

The Noise Advisory Council

A Guide to
Measurement and
Prediction of the
Equivalent Continuous
Sound Level L_{eq}

Report by a Working Party for the Technical
Sub-Committee of the Council

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PREFACE

This Guide was commissioned by the Noise Advisory Council, on behalf of all those who are concerned with the evaluation and control of environmental noise in the UK, to meet the need for a work of reference on the equivalent continuous sound level, L_{eq} . The Guide consolidates information which is, in the main, already available but which is widely scattered throughout the technical literature. It has been prepared by a Working Party of specialists under the auspices of the Council's Technical Sub-Committee.

2. The Council greatly appreciates the work done by the Working Party, the members of which were:

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Mr Berry, in addition to contributing several chapters of the Guide, also acted as its compiler and the editor was Mr Higginson.

3. The Guide deals only with environmental noise; this means that industrial noise is treated only insofar as it affects the neighbourhood outside the workplace. The Council is aware, however, that L_{eq} is also used for the characterisation of occupational noise. Chapter 3 describes measurement techniques which are similar to some of those set out in British Standard 5330, 'Method of Test for Estimating the Risk of Hearing Handicap due to Noise Exposure'.

4. The Guide is intended for use by practitioners with the appropriate technical background who need to measure or predict environmental noise. It is not concerned with the suitability or otherwise of L_{eq} for any particular application, nor is it concerned with the prediction of subjective reaction to noise. References in the Guide are quoted only for their factual content.

5. The Noise Advisory Council hopes that the Guide will be used in the making of proper comparisons between L_{eq} -based noise indices and existing

non- L_{eq} indices. Chapter 2 of the text deals with mathematical derivations and is therefore complete as it stands. Chapters 3 and 4, on the other hand, summarise current practices and these might be superseded in time. Supplements to the Guide, covering new areas of knowledge, may therefore be issued in the future.

6. The Guide gives the general procedures to be followed for the measurement and prediction of L_{eq} . The amount of detail given in Chapter 4 varies according to the state of the art between the four different types of noise source discussed, but in a volume of this size it cannot be exhaustive. For formal measurements for regulatory purposes it will be necessary to refer to other literature on specific regulations in conjunction with the Guide, eg, The Control of Noise (Measurement and Registers) Regulations 1976.

7. The Council hopes that the Guide will facilitate and encourage the wider adoption of L_{eq} . It hopes that in time L_{eq} will replace other noise measures, and in the meantime, where regulations already prescribe other noise measures it strongly recommends that L_{eq} is also used in parallel for the sake of gaining experience with it and enabling comparisons to be made between L_{eq} and other measures.

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