

All Band Linear Amplifier (160 – 10 Meters) Using a pair of GS-31b tubes

by

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The all band linear amplifier using a pair of GS-31b tubes is a “work in progress” and this information will be updated as time goes by. As of 14 May 2011 basic construction has been started, major components selected, and final design is in progress.

The following are photos of various parts and construction stages:



One of the GS-31b tubes



Basic socket parts

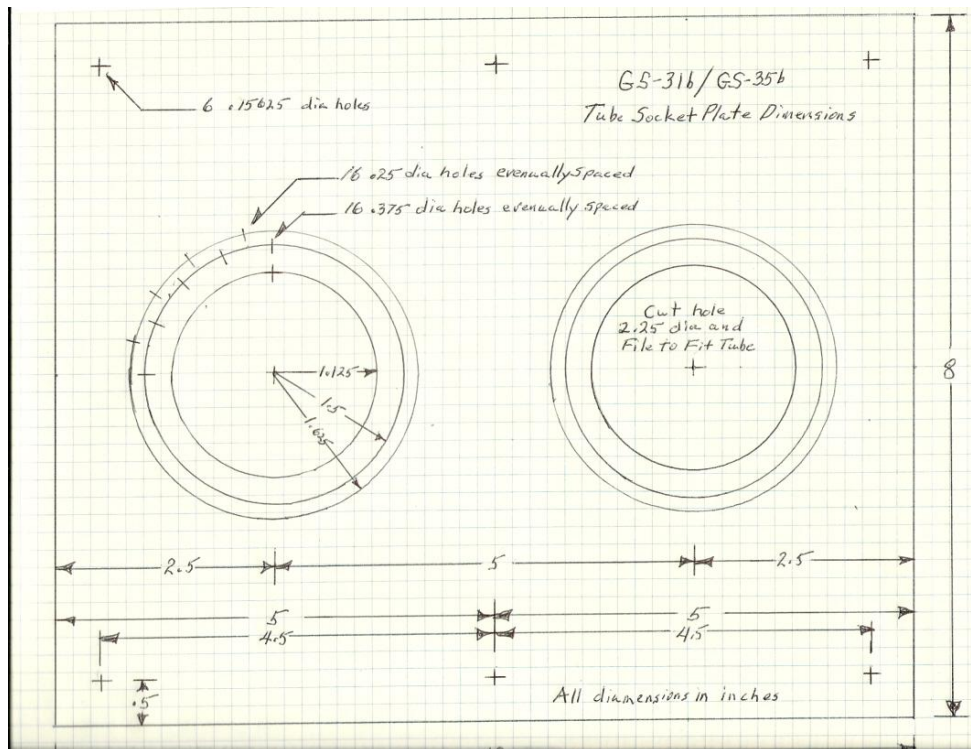


Diagram of socket plate

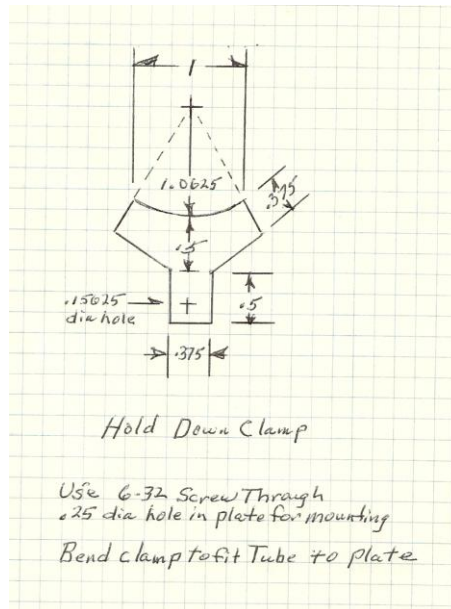


Diagram of hold down clamp (holds tube to socket plate)



GS-31b tubes in socket plate



View showing cathode and heater connections



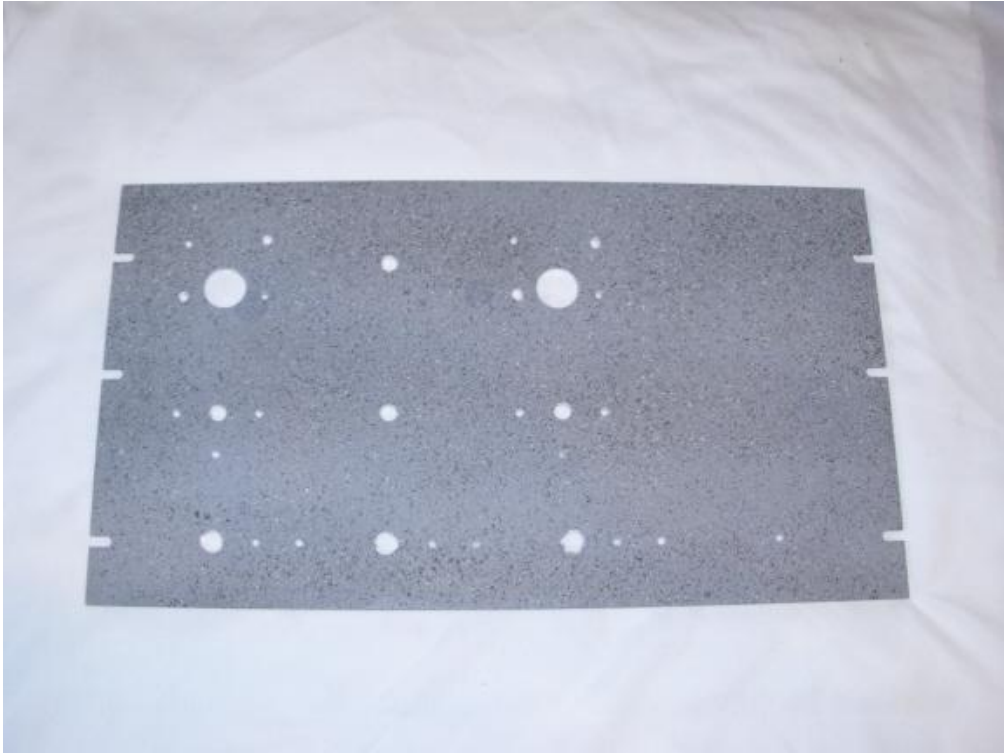
High voltage transformer



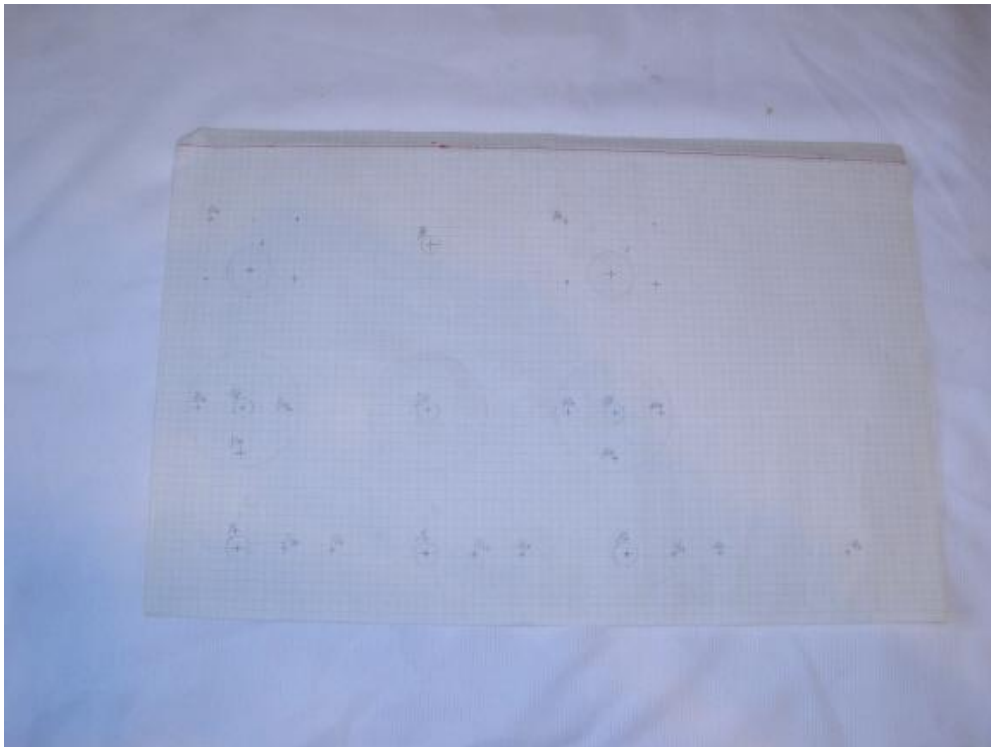
Plate and antenna loading capacitors



Meters: Each is 0 to 1 mA



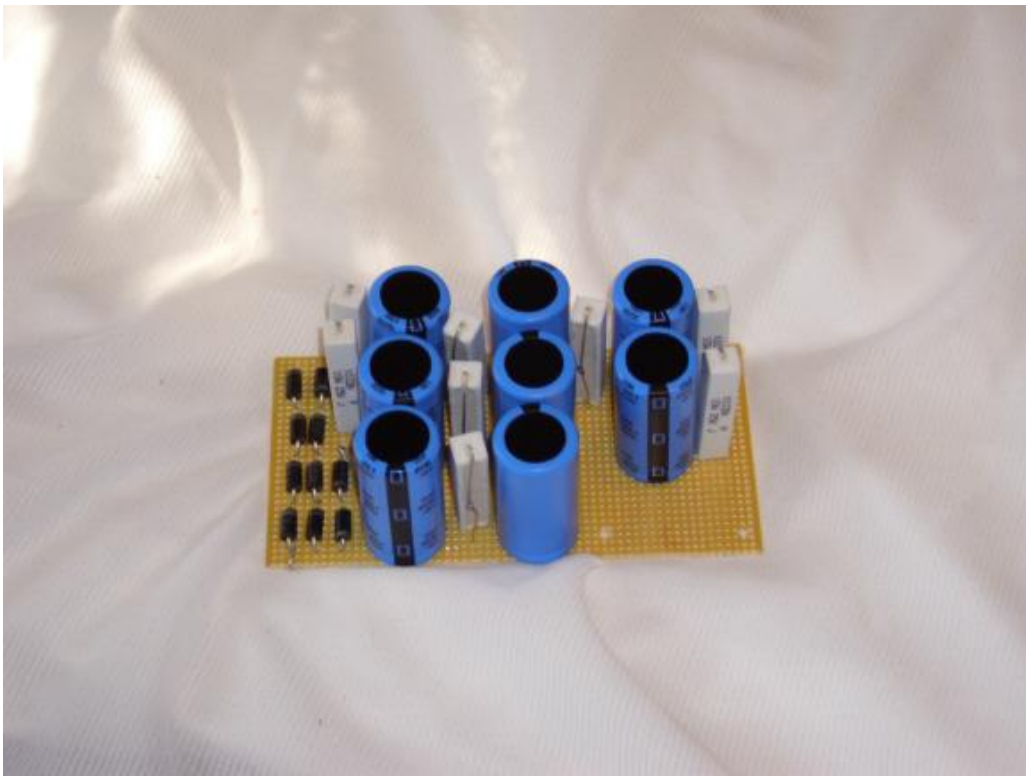
Front panel with holes



Front panel layout drawing



Knobs (from various Heathkit radios)



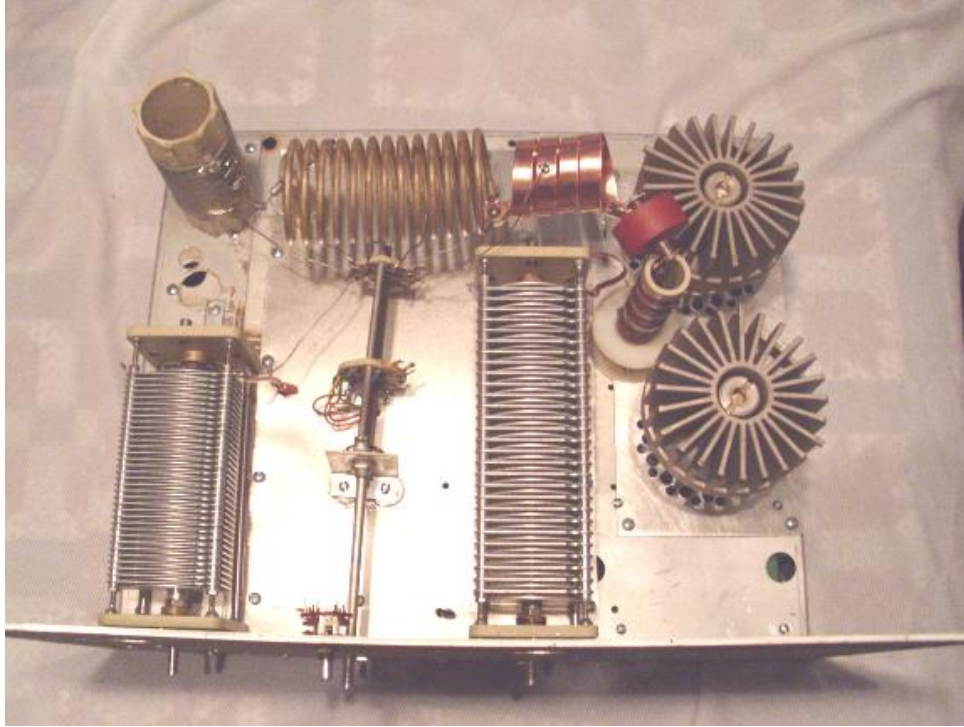
High voltage rectifier and capacitor bank



Here is how the front panel will look.



Here is the start of the metal work (long ways to go!)



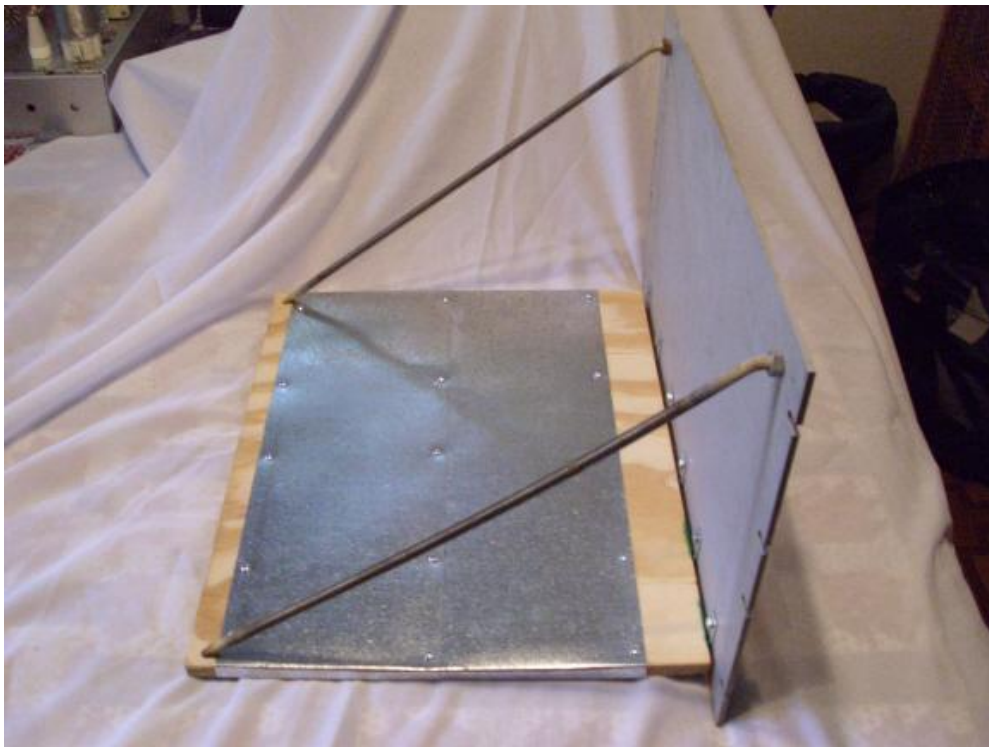
Here is the pi-network. Coil on extreme left is for 160-meters, center coil is for 80 through 17-meters, and the coil on the far right is for 15, 12, and 10-meters. The r.f. choke is home brew and has an inductance of right at 90 μ H. Series resonance points are 22.503 MHz and 31.240 MHz.



Start of underside wiring. The tuned input board, bias board, and the start of the air ducting.



Since the power transformer weighs right at 70 pounds, the high voltage power supply will be at the bottom of the rack. To support the weight, a shelf of $\frac{1}{2}$ inch plywood is attached to a 12 inch rack panel. To provide a good ground plane sheet metal is attached to the plywood.



Side view of power supply shelf. The angle braces are made from $\frac{5}{16}$ th inch "all thread".



Revised pi-network layout. The 160-meter and the 15, 12, 10 meter coils were moved to shorten the connections to the bandswitch. Also, the wires between the coils and the bandswitch were replaced with copper braid.



As of 28 June 2011: The amplifier has a long way to go. However, the front panel is now lettered using overhead transparencies printed on an inkjet printer.