

RCA TELEVISION EQUIPMENT

AS a result of RCA's extensive research development and field test in all branches of television, RCA's wide experience in building both television transmitters and receivers, as well as actual television transmission conducted both in New York and Camden, N. J., the RCA television apparatus line is probably the most advanced ever offered in a new field. But in addition to extensive facilities for television circuit and tube development which have resulted in apparatus having electrical characteristics considerably superior to those actually required at present, the activities of RCA in the broadcast transmission field have furnished a guide to mechanical design and arrangement for maximum convenience, accessibility and flexibility. In addition, production facilities and manufacture of apparatus by economical methods enable RCA picture apparatus to be sold for prices comparable with equivalent sound broadcasting units, considering the more stringent requirements which must be met. As a result, RCA television apparatus units are obtainable with advanced circuit design, in commercial mechanical layouts and with performance exceeding present requirements in regard to frequency response, noise level and phase displacement. Equipment is available in unit form or in



RCA Television Camera.

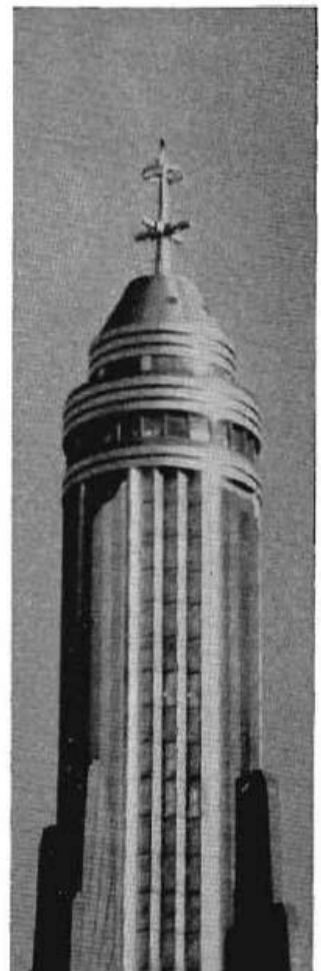
complete chains for laboratory, experimental or transmission purposes.

COMPLETE SYSTEM

RCA television apparatus includes receivers of several different types, video amplifier and terminal equipment, transmitters, vacuum tubes, measurement apparatus and television field pickup units. It is significant that just as RCA produces a complete line of apparatus for broadcast transmission and reception, so RCA has designed an integrated line of television apparatus, complete even to the test equipment for operation or adjustment. Full information is available to prospective purchasers of any of this equipment although it is not practicable to provide more than a condensed outline of most of the line here. A description of the RCA measurement apparatus for television will be found in a separate section of this catalog and RCA television tubes are listed with other special purpose tubes in the rear of this book. Data on television receivers is available on request.

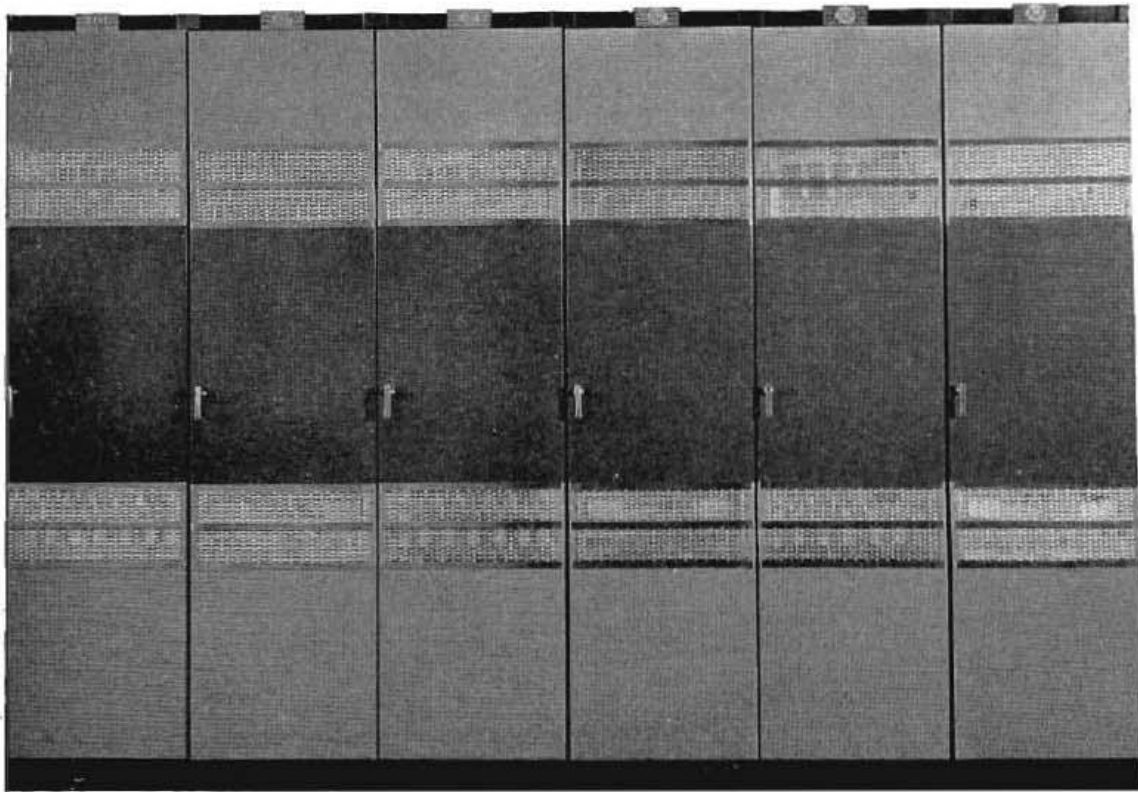
VIDEO EQUIPMENT

RCA video apparatus, the parallel of the audio apparatus found in



RCA Television Antenna atop Empire State Building.

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RCA Video Equipment is housed in these racks.

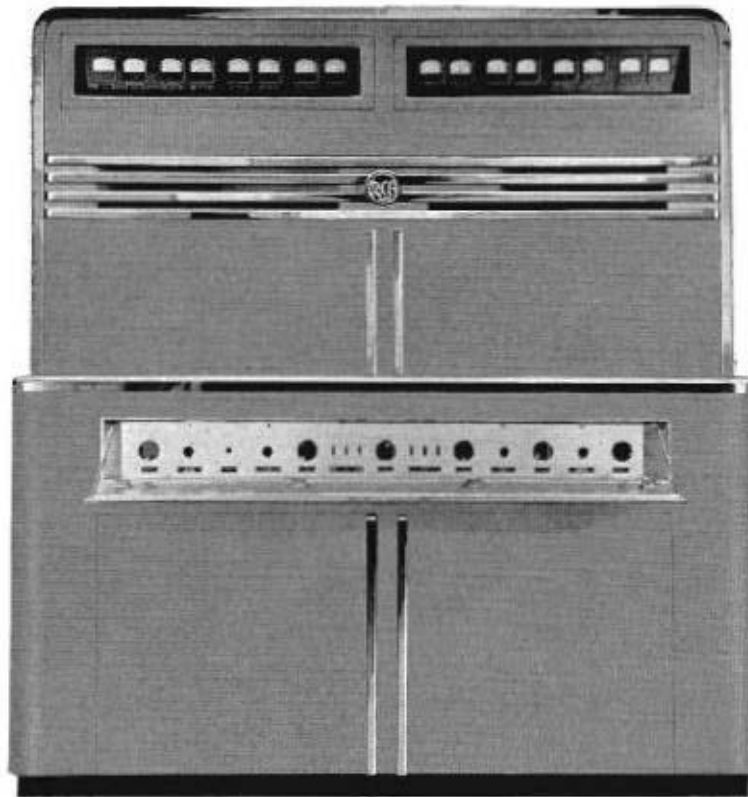
broadcast studios and control rooms, includes studio and film cameras, film projectors, camera apparatus chains, amplifiers, synchronizing generators, monitors and accessory equipment.

The design of the apparatus permits an equipment layout in many ways similar to that used in broadcasting. Each camera, containing a video preamplifier and associated apparatus, requires a "chain" of video equipment, mounted on a rack in the control room and performing the functions of amplification, the supplying of suitable deflection voltages to the Iconoscope, power supply, etc. The output of the camera chain may be switched to common apparatus used with any number of cameras and including a synchronizing generator and line amplifier. Monitors

may be employed for viewing the picture produced by each camera or on the output line. Picture oscillographs having wide frequency response characteristics are employed for setting levels and checking operation.

The RCA video panels are constructed for rack mounting and embody a special mechanical design arranged for accessibility as well as for carrying off heat from components and tubes. This construction, a modification of the vertical chassis design which has proved so popular in RCA broadcast transmitters, provides for the mounting of tubes, condensers and adjustment controls on the front of a dished chassis. On the rear are located the other components and interconnecting wiring. Instead of separate front

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RCA 1 KW. Picture Transmitter Type T-1.

panels, a door the full length of the rack is used. On opening this, all tubes are easily reached and grilles in the door promote good ventilation which is aided by the natural thermal circulation up the rack. The rear door of the cabinet rack affords access to the back of all panels where other components are located. Plate currents of most of the vacuum tubes may be read by plugging a portable meter into a jack and operating a selector switch for the desired tube. Provision is made for checking circuits with an oscillograph by connecting to terminals in the rear.

Operating controls are usually located on a control console which may be designed for any number of camera channels. Remote control of brightness and

gain is effected by means of d. c. circuits. Special coaxial cable terminations are furnished for video circuits on the units. Other apparatus including film projectors, camera stands, alternate lens systems, etc., is also available. Standard RCA broadcast studio equipment may be employed for the sound channel.

RCA video apparatus may be obtained in rack and panel design for any number of camera channels or in simplified cabinet form for use with one camera only.

TRANSMITTER AND SPECIAL APPARATUS

The RCA 1 KW. picture transmitter, Type T-1, is a medium power television transmitter built to commercial standards and including a number of impor-

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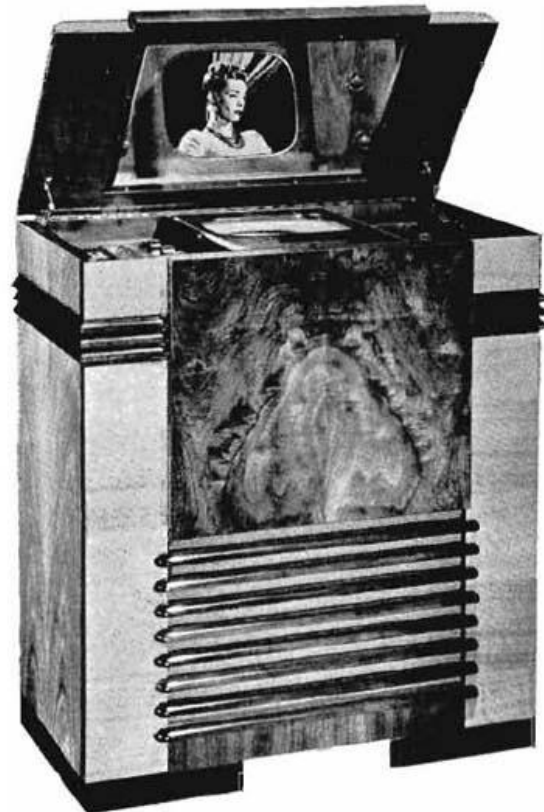
Television Demonstration Unit Model 510A.

tant circuit developments. This equipment, crystal controlled and a. c. operated, employs tubes designed particularly for this application and is easy to install and to operate. A carrier frequency range of from 45 to 108 mc. is covered with a frequency response good to over 4.5 megacycles. The transmitter employs d. c. coupling between the modulator and power amplifier with special isolation circuits to permit operation of the tube filaments from a. c. Undesirable transient characteristics have been avoided by the use of carefully designed video circuits and novel power supply systems.

The transmitter is mounted in a well styled cabinet and includes an external power supply frame and water cooling unit for the power amplifier tubes.

An external partial sideband suppression filter is available, designed to reduce transmission of the lower sideband without disturbance of the picture. This filter is composed of several sections and is constructed of transmission line of the proper characteristics.

RCA television field pickup equipment for mobile use is under preparation at the time of issuance of this catalog. It allows for picture transmission by special wire line or by radio links to the main television station. Both video apparatus and very high frequency, small size radio transmitter units are included.



RCA Victor TRK-12 Television Receiver.