

"The Phantom"

. . . with Triple Stage Feature

Maximum DC input power to final stage: 850 watts.

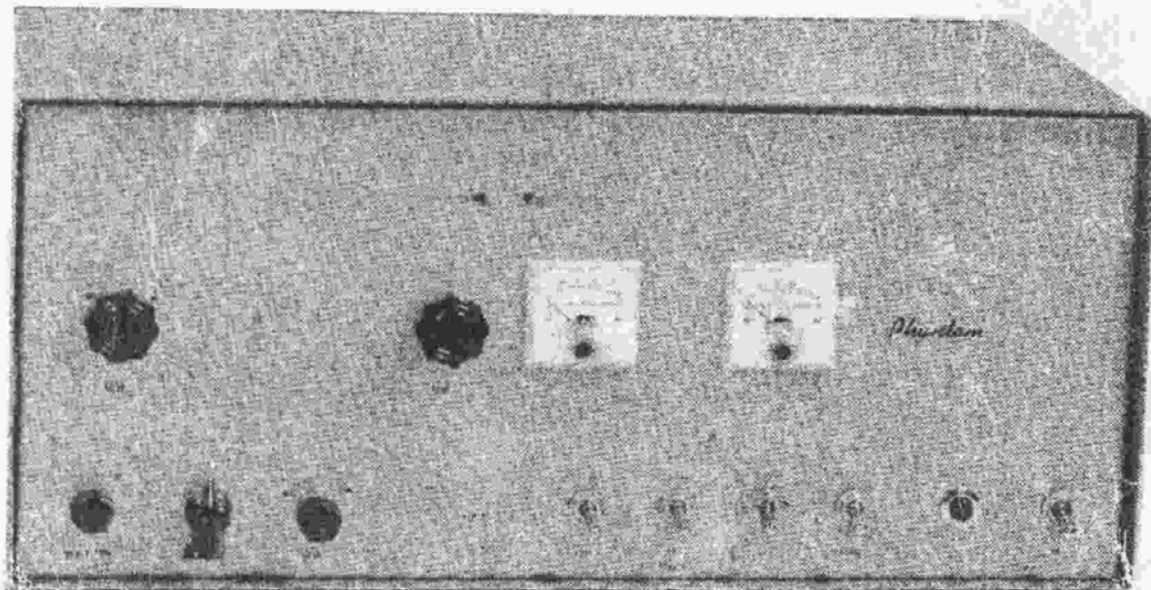
Maximum PEP input power to final stage: 1,360 watts.

(Middle stage readings approximately half of the high power ratings; low stage ratings approximately half of the middle stage readings.)

R.F. drive power requirements: (same as dual-power "Phantom").

(Bi-lateral switch \$15.00 extra.)

Shipping Weight: 48 lbs.



D & A Manufacturing Co.

"PHANTOM"

(Triple-Stage with bi-lateral feature)

Your triple-stage bi-lateral PHANTOM multi-band linear amplifier is designed to operate on the 40, 20, 15, and 10 meter amateur radio bands. Select the band of operation desired prior to beginning loading adjustments.

The antenna coupling circuit of the PHANTOM employs the conventional pi network for the utmost in stability and loading ease. The PHANTOM pulls no current except for filaments when not transmitting. No other meters are necessary for the proper loading of the PHANTOM to your antenna. The meter on the PHANTOM is quite adequate for all adjustments necessary. **MAXIMUM POWER WILL NOT BE TRANSFERRED TO YOUR ANTENNA UNLESS THE UNIT IS PROPERLY LOADED.**

AVERAGE DRIVE REQUIREMENTS

Ratings are determined with 4 watts R.F. power at 14.300 mhz. Measurements taken with power line voltage of 117 VAC.

Maximum DC input power to final stage: 850 watts

Maximum PEP input power to final stage: 1,360 watts

MIDDLE STAGE READINGS APPROXIMATELY HALF OF THE HIGH POWER RATINGS.

LOW STAGE READINGS APPROXIMATELY HALF OF THE MIDDLE STAGE RATINGS.

OPERATING INSTRUCTIONS

The switch labeled POWER selects high or low power mode of operation. When the POWER switch is in the "Off" position the PHANTOM is operating in low power mode, with POWER switch in "On" position the PHANTOM is operating high power. To use the second stage of your triple-stage PHANTOM, it is only necessary to have the POWER switch in "On" position and also the switch labeled "250" in "On" position - then load as per instruction below.

The meter on the right hand side is for low power and the meter on left is for second and third stage operation. Only one meter is operative at a time depending upon mode of operation. The meters are relative indicating meters and are not calibrated in watts.

The switch labeled BTL. is for bi-lateral use. With the BI-LATERAL switch off the unit operates as a standard linear and will not amplify on receive; in this position it may also be operated straight through if POWER switch is off. With BI-LATERAL switch on the unit will amplify on receive. If the BI-LATERAL switch is on and POWER switch off, the unit will not operate straight through.

The bi-lateral feature incorporates a new bi-lateral circuitry with tuned collector and base input. 10-20 DB gain can be realized with a very high signal to noise ratio.

It is not difficult to load the PHANTOM linear into your antenna if the correct loading procedure is followed. Hook a length of RG58/U or RG8/U coax cable from your transmitter to the INPUT connector on the linear. (Any length of cable can be used but it is best not to use any more than necessary. If more than 12 feet is used RG8/U cable is the most desirable.)

NOTE: LOAD ONLY WITH POWER SWITCH IN HIGH POWER POSITION. (LOW SIDE AND MIDDLE STAGE WILL AUTOMATICALLY BE PROPERLY ADJUSTED WHEN HIGH SIDE IS LOADED CORRECTLY. NO FURTHER ADJUSTMENTS ARE NECESSARY FOR LOW POWER OR MIDDLE STAGE OPERATION.)

This PHANTOM has a grid tune control located in the rear. Next to the grid tune control is a switch. This switch must be in the **OFF** position when operating on 15 or 10 meters. The grid tune control is in the circuit only when the switch is in the 15-10 Meter position. When making loading adjustments on 15 or 10 meters, the grid tune control should be adjusted for maximum output power. When operating on 40 or 20 Meters, this switch must be in the **ON** position and no grid tune adjustment is necessary when adjusting the amplifier on 40 or 20 Meters.

Select the desired band by setting the band switch control to either 40, 20, 15 or 10 meters. The switch at the extreme right labeled FIL. applies voltage to the filaments. After linear is properly connected to your transmitter, turn FILAMENT switch on. Turn STANDBY switch on and turn POWER switch on. With POWER switch in on position, depress microphone button and adjust TUNE control located on top front (near MA meter) for highest reading on the MA meter. Then turn LOAD control located on top front (extreme left side) for highest MA reading. Next adjust DRIVER TUNE control located on the lower left front of the linear for highest MA meter

reading. Adjust DRIVER LOAD control located to the right of the band switch selector for maximum MA meter reading. Now adjust GRID TUNE control at the rear of the unit for highest MA reading. Repeat this entire procedure several times until you obtain the highest possible reading on the MA meter. Turn DRIVER LOAD control clockwise until MA meter drops 2-3 divisions or when modulation deflects MA meter forward slightly. Your linear then should be properly loaded.

It may be necessary to turn the FINAL LOAD control (on top front) slightly clockwise to reduce output power and further improve modulation. Repeak FINAL TUNE control (on top near MA meter) as a final adjustment. The amplifier is now properly adjusted for both high and low power modes; throw POWER switch for mode of operation desired.

If the PHANTOM does not load properly, check your antenna S.W.R. If the S.W.R. is higher than 2:1 you may experience difficulty in loading and the relays may not energize. If the S.W.R. is higher than 2:1 and you continue to operate under these conditions, T.V.I. and distortion will result.

Note the meter is relative and is not calibrated in watts or r.f. output power. The actual reading of the meter is not an indication of power out. It is used only to determine if unit is correctly adjusted to your antenna.

Should you use an inline r.f. watt meter, use it only to determine actual power out. As an inline r.f. watt meter is not a modulation meter, it will not tell you whether the linear is correctly loaded as it will deflect downward under almost any conditions of loading.

To operate your triple-stage bi-lateral PHANTOM on single side band, it is only necessary to turn SSB Switch on.