

FOUR NEW SMALL G-E TRANSMITTING TUBES ANNOUNCED

RADIO AMATEURS who are planning to build new mobile equipment will find two new compactrons, and two 9-pin miniature tubes ideal for transmitter circuits. All four new tubes—pictured at the left—have been designed specifically for reliable and economical mobile communications at frequencies up to 175 megacycles.

The popular 6146 transmitting tube has been compactronized in such fashion that it delivers more power output in the VHF range (at 175 megacycles) but at the same time requires less driving power. It bears the EIA designation of type 7984, and is rated for 46 watts output, as compared with the rated 35 watts of the 6146 under similar conditions.

Seated height is only 2.5 inches, as compared with the 3.25-inch seated height of the 6146. The saving is gain because the 7984 has neither a composition base, nor a top cap. Eliminating the top cap for the plate connection in mobile equipment is advantageous because it eliminates a long loose wire lead which is difficult to keep from vibrating or otherwise moving about.

Maximum ratings of the 7984 in intermittent mobile RF service, class C telegraphy and FM telephony, are: DC plate voltage, 750 v.; DC screen-grid voltage, 250 v.; DC grid No. 1 current, 4.0 ma.; and plate dissipation, 35 watts. Typical operation as amplifier at 175-megacycles: plate voltage, 450 v.; screen-grid, 125 v.; grid No. 1, —60 v.; plate current, 180 ma.; screen-grid current, 12 ma.; grid No. 1 current, 2.5 ma.; driving power, 2 watts; and power output, 46 watts.

Another new compactron, type 8156, is a medium power tube with 15 watts plate dissipation. A new multiplier-

driver tube, the 8106, is rated at 6 watts plate dissipation. The 8106 can double and drive the 7984, can drive two 7984's in push-pull, or can double and drive a pair of 8156's. For frequency tripling and FM modulator, the triode-pentode 8102 miniature tube is available.

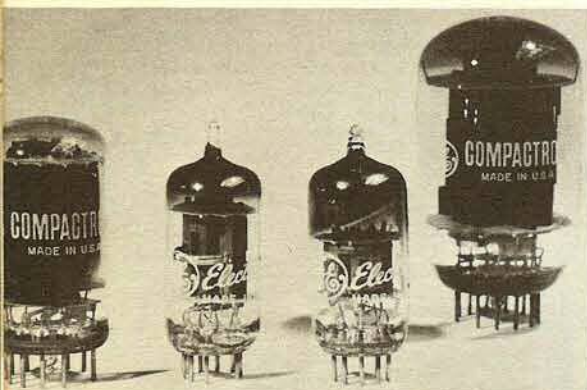
Other significant characteristics are:

8156—This beam pentode compactron has four pins for connecting to the cathode and beam plates, three plate pins, and two screen-grid pins. Ratings are: 600 volts maximum DC plate, 250 volts screen grid, 100 ma. plate current, 5 ma. control-grid current, 15 watts plate dissipation, and 2.5 watts screen-grid dissipation. In typical operation at 175 megacycles with 400 plate volts, 170 screen-grid volts, and minus 60 control-grid volts, the tube draws 90 ma. plate current, 10 ma. screen-grid current, and 3 ma. grid current. With 1.0 watt of driving power, the useful output is 21 watts.

8106—A 9-pin miniature beam pentode, the tube features three cathode-beam plate pins, and two screen-grid pins. Maximum ratings are: 330 plate volts, 300 screen-grid volts, 6.0 watts plate dissipation, and 40 ma. DC cathode current.

8102—A 9-pin miniature triode-pentode, the tube has a large cathode cross section, and the pentode section is rated to carry 20 ma. cathode current. Both plates are rated at 330 volts maximum, and 2.5 watts dissipation. In typical operation at 125 volts, the plates draw 12 and 13.5 ma., respectively.

These new tubes will bring higher efficiencies to amateur radio mobile equipment, as they are doing for commercial VHF two-way radio.



NEW MOBILE transmitting tubes by General Electric are: (left to right) 8156 21-watt beam pentode compactron; 8106 beam pentode multiplier-driver; 8102 triode-pentode for tripling and modulating; and the type 7984 compactron 46-watt beam power amplifier. Designed specifically for reliable and economical equipment in the 175 Mc. range of commercial communications, the 7984 and 8156 feature high power output at moderate plate voltage, compact size, short internal leads, multiple base-pin connections for positive RF grounding of cathode and screen-grid elements, and 13.5-volt heaters which operate directly from 12-volt auto electrical systems.

Complex or Simple? . . .

We feel that with articles like the KCS receiver and LWM-3 transceiver, we are helping to advance the "state of the art" in home-constructed amateur radio equipment. We have shown that the equivalent of fine commercial equipment can be constructed at home. And, we estimate from mail received that at least 400 to 600 SSB transceivers similar to the LWM-3 are being constructed, and many more SSB exciters are being converted to include transceive operation. However, for those who like simple projects, we publish shorter articles too, like the LOADBOX in this issue, and thus provide a balanced "diet" of articles. See November-December, 1961, and January-February, 1962 issues.

While the KCS Compactron receiver is admittedly an ambitious project, the construction and alignment are well within the capabilities of the experienced radio amateur. It enables amateurs with a good supply of parts on hand to "step-up" to a higher performance receiver at low cost. The KCS receiver also is a "goldmine" of circuit and constructional ideas for thousands of other amateurs who may not construct a complete receiver, but who can use these ideas in equipment they now have, or are constructing.

—Lighthouse Larry



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