

Audio Engineering Society News

TO AUDIO engineers of Denver, Colorado, goes the credit for organizing the first local section of the Audio Engineering Society on May 4. No technical program was presented at this first meeting, but the entire time was given over to the organization activities. Three technical meetings are already scheduled for the newly formed section, the first to be held on June 8.

Heading the group responsible for the new section are R. W. Cross, of Electronic Network, Denver Muzak licensee; W. R. Bliss of Decimeter, Inc.; and W. H. Eichelberger, assistant chief engineer of Hathaway Instrument Co. and formerly with RCA at Indianapolis. Mr. Eichelberger is Acting Secretary and engineers in the Denver area who are interested in taking a part in Society activities may contact him at 1315 So. Clarkson St., Denver 10, Colo.

New York Meeting

The May meeting of the New York group was held in Studio 6A, Radio City, on May 11, with over 250 in attendance. A well-prepared and informative paper on "A New Audio Sweep-Frequency Generator" was presented by Hershel Toomin of Instrument Electronics. This generator embodies many unique features which are of importance to the audio engineer.

Mr. Toomin, who is responsible for the design of the new generator, pointed out in his paper that instruments designed for use by engineers are of greatest value if they relieve the user of the necessity of making improvisations in the measurements, or if they provide definite and labor-saving features. As is well known, the usual procedure in making a frequency-response measurement on a piece of equipment is to apply a fixed tone to the input and to measure the output. This must be done at a number of selected frequencies so spaced that they are capable of indicating accurately the trends at important points of the curves, particularly in the case of filters and equalizers. This is a time-consuming operation, for after twenty to thirty measurements are made, they must then be plotted before the whole picture is made visible to the engineer.

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To provide a rapid method of making these curves and of presenting them in a form which is correlated to conventional curves as drawn on semi-log graph paper was the aim of the instrument. Primarily, it consists of a beat-frequency oscillator which is swept over the entire audio-frequency spectrum, or over any desired part of it, at a rate which is continuously variable from two sweeps per second to 15 per second, or at a long sweep of once in 25 seconds.

The problems of making the sweep of such a character that the low frequencies are shown in the same detail as those in the higher ranges are rather complicated, but with a considerable amount of straightforward engineering and clear thinking, this sweep was achieved. Since sufficient time must be allowed for the response of the measured circuit to reach a maximum for each frequency applied, the sweep is so arranged that 90 per cent of the sweep cycle is devoted to frequencies below 200 cps. In addition to providing the frequency-swept audio voltage, a signal is furnished to the horizontal circuits of an oscilloscope to move the beam at a logarithmic rate.

Considering the generator as one problem, there was still another to be solved—that of making the output voltage appear on the scope screen in a form which is most familiar to engineers. Normal deflection of the scope beam is proportional to voltage, but the curves should be presented in db, which necessitates another form of logarithmic amplifier. This is incorporated into the instrument, and provides a linear db scale on the vertical deflection of the scope, the range covered being 40 db. Thus, with the single instrument it is possible to present normally recognizable frequency response curves on any cathode-ray oscilloscope.

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The Society is continuing to grow, with over 600 members now on the rolls, and from 21 states and three foreign countries. Further information and application blanks may be obtained from the Secretary, N. C. Pickering, Box F, Oceanside, N. Y.