

ENVIRONMENTAL NOISE

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INTRODUCTION

1. Noise has been given a variety of definitions, depending on the circumstances in which it occurs and the effects it produces. Noise is different to sound; sound is a variation in pressure that can be detected by the ear, while noise is considered to be “sound which is undesired by the recipient”. In other words noise can be any sound which intrudes, disturbs or annoys. Civil Aviation Authority social surveys¹ conducted in the early 1980s established that long-term aircraft noise level exposure of 57 dB(A)² generally related to the onset of annoyance, and the threshold for sleep interference occurs at 45dB(A) or lower. However, onset of noise complaints can occur at levels as low as 40dB(A). There is a reduction in tolerance to noise from military activities by the public and an increasing expectation of a reduction in the nuisance.

2. The MOD has a duty of care to protect members of the public as well as the natural environment from the effects of noise generated by its activities, while at the same time providing for realistic training. Core MOD activities use mechanised equipment, which can create intrusive environmental noise and vibration during training e.g. artillery firing, heavy vehicle movements, low flying and night flying. These activities are essential to maintain the effectiveness of the Armed Forces; however the noise nuisance that is generated from these activities must be managed appropriately to prevent it becoming a nuisance. Environmental noise nuisance can also be generated

¹ [Attitudes to Noise From Aviation Sources in England](#) (ANSE) 1985 – Department of Transport

² The measurement of sound is a decibel (dB). The human ear does not detect all frequencies of sound equally efficiently (the ear responds less to very high and very low pitch sounds). To compensate for this, sound level meters incorporate electronic filtering to mimic the varying sensitivity of the ear. This filtering is called A - weighting and is signified as dB(A).

from non-training activities e.g. local car clubs or flying clubs using military airfields and must also be controlled.

3. This leaflet provides guidance to Line Management and staff both Service and civilian, on the MOD policy and the legal obligations (Annex A) required for the management of environmental noise and the need to mitigate its effects both to MOD staff and its local communities.

Health effects from exposure to environmental noise

4. Independent research³ has found that exposure to environmental noise can produce physical health effects in humans e.g. increases in circulatory problems with increased blood pressure and in some cases result in hypertension (permanently raised blood pressure). It can also result in psychological conditions (anger, frustration, mood changes and powerlessness to control the noise) which can manifest as physical symptoms. Research suggests that certain psychiatric disorders may be more sensitive to environmental noise.

5. Studies⁴ have also found that children in particular, suffer poorer mental performance when subjected to chronic exposure to environmental noise, particularly aircraft noise. The effects on children include poorer long-term memory and reading comprehension. These conditions have been observed in children attending schools close to airports and it has been suggested that aircraft noise may be more disruptive due to its “variability and unpredictability”,

6. Birds, animals and aquatic life are also known to be effected by noise. However, response to noise differs greatly by species. Noise can disturb feeding and breeding patterns of some animals and has been identified as a contributing factor of the extinction of some species. An impact of noise on animal life is the reduction of usable habitat that noisy areas may cause e.g. there is some evidence that use of outboard motors use can be confusing to some aquatic life⁵ Studies on domestic animals suggest that some species appear to adjust or habituate to some forms of sound disturbance, but in general the behavioural reaction to impulse or aircraft noise is the startle response whereby the animal/bird may panic and act unpredictably, affecting breeding and feeding patterns, and potentially causing public safety risks.

MOD POLICY

7. The main legislation regarding noise control is the Environmental Protection Act 1990 (EPA 90). Although MOD has exemption from clause 79(1)(g) of the EPA 90 [smoke and noise emitted from premises for

³ The EU Hypertension and Environmental Noise Near Airports (HYENA - 2008)

⁴ Road Traffic and Aircraft Noise Exposure and Children's Cognition and Health (RANCH) study 2005

⁵ [Effects of Anthropogenic Noise in the Marine Environment](#) Office of Naval Research 2005

operational and training activities so as to be prejudicial to health or a nuisance (this exemption extends to Scotland and Northern Ireland)] it is aimed solely at protecting those activities directly related to national security. (JSP 418 Leaflet 4 – Statutory Nuisance). This, exemption does not, however, prohibit an aggrieved person who suffers a nuisance from noise or smoke from MOD premises from bringing a common law action. The MOD does apply the EPA 1990 to everyday commercial or domestic activities on the Defence Estate; MOD offices, workshops, domestic accommodation (including messes) etc, that they shall, not create excessive noise liable to cause a nuisance to their local communities.

8. MOD Policy is developed by the Environmental Noise Policy Working Group (ENPWG) to mitigate as far as is reasonably practicable, the effects of the environmental noise which its activities produce. MOD activities shall as far as is reasonably practicable, be conducted:

- I. so as to minimise the noise generated whilst achieving operational imperatives (including those activities which are an operational necessity e.g. search and rescue), to reduce disturbance to local communities including residential areas (both Service and public) together with impacts on domestic animals and wildlife and their habitat.

Training activities

9. Training objectives should be met the day when ever practicable and should not extend into the night unless absolutely unavoidable. Such training that does extend into the night shall be conducted to minimise noise as activities at night are more likely to cause disturbance, as noise levels are subjectively louder when the background sound is low.

10. Dedicated/Specific Night Training has be conducted a night for operational necessity, however, this training shall be conducted to minimise the disturbance (e.g. all flying shall be in accordance with JSP 550 Regulation 301) to local communities and shall be subject to prior authorisation that noise mitigation has been factored into the planning decisions/chosen routes.

Sustainability Appraisals

11. The Sustainability and Environmental Appraisal Tool (SEAT) Handbook should be used to “carry out sustainability appraisals and environmental assessments, as appropriate, for new or revised policies, programmes (including acquisition programmes) office relocations, new projects and training activities”⁶. Please use [link](#) for further information.

⁶ Secretary of State's Policy Statement on Safety, Health, Environmental Protection and Sustainable Development, July 2009

Polluter Pays Principle

12. MOD has adopted the Polluter Pays Principle (PPP) which is the concept that whoever causes pollution is responsible for the cost of repairing any environmental damage. In the case of this leaflet, the pollution is noise and it will be the owner of the equipment, in the majority of cases this will be the TLB operating the equipment that is producing the noise, which will be liable for any costs for compensation or mitigation measures. The PPP is linked to the further principle of 'extended producer/procurer responsibility' where the producers or procurers are required to take responsibility for the environmental impacts of their products e.g. manufacture and the use of artillery.

13. Therefore, to ensure that noise pollution is minimised all those associated with acquisition of, or improvements to, equipment/platforms and commissioning of airfields and ranges or change to existing airfields/ranges need to attach high importance to noise control. All parties in the acquisition cycle need to be aware of the potential hidden risks and costs arising from noise pollution.

Noise Amelioration Scheme (Military) (NAS(M))

14. A mitigation measure is the introduction of a Noise Amelioration Scheme such as those statutorily enforced for the civil airports of Heathrow and Gatwick under the Civil Aviation Act⁷. The responsibility for introducing (advice is obtainable from SSDC), funding and running a Noise Amelioration Scheme for military aircraft known as a NAS(M) now resides with the TLB operating the establishment and/or equipment producing the environmental noise disturbance, which necessitates the introduction of a scheme. Proposal for any NAS(M) shall be directed in the first instance to the ENPWG to ensure compliance with MOD environmental policy. It shall be introduced in an open and transparent manner and involve public consultation. Any NAS(M) will be based on the following parameters:

- Offer to purchase residential properties exposed to noise of 72dB(A) $L_{Aeq,16h}$ or more;
- Offer to install an acoustic insulation package (the acoustic double glazing system should be at least 10(12)6.4) for residential properties exposed to noise of 66dB(A) $L_{Aeq,16h}$;
- 63dB(A) $L_{Aeq,16h}$ for noise sensitive areas such as schools/colleges, hospitals, care homes;
- Night time (23:00 -0700) 48dB(A) $L_{Aeq,8hr}$ for rotary wing activities;
- Night time (23:00 – 0700) 80dB L_{Amax} for fixed wing fast jets.

⁷ MOD voluntarily introduced a centrally funded Noise Amelioration Scheme, broadly based on the civil scheme parameters for military aircraft called NIGS – Noise Insulation Grant Scheme. This scheme was suspended in April 2005 on cost grounds

Management of Complaints

15. In general, complaints from the public in regard to environmental noise are to be managed at the local level. Complaints should be handled in accordance with the guidance given in Defence Information Note: [2006DIN03-002](#). Who responds to complaints and how complaints data is collected and managed is a matter for the Commanding Officer/Head of Establishment unless directed by their TLB. All replies to complaints must make clear to whom the matter may be referred to if they are dis-satisfied with the response.

ROLES AND RESPONSIBILITIES

Commanding Officer/Heads of Establishment

16. In broad terms the Commanding Officer (CO), Head of Establishment (HoE), shall ensure that:

- All relevant UK environmental legislation is complied with;
- Good relations are established and maintained with local community, schools etc (e.g. creating a local website or placing adverts in local newspapers) to publicise exercises and any unusual range activity, aircraft movements etc. and where possible limit activity during school exams or special events minimise disruption;
- Where environmental noise could be an issue resulting from any changes on the Defence Estate that require planning permission, the benefits (defence, economic and other) must be included in the planning application justification, along with proposed mitigation measures;
- Measures are taken to provide a balance between the essential training required and excessive environmental noise to its local communities including those staff housed in Single Living Accommodation and Married Quarters (e.g. staggering operating times, or limiting night time activity as far as is reasonably possible);
- Synthetic (simulators) training systems are used when and wherever possible;
- Land management (earth bunds etc.) and planning measures are used to reduce the impact of environmental noise from airfields and ranges to local communities and that protected species and/or habitats are not subject to significant noise disturbance;
- An Environmental Impact Assessment is carried out on new Ranges before they are commissioned or prior to re-commissioning following a change of use.

- The relevant single Service Public Relations (PR) staff and Command PR staff are advised of exercises or unusual activity so that appropriate Ministers, MPs and other interested parties can be informed;
- All complaints about noise from military activity are treated sympathetically with a prompt and comprehensive response and action taken wherever possible to end or abate the disturbance which caused the complaint;
- Complaints about military low flying (which are outside of the Military Air Traffic Zones) are passed to Chief of Air Staff-Air Staff-Low Flying Complaints Unit (CAS-AS-LF), 5th Floor, Main Building, Whitehall, London SW1A 2HB for action;
- Any complaints that cannot be dealt with satisfactorily at the local level are passed up the chain of command.

Defence Training Estate (Artillery Ranges and Training Areas)

17. In addition to paragraph 17, the CO/HoE of Defence Training Estate (DTE) Ranges shall also ensure that:

- Their activities are in accordance with DTE Headquarters policy and any local restrictions imposed on the Range/Training Area are met in full;
- Appropriate assessments are carried out using gunfire assessment software to establish the potential disturbance of individual artillery yields to neighbour and that appropriate measures are taken to mitigate the disturbance .e.g. atmospheric conditions change or changing firing positions or impact areas where possible;
- the Control of Noise at Work Regulations 2005 are complied with so that no personnel and/or members of the public are exposed to hazardous noise levels;

MOD Test and Evaluation Ranges

18. MOD Test and Evaluation Ranges are operated by QinetiQ on behalf of Defence Equipment and Support (DE&S) under the Long Term Partnering Agreement (LTPA). In addition to the duties covered in paragraph 17, QinetiQ and or MOD CO/HoE shall also ensure that:

- Their activities comply with MOD policies or the appropriate legislation, whichever is the more stringent and activities are in accordance with

any local restrictions imposed on the range and assessments of potential noise disturbance are carried out before any artillery firing is carried out;

- Appropriate assessments are carried out using gunfire assessment software to establish the potential disturbance of individual artillery yields to neighbour and that appropriate measures are taken to mitigate the disturbance .e.g. atmospheric conditions change or changing firing positions or impact areas where possible;
- Compliance with the Control of Noise at Work Regulations 2005 that no personnel and/or members of the public are exposed to hazardous noise levels;
- All complaints are responded to quickly and sympathetically whilst explaining the need for the activity;

Air Stations (Military Air Traffic Zones)

19. In addition to the duties covered in paragraph 17, the CO/HoE of active air stations (Rotary Wing, Fixed Wing (Propeller and Fast Jet) shall also ensure that:

- The amount of flying is limited to that necessary for aircrews to achieve and maintain operational effectiveness and is kept under continuous review;
- Where possible flights and training are not conducted during public holidays and weekends. If operational needs dictate flying during public holidays and weekends the local neighbourhood shall be informed in advance where practical;
- Night flying training is where ever possible avoided between 23:00 - 07:00 hrs or where this is not possible it is kept to a minimum and the disturbance such activity causes to the local community is managed;
- Permanent or temporary Local Avoidance Zones (LAZ) are respected wherever possible. All permanent and temporary LAZs are to be brought to the attention of all visiting aircraft crews and that they comply with them;
- Care is taken to reduce the impact of any aircraft maintenance activity e.g. test running of aero engines on local communities. Any such work should be carried out during normal working hours preferably under cover (the use of 'hush sheds' shall be mandatory where these facilities exist). In addition this work and similar should be conducted away from the perimeter of the airfield, especially where there are residential properties in close proximity;

- No new aircraft viewing areas are introduced and that where they already exist that such viewing areas have signs warning the users of the areas that they are likely to be exposed to loud noise. Any proposed changes to the existing viewing areas must be subject to the Sustainable and Environment Assessment Tool (SEAT);
- All complaints about noise from military aircraft are treated sympathetically with a prompt and comprehensive response, explaining the necessity for the disturbance and action taken wherever possible to abate the disturbance which caused the complaint wherever possible.
- Any complaints regarding aircraft noise outside of the Air station MATZ are passed to Chief of Air Staff – Air Staff Low Flying Complaints Unit to respond.

Low Flying Areas and Tactical Training Areas

20. Chief of Air Staff- Air Staff- Low Flying shall ensure that:

- Low flying activity shall be spread as widely as practicable across the country, and avoiding built up areas, to reduce the noise burden in any one region;
- Low flying activity shall be kept to a minimum during weekends and public holidays. However, some weekend activity may be required to support Territorial Army and reserve personnel who may be unavailable during the week. In addition, weekend activity may be necessary to conduct essential pre-deployment training;
- Where protected species and/or habitats are located within Low Flying and Tactical Training Areas, these shall be avoided where practicable;
- Prior notice of exercises that will involve low flying activity are posted on the MOD web site and, where appropriate, are submitted in advance to local media;
- A monthly programme is posted on the MOD web site at least one week prior to any training activity where aircraft could be operating as low as 100 feet is planned;
- A free-phone number (0800 51 55 44) is available for members of the public to enquire about low flying activity in their area;

Dockyards, Harbours and Ports

21. In addition to the duties at paragraph 17, the CO/HoE shall ensure that when ships are moored alongside that:

- They utilise onshore electrical supply, rather than onboard generating systems whenever practicable;
- The use of the upper deck broadcast system is restricted, particularly during the late evening and silent hours to reduce nuisance to the local community.

Defence Estates (Safeguarding Teams and Local Land Agents)

22. The Defence Estates (Safeguarding Teams and Local Land Agents) shall ensure that:

- They engage with local authorities for the early identification of any planning applications which have the potential to encroach on the fence-line of the Defence Estate (particularly Air stations and Artillery ranges) which could place MOD at risk of becoming a disturbance to potential new local communities. As more housing near an Air station/Artillery range translates into more people exposed to noise, DE should use the Planning Policy Guidance (PPG) 24 to influence planning authorities to object to development as far as possible. Evidence in support of the objection should include noise contour maps where they exist;
- Any developments on the Defence Estate are subject to local authority planning application procedures and shall include evidence that if noise is a potential disturbance, appropriate noise control and mitigation measures have been costed and incorporated into the application.
- The Defence Estate is not included in any or proposed Noise Abatement Zones.

Defence Acquisition Team (Project Team Leader)

23. The Project Team Leader shall ensure that:

- All equipment being brought into service has been evaluated in accordance with the Project Oriented Environmental Management System (POEMS) appraisal tool and the potential environmental noise exposure measured and assessed to enable a comprehensive through life assessment to be completed;
- Where links with the Defence Estate exist, the SEAT should be applied in parallel with the POEMS appraisal tool;
- In the case of new weapons or ammunition types noise levels produced when the artillery is fired shall be obtained during the

development of the weapon/ammunition where practical and provided by defence acquisition teams to DTE, DSTL or QinetiQ to enable noise predictions on the potential of disturbance to the local community to be conducted;

- In the case of new airborne platforms (both fixed and rotary wing) the defence acquisition teams must provide the environmental noise data (noise, power and distance) to RAF CAM (Noise and Vibration Division) at RAF Henlow in the Federal Aviation Administration Integrated Noise Management (INM) software format to allow for the production of noise contours to establish the potential noise disturbance to the local community at air stations where these platforms will be based.

Annex A – The Legal Context

1. Noise and Nuisance policy for the UK is primarily implemented by the following pieces of legislation;

ENVIRONMENTAL PROTECTION ACT 1990 (EPA 90)

2. The main legislation regarding noise control is the Environmental Protection Act 1990 (EPA 90). Although MOD has exemption from clause 79(1)(g) of the EPA 90 [smoke and noise emitted from premises for operational and training activities so as to be prejudicial to health or a nuisance (this exemption extends to Scotland and Northern Ireland)] it is aimed solely at protecting those activities directly related to national security. This is covered in more detail in JSP 418 Vol 2 Leaflet 4 – Statutory Nuisance

COMMON LAW

3. Under common law a civil action for nuisance may be brought against MOD regardless of any statutory exemptions. The claim will generally be for damages in respect of interference in the use of land; residential, business or agricultural.

HEALTH AND SAFETY Etc AT WORK ACT 1974

4. Although this Act is primarily aimed at Health and Safety it requires that persons not directly employed e.g. visitors to the workplace, or members of the public, who may be exposed to risks from the activities such as noise, are protected as far as is reasonable practicable.

RELEVANCE OF THE CONTROL OF NOISE AT WORK REGULATIONS 2005 TO ENVIRONMENTAL NOISE

5. The Control of Noise at Work Regulations 2005 do not apply to noise outside the workplace but, where members of the public are exposed to noise levels above the regulatory thresholds⁸, this would signify that there is an environmental noise issue and action should be taken to reduce the noise levels.

HUMAN RIGHTS ACT 1998

6. Aircraft noise could constitute an infringement of the Human Rights Act 1998. The interpretation of the rights conferred by the Act is still being developed by the courts.

⁸ Lower Exposure Action Value - Daily/weekly of 80dB(A) or 135dB(C)
Upper Exposure Action Value – Daily/weekly of 85dB(A) or 137 dB(C)
Exposure Limit Value of 87 dB(A) or 140 dB(C)

WILDLIFE AND COUNTRYSIDE ACT 1981, THE CONSERVATION (HABITATS etc.) REGULATIONS 2007, AND THE OFFSHORE MARINE CONSERVATION REGULATIONS 2007

7. MOD has a statutory duty, in the proper exercising of functions, to take reasonable measures to avoid significant disturbance to disturb birds or animals and aquatic life that are protected through International, European or National legislation. Details of this duty can be found in JSP 362, Chapter 5 – Conservation (Natural Environment) and the Practitioner Guide on Protected Species.

TOWN AND COUNTRY PLANNING ACT 1990

8. This Act is the main legislative control over planning and development. Some of these requirements relate to noise nuisance e.g. conditions relating to planning and noise may include such matters as the method of construction, times of operation and permissible noise limits.

TOWN AND COUNTRY PLANNING (ASSESSMENT OF ENVIRONMENTAL EFFECTS) REGULATIONS 1988

9. This applies to the assessment of the effects of certain public and private projects on the environment. It provides that the environmental impact assessment procedure should incorporate the noise effect of a development during construction as well as operation.

TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (ENGLAND AND WALES) REGULATIONS 1999

10. These regulations require that an environmental impact assessment be carried out on any new project or construction that requires planning permission and that this should include noise and statutory nuisance provisions.

THE ENVIRONMENTAL NOISE REGULATIONS (ENGLAND) 2006 (Amended 2009) and THE ENVIRONMENTAL NOISE REGULATIONS (WALES) 2006 (Amended 2009)

11. The Environmental Noise Regulations require the creation of strategic noise maps and formation of noise action plans. The noise maps are drawn up for major agglomerations along major roads, railways and civil airports; requiring that action plans are drawn up to manage noise issues.. MOD has a disapplication of the Regulations for military activities in military areas. The definition of 'military area' is *"The term "military areas" covers a wide and heterogeneous range of terrains and infrastructures owned and/or used by the armed forces".*⁹ However MOD is bound by the Secretary of State's Policy Statement to introduce standards and management arrangements that are at least as good as those required by legislation,

⁹ European Commission's own report "LIFE and the military" in 2005. It is not a legal definition
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