

Guide for

Subjective listening tests for sound radio receivers

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This British Standard, having been prepared under the direction of the Electronic Equipment Standards Committee, was published under the authority of the Executive Board and comes into effect on 30 April 1980

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Foreword

This British Standard has been prepared under the direction of the Electronic Equipment Standards Committee. It is technically equivalent to IEC Publication 543:1976, published by the International Electrotechnical Commission (IEC), although it has been necessary to make some editorial changes to improve the clarity of the standard. Some textual errors have also been corrected.

Appendix C of IEC Publication 543 has been omitted from this British Standard. A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Introduction

A need exists for reproducible subjective listening tests for sound radio receivers, because objective measurements alone have not been found adequate for determining sound quality. As however, subjective tests have an inherent degree of uncertainty, objective tests should still be used wherever possible, particularly for those parameters that are to be included in the terms of a contract.

The purpose of this guide is to define procedures that will permit the comparison of the acoustical performance of various types of household or similar sound radio receivers, in a controlled environment and with an established procedure, to give results that are as reproducible as possible. The listening tests are carried out by comparison against a reference receiver. However, this does not exclude certain qualities and impairments from being characterized by absolute judgements. The reference receiver should be selected with great care in all cases because the comparative judgements made are dependent on this reference. A description of the reference receiver should also be given with the results.

A subjective evaluation, based on this guide, consists of the average judgement of several persons on a given subject. The individual opinions are divided into ranges corresponding to assessment scales, showing for each range the number of persons of that opinion. In this way, the subjective evaluation may be presented as an average opinion with a standard deviation.

Receivers should be divided into categories of use for comparison so that each is judged within its own category.

Such categories might be, for example:

A: personals (pocket receivers)	- A1 a.m. personals - A2 f.m. personals - A3 a.m./f.m. personals
B: portables	- B1 a.m. portables - B2 a.m./f.m. portables
C: table sets	- C1 table sets for a.m. - C2 table sets for a.m./f.m.
D: other receivers (e.g. larger radiograms)	
E: high-fidelity equipment ^a	

^a Great care should be taken in using this method for the assessment of high-fidelity equipment. This method is to be regarded as provisional, pending completion of international work on this subject.

If appropriate, price classifications may be used in connection with such categories. Care should be taken to avoid grouping together receivers providing different ancillary equipment (for example radios and radiograms), unless it is required for particular reasons.

0 Scope

This British Standard gives guidance on the procedures for carrying out and evaluating the results of subjective listening tests for the comparison of the acoustic performance of various types of household or similar sound radio receivers in a controlled environment, to give reproducible results. This standard describes the requirements for the test room, the composition and qualifications of the judging panel, the setting up and test procedure and the method of scoring.

NOTE 1 The use of this standard for the assessment of high fidelity equipment should be regarded as provisional (see the footnote to the introduction).

NOTE 2 The titles of the publications referred to in this standard are listed on the inside back cover.

1 Characteristics of the test room

It is recommended that the characteristics of the test room should be as follows.

- a) A room of the same type as a living-room with the average characteristics of domestic surroundings is recommended.

The rooms should be approximately rectangular in shape, about 30 m², with one side slightly longer than the other.

The shorter side should be not less than 3.5 m (see Appendix B) in order to be able to measure stereophonic equipment (stereo base > 2.5 m).

- b) The acoustic response of the room should be fairly smooth and have a reverberation time corresponding to that of a typical living-room.

This time is approximately 0.5 s at 500 Hz (limits 0.4 s and 0.6 s inclusive).

Over the frequency range 100 Hz to 5 000 Hz, there should not be any unusual room resonances, nor flutter echo.

- c) The lighting within the room should be of medium intensity, so arranged that the lights do not shine directly into the eyes of any panellist.

Temperature: 20 °C to 26 °C.

The degree of relative humidity should be between 45 % and 75 %.

NOTE Damping elements consisting of domestic furniture, curtains and carpets are to be preferred to sound-absorbing panels to ensure the correct relationship between reverberation time and frequency.

Rooms with solid floors, covered with pile carpet, and without large areas of glazing are easier to correct.