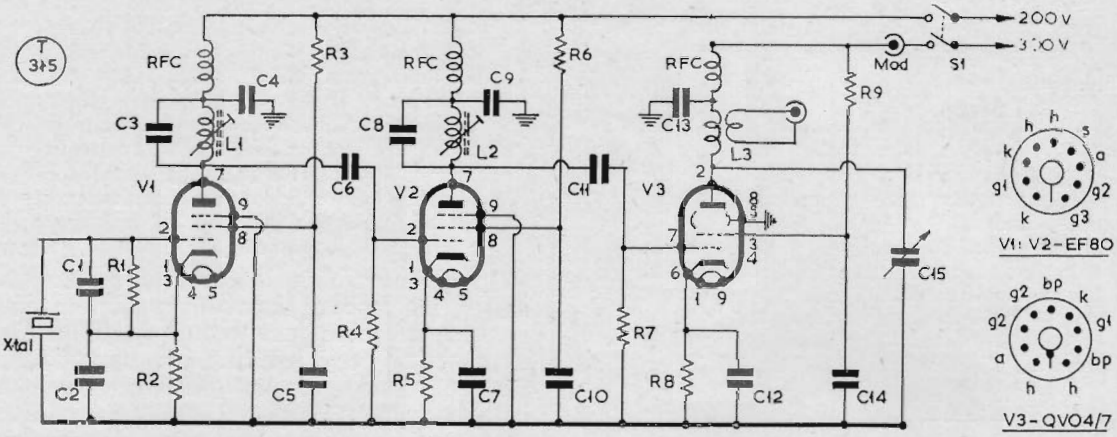


Circuit arrangement of the 10-metre transmitter discussed in the text. It gives an output of about 5 watts, and is suitable for local phone working ; under good conditions on the 28 mc band, some DX has been raised. The general design can be applied to a low-power transmitter for the other HF bands.

QRP Transmitter for Ten

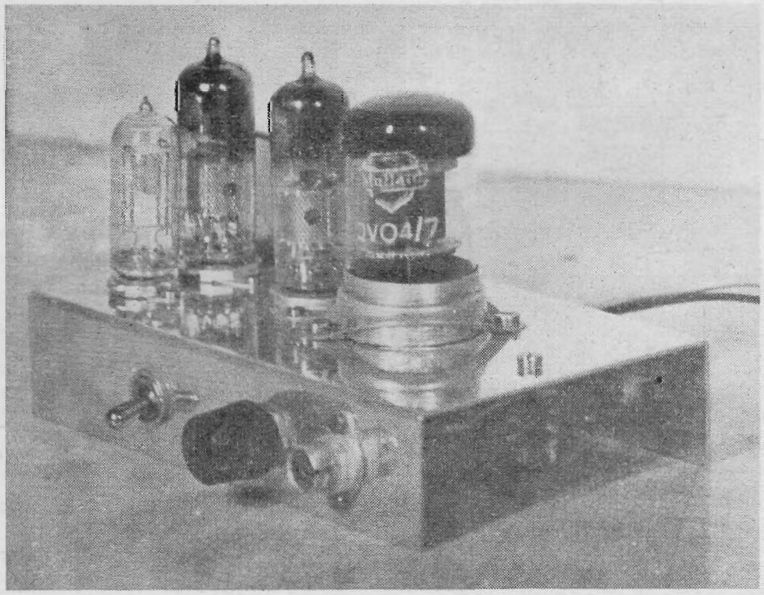
DESIGN FOR LOCAL PHONE

D. PRATT (G3KEP) AND D. NOBLE (G3MAW)

IT is surprising what little power is required for working on the DX bands assuming that a reasonable aerial is available. A low-power transmitter was constructed and is described in the article. The unit was initially designed for use on the 10-metre band; but with suitable changes to the coils and the selection of an appropriate crystal, it may be used on any of the high-frequency bands.

The transmitter comprises a Pierce crystal oscillator on 9·38 mc, the third harmonic output of which is taken at 28 mc and amplified by a tuned buffer amplifier which drives the QV04-7 PA. Any miniature high gain RF pentodes can be employed for the oscillator and buffer stages. EF80's were used in the prototype, but others such as EF91, or 6AK5 would be suitable. The PA could also run a 5763 or any other modern type, although the circuit is designed for the valve specified.

Oscillator and buffer stages can be set up by inserting a meter in the grid circuit of the following stage, and peaking the the coils L1 and L2 for maximum drive current. The PA tuning is best carried out by means of a field-strength meter. This may consist simply of a crystal diode connected across a 500 μA meter with a short piece of wire fastened to one of the connections for RF pick-up. If the meter is not sensitive enough, the other terminal may be



The 10-metre transmitter described in the article — a simple layout very suitable for local telephony working.

Table of Values

The simple QRP 10-metre transmitter -

C1, C6, C11	= 47 $\mu\mu$F silvered-mica	R8	= 100 ohms
C2	= 180 $\mu\mu$F silvered-mica	R9	= 10,000 ohms
C3, C8	= 12 $\mu\mu$F silvered-mica	RFC	= 1.25 mH RF choke
C4, C5, C7, C9, C10, C12, C13, C14	= .001 μF disc-ceramic	Xtal	= 9333 to 10,000 kc crystal
C15	= 50 $\mu\mu$F miniature variable	L1, L2	= 12¾ turns, 26g. enam. close wound on 5/16in. former, with iron-dust core
R1, R4, R7	= 47,000 ohms	L3	= 7 turns, 16g. enam. copper, self-supporting, 7/16in. inside diameter, with 1-turn link at 'cold' end.
R2	= 2,200 ohms		
R3, R6	= 4,700 ohms	V1, V2	= Mullard EF80
R5	= 180 ohms	V3	= Mullard QV04/7

carthed—the little finger of your left hand should suffice!

Modulation and Power

The transmitter is run from the modulator and power supply of the writers' Top Band rig. But any power unit capable of supplying about 300 volts at 60 mA will suffice.

Originally, the transmitter was used for low-power experiments on ten metres, to test the capabilities of QRP for local working on this band. However, during good 10-metre openings it has been found possible to raise American stations using this simple rig and an indoor dipole.