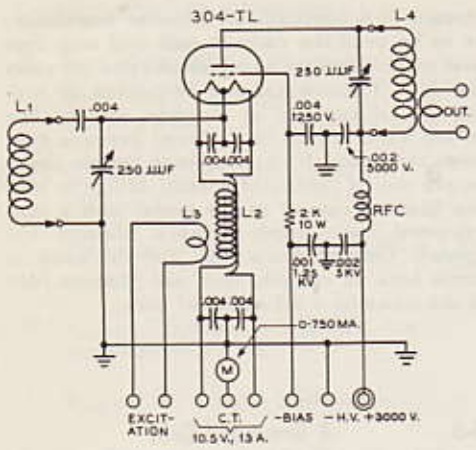

Figure 11
SCHEMATIC OF THE
304TL G-G AMPLIFIER

L_1—None required for 3.5 Mc., since cathode coil L_2 tunes to 3.5 Mc.
7 Mc.—20 turns no. 14 enam., 1¼" dia. by 3" long.
14 Mc.—10 turns no. 8 bare, 1¼" dia. by 3" long.
L_2—Two parallel lengths of no. 12 enam. close-wound to fill National type XR-10A coil form.
25 turns of the two wires in parallel.
L_3—5-turn link of no. 16 rubber and cotton covered wire.
L_4—3.5 Mc.: 18 turns no. 12 enam.; Nat. XR-10A form wound full, 4 t. link
7 Mc.: 10 turns no. 12 enam.; Nat. XR-10A form, 3 t. link
14 Mc.: 4 turns no. 8 bare; Nat. XR-10A form, 2 t. link
RFC—800-ma. r-f choke (National R-175)

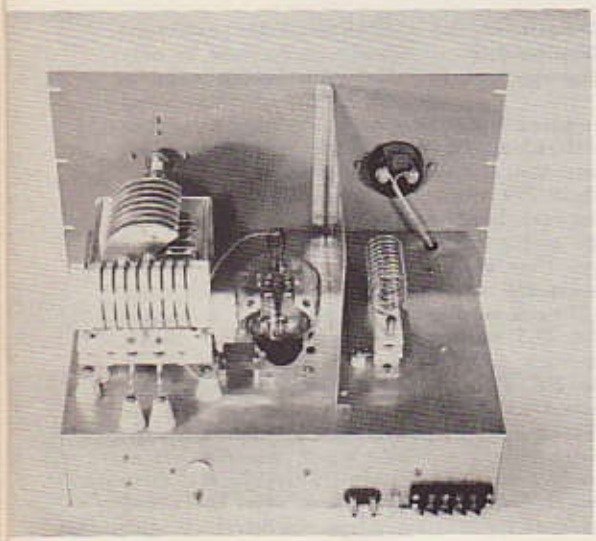

Figure 12
REAR OF THE GROUNDED-GRID
AMPLIFIER

Since 15 to 20 per cent of the output [illegible] grounded-grid r-f stage passes directly [illegible] it from the driver, it is obvious that [illegible] tional plate modulation of the output [illegible] only will give incomplete modulation. [illegible] if the plate voltage is completely removed [illegible] the g-g (grounded-grid) stage and the plate [illegible] turn is grounded, the energy from the [illegible] will pass directly through the tube and appear in the output circuit. So it becomes necessary to apply modulation to the driver tube simultaneously to that which is applied to the plate of the g-g stage. It is normal practice in commercial application to modulate the driver stage about 60 per cent as much as the plate stage.

For straight c-w operation no special considerations are involved in the use of a grounded-grid power amplifier except that it obviously is necessary that the driver stage be keyed simultaneously with the final amplifier. If the installation is such that the final amplifier cannot be keyed. With excitation, keying the combination of the driver and output stage will operate quite normally.

The Grounded-Grid Class B Linear

The g-g power amplifier is particularly well suited to use as a class B linear amplifier to build up the output of a low-powered SSB transmitter. Two advantages are obtained through the use of the g-g stage as a class B linear amplifier are (1) no swamping is required in the input circuit of the g-g stage and (2) nearly the full output of the exciter transmitter appears in the output of the g-g stage, being added to the output of the amplifier.

Since operating impedances are low when a stage is operated as a Class B linear, rather high values of tank capacitance are required for a satisfactory operating circuit Q. The load impedance presented to one 304TL with the operating conditions specified above is about 2500 ohms; hence the plate tank circuit capacitance for an operating Q of 12 should be about 180 ohms. This represents an operating plate tank capacitance of about 240 μμfd. for 4 Mc., and proportionately smaller capacitances for the higher frequency bands. The cathode impedance for one 304TL under the operating conditions specified is about 700 ohms. Thus, for an operating cathode-circuit Q of 10 the cathode tank capacitance

have a reactance of 70 o
reactance is represented by
Mc., and proportionately
for higher frequencies.
athode voltage is only about
spacing in the cathode tank
used.

Figure 11 illustrates a practica
amplifier, using a single 304
wound coil is used to feed
the tube. Shunting in
the filament circuit to
When tuning the g-g sta
remembered that the input tune
in series with the outpu
the output energy is conce
possible to apply full exci
stage unless plate current i
excitation is applied in
voltage, the grid of the
damaged from excessive
of the amplifier is i
12 and 13.
-volt plate supply is
have good regulation. An
of at least 10 microfar
for Class B operation.
bias is −260 volts, obtain
bias supply.
operation in TV areas,
is required, as wel
of the amplifier.

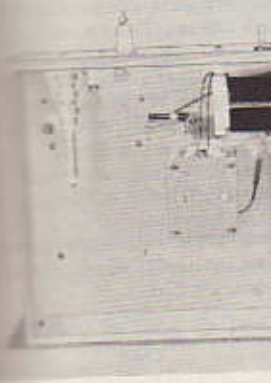

Figure 13
UNDERSIDE OF THE GR
AMPLIFIER