

form a continuous winding; one of the 4 cylinders is driven by the small motor which keeps the coil in continuous motion in one direction.

Thus, if it is desired to immediately re-listen to a portion of the recording it is necessary to wait 2 minutes until that portion of the recording is again under the pickup coil, in this particular model of the soundmirror.

It is most convenient to run the tape through the recording-playback and erasing heads on the diagonal return-path of the tape. A slight amount of tension keeps the tape taut at all times. The welded joint is about as strong as any other part of the tape.

The endless helix has a recording length of about 360 ft. for making recordings 2 minutes long. Shorter lengths of tape may be used to obtain almost any desired length of "playing" time. In general, however, reels instead of a helix would be used for recordings much exceeding 12 minutes' duration.

Although the tape of the machine here described travels at the rate of 180 ft. per minute this speed may be increased or decreased within wide limits (depending considerably upon the required recording- and playback-frequency ranges) to accommodate other recording-playback durations.

The timer is electrically-driven by the synchronous motor which drives the tape and is set by means of the Timing dial on the instrument panel to repeat the playback after any predetermined period; it also controls the erasing current. One position of the power switch permits the power amplifier to be utilized in P.A. work, for call and announcement purposes, or as a phono amplifier; only in the "RUN" position of the switch is the tape drive motor put into operation.

APPLICATIONS OF THE SOUNDMIRROR

(Continued from page 655)

be used to send traffic information and directions up to 400 yards by radio to be picked up in any radio-equipped car capable of tuning just above the broadcast band (on about 550 kc.). The Federal Communications Commission is considering this application as a means of aiding World's Fair traffic this summer.

In talkie studios, numerous recordings can be made on the steel tape and the final, perfected recording dubbed into the sound track of a sound-film. This represents a tremendous saving; particularly, when it is recalled that immediate steel-tape playback of each experimental recording is possible without any processing (developing, etc.).

Incidentally, May 1938 *Radio-Craft* contained the article, "37 Hours of Sound on Single 16 MM. Reel!". A diamond-stylus head indents 40 sound tracks side-by-side on a specially-prepared acetate cellulose film. A second, and similar, head affords immediate playback.

Also in May, 1938 *Radio-craft*, in "Make Your 'Silent' Movies into Home Talkies," a sapphire-needle recorder indents on the non-emulsion side of motion picture film. Same head, recording weight removed, plays back.

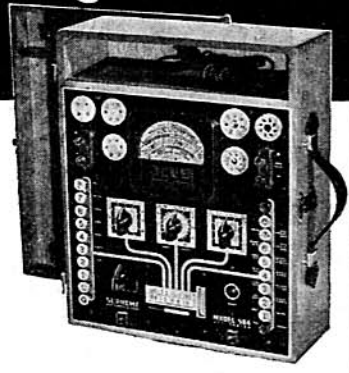
In March, 1939 *Radio and Television*, in "Records on Paper Tape from Mike or Phono," Merle Duston's sound-on-paper tape system was described. The recording stylus discolors, at audio frequency, a chemically-treated cellophane or glassene tape. For immediate playback the discolored tape interrupts a light beam directed on a photocell.—*Author*



CAN YOU TEST THE TUBES

they'll announce

NEXT MONTH?



New filament arrangements just announced and to be announced are obsoleting thousands of tube testers. The demand for a better tube, one which would perform at higher frequencies, necessitated a mechanical change in tube design which resulted in the single-ended tube. This same mechanical change, primarily developed for television, has been incorporated in radio receiving tubes because of its many advantages. In changing the ordinary tube to a single-ended tube, filament termination can not be held constant; the grid gets the most consideration and the filaments have to look out for themselves.

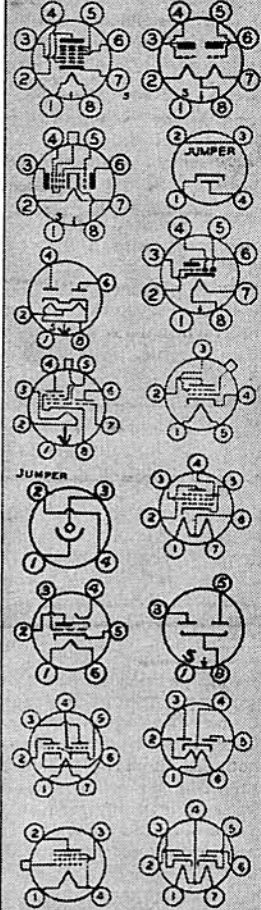
At left are shown a few tube bases with different filament terminations. There are at present fifteen filament arrangements. But remember, there are 143 different filament terminations possible without considering center-tapped type filaments. Center tapped filament combination possibilities would raise this figure to several hundred.

Most tube testers in use today are already obsolete—the oft-bragged about spare socket is of little or no help, and the constant purchase of adapters will soon equal the original cost of the tester. So the average service-man must buy a new tube tester—not just for TODAY'S tubes but for the tubes which will be announced next month or next year.

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