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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Acoustics — Assessment of noise with respect to its effect on the intelligibility of speech

Acoustique — Évaluation du bruit en fonction de son influence sur l'intelligibilité de la parole

Technical Report 3352 was drawn up by Technical Committee ISO/TC 43, *Acoustics*, and approved by the majority of its members. It was decided to publish the document in the form of a Technical Report as this is a subject that can not yet be considered as suitable for an International Standard. The subject is still under study and it may be found necessary to make changes in the levels of mean speech power in the future.

0 INTRODUCTION

This Technical Report is based on the work of French and Steinberg, Kryter, and Beranek (see the annex). Without prejudging the difficulties which would be met, it was not considered necessary to define precisely what is understood by "normal speech", this Technical Report describing a survey method.

The mean speech power levels for normal and raised voice which have been retained were determined empirically; they were in agreement, by comparison, with the indices computed in accordance with classical methods (Kryter or Beranek). These levels may be subject to future modifications according to the results of the studies that are in the programme of work of WG 12 of ISO/TC 43/SC 1.

An intelligibility of 95 %, as indicated in this Technical Report, corresponds to an articulation index (AI) as defined by Beranek of about 0,4 (i.e. approximately 50 % of logatomes understood or 90 % of words understood).

The use of the overall weighted value A for the assessment of the sound level of the various spectra adopted does not lead to good agreement with the results obtained by the described method. For assessment of the intelligibility it seems that one cannot be satisfied with a measurement of the overall level of noise in dB(A) : that is why it appeared preferable to use the average value of the four octave bands 500, 1 000, 2 000 and 4 000 Hz to define the level of the disturbing noise.