ONE-TUBE XTAL RIG GIVES 150-WATT OUTPUT ON C-W

RCA 806 IS TOPS FOR HIGH-POWER HAM TRANSMITTERS

New enclosed plate increases power at 30 megacycles

Always a leader with amateurs for high-powered transmitters, RCA 806 is finding even greater favor because of numerous design improvements. A totally enclosed tantalum plate conserves power by eliminating losses from bulb bombardment and stray electrons. At 30 megacycles, this provides the user with 75 watts of additional useful power per tube. As a plate modulated r-f power amplifier, the RCA 806 has a power output of 390 watts per tube with a driving power of only 32 watts. As an r-f power amplifier and oscillator in Class C telegraph service, the power (Continued on page 2, column 1)

For Television Experimenters

High-power Crystal Oscillator

A REALITY WITH RCA-813 TETRODE

May be plate-modulated with 60% efficiency for carrier output of 100 watts

The long-held amateur dream of a one-tube crystal-controlled 'phone or cw transmitter comes very close to being realized with the new RCA-813 beam power tetrode. In plate-modulated service, 100% modulation can be obtained with good linearity, low distortion, and a carrier output of 100 watts! In cw telegraphy service, excellent keying can be accomplished in the screen circuit and a power output of 150 watts can be obtained! In either case is the r-f crystal current excessive.

FOUR TELEVISION TUBES ANNOUNCED TO EXPERIMENTERS

Two Kinescopes provide black and white pictures

Three new Kinescopes and an improved Monoscope have just been made available to Amateurs and experimenters by all RCA Power Tube Distributors. These new tubes are:

RCA 906-P4 KINESCOPE (3-inch Electrostatic-Deflection Type with White Phosphor) $15.00
RCA 1802-P1 KINESCOPE (5-inch Electrostatic-Deflection Type with Green Phosphor) 23.75
RCA 1802-P4 KINESCOPE (5-inch Electrostatic-Deflection Type with White Phosphor) 27.50
RCA 1899 MONOSCOPE (Electromagnetic-Deflection Type) 95.00

Kinescope 906-P4 (similar to the well-known type 906) is a 3-inch cathode-ray tube which features a white fluorescent screen material for the black-and-white reproduction of television pictures. In addition to its low initial cost, this new type permits

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Beam Tetrode

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of low circuit cost due to the low voltage at which its Anode No. 2 can be operated—only 600 volts. This feature is the result of improved electron-gun construction and the use of a conductive inner-bulb coating. The conductive coating minimizes deflecting-plate loading and prevents drifting of the pattern with changes in control-grid bias.

Two 5-inch Kinescopes

Kinescopes 1902-P1 and 1902-P4 are 5-inch cathode-ray tubes of the double-electrostatic-deflection type. These tubes are similar except for their fluorescent screens. The 1902-P4 has the new white-fluorescent screen, while the 1902-P1 has the standard green screen. Both types have an improved electron-gun construction and a conductive inner-bulb coating. The 1902-P1, being designed for television as well as for oscillographs, is especially good for the latter application due to the brilliant pattern and small spot-size it produces. In either tube, the deflection sensitivity is such that the beam may be deflected across the entire screen with no more voltage than is required for full deflection on 3-inch cathode-ray tubes.

Improved Monoscope

Monoscope RCA-1899 is a special form of cathode-ray tube used mainly for testing the performance of television equipment. In the operation of this tube, an electron beam is made to scan a test pattern printed on an electrode located in the screen end of the bulb. As a result of these secondary-emission effects produced by the scanning of the pattern, the tube generates a video signal. This signal, after amplification, is useful for testing television equipment and for demonstrating television principles.

RCA 806 Is Tops
For High-Power Ham Transmitters

(Continued from page 1, column 1)

output is approximately 450 watts per tube with 80 watts driving power. Supplementing its fine performance is the mechanical design of the RCA 806. The filament structure and grid assembly are both double collar mounted, while rugged supports prevent possible glass fractures. Every precaution has been made to make the RCA 806 an extraordinarily sturdy high-powered tube. It’s tops in performance and tops in construction.

The low net price of $82.00, plus the many fine features of this tube, is making it a great favorite for replacement use. Your RCA Parts Distributor will be glad to give you further details pertaining to this fine RCA tube.

Uses Pair RCA 813’s

First prize winner in “Ham Taps” 100% RCA Tubed Transmitter photo contest is Richard T. Parks, Jr., of Alameda, California, owner of amateur radio station W6PMS. The illustration shows the final amplifier using push-pull RCA-813’s.

V-CUT CRYSTALS

Greatly Reduce Frequency Drift

Unusually high-power output, plus an extremely low temperature coefficient, make the RCA V-Cut Crystals ideal for amateur use. Crystals are supplied within 0.1% of specified frequency and are calibrated to an accuracy of 0.005% at calibration temperature. Temperature coefficient is 4 cycles or less per million per degree of centigrade on all bands. They are ideal for operation at the edge of amateur bands where extreme stability is required. RCA V-Cut Crystals are not to be confused with the usual amateur type crystal and are supplied and calibrated on order only. Your RCA Amateur Equipment Distributor will be glad to furnish these units at the following prices, which include holder and calibration. (Allow two weeks for delivery after your distributor has placed order with us."

Amateur Net

160, 80 and 40-meter band crystals

$18.00

20-meter band crystals (up to 15 megacycle for doubling to high frequency end of 10-meter band) 

$22.00

RCA SOCKETS

Sturdy, well-built RCA sockets are available for many Transmitting tubes. These sockets are manufactured by RCA and are built to the same high standards employed in RCA Transmitting Tubes.

Amateur Net

UT 541-A for RCA 208-A, etc. 1.75

UT 108 for RCA 883 only 1.25

UT 109-A for RCA 808 only 2.25

UT 1085-A for RCA 204-A, etc. 4.65

UT 104 for RCA 813 only 1.25

One-Tube Rig Has 150-Watt Output on C-W

(results on 40 meters were the same as those on 80 meters. The same circuit constants can be used for either cw or head "phone" operation.

Easily Keyed Without "Chirping"

When the screen circuit is keyed, a receiver test shows that a clean-cut signal can be obtained with no noticeable "chirping." This excellent keying characteristic is due to the fact that, when the key is closed, the crystal stops oscillating when the key is open. Proper loading can be obtained, with correct circuit adjustments, without stopping the key-up oscillations. In order to key the high-voltage screen circuit safely (as regards the operator), it is absolutely essential to employ a suitable high-voltage keying relay, insulated for 3200 volts. Under no circumstances should an ordinary manual key be used in the screen circuit.

Operating Conditions

The operating conditions for circuit UC-14 are as follows:

For plate-modulated telephony: d-c plate voltage, 1500 volts; plate current, 111 ma; screen current, 15 ma; d-c grid current, 5 ma; r-f crystal current, 61 ma; plate input, 167 watts; carrier output, 100 watts; and plate efficiency, 60 per cent.

For cw telegraphy: plate voltage, 1500 volts; plate current, 162 ma; screen current, 18 ma; d-c grid current, 7 ma; r-f crystal current, 14.2 ma; plate input 244 watts; carrier output, 150 watts; and plate efficiency, 63.1 per cent.

The 813 as a high-power crystal oscillator can be used to drive a plate-modulated one-kilowatt final amplifier stage directly—for example.

MAYBE NEXT TIME YOU BUY TUBES FOR YOUR AMATEUR RIG.