RCA

# TUBE TIPS

A NEWSLETTER TO THE BROADCASTING INDUSTRY

EDITORIAL OFFICES, RCA TUBE DEPARTMENT, HARRISON, N. J.

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Among our assets
we like to count
the only one that money cannot buy,
Your Good-Will.

So at this Holiday Season
we of RCA's Tube Department
extend to you our
Best Wishes for the coming year.

## RCA Publishes Two New Tube Booklets

Two new 16-page booklets -- "Power and Gas Tubes for Radio and Industry", and "Receiving Tubes for Television, FM, and Standard Broadcast" -- have just been published by RCA.

The first pamphlet has detailed technical information on air- and water-cooled transmitting tubes, rectifiers, thyratrons, ignitrons, and voltage regulators. Each tube is covered by a text description and ample tabular data, together with its base diagram. Many of the preferred types are illustrated by photographs.


The second pamphlet contains characteristics and socket connections of RCA's extensive receiving tube line. It includes the latest data on all new tubes, revised data on many older types, and a substantial revamping of all socket diagrams. Among the new features of the booklet are complete kinescope listings, identification of miniature and metal types through easy-reference symbols, and a keying of discontinued types.

The ever growing demand for up-to-the-minute tube data by station engineers should make both publications valuable as reference sources. The new booklets are being enclosed with station engineers' copies of this month's TUBE TIPS. Other interested readers may secure the publications by dropping a line to RCA's Industrial Sales Section, Harrison, N.J.

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## RCA-914-A Replaces 914 Cathode-Ray Tube

The RCA-914, a high-vacuum cathode-ray tube with electrostatic focus and deflection, has been superseded by the RCA-914-A. The latter has an improved electron gun of the zero-first-anode-current type, and utilizes a button stem which reduces the overall length of the tube about 1-1/2". In other respects, the 914-A is the same as the 914 and has the same maximum ratings. The 914-A is generally interchangeable in equipment designed for the 914 except that readjustment of the socket and extension of the socket cable may be required. User's price on the RCA-914-A is $85.00.


## Two RCA-872's Pass 55,000 Hour Mark

Perhaps the long-life tube-story which tops them all is contained in a recent letter received from Roland W. Richardt, Chief Engineer of Northern Broadcasting Company's Station WSAU in Wausau, Wisconsin. A pair of RCA-872 half-wave, mercury-vapor rectifiers are still performing satisfactorily in the Station's transmitter after 55,230 hours of service. The tubes, installed more than ten years ago, see 16 to 18 hours of daily service and show no signs of weakening, according to Mr. Richardt.

## RCA Delivers Equipment for Mobile Radio-Telephone Service

The magic of electronics will soon transform one of America's oldest mail coach highways, the Boston Post Road (U.S. 1), into a communication lane equipped to provide two-way radio-telephone service for motor vehicles traveling between New York and Boston. This was disclosed by RCA when initial deliveries of RCA land and mobile FM radio transmitters and receivers were made to the three Bell Telephone System companies which will operate the service.

The new mobile radio-telephone highway service will be inaugurated upon the completion of an initial test period, after other units of the equipment are delivered and installed. Subject to the Federal Communications Commission's licensing, the service will operate in the 30-44 Mc band.

## Advantages of Grounded-Grid Circuits

Many of the difficulties encountered in obtaining power amplification at high frequencies can be alleviated by the use of the grounded-grid circuit. Characteristics of the circuit are: 1. It permits use of a triode in such a way as to reduce the possibility of self-oscillation without the need for neutralization. 2. The driver tube and the output tube act in series to supply the load. Power output, therefor, is higher than would be expected and the conventional efficiency is unusually high. 3. The driving power is higher than when the same tube is used in a normal triode circuit. This increased power, however, is not lost; it is merely transferred to the plate circuit and appears as output. 4. Lower output capacitance results in increased rf bandwidth-handling capabilities and in lower circulating kva in the output circuits.

# TUBE TIPS

## RCA Radar Averts Head-On Collision of Two Steamships

The dramatic story of how RCA tubes and radar equipment saved two steamships from head-on-collision during a blinding snowstorm on Lake Superior was revealed recently. The ore carrier, S.S. A.H. Ferbert, aboard which RCA Radiomarine recently installed a new type of three-centimeter radar, was running eastward toward Sault Ste. Marie, when First Mate, Tom Hermansen observed that luminous "pips" representing two other ships were rapidly converging from opposite directions. He immediately contacted the two ships by radio, warned them of their danger, and directed each on a change of course which averted the collision. The vessels were the S. S. J.H. Sheadle and the S. S. Sascatu, and the officers on both had been unaware of their danger until warned.

## RCA Review Valuable for Station Engineers

The "RCA Review" -- a technical journal published by RCA's Princeton Laboratories -- offers station engineers a wide and timely assortment of articles on radio, electronics, research and engineering. Each issue is composed of outstanding papers written by RCA scientists who, in the course of their work, have made observations of interest and value to members of the entire engineering profession. The "RCA Review" appears on a quarterly schedule and has a subscription price of $2.00 per year. Editorial offices are at RCA Laboratories, Princeton, N.J.

## Quality Control Plays Lead Role in RCA Tube Manufacture

Modern quality control is an important phase of RCA tube manufacturing operations. New control methods, constantly in development, serve to keep production up to the high standards of modern tube requirements and applications. Long before the war, RCA began building into its operations more scientific methods of observation and correction of process and material variables. Statistical checks and supervision coordination were extended from purchased raw materials and components through manufacturing to warehoused stocks. RCA foresight in quality control has made possible outstanding tube performance, long tube life, and economies in production costs which have been passed on to RCA customers in the form of lower tube prices. A recent example of this was the reduction in price of the RCA-833-A from $62.50 to $45.00.

## Tubes Should Be Inspected Upon Arrival

Every RCA transmitting tube is thoroughly tested and inspected before it is shipped from the factory. Despite elaborate precautions, however, damage may occur during transit. To insure against the possibility of holding spare tubes in stock which may be defective, station engineers are cautioned to examine each tube when it arrives, and if possible to test it under actual operating conditions. If, on delivery, a tube carton or crate appears damaged, the bill of lading should be signed "subject to later inspection" in order to facilitate possible adjustment claims with the carrier.

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## Latin America Laying Plans for Commercial Television

Television broadcast service for Latin America is being considered by leaders of the radio broadcasting industry in Mexico, Cuba, Puerto Rico, Brazil, Argentina, and Chile as a sequel to RCA's first demonstration of modern television "south of the border". Broadcasting officials from the Central and South American countries were particularly impressed with RCA's highly successful pick-up and transmission of the first bullfight ever televised, staged in Mexico City as a feature of the First Inter-American Broadcast Congress. The bullfights were televised at the Plaza Mexico, new 60,000-seat bull-ring in Mexico City, and the program was transmitted by microwave radio relay to the Hotel del Prado, six miles away, where 7,500 spectators viewed the event on the screens of RCA Victor television receivers.

For this television premier of Mexico's favorite sport, RCA engineers placed an RCA Image Orthicon Camera under the judges' box at the Plaza Mexico, facing the gate through which the bulls charge into the arena. Monitoring equipment was placed a little farther up the side of the deep-dish stadium, and a portable microwave radio relay parabola was installed near the rim of the bowl to permit line-of-sight transmission to a receiving reflector on the roof of the Prado.

## *Directory of Sources for Tube Information*

Broadcasters can expedite their tube inquiries by addressing them to the RCA department concerned with the particular question involved, as follows:

*TUBE ORDERS - should be sent direct to the RCA Warehouse serving you:*

M. J. Donovan, Radio Corporation of America, 34 Exchange Place, Jersey City, N.J.
W. J. Flannelly, Radio Corporation of America, 589 East Illinois St., Chicago, Ill.
R. G. Eoff, Radio Corporation of America, 420 So. San Pedro St., Los Angeles, Cal

*EXISTING ORDERS' STATUS -*

*Inquiries should be addressed to your serving RCA warehouse, as listed above.*

*QUOTATION REQUESTS -*

*Requests for current price and availability information on tubes should be addressed to the nearest of these four offices:*

C. A. Brokaw, Radio Corporation of America, 621 South Hope St., Los Angeles, Cal.
H. C. Vance, Radio Corporation of America, 415 South Fifth St., Harrison, N.J.
Robert Lord, Radio Corporation of America, 36 W. 49th St., New York, N.Y.
R. C. C. Dubois, Jr., Radio Corporation of America, 666 North Lake Shore Dr., Chicago, Ill.

*REQUESTS FOR ADJUSTMENT -*

*Return authorizations should be requested from:*

F. H. Thompson, Radio Corporation of America, 401 Bergen Street, Harrison, N. J.

*Please do not return tubes until you have secured shipping instructions from the RCA Adjustment Section.*

*TECHNICAL INFORMATION -*

*Technical bulletins and information may be obtained from:*

R. S. Burnap, Radio Corporation of America, Commercial Engineering Section, 415 South Fifth St., Harrison, N. J.