ACOUSTICS IN THE INTERNATIONAL
STANDARDS ORGANIZATION

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The Technical Committee on Acoustics of the International Standards Organization (ISO/TC 43) was setup in 1947. Its secretariat is run by the British Standards Institution (BSI).

In 1966 the following countries participated actively in the work of the ISO/TC 43: Australia, Austria, Britain, Argentine, Belgium, Bulgaria, Brazil, Holland, Denmark, Israel, India, Italy, Canada, Norway, Poland, USSR, USA, Finland, France, Czechoslovakia, Sweden, Switzerland, and Japan. Another 14 countries are listed as observers (membership "O").

The ISO recommendations are one of the principal documents on which the recommendations of the Council of Mutual Economic Aid (COMECON) are based. Thus, the acoustical standards of various countries not only reflect the international technical experience, but they are also intercoordinated. The acoustical testing of machines, means of transportation, radio products, and instruments supplied by one country to another is made according to the method recommended by the ISO. The exchange of scientific information is facilitated, since it is expressed in uniform acoustical terms and comparable acoustical measurement results.

The TC 43 operates in specialized working groups. Altogether 17 such groups have been formed. According to the report to the ISO meeting of April 18-23, 1966 the following working groups operate at the present time: WG-1, WG-3, WG-8, WG-9, WG-12, WG-13, WG-14, WG-15, WG-16, and WG-17. These groups coordinate their work with corresponding groups of the International Electrotechnical Commission (IEC) as well as with such international organizations as the "European Broadcasting Union," "International Aeronautics Organization," "International Acoustical Commission," "International Broadcasting and Television Organization," "International Association on Problems of Noise," etc. The ISO/TC 43 coordinates its activity also with ISO/TC 20 on "Aviation," ISO/TC 108 on "Mechanical Shocks and Vibration," ISO/TC 105 on "Testing Methods and Acceptance Tests for Pumps" and with ISO/TC 117 on "Methods for Testing Commercial Ventilators."

The Working Group on "Normal Audibility Threshold" (WG-1) has considered problems of the air conductivity threshold (since 1958), mechanical impedance of the head (since 1962), reference levels of bone-conductance thresholds (since 1961) and acoustical measurements of the speech level (since 1964). As a result of this the work group drafted the following ISO recommendations: R389-1964 on "Initial Reference Zero for Calibrating Simple Current Audiometers," R226-1961 on "Normal Curves of Equal Loudness and Normal Audibility Threshold in a Free Field."

The Working Group on "Loudness Scale" (WG-2) has considered the relationship between the loudness level in phons and natural loudness in sones.

The Working Group on "Architectural Acoustics" (WG-3) has considered the evaluation of soundproofing in living premises (since 1962), measurements of the reverberation time in auditoria, of absorption coefficients in reverberation chambers, of attenuation in linear channels. It has worked out a draft ISO recommendation (N880) on determining soundproofing in premises and suggested evaluation curves for soundproofing against air and shock sounds. It also drafted recommendation ISO R354-1963 on "Measurement of Absorption Coefficients in Reverberation Chambers."

The Working Group on "Soundproofing against Air and Shock Sounds in Buildings" (WG-4) worked out ISO recommendation R140 on "Natural and Laboratory Measurements of Air and Shock Sound Transmission." Documents R140 and N880 were taken as a basis for the recommendation on "Unification of Physical Protection Measures in Buildings. Sound Protection" adopted by the Comecon permanent commission on building (1962) and for the draft standard on "Soundproofing. Measuring Methods. Soundproofing Index."

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The Working Group on "Methods for Computing the Loudness Level in Objective Analysis" (WG-5) has considered the computation methods suggested by Stevens (USA) and Zwicker and prepared a draft recommendation.

The Working Group on "Units and Symbols" (WG-6) has considered the unification of the acoustical quantities' letter notations and measurement units. It drafted the following ISO recommendations: R131-1959 on "Expression of Physical and Subjective Values of Sound and Noise" and R387 on "Expression of the Power and Intensity Levels of Sound and Noise."

The Working Group on "Transport Noise" (WG-7) has worked out recommendation ISO R362 (1964) on "Measurement of Noise Produced by Ground Transport" in which it is recommended to measure noise by means of noise meters with the application of correction A.

The Working Group on "Industrial and Domestic Noise" (WG-8) has worked out a suggestion on evaluating noise for protecting hearing and speech communications. Evaluation is made by means of spectral limit curves. This method has been adopted in the USSR ("Medical Norms of Permissible Noise Levels in Living Premises" Ministry of Health of the USSR).

The Working Group on "Measuring Machine Noise" (WG-9) has worked out a draft recommendation ISO on "General requirements for working out technical conditions for measuring noise produced by machines." This document describes methods for measuring noise power in free and diffused sound fields and in a field close to the machines. This method was used in drafting the Comecon standard recommendations on "Noise Measuring Methods. General Propositions" (1966) and of GOST 11870-66 on "Machines. Noise Characteristics and Methods for Their Evaluation." This group also drafted a series of documents on methods for measuring noise of rotating electrical machines. These documents have been used in drafting the Comecon recommendations on "Rotating Electrical Machines and Transformers of General and Special Application. Methods for Determining Noise Characteristics."

The Working Group on "Dictionary" (WG-10) has prepared drafts for an acoustical dictionary provided with a detailed explanation of acoustical terms. The English-French and Russian-English versions of the dictionary are being prepared for print.

The Working Group on "Specification of Equal-Loudness Curves" (WG-11) has prepared ISO recommendation R454-1965 on "Relationship of the Sound Pressure Level of Narrow Noise Bands in a Diffused Field to That for a Normal Sound-Wave Drop in a Free Field at an Equivalent Loudness Level."

The Working Group on "Measurement of Aircraft Noise" (WG-12) and the Working Group on "Evaluation of Aircraft Noise" (WG-13) have developed draft ISO recommendation (N 879) on "Methods for Describing Aircraft in the Neighborhood of Aerodromes." It also prepared a draft recommendation on a simplified method for measuring the effect of aircraft noise on the ground by means of a noise meter with correction A. In our country both methods are used. Methods for measuring the shock waves produced in air by flying plane are also being studied.

The Working Group "Basic Acoustical Values" (WG-14) prepared ISO recommendation R226-1962 on "Preferred Frequencies for Acoustical Measurements." A corresponding standard has been drafted on the basis of this recommendation.


The Working Groups on "Measurement and Computation of Noise" (WG-16) and on "Ship and Railroad Noise" (WG-17) were organized in 1966 and are engaged in collecting information.

Soviet experts joined the ISO/TC 43 in 1955 in connection with its conference in Bern. In the period between the Bern and Paris conferences considerable work has been carried out with the object of making the USSR more active in the international committees on acoustics and air acoustics. This work is supervised by the Committee of Standards, Measures, and Measuring Instruments attached to the USSR Council of Ministers. The working group comprises the representatives from the USSR Academy of Sciences, the USSR State Committee on Building, the Ministry of the Radiotechnical Industry, the Ministry of Culture, the Ministry of Communications, and the Commission on Acoustics of the USSR Academy of Sciences.

This working group examines systematically ISO documents, drafts suggestions, and participates in preparing and conducting conferences.