



Top: part of the capacity crowd that witnessed the first "Soundorama" in Constitution Hall. Many new faces were evident according to regular concert goers, indicating that the hi-fi fan and home music lovers were very much interested in the demonstration. Lower: Irwin Stein, physicist, operated the two Berlant Broadcast recorders used to record and playback the musical selections. Mr. Stein also made a careful check of the entire hall with a decibel-meter during rehearsals and pronounced it one of the finest auditoriums from an acoustical standpoint. During the tests it was discovered that the plush bottoms of the seats absorbed just about as much sound as a person so that levels could be established very closely with the hall empty.

not hear the orchestra very well on the stage, which may be true. However, the engineers with their decibel meter discovered that for the audience, and for recording, the hall is one of the finest.

To fill the 1,000,000 cubic foot auditorium with sound approximating the effect of the 90 piece orchestra took a bit of doing and the hi-fi fans in the audience were drooling at the sight of the equipment. For the recording, the engineers selected the Berlant BR-1 recorder, Fisher supplied the amplifiers, Audio Devices the tape and Jensen the speakers.

When it is realized that the average living room contains from 2,000 to 6,000 cubic feet of space, some idea of the magnitude of the problem can be grasped.

It was solved by the use of ten speakers, mounted behind the orchestra, each one fed with a 50 watt amplifier. This gave 5000 watts of audio output which was undistorted and did the job.

Other than the microphone used for the pickup, all the equipment used was standard and could be purchased by anyone for use in his own home.

The microphone was suspended about 20 feet above the stage and slightly back of the podium. The main mike was a Western Electric 640 AA condenser microphone which had been calibrated by the Bureau of Standards. According to the engineers, it is this mike that is used by the Bureau as a reference mike to check other microphones. In addition to the 640 AA two other mikes were also hung in the same spot to provide emergency facilities should there be any failure of the principal circuit.

In addition, a Telefunken condenser mike and several of the RCA 77-D mikes, were placed on the stage among the musicians. The purpose of these mikes was to pick up sound for the demonstration of how an improperly placed mike or mikes can distort orchestral balance.

In order to show how an orchestra is built Dr. Mitchell introduced the various sections one at a time and each performed a "solo" so that its tone color could be grasped by the audience. The first section to play was the brass which, according to M. Robert Rogers, president of WGMS who did the running commentary, "was like military brass—intended to be heard."

Few, if any of the 4000 people realized that what they had heard from the brass section was not the live musicians but a recording enhanced by the musicians merely making the motions. The illusion was perfect.

And when Mr. Rogers left his speaking stand and walked away with his voice continuing from the speakers, the audience was not only delighted but had begun to mistrust their own senses. To tell the difference between the recording and the live music or voice and the tape playback was next to impossible.

The acid test of the system came when the orchestra played Rimsky Korsakoff's Spanish Caprice. This was selected by Dr. Mitchell because its composer used every type of sound permissible, calling on the entire orchestra singly and together.

It lasted but a minute and some few seconds and many felt that it had been all too short to give a good comparison. By the time one had begun to listen, it was over.

The first playback of the Caprice was made from the tape fed by the incorrectly placed stage mikes. The imbalance of the recording was very obvious with the drums