

# TWO NEW AUTOMATIC TURNTABLES

*Afford an Easy Economical Approach to  
Semiautomatic Programming Using  
45-RPM and Magnetic Disc Recordings*

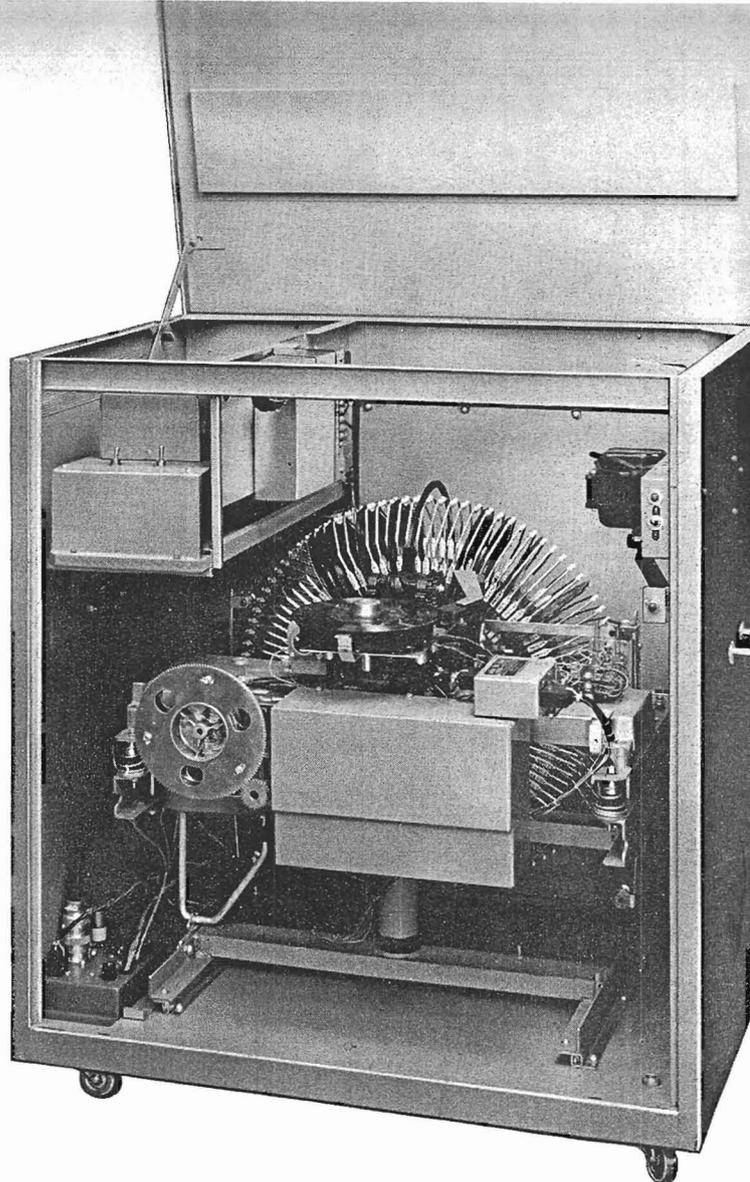
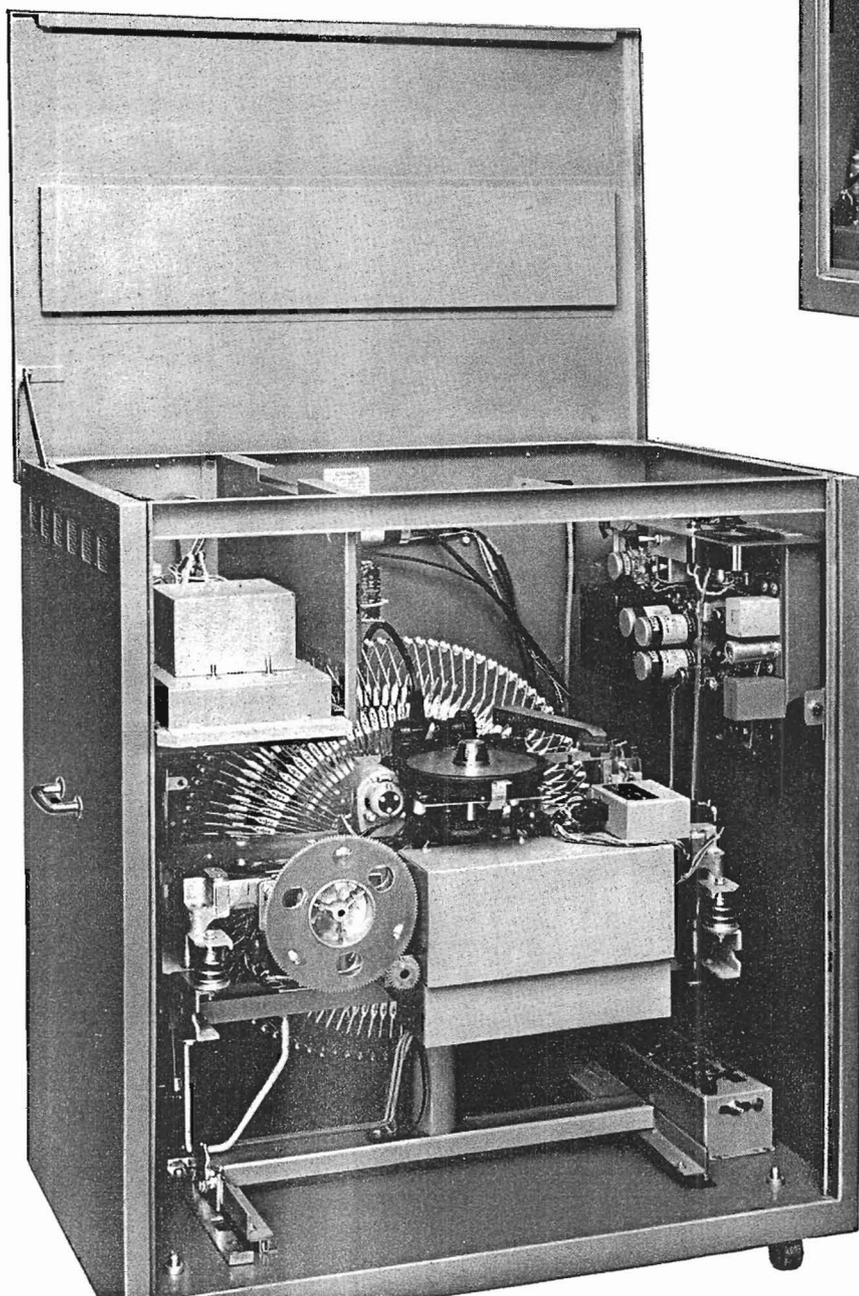


FIG. 1. Front view of a BQ-103 Automatic Turntable with panel removed. Note the circular record basket which has a capacity of 100 records (200 selections). The dust-free cabinet reduces wear.

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**E**fficient, simplified, automatic handling of recorded program material is a reality with the new BQ-103 Automatic Turntable for 45-rpm records and the new BQ-104 Automatic Turntable for magnetic disc recordings. A single operation can control several of these automatic units, since all manual operations such as selection, cue, and so on are made fully automatic. Fewer operator "fluffs" result, and program flow is smoother for the listening audience.

FIG. 2. Front view of a BQ-104 Automatic Magnetic Disc Turntable. This unit is identical in operation to the BQ-103; however, its turntable speed is 33½ rpm to accommodate the magnetic discs, and a magnetic pickup head is used as well as a BA-51A Record/Reproduce Amplifier.

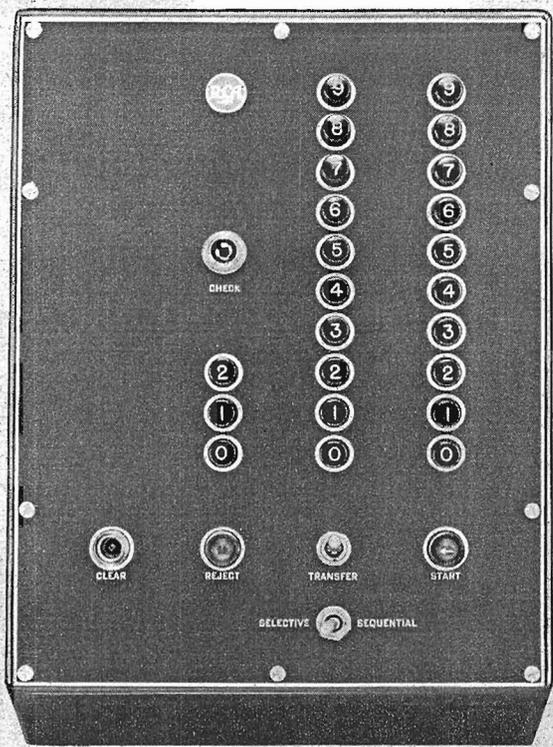


FIG. 3. Manual selection of any turntable is easily accomplished with this manual control box. Random or sequential modes of operation and other control functions are switchable. The three banks of numbered push buttons are used to select any of the 200 possible records in an automatic turntable.

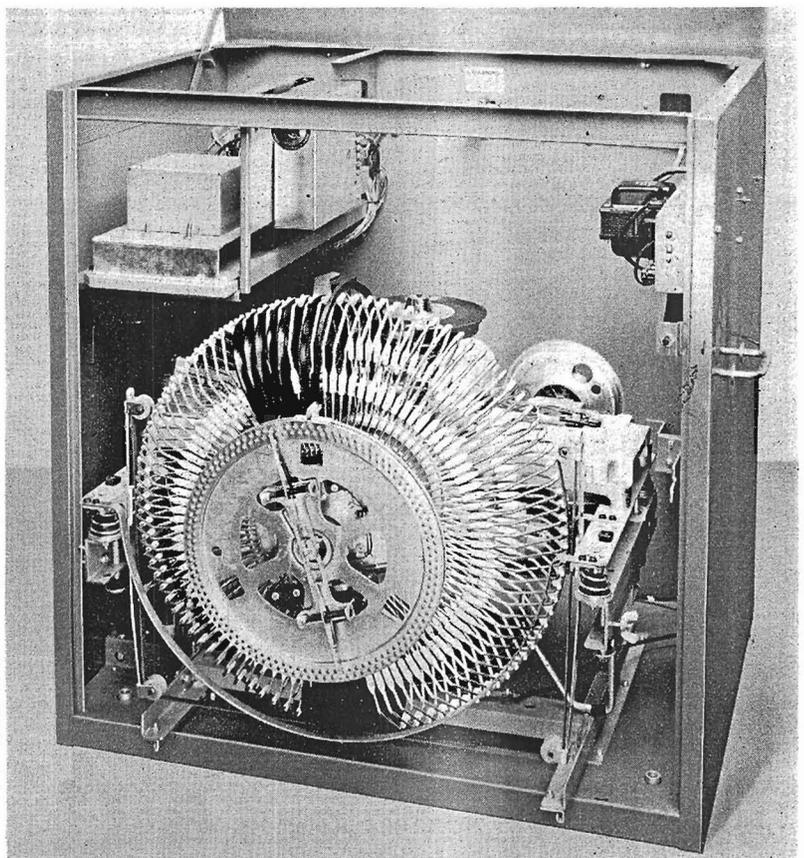


FIG. 4. The record basket is easily rotated into this position to simplify loading in the BQ-103 and BQ-104 Automatic Turntables.

### BQ-103 Automatic Turntable

The new RCA Type BQ-103 Automatic Turntable is a fully automatic unit, designed to permit selection of records in either random or sequential order. Random operation permits selection of recordings in any desired order, while sequential operation restricts selection to the order in which the recordings were placed in the machine. The desired mode of operation is easily selected on the manual control box where any of the 100 45-rpm records (200 sides) may be selected (see Fig. 3). The circular record "basket" will store 100 discs, and it may be loaded from the top of the cabinet or from the front by sliding the record basket forward (see Figs. 4 and 5). The dust-free cabinet of the BQ-103 and the automatic handling of the discs reduces record wear.

The BQ-103 when used in combination with a Transistorized Turntable Preamplifier, Type BA-26A, produces an output signal capable of being fed into a console at mixer level. Built-in equalization of the BA-26A conforms to RIAA/NAB curves. A BA-26A is easily mounted in the BQ-103 cabinet as shown in Fig. 4.

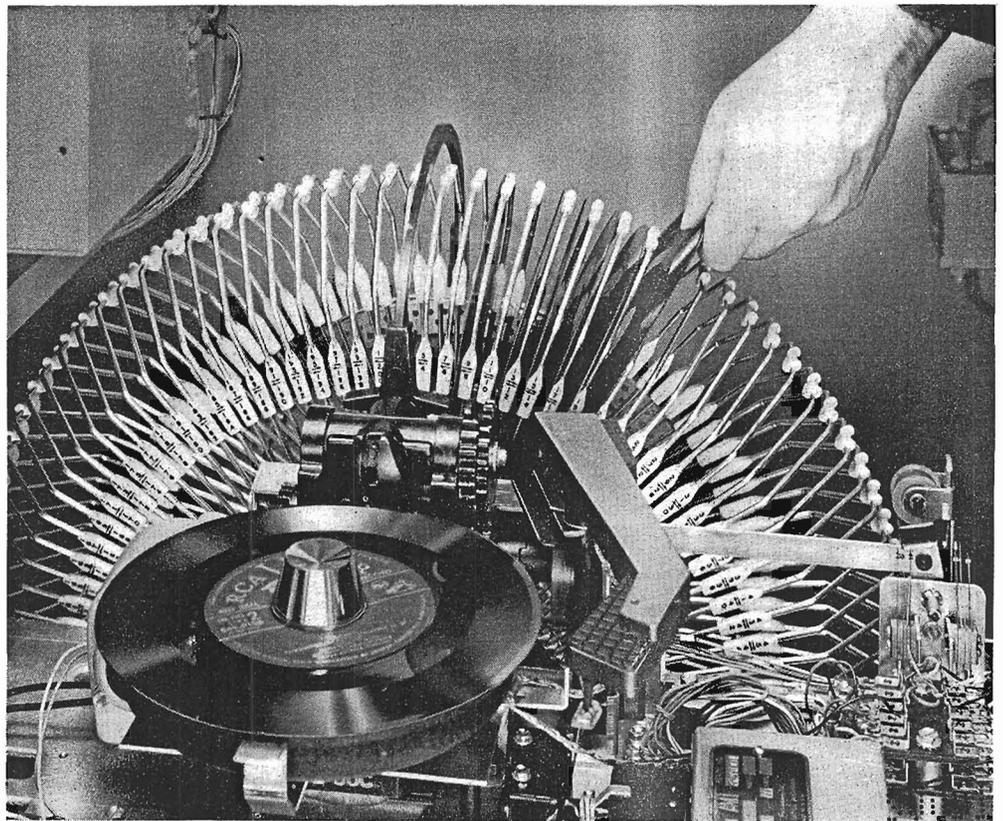


FIG. 5. The turntables may also be top loaded as shown here. Thus, last-minute changes can easily be made.

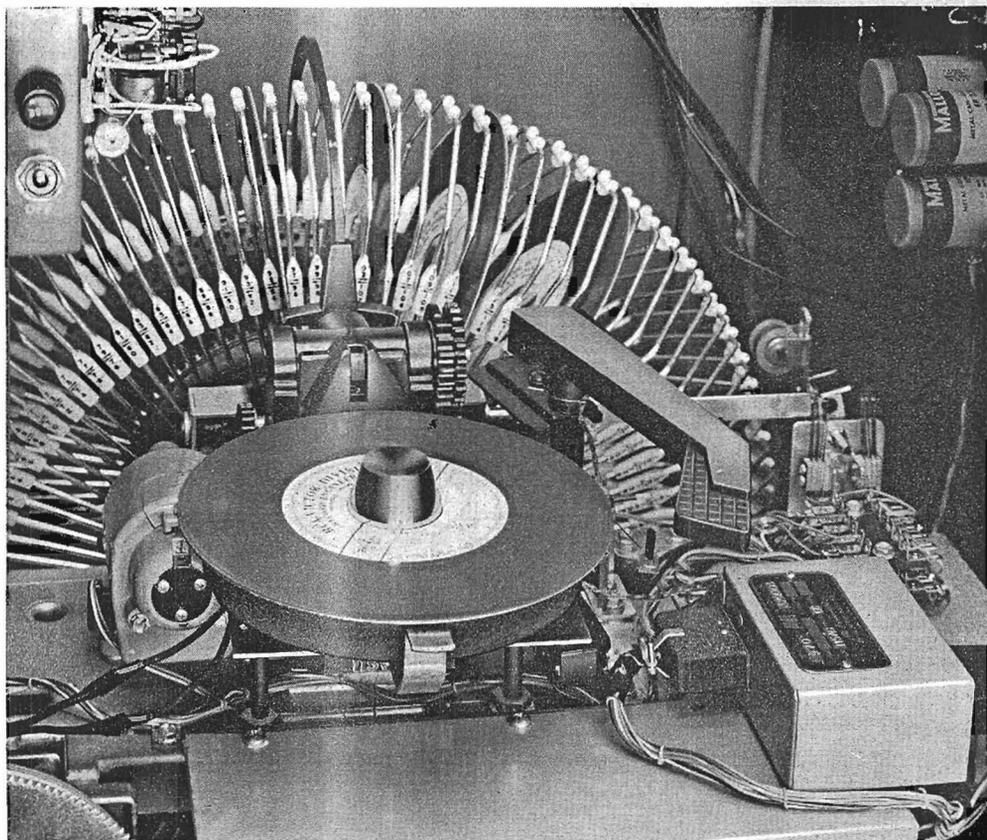


FIG. 6. A magnetic disc is shown on the turntable. The next step in the operation would be automatic cueing of the magnetic disc. The pickup arm is equipped with a magnetic playback head.



### BQ-104 Automatic Magnetic Disc Turntable

Another new Automatic Turntable, Type BQ-104, is almost identical to the BQ-103; however, the BQ-104 has been designed for automatic playback of the new RCA magnetic discs (see Figs. 2 and 6). The turntable speed of the BQ-104 is  $33\frac{1}{3}$  rpm to provide correct playing time on the magnetic discs, and the BA-51A Record/Reproduce Amplifier should be used to provide proper equalization of the signal from the magnetic discs. In operation the BQ-103 and BQ-104 are identical.

The BQ-104 offers a convenient method of storing and playing back commercials, announcements, and other repetitive types of recorded material. Multiplicity on any program is easily obtained by prerecording announcements on the BQ-51A/BA-51A Magnetic Disc Recorder (see Fig. 7), and then placing the magnetic discs in the BQ-104. A typical operating arrangement might include a BQ-103 and one or more BQ-104's. The BQ-103 will accommodate the conventional 45-rpm recordings, and the BQ-104 Turntables will play commercials and announcements recorded on magnetic discs. The machines can be preset for back-to-back operation; thus as a music selection finishes on a BQ-103 a magnetic disc recording of a commercial on a BQ-104 can be switched to the on-air position for immediate follow up.

### Sequential Operation

Both the BQ-103 and the BQ-104 operate in the same manner. The sequential or random mode of operation is selected with a switch on the control box (see Fig. 3). When the switch is in the sequential position, the first record (in numerical order) is automatically selected, removed from the record basket, placed on the turntable, and automatically cued-up.

The first selection will play only after the start button has been depressed; however, for sequential operation the start button may be locked into the depressed position which will make the operation fully automatic and continuous. If desired, the start button may be used for each selection.

Sequential operation requires prearrangement of the discs to conform to program requirements, since all sequential selections are made in ascending numerical order after the first selection has been made.

FIG. 7. The RCA Type BQ-51A/BA-51A Magnetic Disc Recorder is used to record the magnetic discs played in the BQ-104 Automatic Turntable. The magnetic discs combine the advantages of tape and disc to produce a practical commercial recording instrument.

FIG. 8. This is a Type BQ-101 Automatic Turntable. The 60-record unit is designed for sequential operation only, and its companion unit, the BQ-102, is designed for random-select operation. Both units are physically similar, but differ slightly in electrical and mechanical construction.

Periods of unattended studio operation are possible by using a BQ-103 set for sequential operation. There is an elapsed time of approximately six seconds between recordings.

### Random Operation

The random select mode of operation permits the choice of any recording by simply "punching up" the desired selection number. Three rows of switches on the control unit make available any recording in the record storage basket (see Fig. 3).

When the selection number is selected a "check" light indicates that the recording is acceptable, that is being within the number 1 through 200. (Note that all three digits of a number must be pressed to make a selection therefore recording 10 would be 0—1—0.) The selection information is passed on to the turntable mechanism by actuating the "Transfer" switch sending pulses to the pulse converter.

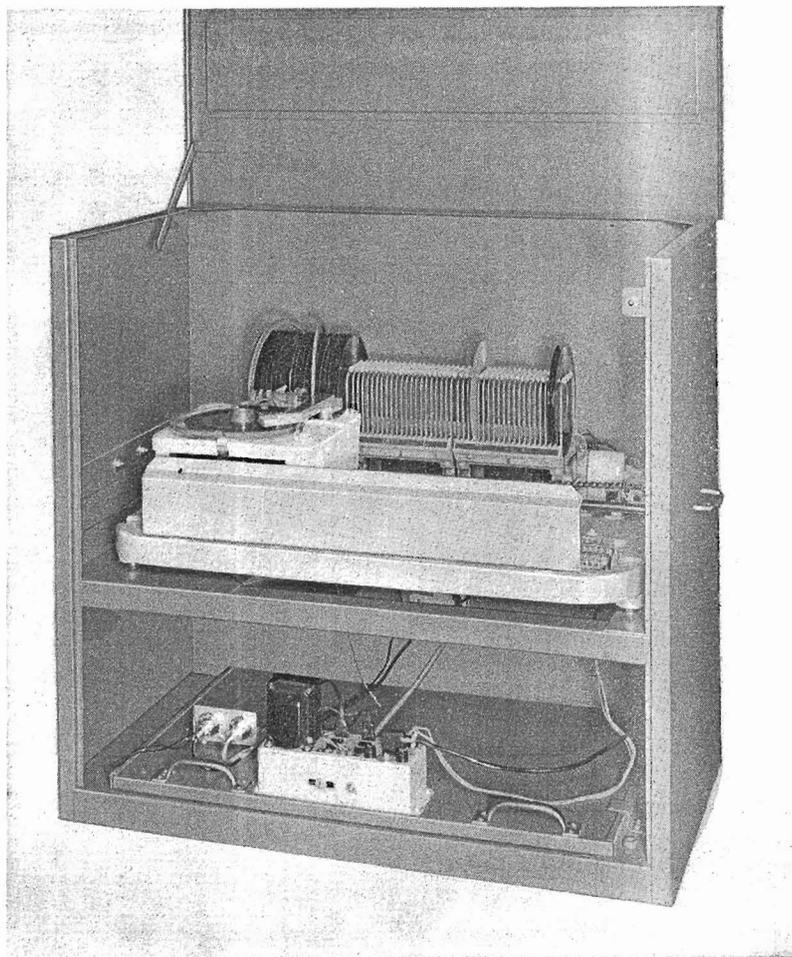


FIG. 9. Magnetic discs are easily recorded. The convenient microphone jack is just below the meter on the BA-51A Record/Reproduce Amplifier.

The record storage basket rotates until the desired selection is in position where the mechanical selector arm can remove the recording from the basket, and place it on the turntable. The tone arm is then automatically cued-up on the disc for playback and the start button on the control unit is illuminated to indicate that the mechanism is ready to play. Pressing the start button starts the turntable and the playback is begun.

At the completion of the recording, the disc is returned to the storage rack and the mechanism is ready to select another recording repeating the same procedure.

Preselection of recordings can be arranged by making a selection and passing it on to the mechanism by means of the transfer switch. This operation may be repeated to accommodate several selections (playback must be in an *ascending numerical order*) Selecting one recording and preselecting a second one will, of course, allow playback in any desired numerical order.

A "Reject" button removes the record on the turntable and returns it to its position in the storage rack. The clear button removes all preselections from the mechanism, thus last-minute-program changes

can be made seconds before a selection is to be played.

### Other Automatic Turntables

Several years ago, RCA introduced automatic turntables with a capacity of 60 records (120 sides).<sup>\*</sup> These units differ in mode of operation: the Type BQ-101 Automatic Turntable plays records in a predetermined sequential order, and the BQ-102 Automatic Turntable plays records in any random order (see Fig. 8). Both units have been proved in many installations and they may be used where larger record-handling capacities are not required.

### Building Blocks

The BQ-103 and BQ-104 are excellent units offering semiautomatic programming and in addition to their individual benefits they can also become an integral part of the RCA automatic programming system. Thus, it is now possible for a broadcaster to become familiar with the operation of these semiautomatic units on a step-by-step basis. Future expansion to fully automatic programming can be planned while currently enjoying the benefits of automatic turntable equipment.

<sup>\*</sup> "New RCA Automatic Turntables," *Broadcast News*, Vol. No. 89, June, 1956.