CRITERIA FOR NOISE STANDARDS

For environmental standards, there seems to be rather less reason for compatibility between countries, even though it may be of interest to make comparisons. Living conditions, design of buildings, climate, differing habits related to various times of day, all tend to make the formulation of universally-acceptable standards both difficult and probably unwise.

It is clearly obvious that no formula or index in use so far, or ever likely to be introduced in the future, is likely to meet all the above requirements and a compromise is required; but where the balance of such a compromise should lie varies with the purpose of the standard and is open to discussion.

A compromise is also required with respect to the level at which the standard is set. On the one hand, the level needs to be realistic and attainable with existing technology, it needs to be economically feasible, and it needs to be enforceable. On the other hand, there is little point in setting an environmental or emission standard unless it has some bite, and either provides an improvement over the existing situation, or at the very least ensures no worsening. This is particularly important, as one risk inherent in any standard is that as well as setting an upper limit, it can also be considered in the form of a licence to go up to that limit. The reaction of people to noise varies enormously, and, however good the standard, some people will remain dissatisfied, while conversely some people appear not to be disturbed or annoyed by noise at almost any level. A decision therefore has to be taken as to what percentage of the population it is aimed to satisfy in setting a particular level. In this case it is necessary to differentiate between effects which merely cause some degree of annoyance, and those which can cause actual hearing damage. Thus while the risk of permanent hearing damage cannot be tolerated for more than a minimal proportion of those exposed to industrial noise, it may have to be reluctantly accepted that some larger percentage of the population cannot be adequately protected from being annoyed.

Finally and perhaps the most difficult problem is to draw a balance between the rights of people to enjoy themselves, as for example by attending pop concerts, and the equal rights of residents to a quiet environment. Compromises are clearly necessary, both by setting limits and restricting times but in the long run the only satisfactory solution is to set a moral standard for people to be considerate and tolerant towards each other.

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Proceedings of The Institute of Acoustics

APPROACH TO HIGHWAYS NOISE AND OTHER ENVIRONMENTAL FACTORS

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In 1963 the Buchanan Report, Traffic in Towns, (1) concluded that "traffic noise is steadily developing into a major nuisance, seriously prejudicial to the general enjoyment of towns, destructive of the amenities of dwellings and interfering with the efficiency in offices and other business premises".

It was in the late 60's that the first rumbles of discontent were felt as major trunk roads and motorway schemes pushed into the urban areas. These roads were being built within the straight-jacket of value for money without any discretionary powers to carry out works or pay compensation outside the site boundary to alleviate their impact.

At the same time it was fashionable for wholesale re-development of the inner areas and the construction of high rise dwellings and pre-fabricated blocks of flats.

This led to an interface problem between major highways and the town fabric. Following a steady growing pressure for action and demonstrations such as Westway the Urban Motorways Committee was set up whose report "New Roads in Towns" was published in 1972. (2)

This report recommended that highway authorities should be enabled to purchase land to maintain or improve the environment in areas adjacent to the road works. Also that householders whose predicted noise levels (exceeded a prescribed level) outside their dwellings should have a right of claim against the highway authority.

It was as a direct result of this Report that in 1973 the Land Compensation Act came onto the statute books which conferred a new right of compensation for depreciation of the value of interests in land caused by public works as well as new powers to mitigate against injurious affection. This was the first time that a highway authority paid compensation or carried out works to relieve the "anti-social" aspects of road construction as it affected the surroundings and was thus a major step forward. The fact that these disbenefits was recognised also made it easier for designers to justify more expensive treatments to mitigate against them.

Regrettably some damage had been done to the urban fabric and the ground roots pressure which had helped push through the legislation encouraged the formation of preservation and conservation groups. The problems caused by the wholesale re-development of the 60's which had promised so much, were also now becoming apparent and at the same time cuts in public expenditure and rising inflation rates tended to depress expenditure on urban road schemes. The combined result has been that major road construction in urban areas has virtually disappeared and thus the Land Compensation Act has not been called into widespread use.

In relative terms however the Act has helped to ease the problems of road construction in rural areas.

The Department of Environment and subsequently the Department of Transport has been fully aware of the increasing interest in the environment and its value to Society and has been strenuously attempting to in some way quantify the more nebulous elements. In the urban field Alan Lassiere co-ordinated some of the research into the problems of evaluating noise, visual intrusion, severance etc, the results of which are reported in Research Report No 8, "The Environmental Evaluation of Transport Plans" 1976. (3)

At the same time an internal working party under the Chairmanship of Mr J Jefferson was set up to look at the Department's methods of appraising environmental aspects of trunk road schemes, the bulk of which are rural or peri-urban. This Report "Route Location with regard to environmental issues" was produced in 1978. (4)

The Report recommended a consistent method of evaluating the various elements and a method of displaying the results to give the maximum amount of information relevant to the decision making process.

It is soon apparent to anybody working in the environmental field that as well as the quantitative impact, there is also the qualitative element and this is even more elusive and personalised. A great deal of research and development is going on in Western Europe and the USA, which is slowly reaching agreed definitions and standards, noise being one of the most advanced in this field.

Until tried and reliable methods could be developed the main yardstick used to determine the viability of a road scheme was Cost Benefit Analysis supplemented by a subjective or intuitive assessment of the effect on the environment.

At the end of 1976 following criticisms of the Department of Transport's methods of arriving at decisions, the Secretary of State for Transport set up an Advisory Committee on Trunk Road Assessment under the Chairmanship of Sir George Leitch to review the Department's methods of appraising trunk road schemes taking account both of economic and environmental factors and the methods of traffic forecasting. The Committee's Report was published in October 1977. (5)

The Report covers the whole spectrum of Trunk Road Scheme appraisal and traffic forecasting methods but out of its 61 recommendations 17 cover the non-economic component of the assessment and a further 10 are associated with the framework which is a presentation and layout of the results of the analysis.

The general framework, which is one of the key elements in the Report, is intended to enable the public to identify how different groups of individuals are affected by the scheme. It takes the form of a matrix in which the alternatives are listed in one direction and the individual impacts in the other.

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The non-economic components of the assessment are intended to cover the environmental impacts of the scheme alternatives as they affect the area and attempts to display both the benefits and disbenefits. It is however a summary and an aid to the decision maker and its primary output is not conclusions.

The Report clearly stated that the framework shown was only a guideline and that it needed developing based on practical experience and over the last year the Department of Transport has been attempting to do this.

The framework itself has needed re-organisation both to limit elements of double counting and to clarify the groups. Each of the impacts has been considered to see what it is intended to measure, the reliability of the measurement itself and what further research is required.

At the same time, research has taken place in attempting to move from the subjective assessment to the quantitative and ultimately to monetary valuation of the various environmental impacts.

There is now in operation for all Trunk Road Schemes a general assessment framework based on the ACTRA Report concepts and a number of Departmental Advice Notes are being issued on how to evaluate the individual elements. We are also developing methods of estimating the Environmental Intrusion Cost for residential properties using regression formulae based upon records of compensation payments made under the 1973 Act.

The Department is continuing to research methods of putting a value on a place based on the ideas expounded by Mr Bridle in his paper published by the Institution of Highway Engineers in 1976. (6)

Acknowledgements

The author wishes to thank the Deputy Secretary Roads and Local Transport, Department of Transport, Mr T P Hughes, for permission to publish this paper. The views expressed, however, are those of the author and do not necessarily represent those of the Department of Transport.

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