coil of the driver. If the driver has a series capacitor in the output C1 will not be necessary. Capacitor C2 is used to keep both sides of the filaments at the same rf potential. Capacitors C3 and C4 are used to keep the "cold" end of the filament choke more or less firmly tied down to ground for rf. None of these capacitors are critical as to value.

Parasitic suppressors R1 and R2 were found advisable to prevent a slight tendency toward instability on the 10- and 15-meter bands.

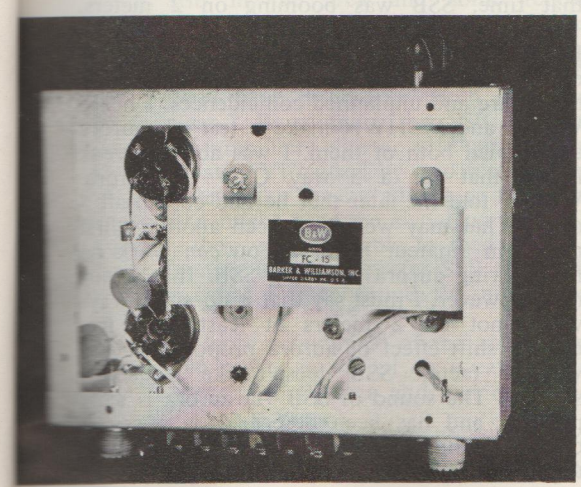
The plate choke, RFC2, must be suitable for use over the range of frequencies to be used and must, of course, be capable of handling the plate current. The cold end of this choke is tied to ground by means of C5, whose exact value is not critical but must have a working voltage rating well over the value of the plate supply potential, preferably at least twice as much.

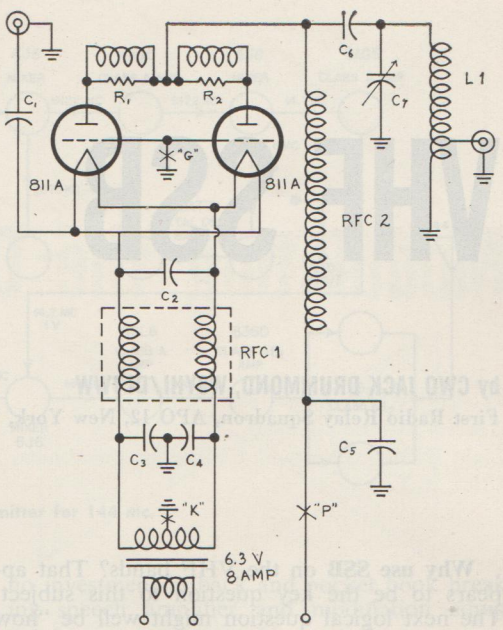
The exact capacity of C6 is not critical, its purpose being to block the dc plate voltage from the output circuit, while at the same time offering a low impedance to rf. This capacitor should have a working voltage rating of at least two or three times the value of the plate voltage.

The plate circuit (C7-L1) is the conventional parallel-tuned circuit. The approximate values of C and L are given in Table I. These values are based upon a plate voltage of 1250, plate current of 350 ma., and a Q of 12. The loading is adjusted by varying the position of the tap on L1.

If operation is to be confined to one or two bands, the plate tank circuit shown should be quite adequate. Plug-in coils may be used. However, if so-called all-band operation is desired a PI-net arrangement in the output would be preferable since it is more adaptable to band-switching. For this the reader is referred to a recent article by W6GEG/3.*

Metering may be accomplished in different ways. Plate current may be read by breaking the lead at point "P" and inserting a milliameter. An alternative is to break the lead at





Schematic diagram

point "K" and insert the milliameter. This latter point will, however, indicate the sum of the plate and grid currents. Grid current alone may be read by inserting a milliameter between the 811A grids and ground at point "G". If this is done, the grids should be grounded for rf, preferably at the sockets, through .01 mfd ceramics.

The amount of power that can be run to this amplifier will depend upon the driving power available. Single-sideband exicters such as the Pacemaker, the HT-30 or HT-32 will drive it to the full safe input of approximately a half KW. The author has found that the Central Electronics 20A exciter will drive it to about 250 watts on the lower frequency bands and about 150 watts on the higher frequency bands. The addition of a driver such as a single 837 in grounded-grid in between the 20A and the amplifier should enable operation at four or five hundred watts input. Indications are that it requires 30 to 40 watts peak power to drive the amplifier to its full capabilities.

The proper tuning and loading for a linear amplifier has been discussed in a number of excellent articles so no attempt will be made here to go into this phase. However, some important points might be mentioned. Tuning of the plate circuit may be done by the usual dip method, although a much better method is to use a field-strength meter or rf ammeter in the transmission line in conjunction with the plate meter. One very important point to remembers is to keep the amplifier heavily loaded to avoid limiting, although not to the extent

*"Simplified Loading of Pi Coupled Amplifiers," by Norman R. McLaughlin; CQ, April, 1957.

[*Continued on page 106*]