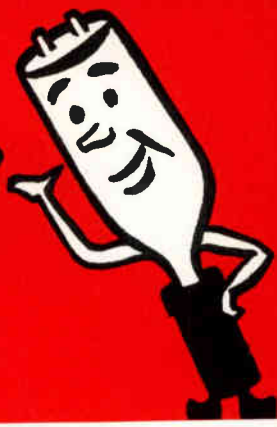




# TUBE TIPS



A NEWSLETTER TO THE BROADCASTING INDUSTRY

RCA TUBE DIVISION

HARRISON, N. J.

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## Versatile New RCA Oscilloscope and Vacuum-Tube Voltmeter Most Suitable for Maintaining Broadcast Station Equipment

A new oscilloscope (WO-91A) and a new vacuum-tube voltmeter (WV-98A) were recently added to the RCA Tube Division's line of test equipment. Both instruments are designed for a wide variety of applications of interest to broadcast engineers.

The WO-91A, a very versatile performer at a moderate price, is a 5-inch oscilloscope incorporating all the 'scope functions needed for testing black-and-white and color-TV receivers or monitors. Featuring dual band-width response, this new test instrument has a frequency response in its wide-band position that is flat within plus-or-minus 1 decibel from 10 cycles per second to 4.5 Mc. In the narrow-band position, response is flat within minus 1 db from 10 cps to 0.5 Mc and is within 6 db at 1.5 Mc. Sensitivity of the WO-91A is 0.05 volt, peak-to-peak, per inch (0.018 volt rms) in the narrow-band position. In the wide-band position, sensitivity is 0.15 volt, peak-to-peak, per inch (0.053 volt rms). The WO-91A has a voltage calibrated, frequency-compensated, 3-to-1 step attenuator for the "V" amplifier, and pre-set "V" and "H" sweep positions.

The WV-98A, RCA's new Senior VoltOhmyst<sup>®</sup>, is a vacuum-tube voltmeter designed for all-round testing and trouble-shooting of TV, FM, AM, and audio circuits. Incorporating all the important time-proven performance figures of earlier VoltOhmysts - including direct voltage readings of complex waveforms - the WV-98A includes an improved, negative feedback circuit that provides greater accuracy than ever before. In addition, this new test instrument features an extra-large (6½-inches wide), full-vision meter face that greatly simplifies and speeds up testing. Provided with the meter is a new single-unit dc/ac-ohms probe that has a handy, built-in switch for selection of dc, ac, or resistance functions. Overall accuracy of the WV-98A on its ac and dc voltage scales is plus-or-minus 3%. Input resistance on dc scale, including 1 megohm in the probe, is 11 megohms. On ac scales, input resistance is at least 0.83 megohms.

User prices (optional) of the RCA test equipment are as follows: WO-91A oscilloscope, \$229.50; WV-98A Senior VoltOhmyst, \$75.00.

## *Holiday Greetings and Best Wishes*

Your friends in the RCA Tube Division take this opportunity to wish you a happy holiday season and a successful new year.



## Adjustment Service Accelerated

To speed up adjustment service to broadcasters on RCA camera tubes and power tubes which are either water-cooled or air-cooled by means of an external radiator, the RCA Tube Division is now enclosing Tube Return Authorization Form 9615 in all shipments of such tubes. This form has been designed to eliminate the need for your RCA tube distributor to request a return authorization prior to shipping these high-value tubes to RCA when the need for adjustment consideration should arise.

The tube types with which form 9615 may be used are as follows:

4X150A	9C25	891	5671	5946	1699
4C33	207	891R	5713	6161	1850A
8D21	827R	892	5762/7C24	6166	5527
9C21	862A	892R	5770	6181	893AR
9C22	880	893A	5771	6383	898A
6326	889A	5588	5786	6448	5820
6474/1854	889RA	5592	5831	2F21	6198

Because this new policy was only recently put into effect, it is possible that your distributor may have some of the above tube types in stock which do not have Form 9615 packed in the container with them. However, all RCA tube distributors have been furnished a supply of these forms and they will be used, whenever necessary, as an **advance** Return Authorization and Service Report to cover tubes sold or in service before this procedure became effective.

By filling in the necessary information on Form 9615 and enclosing it with any of the above-listed tubes to be returned for adjustment, you will considerably speed the service your RCA tube distributor stands ready to offer you.

## RCA-5762/7C24's Setting New Life Records at WJAC-TV

Not one but five instances of long-life records by RCA-5762/7C24 tubes were recently reported in the making at WJAC-TV, Johnstown, Pa. According to a letter from Nevin Straub, technical director of the station, every one of the five 5762/7C24's in use at WJAC-TV is still going strong after more than 17,000 hours of continuous service.

The rugged RCA-5762/7C24 is a forced-air-cooled power triode rated at 3 Kw plate dissipation. The original type 7C24 was developed for use in 110-Mc FM applications. Technological advances in high-efficiency radiator design led to the introduction of the 5762 – a type similar to the 7C24 but having an improved radiator which permitted more effective plate cooling. As a result, the 5762 has a higher plate-dissipation rating and a higher plate-input rating than the 7C24. Shortly after the introduction of the 5762, structural improvements in both tube types made possible their operation in TV service up to 220 Mc. At about the same time, the improved radiator already in use on the 5762 was incorporated in the 7C24. This change eliminated the only difference between the two types, and shortly thereafter the tubes were double-branded. Today the 5762/7C24 is proving itself a reliable, economical tube type for TV, AM, FM, and industrial applications.

## Power Rating Increased for Transmitter Featuring RCA-6146's and -6166's

Design improvements in the RCA TT-10AL television broadcast transmitter, which features two RCA-6166's and six RCA-6146's, now increase the power rating to 11 Kw. When used in combination with an RCA 12-section antenna, the new 11-Kw transmitter can deliver 100 Kw effective radiated power – the maximum broadcast power permitted low-band (channels 2 to 6) TV stations under regulations of the Federal Communications Commission.

Two RCA-6166's operating in single-ended output amplifier stages supply the "punch" of the TT-10AL. One 6166 is used as the final video amplifier; the other powers the final audio-amplifier stage. The six RCA-6146's power the new video modulator which is now part of the TT-10AL.

One of the broadcast industry's most widely used low-band television transmitters, the TT-10AL formerly had been rated at 10-Kw output, but the incorporation of a new modulator now enables this transmitter to deliver a full 11 Kw of peak visual power measured at the output of the side-band filter. In addition, the new TT-10AL is fully corrected for color operation and, therefore, requires no modification for transmitting color programs.



## Price Cuts Announced for Four RCA Power Triodes

Increased demand coupled with improved manufacturing techniques prompted the RCA Tube Division to announce price reductions effective November 1st on the 891 and 892 water-cooled power triodes and the 891R and 892R forced-air-cooled power triodes. New prices for these types are as follows:

Type	Distributor Resale Price (Optional)
RCA-891	\$235.00
RCA-891R	381.00
RCA-892	235.00
RCA-892R	381.00

## New RCA Application Note Discusses Blower Requirements

The new, 11-page Application Note AN-161, entitled "Blower Requirements for RCA Forced-Air-Cooled Tubes," contains valuable information for all broadcast engineers planning the installation of new equipment or the modification of an existing transmitter.

Selection of a suitable fan or blower for cooling the external anode of an electron tube, a tube header or electrode seal, or the glass envelope of a tube having a radiation-cooled anode requires that the following three factors be known: (1) the airflow required; (2) the static pressure at the blower outlet; and (3) the amount of permissible noise. Application Note AN-161 discusses these factors in detail and illustrates the procedure for choosing a suitable blower by means of an example problem.

Copies of RCA Application Note AN-161 are available from Commercial Engineering, RCA Tube Division, 415 S. 5th St., Harrison, N. J.

# STAR PERFORMER

... year  
after  
year



This is the Image Orthicon, Type 5820. RCA designed this tube — and developed the specialized equipment and techniques necessary to precision-manufacture it.

Known for superb picture quality, high stability, and remarkable uniformity, RCA Image Orthicons have been making friends with TV stationmen and sponsors since 1949.

**RCA 5820 Image Orthicon**—  
the TV Camera Tube that made  
modern telecasting practicable



**PICK-UP TUBES for TELECASTING**

RADIO CORPORATION OF AMERICA