

Radiotone

"America's Finest Recorder"

COMBINATION
PHONOGRAPH,
RADIO AND
PUBLIC ADDRESS
SYSTEM



Featuring

RADIOTONE'S

Duo-Chromatic

EQUALIZERS

FO those who want the best in recording, Radiotone presents their new Five-in-One recorder combination • Microphone Recorder • Radio Recorder • Radio • Phonograph • Public Address System.

- You can make a record of your voice or an orchestra ready for instant reproduction.
- Your favorite radio program can be preserved by simply recording it.
- The finest radio reception can be enjoyed from this instrument which reproduces the original program with full fidelity.
- Your favorite selection of phonograph records may be played with more life-like tone than you have ever heard before.
- This versatile instrument can also be used as a public address system.

- One outstanding feature that contributes to the supreme performance of this new recorder is Radiotone's new Duo-chromatic Equalizer. Through their use you can actually focus the music to the quality and fidelity that you desire. In brief, you can expect performance equaled only by high priced commercial studio installations. Yet, it is within the reach of many and can be operated by anyone without technical knowledge.

- See and hear this miracle of modern science today at your favorite Radio or Music Store.

- Refer to back page for the name of your nearest dealer where you may arrange for a demonstration.



*Model R-16
Dual Speed Recording
Mechanism as Pictured
on Extreme Left.*

*Size—18½" x 25" x 12½"
Weight—47 pounds*



*Model RA-16
Dual Speed Recording System as Pictured in Center
Size—23" x 25" x 14½" Weight—84 pounds*

Model D-16

Dual Speed 16" transcription table designed to offer a perfect medium for record reproduction with absolute freedom from flutter or vibration as Pictured on Extreme Right.

*Size—18½" x 25½" x 12½"
Weight—41 pounds*

MODEL R-16—For those who have their own amplifying and public address facilities, the addition of this instrument will make a complete recording system. The mechanism is identically the same as the one used in the Radiotone RA-16 Complete Recorder and will handle all size discs up to and including the largest transcriptions. Maximum time 45 minutes on a 16-inch disc.

MODEL RA-16—Here is an instrument that is the finest of its kind. It makes records at either speed from a microphone or radio. It handles all discs up to and including the largest transcriptions, allowing a maximum time of 23 minutes on each side. You may play any phonograph record or transcription or tune in your radio programs with full-toned, high fidelity reproduction. It also can be used as a public address system.

MODEL D-16—Consists of a turntable, motor with its drive system mounted on a reinforced panel and equipped with a light-weight high fidelity playback arm and crystal cartridge. When coupled to your amplifier, this unit affords a perfect medium for making duplicate records where quality must be maintained. All parts, including motor, are the same as those used in the R-16 recorder.



One of the many practical uses for Radiotone equipment is shown in this picture of the Lux Radio Theatre sound truck with Cecil B. De Mille.

Here are many other ways in which Radiotone equipment is used.

- *Public Schools, Vocal and Dramatic Studios and Universities . . .* in speech correction, language work, singing, elocution and dramatics, it is an invaluable aid to the pupil to be able to actually hear himself. With this definite advantage, he can make more rapid advancement than has ever been possible before. The recording of radio programs for study has already been put into practice. This feature will make any program available while the class is in session. Important events may be recorded and filed for future reference and study.
- *Composers, Arrangers and Orchestra Leaders . . .* to capture a new theme or composition, a recording can be made instantly and a valuable piece of work can be preserved which could never be duplicated. Invaluable for perfecting arrangements and style.
- *Industrial Institutions . . .* for the education of salesmen, personnel, and the delivering of important messages from department heads. Valuable sales talks may be recorded and dispatched to branch offices at small cost.
- *Insurance Companies, Police Departments and Detective Bureaus . . .* for recording of evidence and confessions in civil and criminal cases.
- *Recording Studios and Broadcast Stations . . .* for the making of studio transcriptions, personal records, air checks, duplicate records, sound effect records and transcriptions for delayed broadcasts.
- *Motion Picture Studios . . .* for use by the casting director for the selection of new talent. Recording of special material to be filed for future reference. The making of instantaneous playbacks of each scene so that the director can approve or reject it at the time.

Radiotone recorders are the favorite of those who demand the best.

Here is a brief list of well known satisfied users:

Bing Crosby
Harold Lloyd
Edgar Bergen
Amos 'n' Andy

Jerome Kern
Rudolph Friml
Sigmund Romberg
Ozzie Nelson

20th Century-Fox Studios
Disney Studios
RKO Studios
Republic Pictures

Model RA-12
Dual Speed Recorder
as Pictured.
Showing the Composer
Making a Record while
Playing the Piano.
Size—20"x21 1/4"x14"
Weight—69 pounds



MODEL RA-12—This instrument is a complete self-contained recording system on which you can make records at either speed from a microphone or radio on all size discs up to and including 13 1/2 inches in diameter, allowing a maximum time of 10 minutes on each side. You may play any phonograph record, including a 16" transcription, with high fidelity and reproduction. You can listen to your favorite radio program and enjoy full round tone quality equaled only by the original. This machine can be used as a public address system when desired. Many special features are included such as variable lines per inch and reversible direction of cut.

COMPLETE SPECIFICATIONS AND TECHNICAL DATA ON PAGES 7 AND 8

Recording Mechanism

- DUAL SPEED** —78 or 33-1/3 rpm. instantly available with the shift of a lever.
- LEAD SCREW** —Positive feed overhead lathe type lead screw insures perfect grooves and dependable operation. Direction of cut can be changed instantly from outside-in to inside-out and vice versa.
- VARIABLE LINES** —The number of lines per inch on the disc may be varied from 90 to 150. Calibrated scale shows correct setting. More lines per inch than 130 are not recommended in most cases. 105 lines should be the maximum for 78 rpm. recording. Lines may be varied while machine is in operation.
- LIFT LEVER** —Automatically engages the half nut as cutting head is lowered into position. Release device allows the making of run-in grooves at the end of a recording.
- DEPTH OF CUT ADJUSTMENT** —Accurate regulation of pressure at the cutting stylus is obtained by turning the calibrated knob. Adjustment can be changed as stylus dulls and returned to original setting for new stylus.
- ANGLE CONTROL** —To insure perfect angle of any cutting stylus under all conditions regardless of thickness of the recording blank a single lever provides ample adjustment instantly.
- DRIVE SYSTEM** —Radiotone has perfected a positive silent drive insuring perfect motion, correct pitch, and stability. Moving parts have been reduced to a minimum and provision has been made to easily change cycle when necessary.
- MOTOR** —A streamlined heavy duty power plant especially designed for continuous operation and constant speed. It is dynamically and astatically balanced for extremely quiet operation. Ample cooling is provided through its construction and ventilating fan. It operates on 100 to 120 volts AC with 50 or 60 cycle current and may be operated from an electronic converter when only DC current is available.
- PANEL** —The entire assembly is mounted on a 16-gauge pressed steel formed panel heavily reinforced with rib section, thus insuring lightweight and maximum strength.
- HIGH FIDELITY CUTTING HEAD** —Standard Radiotone cutting head maintains its adjustment and has a uniform frequency response from 40 to 6000 cycles.
- PLAYBACK ARM** —Velvet action, ball-bearing, resilient rubber mount. Heavy construction and counterbalanced to 1½ ounces providing a perfect carriage for its high fidelity crystal unit. Frequency range from 30 to 7000 cycles.

Recording Amplifier

- DUO-CHROMATIC EQUALIZERS** —Radiotone has contributed a final step toward high fidelity recording and reproduction with its exclusive chromatic equalizers. There are two separate continuously variable controls. One allows the operator to vary the low frequency response broadly, at about 100 cycles from 1 to 15 DB above normal or below normal. The other gives constantly variable boost at the high frequency end around 7500 cycles of from 1 to 22 DB or an attenuation of from 1 to 15 DB broadly below 5000 cycles. These controls have a plainly marked setting midway between maximum and minimum which allows the amplifier to perform with its normal response curve of a flat frequency range within 2 DB plus or minus between 50 and 12000 cycles. All settings of these controls affect any signal that passes through the amplifier.
- MULTIPLE INPUT CHANNELS** —Four input channels are provided. All are high impedance on standard equipment but any impedance can be furnished at additional cost. Two channels have an overall gain of 115 DB which is ample to operate microphones as low in level as -70 DB. The other two have an overall gain of 80 DB which is suitable for most any crystal magnetic or dynamic pickup as well as a zero level line.

MIXERS

- Two volume controls are provided and may be operated simultaneously regulating the input signal from two microphones, microphone and dubbing table (or external phonograph), radio and microphone, or radio and dubbing table. All combinations are plainly marked on the controls and the input jacks (e) designates the 80 DB channel and Jack (m) designates the 115 DB channel. Selection of channel desired is obtained by depressing the proper button.

PUSH-BUTTON CONTROL

- All functions of the unit are regulated instantly by depressing one or more of the seven different buttons.

VOLUME INDICATOR

- Uses one 6U5 magic eye tube to indicate recording level. Maximum volume is shown when shadow is completely closed. This eye has a dual purpose. When recording, shadow fluctuates instantly with the signal fed to the cutting head. While reproducing only, the eye serves as a tuning indicator for the radio.

OUTPUTS

- All output impedances are six ohms. The cutting head is fed from two tip jacks on the top panel. The standard speaker is connected to the amplifier by means of a three-prong receptacle located on the front panel. There is an extra phone jack provided to handle an additional speaker or a pair of ear-phones. The monitor switch located between the two plugs will disconnect the standard speaker while recording from a microphone in the same room.

AMPLIFICATION STAGES

- The amplifier has four stages. The first one is a dual preamplifier utilizing one 6SC7 tube which provides the two microphone inputs. The second is the duo-chromatic equalizer stage also utilizing one 6SC7 tube. The third uses two 6SQ7 tubes in push-pull as phase inverted degenerative resistance coupled drivers. The fourth is the power output stage using two 6V6GT tubes in push-pull class "A" feeding an extra heavy duty output transformer. To insure stability inverse feedback is employed.

RADIO

- Radio receiver employs a 6SK7 in an untuned R.F. circuit, a 6A8 mixer and oscillator which is followed by a 6SK7 intermediate frequency amplifier employing high quality variable selectivity transformers. Sharp position for standard selectivity, broad position for high fidelity reception from local stations. Intermediate frequency is 456 kc. The last stage employs a 6SQ7 second detector and audio gain stage. This audio gain stage is equalized to pre-emphasize these frequencies normally attenuated in a superheterodyne receiver. The receiver has a built-in antenna with provisions for connecting an outside antenna and ground. The receiver tunes from 550 to 1550 kc.

POWER SUPPLY

- The power supply utilizes a slow heating cathode type 5V4G tube insuring excellent voltage regulation. The power transformer is conservatively rated to withstand temporary overloads without failure or overheating. Will operate on 50 or 60 cycles.

FINISH

- All units are housed in high grade black leatherette cases with chromium hardware. The mechanisms are finished in baked crackle lacquer with chrome trim. Control knobs are white plastic.

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