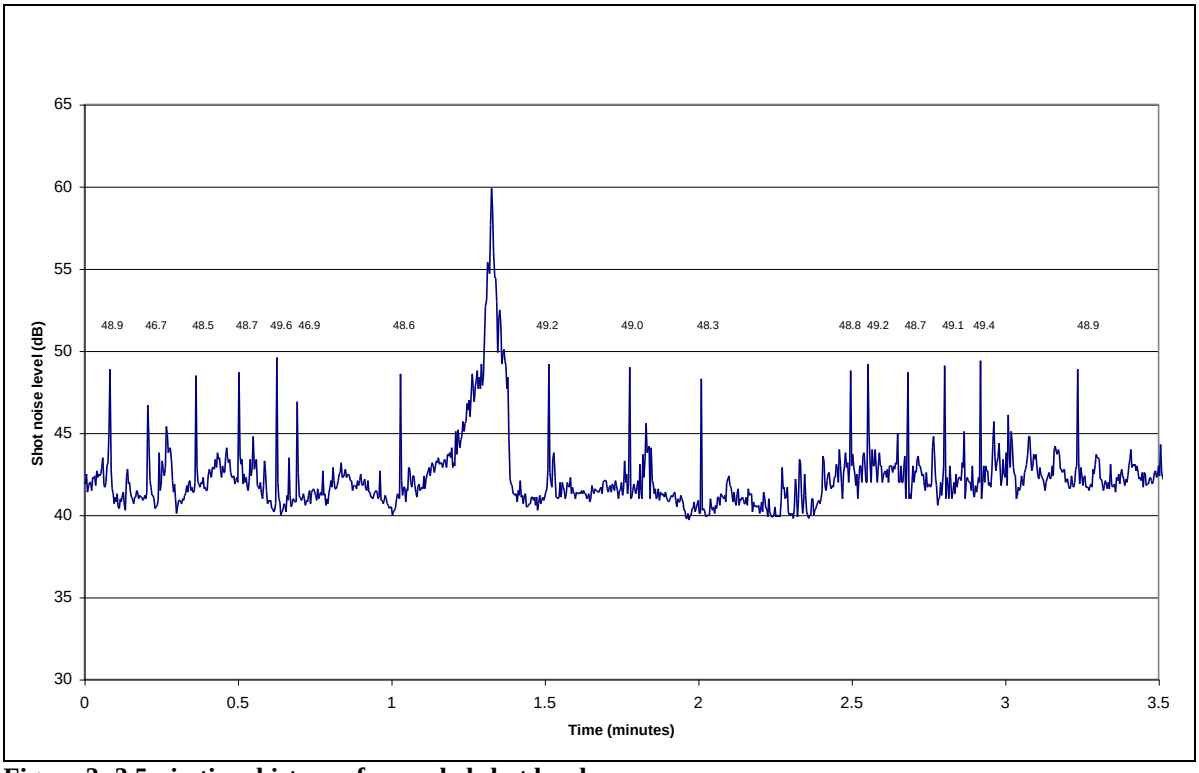

Figure 3: 3.5min time history of recorded shot levels

APPENDIX 6

FURTHER INFORMATION

Institute of Acoustics
77A St Peter's Street
St Albans
Herts, AL1 3BN

Association of Noise Consultants
6 Trap Road
Guilden Morden
Royston
Herts, SG8 0JE

Countryside Agency
John Dower House
Crescent Place
Cheltenham, GL50 3RA

Council for the Protection of Rural England
Warwick House
25 Buckingham Palace road
London, SW1W 0PP

English Nature
Northminster House
Peterborough, PE1 1UA

Countryside Alliance
The Old Town
367 Kennington Road
London, SE11 4PT

Game Conservancy Trust
Burgate Manor
Fordingbridge
Hampshire, SP6 1EF

Forestry Commission
231 Corstorphine Road
Edinburgh, EH12 7AT

National Farmers Union
164 Shaftesbury Avenue
London, WC2H 8HL

Herpetological Conservation Trust
665a Christchurch Road
Boscombe
Bournemouth, BH1 4AP

Wildlife Trust
The Kiln, Waterside
Mather Road
Newark
Nottinghamshire, NG24 1WT

Wildlife & Countryside Link
31 Pitfield Street
London, N1 6HB

Shooting Associations and Bodies – please refer to an internet or library search

Wildfowl & Wetlands Trust
Slimbridge
Gloucestershire, GL2 7BT

APPENDIX 7

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APPENDIX 8

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02 August 2021

RE: Planning Application 20/07444/FUL – Objection

Dear Ms Mitchell,

Thank you for the opportunity to comment on the applicants updated plans.

We reviewed the latest documents provided by the applicant, and we wish to confirm that our objection to the planning application remains.

Whilst we note that the applicant has made some adjustments and clarifications as to their application, we note that the applicant still has not taken the opportunity to conduct real-world assessment of the noise that will be created if their planning application is accepted.

Since our letter of 13 October (in which we noted six decibel readings we took from our property ranging from 59.0dBA to 80.9dBA), the applicant has conducted shoots at the location on a limited basis presumably under the 28-day allowance. We have continued to take ad-hoc decibel readings during those shoots – these additional readings match the range of our first six readings and continue to cast significant doubt as to the actual volume of shots we are likely to hear if the application is granted; nearly all readings being in excess of 55dBA and a significant majority being in excess of 65dBA with several shots registering above 80dBA.

As we stated in our letters of 13 October and 6 April, ambiguity as to noise levels could easily have been removed by the applicant by undertaking a real-world noise assessment, but the applicant has chosen not to take this opportunity to support their application, instead continuing to rely on a model which has not reflected reality.

As we are not experts in acoustics and planning, we recently took the opportunity to have a third-party acoustics specialist company, Acoustics Consultants Limited (“ACL”), review the application, specifically with regard to the noise model and mitigation – their report is attached to this letter and forms part of the basis of our objection.

Our objections remain:

1 - Noise assessment

1a - Modelling shouldn't be used

Per page 10 of ACL's letter the CIEH is quite clear that the only accepted methodology for assessing noise impact due to shoots us by direct measurement of test shoots to be taken over multiple events.

There have been many opportunities for the applicant to undertake such direct measurements in the past 10 months, and we question why the application would choose to ignore this.

1b - Modelling does not reflect real world data

We are glad to note that the updated plans include fixed earth bunds and fixed shooting locations and directions. However, we remain extremely concerned that the modelled acoustics will not reflect the reality of actual noise levels at NSR1.

Per our original letter of 13 October, real noise levels measured from a test shoot vs those predicted by Venta were vastly different. Venta predicted noise levels peaking at 58dBA from the rabbit stand whereas our own real data measurements were between 71.6-80.9dBA from the boundary of our property. Measurements we have taken since that date during other shoots held by the applicant continue to severely undermine the accuracy of the model.

We now note that the latest report expects the maximum decibel to peak at 55 dBA (a 3dBA reduction), which taken at face value is still a volume that the CIEH CTS report considers to be a point at which noise annoyance is likely to increase. Given our numerous real-world readings which far exceed the model, we have very low confidence that the noise will actually be constrained to 55dBA and if indeed there is only a 3dBA reduction with the proposed adjustments, we would expect actual readings to still be in the 70s.

1c – Model methodology is not appropriate

As stated in section 4 of the attached report, there are numerous concerns regarding the modelling used by Venta Acoustics in their report which means the application cannot be assessed for impact.

- ACL state that the wrong ISO standard has been utilised to model the sound of shotguns (ISO 9613-2:1996 vs ISO 17201-3:2019) and that indeed the software used by Venta does not have the ability to model the correct ISO.
- In addition, the modelling was not granular enough, using terrain data with 10m contour lines opposed to the 1-2m contour lines that ACL would recommend.
- The source data for the side-by-side shotguns was not provided, and ACL note that source noise levels can differ significantly between cartridges, guns and shooting direction.
- Finally, the model does not consider that multiple stands might be in use with simultaneous shots fired, so ignores the increase in volume that would ensue. Given the applicants plans, it is unrealistic to assume that only one stand or gun would be used at any one moment.

As reliance cannot be made on Venta's report, and our own readings confirm significant noise from the shoots, we object to the application on noise grounds.

Days & hours of operation

Whilst we are glad that the applicant has now limited their proposed opening hours, we note that that the proposal is still at the upper level of all the shoot schools referenced previously.

We also note, that these hours are still in excess of those recommended by the CTS report of CIEH:

> *"where noise levels are measured or predicted to exceed the levels given in Section 6 of this guidance,*
> *then restricting shooting to the following times may provide a suitable remedy:*
> ***i.*** *Mondays to Fridays: 09.00 to 18.00 with a* ***maximum cumulative duration of 4 hours***
> *ii.* *Saturdays: 10.00 to 18.00 with a* ***maximum cumulative duration of 3 hours***
> *iii.* *Sundays: 10.00 to 14.00 with a* ***maximum cumulative duration of 3 hours***
> *On those sites* ***where shooting occurs on more than 28 days within any calendar year*** *it may, in some circumstances, be appropriate to further restrict the times of operation and/or the number of days per week and/or weeks per year that shooting may take place."*
>
> - *CTS report, Section 5.3*

We also remain concerned by the number of shooting days and the open/charity shooting days. As previously referenced:

> *"In order to protect noise sensitive areas it is recommended that* ***any 'major event' should not be staged more frequently than once in any 28 day period****. A 'major event' might be a regional, national or international competition, or any other event which might attract in excess of 50% more participants than would normally use the shoot. In such cases, notification to surrounding occupiers of land and to the local authority should be regarded as essential and additional measures to reduce the impact on noise sensitive premises should normally be taken."*
>
> - *CTS report, Section 5.3*

We note that the applicant would accept a limitation of 18 events per year, however this is still in excess of the maximum number CTS would recommend, and given the acknowledged seasonality of the shoot school, it seems very likely that the summer months would see these events take place every other week.

There can be no doubt that these events would be considered major events, with up to 10,000 cartridges used in a proposed 4.5-5.5 hours – this would mean on average over 30 shots per minute throughout the whole event.

Whilst we object to the planning application, we would also object to planning consent being provided with the extensive opening hours requested, and the high frequency of major events. If planning permission is granted, we would request that more reasonable days/hours of use and major events is mandated via relevant conditions.

Summary

In summary, we strongly object to this application for change of use. The change of use would demonstrably affect our quality of life significantly, with the noise effects of the shots and traps being above that which is acceptable, such that a noise nuisance would certainly be caused.

Yours sincerely

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