

NUISANCE ACTION

Train horns prompt public and private nuisance actions

Pressure on Network Rail to cut train horn noise is growing with a nuisance action served on the railway infrastructure group.

Newer trains are fitted with horns that are far louder than on previous rolling stock. Lineside residents say the noise is intolerable, while railway authorities say the volume is needed for safety reasons.

To date there has been little action because authorities have been unsure who is responsible for the noise – Network Rail, the train operators or the Railway Safety Standards Board. But Tendring Council has now served an order on Network Rail for nuisance at Ardeleigh in Essex. A private individual in Ardeleigh is poised to serve a second order, and a group of 30 or more residents are threatening to each take action to force Network Rail to abate the nuisance.

Ardeleigh's two actions are centred on a fireman who lives next to the railway line where there are three whistle boards

where trains must blow their horns. The fireman complains the noise is intolerable and that his health is suffering as he cannot sleep.

Tendring Council has now served a section 80 notice on Network Rail detailing an area which it says horns are causing a nuisance. The notice requires the nuisance to be abated within a specific area on the map within six weeks. It said attempts to discuss the matter with Network Rail were ignored.

The fireman is close to serving a private nuisance notice (section 82) helped by independent environmental health officers at Sanctum Consultants. Sanctum's Alan Hawes told *Noise Bulletin*: "The train horn issue is complicated. The local authority believes that specifying a zone is the best way forward, while we believe that making the notice specific to a resident and his premises is a better way."

Hawes added that 30 or more

other people bothered by horns are considering launching their own actions: "If Network Rail were hit by these actions all at the same time, it would effectively become a class action that would be very costly for Network Rail to fight, and mitigating the problem might become more attractive."

Hawes believes that Network Rail will not be able to use the statutory defence available to transport operators that the noise is impossible to mitigate: "We are not arguing about the normal noise of trains going past the house, rather the horns that are ancillary to the operation of the railway. The horn is clearly discernable above the standard train noise on DAT recordings, there are ways of avoiding this nuisance. As such, we believe the action should succeed."

Reversing alarm manufacturer Brigade has successfully demonstrated the use of its broad band directional noise technology on trains.

NEIGHBOUR NOISE

Hot tubs cause 'pure tone' disturbance

The new fashion for hot tubs has caused problems for Bracknell Forest residents and its environmental health officers.

Hot tubs have been made popular by TV programmes such as *Big Brother* and consist of heated water in a small pool located in the back garden. Noise from 'leisure' use of the tubs can be an issue – but in Bracknell Forest's case, it was the pumps and heating equipment that caused a nuisance.

Council enforcement officer Les Drawbridge told *Noise Bulletin* that it had been made

aware of two cases but heard of many more. The first case involved a noisy tub, but once the owner was informed, the tub was moved avoiding any further complaints. The second problem was more difficult.

Drawbridge said: "These hot tubs can often cause problems because they are squeezed into tiny gardens and can end up just a few feet away from a neighbours' bedroom window. The problem can become even worse if the tub is mounted on wooden decking that can amplify any noise."

Complaints centred on the water circulation pump which

operates on and off throughout the night filtering and heating the hot tub: "Measurements in the 100mhz octave band registered 73.7db at a distinct frequency – the measurement was over 20db higher than the octave either side, this 'pure tone' was clearly a nuisance. Even 44m from the site the pure tone spike registered 58db – pushing 30db above background."

"In the event we showed the householder the readings and he agreed to turn off the hot spa – we were prepared to serve a nuisance notice but of course didn't need to."

IN BRIEF

Mapping progresses

Defra says progress is continuing on its noise mapping England project.

"Of the 15 contracts let nearly all have been returned to Defra," it told *NB*. "The next step is for Defra to carry out the population exposure which is expected to be done by Autumn this year. The noise maps will then inform the action plans which have to be drawn up by July 2008."

Work is also continuing on the European Noise Directive regulations which Defra expects to lay before Parliament this Summer.

ODPM becomes DCLG

In Prime Minister Tony Blair's recent shake up of the Cabinet, David Miliband has been appointed environment secretary, replacing Margaret Beckett.

David Miliband entered the Cabinet as minister of communities and local government in May 2005.

Junior Defra ministers reporting to Miliband remain unchanged (Ben Bradshaw has the noise brief).

Meanwhile the ODPM 'superministry' is to be shaken up with the task taken off Deputy Prime Minister John Prescott.

The new Department for Communities and Local Government (DCLG) will come under Ruth Kelly's leadership and incorporates a new remit to promote community cohesion and equality, as well as responsibility for housing, urban regeneration, planning and local government.

DCLG will "unite the communities and civic renewal functions" previously undertaken by the Home Office, with responsibility for regeneration, neighbourhood renewal and local government (previously held by the ODPM).

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IN BRIEF

Chinook payout

The Ministry of Defence has paid £7,000 in compensation to a homeowner in Hampshire who said noise and vibration from Chinook helicopters had damaged his house.

Tesco softens image

Tesco supermarket chief Sir Terry Leahy has pledged new stores will be better neighbours in future.

In a speech outlining a number of changes aimed to improve the image of the supermarket giant, Leahy promised that he would reduce the frequency of deliveries to stores and find ways to make deliveries quieter.

Tesco was unable to provide any further detail on how it intended to do this.

Highway plans

The Highways Agency says it will treat 110 lane km of roads with low noise surfaces in its forward business plan.

The Agency's plan traditionally sets out numerical targets for noise (50 lane km in 2004/05 and 200 lane km in 2005/06) and these are well down on previous years. It adds it will continue to deliver noise reduction measures, support Defra with noise mapping and progress its own noise impact assessment system.

Research will also commence to improve the understanding of long term noise performance of new quiet surfaces.

● 2006/07 business plan www.highways.gov.uk/about-us/136.aspx

Harmonoise delivers

A new version of the Harmonoise Point-to-Point propagation model is available free of charge.

Also, Harmonoise is offering a free download of a database for industrial noise sources. It covers cases where measurement results cannot be used, sources range from very specific individual noise sources (like a fork lift truck) to sound power levels for types of industry as a whole.

● www.imagine-project.org

MALADMINISTRATION

Ombudsman rap for Weymouth

The local authority Ombudsman has criticised Weymouth and Portland Borough Council for failing to adequately carry out its nuisance responsibilities.

Residents complained that a boat repair business using high pressure washing equipment causing a noise nuisance. The council was accused of taking too long to investigate the complaints and was fined £500 even though no nuisance was proven.

The case will serve as a warning to other local authorities that it is not just the handling of recognised nuisances that can attract criticism from the Ombudsman – but the speed at which the council moves to establish the

nuisance in the first place.

The resident first made the complaint in Summer 2004, the council said it had no record of the complaints until the following year. The Ombudsman found complaints had not been passed on to environmental health officers, not least because most had been made informally to other officers engaged on other duties.

The Ombudsman said this didn't matter – complaints did not have to be formally logged by the environmental health department for them to be valid, and even if complaints were mentioned as 'an aside', the council should share in its responsibility for failure to

investigate sooner. And because of the intermittent nature of the work at the shipyard, the delay has meant it has still to be established whether or not the work constitutes a nuisance.

The Ombudsman has rejected a claim from the resident that his house, which he sold during the investigation, was devalued by £15,000 as a result of the noise: "If the noise is a statutory nuisance, any loss of value would not be permanent because the council would have to take formal action to secure abatement of the nuisance. And if the noise is not a statutory nuisance, then the council is not responsible for any detrimental effect on the property," said the Ombudsman."

MONITORING

Casella sold as new dosebadge launched

Noise monitoring firm Casella Cel has launched the new Cel350 dosebadge. Meanwhile parent firm Casella Measurement has been sold to US firm Ideal Industries.

Five years ago the Casella Group was an expanding conglomerate – now it is no more than an administrative shell, having sold off the measurement and consulting arm. But Casella Measurement continues to trade normally, albeit under the new US owner, a US corporation employing over 1000 people worldwide.

Casella Measurement is an unusual fit for Ideal, which is one of the USA's largest manufacturers of wire connectors, electrical tools and supplies, along with electrical and telecoms test equipment. Casella Measurement, based in Bedford, employs 130 staff and comprises Casella CEL, Casella ETi, Monitor Europe, Darwin Hire, Casella USA and Casella Espana.

Ideal says there will be no restructuring arising from the acquisition and all businesses will continue to trade as normal

and are unaffected by the change in ownership.

Casella Cel's new Cel350 personal sound 'badge' avoids the need for cables and includes an integral display and noise exposure alarm.

Weighing just 68g, it measures all occupational noise parameters, as well as the time history of an individual's noise exposure throughout the day. It has a 32 hour battery life, the rechargeable batteries can be charged in 90 minutes.

● More details on the Cel350 on www.casellacel.com

MONITORING

Logging software out

Improved logging software for the long term monitoring of broadband and spectrum data is now available to support Bruel & Kjaer's Type 2250 fourth generation hand-held analyser.

The new BZ7225 software is ideal for implementing noise profiling investigations as well as providing continuous monitoring and logging of periodic reports for the development of time histories used in environmental noise and workplace noise assessment studies.

● Website: www.bksv.com

PEOPLE

Joseph to leave NSCA

National Society for Clean Air secretary general Martin Joseph is to leave the NSCA after just months in the post. Joseph intends to work for acoustic consultants. Previously he was head of noise at Defra.

NSCA had yet to replace deputy chief Tim Brown who left last year, for now it is not directly replacing Joseph and is recruiting for a person to take on aspects of both Brown and Joseph's jobs for a salary of £32-35,000.

● Sally May at NSCA: 01273 878776



Joseph's departure prompts search

TRAFFIC

Noise reduction toolkit from TRL

TRL has published details of a traffic noise reduction 'toolkit'.

Commissioned by the GLA and TfL, the research looks at different ways that traffic can be made less noisy. Quieter road surfaces are the most cost effective way of reducing noise – while TRL holds out 'no early prospect' of any significant change in the status quo for vehicle and tyre noise regulation.

"New regulations for vehicle and tyre noise limit values are being considered internationally but it is likely that limit values will be set at broadly equivalent levels to those currently in force." It notes that the move towards hybrid electric vehicles has the potential to reduce noise, but that there will only be a 10% penetration of hybrids even by 2020.

"Motorcycle noise can be a problem, especially along relatively quiet suburban streets and this can often be traced to the fitting of illegal silencers. Greater levels of enforcement can assist in reducing the problem, including the introduction of roadside tests."

Lower noise tyres have the ability to reduce traffic noise by 3dBA, but only if standard European test procedures involve use of a noisy road

surface that is typical on UK roads.

In turn where typical UK roads are replaced with quiet asphalt, 3dBA reductions can be expected.

Driver behaviour is important: "Aggressive driving can result in a significant increase in vehicle noise during the acceleration phase and can be perceived as a form of anti social behaviour. Driver training and encouragements can be realised but there is no evidence that they have a long term effect. Moreover it is doubtful whether overall measured noise levels would be affected by changing the

behaviour of the few percent of drivers who act in this irresponsible manner – although peak noise levels might be reduced, and this may affect the level of perceived nuisance."

Traffic calming can reduce vehicle speeds and cut average noise – but road humps can cause peaks of noise from heavy goods vehicles. TRL suggests that speed cameras would be a better way of slowing and smoothing traffic while reducing noise.

● TRL project report PPR047 *Traffic noise reduction toolkit*, Greg Watts et al, is available from TRL www.trl.co.uk/press/archive.asp?pid=135

Noise barriers reviewed

In the second of a pair of TRL reports, noise barriers are reviewed.

The report notes that timber barriers are the lowest cost option provided there are no gaps, while see-through barriers the most expensive: "Transparent screens, alone or in combination with other materials, are an option worth considering due to their possible advantage in terms of noise, personal safety perception and transmission of natural light. They may be 20

times more expensive than conventional barriers, but where housing densities are high (for example where high rise buildings line the road), their use may be justified."

Where barriers are placed directly in front of buildings, there may be a problem of reflected noise and there may be an advantage to applying absorptive material on the surfaces behind the barrier.

● TRL project report PPR046 *Noise barrier review* by Greg Watts et al

IN BRIEF

PPG24 still holds

A planning appeal inspector has told developers that PPG24 noise exposure bands still hold sway despite the ongoing review of the noise planning guidelines.

PPG24 contains four bands while the new PPS is expected to place less emphasis on banding. Developers of a housing site in Northamptonshire near a railway and busy dual carriageway disagreed with the council's view that the site should not be used for housing.

The Inspector said that PPG24 remained Government policy and the council was therefore correct.

Heathrow night flight cap accepted

A temporary cap on night flight numbers has been accepted by the Government to avoid a further setback for the Civil Aviation Bill.

The Government now proposes to hold the number of night flights at 16 a night for the next six years – it had wanted to remove the numerical flight limit and replace it with a total noise based limit that would have allowed a larger number of quieter aircraft to land. It has also delayed until autumn a consultation on runway alteration (which gives respite to those directly under the flightpath).

Other decisions based on the consultation paper are promised by the end of May. This includes specific movements limits and noise quotas at Heathrow, Gatwick and Stansted as well as structural aspects of the regime.

Looney joins Temple

Dr John Henry Looney is joining Temple as operations director. Looney is on the council of the Institute of Environmental Management and Assessment (IEMA) and has previously worked for Millennium Science & Engineering, Parsons Brinkerhoff and Halcrow.

Meanwhile Andrew Ryan has joined as junior acoustic consultant.

PUBLICITY

Noise action week imminent

Noise Action Week, coordinated by the NSCA, is taking place from 22 – 26 May.

Initiatives taking place include:

- Val Weedon of Noise Network is announcing the winner of a short story on noise competition, and launching a new Community Code (sponsored by Moat Housing);
- A hunt for the noisiest school child in South Oxfordshire;
- Noise from delivery vehicles is tackled by Tees Valley local authorities, who will be working with freight operators to promote quieter deliveries in neighbourhoods;
- In Leeds the night noise service will be promoted to high rise tenants;
- Tips on polite partying for the students in Northants;

- A prize draw for a low noise Electrolux dishwasher;
- Scouts, Guides and schools in Swansea will be provided with a noise activity pack during the week;
- In Armagh, letting and estate agents are distributing multilingual information on tackling noise;
- Robust Details Ltd, will be promoting Robust Detail-built homes, and how they can help improve the quality of life by minimising the risk of neighbour noise;
- In Scotland, Napier University will be presenting its new 'staggeringly useful' guidance on retrofitting sound insulation in homes.
- Further details, see www.noiseactionweek.org.uk

HOUSING

Eviction for noisy Tyneside tenants

North Tyneside Council has used tenancy agreements to evict noisy neighbours in one of its housing developments.

It has served an eviction notice on a couple for breaching their introductory tenancy agreement because of numerous reports of anti social behaviour. This included excessive noise during the day and night, a dog constantly barking and police repeatedly being called to the property.

The council says all new tenants are given a 12-month introductory tenancy, which makes it easier for the council to deal "swiftly and robustly" with reports of anti social behaviour.

Dial 101 for noise hotline

Local authorities are bracing themselves for more noise nuisance complaints with the introduction of an easy phone number for reporting problems, says Lisa Russell

Too many people call 999 when their problem is not a real emergency. Perhaps they genuinely believe that vandalism or their neighbours' noisy music must indeed be dealt with instantly – or else they simply have no idea of where else to call.

A new single non-emergency number (SNEN) is being set up to take the pressure off 999, initially in five areas and eventually across England and Wales. Dialling 101 will give access to advice, information and action for community safety and anti-social behaviour issues (*Noise Bulletin April p3*).

The Home Office initiative is being operated regionally through joint ventures between local authorities and police forces. The launch is backed by extensive promotion to get the message across that 101 will be the number to call “when it’s less urgent than 999”, in the words of the Hampshire scheme which has just gone live. In Hampshire, only 30% of the 300,000 calls made annually to 999 are about real emergencies.

The other “first wave” areas going live this summer are in Northumbria, Cardiff, Leicestershire & Rutland and South Yorkshire. The core scope of service includes areas such as vandalism, noisy neighbours, intimidation and harassment, abandoned vehicles, rubbish, street lighting rowdy behaviour and drug related anti-social behaviour.

Expressions of interest for the second wave are due in by 2 June with a view to launching their services by 30 June 2007. The whole of England and Wales should be covered by 2008. Scotland and Northern Ireland are developing their own systems but the Home Office says that they are aware of the 101 programme and are considering their involvement.

Introduction of 101 is not intended to force every authority into providing round the clock noise cover – though there are fears that the public’s expectations will be raised. The number will be answered 24 hours a day and call takers will be armed with full details of the different services, policies and operating hours offered by each of the many authorities within their region. Police or duty council staff will attend in some situations; otherwise details will be taken for action the next day.

“We’ve had to accept that each of the partners has its own processes and service level agreements,” says Roger Carter, seconded by Hampshire Constabulary as a

project manager, primarily on the police and call handling side. Each authority has been asked how they would respond to particular situations. “We’ve built up a matrix which we’ve made available in web format to all call takers.” Call takers will be able to tell callers what response can be expected and will record all the pertinent details for subsequent action, tracking and to speed up the process for any repeat callers.

“It would be wonderful if every authority had the same level of service and response time – but they don’t, and there are good reasons for that. The system we’ve put in place supports these differences,” adds Hampshire project manager with responsibility for partnership working, Richard Gibson.

Rushmoor District Council has for instance been able to maintain its existing night time contact procedures. Introduction of 101 won’t make a huge difference, believes environmental health manager Helen Lolley. “We’ve got an emergency out of hours service that is manned 24 hours by a duty officer,” she says. Calls of an urgent nature will continue to be routed to staff in the council’s CCTV room, who will contact the duty officer if appropriate. The CCTV

“ Introduction of 101 is not intended to force every authority into providing round the clock cover ”

room has clear guidelines on what constitutes an emergency. Noise isn’t necessarily treated as an emergency, unless for instance a lot of people are affected, or there is a request from the police. Otherwise, the incident will be followed up the next day.

Communication is playing a major part in creating awareness of the regional launches. Although the Northumbria number will operate around the clock from 3 July, it’s important to be realistic, says Helen Gray, of Northumbria 101, which covers Northumberland and Tyne & Wear. The bigger authorities have noise nuisance teams but a tiny authority might have just

one environmental health officer, she points out. “The caller will be told what can be expected.”

Newcastle has already been operating a night time noise service for a year. It was set up in close co-operation with the local anti-social behaviour team. Night-Watch officers are now on duty at the busiest times – Thursday, Friday and Saturday nights – though calls can be taken around the clock as complaints are registered through a 24 hour anti-social behaviour hotline. This has been using the 0845 605 2222 “It’s your call” number set up by the Home Office last year, initially in 21 areas around the country. “Noise has been one of the key issues that the centre has been taking calls on,” says Newcastle City Council’s Ed Foster. “When the Home Office approached this area about providing the SNEN, it seemed a natural progression.”

Foster believes that a round-the-clock service provides benefits for callers, even on the nights when there is no-one available to visit the scene. “It’s better that they speak to someone about the problem,” he says. “A well-scripted call centre helps callers to feel that people do care about their noise problem.”

Existing police and council enquiry numbers won’t disappear overnight, says Hampshire’s Carter. For instance, there is already a single 0845 police enquiry number covering Hampshire and the Isle of Wight. “Despite being advertised, most people can’t remember it off the top of their heads – but they will remember 101.”

This raises the issue of more calls and a greater need for night time cover. The 101 number could expose a latent demand, believes Rushmoor Borough Council strategy head Karen Edwards, who represents district councils on the Hampshire SNEN board. There could be a lot more incidents to investigate. “I don’t know how many people there are now who are annoyed by noise but who don’t ring the council because they don’t know they can ring the council, and don’t ring the police because they don’t think it’s serious enough,” she says. “There is an expectation that we may receive more calls than we would have prior to the 101 service being launched – although we currently offer an out of hours number for noise anyway.”

First time enquiries would tend to be looked into the following day, while people experiencing ongoing problems are given a contact number to call the council out.

“The issues are ones that we deal with every day anyway – this just provides another channel,” says Edwards. “We are as ready as we can be – we’ve got arrangements in place to deal with SNEN calls; we now have to wait and see the volumes.”

Given extensive advertising for the SNEN, there is potential to swamp councils with noise complaints, says Foster. He has already experienced such volumes. “There was a hot evening in July last year when we received more than 65 complaints in one evening,” he says.

Newcastle has developed an efficient system for making officers available during the busiest nights, rather than every night of the week. Three new officers were recruited to operate Night-Watch’s shifts, instead of attempting to find volunteers among existing staff. The service originally stopped at 4am, but has now had to be extended by an hour. “With the new licensing regime, there’s been a shift in the busy time period,” says Foster. Previously there was a peak at about 2am whereas “now the complaints are coming in at 3am or 4am when people return home”.

The night officers have extensive experience in dealing with the public in a variety of situations. “We’ve managed to get the balance right between enforcement and trying to mediate between neighbours,” says Foster. They also patrol licensed premises when they are not dealing with complaints from members of the public. “We’ve seen a real reduction in noise complaints about pubs and clubs,” he adds.

Night-Watch was set up following the introduction new powers to issue fixed penalty notices for domestic night-time noise offences. Such powers had previously been available through the Noise Act 1996 – but only if an authority adopted the Act and provided a comprehensive night time service, which was something that few could justify doing.

The Act was amended by the Anti-social Behaviour Act 2003 and councils can now take advantage of powers to issue notices whilst providing a night noise service geared to their local community. Night-Watch has been an overwhelming success, says Foster – though users would like it to operate every day.

People involved in the first wave of the SNEN can see potential benefits for councils as well as customers, despite the concerns about workload. Collating data can give local authorities an opportunity to target areas more efficiently. “You can’t

know everything when you are running a huge business that is a local authority or the police – you can’t expect to know where little efficiencies are leaking away,” says Gray. “101 will lead to local authorities being provided with very clear performance data,” she says.

Experience from similar schemes in the US gives some pointers about what to expect says Carter. In particular, efficiency does seem to increase. “Their experience has been that it increases the back office workload, but it also enables people to target what is going on,” says Carter. “Rather than spend time answering the phone, they are just getting the work that has to be done.”

One of the aims is to identify and tackle recurring problems, says communications officer for Cardiff’s 101 service, Emma Thomas. Cardiff’s tasking centre will be looking for patterns such as the same problem happening time and again at the same house. “We are going to be using the intelligence that comes in to tackle long term problems,” she says.

Home Office funding of the regional police and local authority partnerships supports the development, implementation and running of the SNEN. A five year agreement is being drawn up to outline what will be provided. Funding after 2007 will be subject to the agreement of on-going service standards, continuing service development and outcome of the comprehensive spending review. “The concern for local authorities is who is going to continue funding it in the future,” points out Carter.

In Hampshire, the initial discussions about SNEN were purely between the Home Office, the major authorities and the police but the scheme now includes all the authorities in the area, explains Richard Gibson. “We’ve worked together and developed a memorandum of understanding which governs their participation.”

Visits and workshops led to development of a template of information needed for each authority in Hampshire and their services, such as night noise. “We’ve obtained from each of the partners details of the service they provide – availability, hours, contact details, out of hours cover – and what information needs to be gathered from callers,” says Gibson. Some authorities already have a web form, which they wanted to keep. Others prefer to receive emails, or to have a “warm handover” by telephone in addition to

receiving the caller’s details.

Each region therefore needs to hold a vast amount of data on policies, procedures, contacts, service levels and so on. Hampshire has been looking into ways of making it easier for those involved to check and update the information available to call takers and its solution is one that is likely to be adopted in subsequent waves.

There is already a national database of legal questions and answers, as well as a public version at www.askthepolice.uk. Discussions with West Yorkshire Police – which administers the system – have confirmed that it could also be used for the SNEN service. Someone asking, for instance, about noise nuisance could be told both about general solutions and local practice. “It looks very good to us,” says Gibson. It will also allow for there to be sections which the call takers can see, but not the public, to prevent details such as an officer’s mobile number from being distributed too widely.

Work is about to begin on its introduction to Hampshire and the Isle of Wight’s 101 system. “The PNLD system will give us a lot of flexibility,” says Gibson. It should also provide an off-the-shelf system for regions in subsequent waves of the 101 launch, he says.

The 101 services all use call centres within their region, though the exact model varies from place to place.

Call centres covering a large area can raise concerns that local knowledge will be lacking, but Carter doesn’t see this as an issue. Call takers will have full access to police systems such as mapping. They will be able to see the place the call relates to “usually in more detail than someone who thinks they know the area”.

South Wales’ first 101 centre has been set up in a new, dedicated building and will cover Cardiff. The Northumbria service will be handled initially from two local authority call centres and a larger police one, while Hampshire’s 101 call handling is based in the police force’s existing enquiry centre. One of its reasons was to ensure that there would be no delays if any urgent calls do come through on the 101 number. This is not unknown – a kidnapping was once reported on Hampshire’s non-emergency number.

● Useful websites include the homeoffice single number site: <http://snen.homeoffice.gov.uk> and www.defra.gov.uk/environment/noise/noiseact.htm and www.askthe.police.uk

'Ignorability' features at spring talks

A packed Institute of Acoustics spring conference programme included news on ignorability, schools and domestic equipment, finds Lis Stedman

The Institute of Acoustics' mammoth spring conference, held at the University of Southampton last month, provided a glance at the future with twin themes of "today's research and tomorrow's careers" – *Noise Bulletin* provides the highlights from a packed session.

Of immediate interest was the eye-catching paper from Ian Flindell of the University of Southampton and PhD student Leish Gamah, who made the presentation. Their research is looking at aircraft events and "ignorability". The study is an interesting insight into how human nature can thwart attempts to apply acoustical science to annoyance assessment.

Their introduction noted the acknowledged "numerous, and interrelated mitigating factors" involved in reactions to noise, which are dependent upon the "attitude, mood, health and social demeanour" of the listener.

She explained: "Any, and all of these co-varying factors may influence an immediate or post-event, determination of noisiness relating to an individual, or a series of flyover events that may exhibit quite varied, and often ill-defined, non-steady characteristics based solely upon how a listener feels at the time."

Given this, there is nevertheless a great deal of anecdotal evidence from researchers working around airports that tends to suggest listeners either ignore or do not notice most aircraft events. Only certain flyovers appear to spark a transition from this state of ignoring or not noticing to awareness and even dissatisfaction with the sound or series of sounds. Interestingly, their work proposes a theoretical model to explain some of the determining factors that inform such a state.

Gamah also covered the history of the research that forms the basis of government

policy relating to this problem, including the early social survey reports by AC McKennell in 1961, the subsequent Wilson report's Noise and Number Index, the DTI's second survey of aircraft noise annoyance, which looked at the area around Heathrow, and the landmark UK Aircraft Noise Index Study (ANIS).

The authors noted: "There would appear to be a considerable difficulty in forming a coherent policy predicated solely upon what is essentially legislative regulation based upon projected generalised assumptions of hypothesised collective agreements as to what actually constitutes noise annoyance, especially when experimental methodology differs so widely that there is considerable difficulty in extrapolating a robust, consistent set of data across a series of experiments within one country let alone across differing nations."

“listeners either ignore or do not notice most aircraft events”

Flindell and Gamah have taken a different approach. Reasoning that if the ignorability factor could be associated with different acoustic features (present or absent), then enhancing the ignorability by modifying these features could be more beneficial in terms of enhancing quality of life than simply trying to reduce overall A-weighted sound levels.

They suggest that ignorability requires a bland sound with no prominent distinguishing features such as tones or impulses and only a minimum amount of non-stationary filtering processes caused by aircraft movement such as Doppler and ground wave interference effects.

While most research into subjective responses deals with the vexed subject of noise annoyance, this work looks at evidence from both speech perception and psychophysical research that suggests pitch changes that exceed critical bandwidths, such as musical intervals exceeding minor thirds,

may be significant in attracting attention particularly in a spatial context. This could explain why, historically, aircraft sounds that contain tones have been judged to be more annoying, he concludes.

After the conference, Gamah told *Noise Bulletin*: "Notwithstanding reports of annoyance around airports, there is anecdotal evidence from researchers that suggests that the majority of people ignore, or do not notice, the majority of aircraft events. Rather, they notice only a small number of events which they find particularly disturbing or annoying.

"To the average listener many industry-led technical alterations to the sound do not affect how they perceive the sound of an aircraft. Our research investigating the ignorability, or not noticeability of aircraft sounds, is based upon the concept of listener-led aircraft sound improvements. We are looking at any features within aircraft sound that make it easier for the listener to ignore, or not notice the sound. Whether this perceptual sensitivity on the part of the listener is an artefact that has evolved due to bandwidth or time constraints is not known."

Noisy fridges

Another notable paper came from Dr David Waddington and Dr Andy Moorhouse of the University of Salford Acoustics Research Centre. They looked at a curious topic – the interaction within dwellings of transportation noise with tones generated by domestic equipment.

Low frequency noise – noise in the range from 20 to 160Hz – is now a recognised problem in many countries, but a large number of cases remain unexplained and the causes not fully understood.

Moorhouse was recently involved in a Defra-funded project to set out a methodology for assessing low frequency complaints. Field studies were undertaken alongside this work, looking at various cases, some of which were clearly either inside or outside the criterion level for low frequency, but others of which were near the margin and proved very time-consuming to investigate. While looking into these cases, the interaction of domestic sounds and transportation noise was identified as significant.

Low frequency noise is capable of penetrating building structures and exciting resonances, and these waves may then undergo interference with tones generated

Ignorable noise

Ian Flindell and other ISVR academics mooted the idea of "ignoreability".

One possible interpretation of this can be heard on a site stumbled-upon by *Noise Bulletin*. The site gives audio examples of noise masking with a sliding scale allowing masking between 0-100% of the annoying noise (eg jets or car traffic).

The site makes fascinating listening and is worth a visit (with a reasonable amount of bandwidth).

● www.reactivesoundssystem.com/listen.htm

by domestic equipment, resulting in beating tones.

The importance of fluctuations in sound levels had been recognised in earlier research and a series of lab tests proved that fluctuating sounds are less acceptable than steady ones of the same average acoustic energy.

The study found that fridges and freezers were the main sources of low-frequency tones and harmonics, with the other significant source being personal computer fans. Though fridges are not thought likely to result in complaints by themselves, they should not be overlooked in an low frequency assessment.

At one point in the investigation, the falling tones of a propeller aircraft interfered with the fridge noise to create a fluctuating 50Hz tone. Jets taking off and landing also caused problems, though not quite so marked as the propeller craft. Mostly, the noise levels in the research were found not to exceed the daytime criterion but would be around the night-time criterion level.

Road traffic was also found to be significant, with a drive-by in a rural area producing 40Hz sound at 70dB, 15dB in excess of the daytime criterion. Because of the way the human ear perceives sound at these frequencies a rapid increase in sound level can be viewed as alarming and disturbing, the authors note.

Thus the rapid onset of a low frequency event due to the combination of beating and room resonance modes stimulated by the interaction of low frequency noises from domestic equipment and transportation can produce a disturbing effect.

One recommendation is that since domestic equipment may be part of the problem, when assessing a low frequency complaint it should be left running, with a set of preliminary recordings taken both with the equipment on and off in turn for a few minutes to identify the level and character of the sound produced.

Moorhouse says: "The main issue is that EHOs get these vociferous complaints and don't know what to do with them because they can't find any cause – until recently they've been pretty much on their own, there's been no clear-cut guidance. Now they've got a fairly well laid-out procedure that allows them to exhaust all the possibilities.

"The interaction effect was found in a couple of cases out of 11 and to some extent it is an explanation of a bit of a mystery." At least it gives environmental health officers a chance to provide an explanation for some of the cases that have proved difficult to solve, he notes. (The new procedure is on the Defra website at www.defra.gov.uk/environment/noise/research/lowfrequency/index.htm)

Another paper presented by Andy Hounslea of RAF Henlow looked at noise and vibration measurements in military fast-jets, specifically the experience inside the aircraft and compliance with the European Physical Agents directives on noise and vibration.

The work so far, very much in progress, is a textbook example of how difficult it can be to obtain such measurements in unusual situations. Unfortunately very few vibration data exist for aircraft, and those do not relate to assessing human exposure. The RAF therefore had to start from scratch, looking at the various components of these high-tech jets and how to locate measuring equipment.

This proved a thorny issue, because if the sensors were located on the aircrew and the recorders in the plane, there was no guarantee that the ejector seat would work properly. Much thought went into locating both sensors and recorders in various places on the flight crew's clothing.

“... tones of a propeller aircraft interfered with the fridge noise ...”

There were other problems – there wasn't a commercially-available system that could do what the RAF wanted – record for at least three hours, on two channels of audio and three of vibration simultaneously – so separate systems had to be used.

It was also thought possible that the long, high-speed accelerations during turns might affect the vibration testing equipment, and rapid pressure changes might affect the microphones. In the tests, it was found that only rapid entries into turns affected the accelerometer, giving a brief peak, but an unsuspected problem surfaced – digital distortion on the noise recordings during very highest speed turns. Crew also found sitting on the vibration sensor uncomfortable. The RAF is still looking for a better one-box system.

A set of school building-related papers included a presentation from Emma Tate-Harte and Bridget Shield on the compliance of open-plan learning spaces with Building Bulletin 93 – a much-discussed subject but this time given a new twist – the work shows that these spaces can, and do work.

Their paper reported on a current project, which is investigating room acoustics and speech intelligibility in open-plan primary school classrooms using both objective measurements – room acoustic data – and subjective techniques, that is, pupil and

teacher questionnaire surveys. The presentation reported on some preliminary analysis of the objective data, and provided observations based on the acoustic survey.

The current project – results so far show a surprisingly resounding success for open plan – of the 30 measurements undertaken, the mean ambient noise level was 35dB LA_{eq 5min}, with levels ranging between 33 and 40dB. All of the classrooms achieved the BB93 maximum criterion for ambient noise levels of 40dBA and 63% met the BB93 standard of 35dB for primary school class bases. Those exceeding the criterion tended to fail because of high levels of building services noise rather than external noise.

Achieving sound transmission targets involved coordinating activities, for instance with all classes engaged in listening with just one person speaking, whole-class teaching at desks might be possible – if not, the best results came from children gathering closer to the teacher and away from the opening.

A suggested limit level of LA₆₀ of 65dB is made for individual or group work activities where listening is not quite so critical, and a lower level of LA_{eq} 55DB when the class is involved in critical listening. Schools also achieved top marks for reverberation, apart from two that did not have acoustic ceilings or fully-carpeted floors.

Other and consequent conclusions include observations of a need to limit open-plan layouts to three class bases or less, to achieve a reverberation time not exceeding 0.4 seconds, and that absorption for the whole ceiling and floor area should be provided. Higher-impact activities should also be moved to enclosed spaces, the report suggests.

Andrew Mitchell of the University of Exeter looked at the acoustic performance of temporary classrooms – relevant because although temporary rooms are exempt from the BB93 standards if they are on site less than 28 days, many become a long-term fixture.

The study showed that the sound insulation standards varied considerably, with some elements performing well and others poorly. Poor-quality internal doors in particular flunked performance standards, and some walls were also well below par. Floors and walls performed better in impact sound transmission tests. Reverberation times were generally at the upper end of BB93's allowable range – one room had a reverberation time in excess of one second.

The paper also came up with the interesting nugget that there are no requirements for reverberation times in toilets...

● Conference proceedings are available from the IoA, Linda Canty 01727 848195

Graffiti

TRL has issued a report on noise barrier design that makes interesting reading.

It contains many curiosities – for instance that soft absorptive surfaces may be needed on the quiet sides of barriers – and that see-through barriers can be more successful as noise is less annoying if you can see the source.

Living barriers (ie plants) at first sight are ideal – soft and picturesque. But living willow barriers need watering (and won't get it), and are easy for youngsters to climb.

Ivy is apparently ideal for covering noise barriers – it has all the qualities of a true weed in that it thrives on abuse (doesn't need watering or pruning) and is generally a nuisance everywhere else. And in a masterpiece of understatement, TRL says ivy is 'less attractive' to graffiti artists than a bare wall.

Say again?

Our feature on the single non emergency number revealed some unforeseen difficulties for those trying to provide out of hours call centres.

The new '101' services all use

automated call centres including an "It's your call" anti-social behaviour hotline where callers speak their postcode and an automated voice recognition system puts them through to a local call centre.

Ed Foster of Newcastle reports the service has worked well – except that some Newcastle callers have had problems. "It's not able to recognise strong Geordie accents," he says.

Jobs

Another TRL report outlines a possible traffic noise toolkit and also contains some home truths.

One that particularly rings true is the ability of the public to undermine well meaning attempts to quieten traffic.

As fast as legislators and manufacturers struggle to make cars quieter, so teenagers find ways of making them noisier with big fat exhausts to convert small-engined insurance-friendly hatchbacks into a growling and aggressive menace to impress the mates.

TRL's suggestion that aggressive driving constitutes anti social behaviour strikes a chord – perhaps speed cameras can also

be fitted with noise meters to catch the noisy boy and girl racers.

Long sentence for Weedon

Val Weedon is justly proud of gathering 48 signatures for her early day motion on noise. For sure the support is good – but perhaps the the MPs found it easier to sign up than read to the end of the 148 word sentence forming the motion:

"That this House places on record its appreciation to the UK Noise Association, a coalition of key organisations lobbying on different aspects of noise, for the continued work it undertakes in seeking to tackle the increasing nuisances and problems caused by unnecessary noise; notes that 26th April is the 11th International Noise Awareness Day; congratulates the UK Noise Association for supporting this event which is concerned with the effects of noise on young people; notes that studies have proved that a noisy environment impairs children's health and their cognitive development and that those most at risk are children exposed to aircraft or traffic noise; is concerned that children living in a noisy household may not get the peace and quiet they need to improve their speech and communication skills; and calls on the Government to promote quiet times for young people to help with children's learning and development.

NOISE EVENTS 2006

May 22–26

NOISE ACTION WEEK

Series of events held across the week to highlight noise and environmental problems, coordinated by Mary Stevens, NSCA 01273 878770

May 23rd

DEVELOPMENTS IN NOISE RESEARCH

Institute of Acoustics environmental noise group/Midlands Branch conference to be held at the Arden Hotel, Birmingham. Contact Linda Canty, Institute of Acoustics, 01727 848195

May 24–25th

BB93 ACOUSTIC DESIGN OF SCHOOLS

Intensive two day course held by University of Exeter Centre for Energy and Environment to be held in Exeter www.ex.ac.uk/cee

June 4th-6th

TRANSPORT NOISE AND VIBRATION SYMPOSIUM

to be held in St Petersburg, Russia, www.eiforum.org.uk

June 5th-7th

EURONOISE 2006

to be held in Tampere, Finland, www.acoustics.hut.fi

June 21st

REDUCING RAILWAY NOISE IN URBAN AREAS

SILENCE network conference to be held in Brussels, website www.silence-ip.org

July 3rd-7th

ICSV13

13th International Congress on sound and vibration to be held in Vienna, <http://info.tuwien.ac.at/icsv13>

September 18-20th

LOW FREQUENCY 2006

to be held in Bristol UK, www.lowfrequency2006.org

October 16-17th

INSTITUTE OF ACOUSTICS AUTUMN CONFERENCE

organised by the Environmental Noise Group to be held in Oxford. Linda Canty, Institute of Acoustics, 01727 848195

NOISE BULLETIN



Welcome to *Noise Bulletin*, a monthly newsletter covering noise pollution, its management and its consequences.

We welcome your comments and contributions and hope you enjoy reading it.

Jack Pease

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