

1920

The Iowa Pitch Range Audiometer

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Recommended Citation

Bunch, C. C. (1920) "The Iowa Pitch Range Audiometer," *Proceedings of the Iowa Academy of Science*, 27(1), 230-230.

Available at: <https://scholarworks.uni.edu/pias/vol27/iss1/41>

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THE IOWA PITCH RANGE AUDIOMETER

C. C. BUNCH

The ideal apparatus for measuring the acuity of the ear should enable one to determine the faintest audible sound at each and every pitch within the tonal range. It should be easily and quickly operated and should be permanently standardized. The Pitch Range Audiometer is an approach to this ideal.

The essential parts of this audiometer are a variable frequency generator having a range of between 25 d.v. and 14,000 d.v., a motor for rotating this generator, a telephone receiver, and an electric tachometer for indicating the pitch of the tones produced. The complete range of tones is produced by varying the speed of the motor. Intensity measurements are secured by means of a small potentiometer with an empirically chosen increasing scale of 400 per cent installed in the circuit.

The practical use of the instrument has been demonstrated and verified in the otological clinic. It was used in the army vocational school in selecting radio operators. Unlimited opportunities are open for its use in the psychology of music, and for the basis of laboratory experiments, and other lines of practical scientific work.

THE LOCALIZATION OF SOUND BY WAVE PHASE IN
THE OPEN EAR

HENRY M. HALVERSON

Wave phase localization may be studied under normal conditions; i.e., without the aid of conductors to the ears. Our apparatus consists of two telephone receivers connected in series from the same source. If the receivers are so energized as to produce a pure tone, the observer, by closing one ear and moving the head carefully from one source to the other, (the side of the head parallel to the axis of the receivers) will experience a series of "highs" and "lows" in intensity. These points of maximum and minimum intensity correspond exactly to the points of reinforcement and interference as obtain in the standing wave.

If now the observer, with both ears open, (the aural axis parallel with the axis of the receivers) moves slowly from one source to the other, he will be conscious of a median plane localization for each one-half wave length that he advances. These