

Successful DX Work Marks "Radio-Movie" Transmissions

RADIO experimenters who are contemplating the construction of television or "radio-movie" receivers will be interested to learn of the splendid reception that is being obtained by others who have already assembled the scanning machinery and its supplementary apparatus. Such successful reception should encourage hesitant constructors to proceed with their own receivers without delay, so that they also will experience the great thrill of "seeing by radio."

One of the most active television enthusiasts in the East is James Millen, of Malden, Mass. Although Mr. Millen is a professional radio engineer in the employ of a large manufacturing concern, he is an amateur dabbler at heart and spends a great deal of time in his own home laboratory, pictures of which are shown on this page. He constructed a simple television receiver using a twenty-four-inch disc, a neon-gas glow-lamp and an adjustable-speed motor, and has had unusually good luck in receiving the Jenkins "radio movies" on 46.7 meters.

A letter received from him lately by RADIO NEWS reads as follows:

FIVE-HUNDRED-MILE RECEPTION

"You will, no doubt be interested to know that for the past week I have been able to receive all of the Jenkins 46.7-meter broadcasts on a rather simple outfit built up at home in one evening. While the pictures are not as good as those Jenkins himself demonstrated in Washington, I think they are very fine when one considers the distance involved—somewhere around 500 miles. During a local thunderstorm last Friday (*This letter*



Mr. James Millen

was written at the end of August.—EDITOR), when reception on the broadcast band was almost impossible, we received the entire silhouette broadcast, and had no difficulty in following the movements of the girl bouncing the ball and seeing the ball itself bounce up and down.

"The outfit comprises the standard National short-wave kit, a three-stage transformer-coupled amplifier operated from a 'B' socket-power unit, and the scanning device. The amplifier used was from a broadcast set, with one 'haywire' stage ahead. I

had no trouble in using a 'B' supply unit for both the glow-lamp and the receiving tubes on this short wave."

THE RECEIVING APPARATUS

That Mr. Millen finds it possible to use a transformer-coupled amplifier for satisfactory reception of images is rather surprising, as practically all television engineers have considered resistance coupling to be necessary, because of its comparatively smoother amplifying characteristics. Mr. Millen's transformers are exceptionally large and heavy ones, which may account for his success with them.

A picture of the amplifier is shown below; it comprises two straight amplifier stages and one of push-pull. Resistance-coupled audio amplifiers will, in most cases, give more reliable images. However, the experimenter owning a high-grade transformer amplifier should by all means try his available apparatus first, before spending money on additional equipment.

The general layout of the apparatus employed appears below. The clock-like instrument on the right side of the scanning-disc box is a speed indicator; this is a rather expensive device but is, of course, a great help in adjusting the speed of the disc's driving motor properly.

The short-wave receiver used by Mr. Millen was assembled from a commercial kit, but experimenters desiring to build one like it are invited to write for RADIO NEWS Free Blueprint No. 62. This blueprint shows the construction of a receiver of practically identical design; this employs a screen-grid tube as an R.F. amplifier, and is a very fine all-round short-wave outfit. Remember, the blueprint is free for the asking.

At the right: The "breadboard" three-stage transformer-coupled amplifier used by Mr. Millen for his reception of the Jenkins "radio movies." Below: A general view of the television receiver. The short-wave tuner is the apparatus with the small panel, the scanning apparatus is in the box on the right. The clock-like instrument connected to the scanning disc is a speed indicator.



Below is a rear view of Mr. Millen's scanning apparatus. The neon-gas glow-lamp is mounted upright on the narrow upper shelf behind the scanning disc. The scanning disc's driving motor is an alternating-current machine of the condenser type, designed especially for television work. This receiver is, it will be seen, very much like the one described on page 422 of this issue.

