

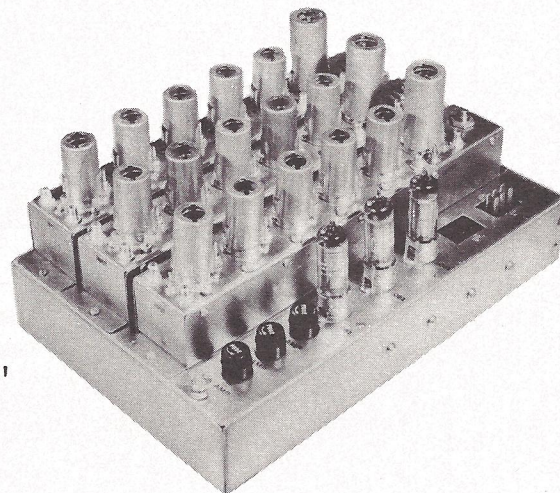
WESTBURY ELECTRONICS, INC.

40 Urban Avenue
Westbury New York

Bulletin No. 155

LINE AMPLIFIER Model 1145

- * AGC on each strip
- * 7.5 to 8 mc flat on top to 0.2 db or better
- * 56 db gain
- * 1.5 volts output
- * Tubes: Five 6AK5's (5654's optional) and one 6AM8.
- * Three Channel Main Deck size: 12" x 8" x 2"



Model 1145 Line Amplifier represents the successful result of a strenuous research program dedicated to the development of a GOOD Line Amplifier for Community TV service. All throughout the development the basic arguments were long life, stability, adequate passband flatness for cascading, easy servicing and adjusting, and high quality workmanship. The description below reflects these qualities and more.

Model 1145 Line Amplifier is a 6 tube strip-type amplifier consisting of 5 amplifier stages and 1 AGC stage. Input impedance and output impedance are both 75 ohms. Gain from input to output is 56 db or better and the bandwidth is 7.5 to 8 mc on top, flat to plus or minus 0.2 mc or better. This extra bandwidth on top means that each amplifier in cascade can be more staggered, with respect to the adjacent ones, without fear of chopping off either picture or sound carriers. The high degree of flatness of these amplifiers means more amplifiers can be cascaded before an intolerable hole appears in the center of the SYSTEM passband.

The secret to the flatter passband in a quintuple is the fact that the amplifier has more "poles" in the stagger. In addition to giving flatter passbands, the corners are more clearly defined. (The design is a "staggered quintuple".)

The inputs are MATCHED to 75 ohms. This means that there are no reflections from the input to produce ghosts at bridging points back from the input. This factor also means that an input pad is not required to kill such reflection. The saving in amplifiers that this factor permits is considerable. For example, some systems use 3 db pads in front of each line amplifier input to kill the reflections due to unmatched inputs. In a system with 10 amplifiers, that fact means 30 db has been unnecessarily thrown away, or more than one-half of an amplifier.

In the output, cable mixing is employed. However, the reaction of one amplifier strip on the adjacent one is barely detectable, if at all. Cable lengths for input separation are all short (eight inches) and are totally uncritical. The output cables for mixing are relatively uncritical with reasonable tolerances.

For longer life, the screens of the 6AK5's are operating at 110 volts instead of 140 volts (rated) or 150 volts (beyond rating). Also for longer life, the heaters are operated at 6.0 volts regulated to 1%.

The construction practices employed throughout the amplifier are comparable to those employed in high quality military electronic equipment. All components are firmly anchored on either tube socket pins or high quality melamine resin standoffs. All components are operating well inside their electrical ratings (many parts operating with safety factors of 5). The chassis are steel, protected with military specification plating. The complete strip is plugged into a Main Deck. The tubes are all upright for rapid tube changes without removing the amplifier. With the tubes upright, the heat from the tubes is more quickly dispersed and the strip internal components are not subjected to unnecessary baking that shortens life. The tuning coils have lock nuts on the tuning adjustments so that they cannot shift once locked. The tuning slugs also are accessible from the top.

The RF connectors are the miniature coaxial type for RG-59/U and take our A102 or comparable connectors. The output level of each strip is set by means of an AGC delay potentiometer on the strip. Separate voltage regulators for each strip are mounted on the Main Deck.

Simplicity of alignment of the Model 1145 is particularly appealing. Using a sweep generator, marker generator, and scope, simply set the marker to the specified frequency of each stage and peak the marker, one stage at a time. Visually adjust the output pair for flatness. Time: Five minutes per strip.

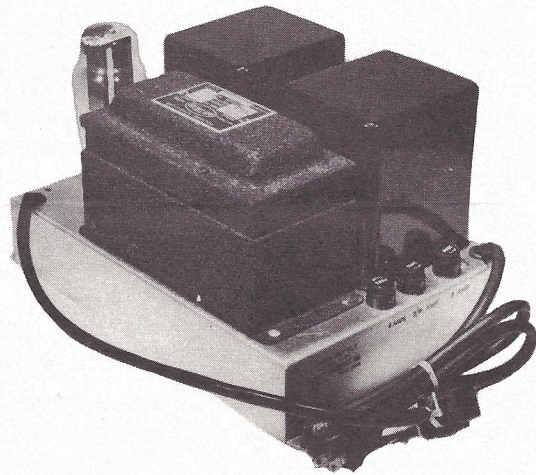
Power to the amplifiers strips is derived from a separate power supply. The power cable from it plugs into the Main Deck. In this way, the RF amplifiers on the Main Deck are quickly disconnected from the power supply and a new group inserted in place. This means only a very light group of three RF amplifiers are handled on the pole and ladder instead of a larger and heavier unit with integrated power supply and RF amplifiers.

There are additional simple but handy features worth mentioning. For example, it is not necessary to disconnect an amplifier in order to check the input signal level. Simply remove a 75 ohm termination and connect an appropriate field strength meter in its place and read. The amplifier keeps working. Another handy feature is the AGC monitoring jack on each strip. When the amplifier levels at input and output are set for proper operation, read and record in the box the DC voltage at the jack. If the gain of the amplifier drops, this voltage (grid line) will drop and becomes a signal of potential trouble. Tube deterioration can be detected before failure actually occurs. Such flags as "Remove amplifier for servicing when test voltages read, etc." can be placed in each box to be a guide for your servicemen.

Model 1145 Line Amplifiers are available for both the 54-88 mc band and the sub channels. Main Decks are available for 3, 4, or 5 strips. Note: The 5 channel deck has the crossover networks integrally built in.

POWER SUPPLY
Model 1191

This unit was designed expressly for use with Model 1145 amplifiers. It delivers to the Main Deck 160 volts DC unregulated and 6.0 volts AC regulated over an output cable that plugs into the Main Deck (Regulators for the screens are on the Main Deck). The output capacities are 275 ma (using a 5AU4 tube) and 5.0 amperes, respectively. The consumption of three channels is 185 ma and 3.5 amperes. It is therefore immediately obvious that reserve capacity is available for expansion to five channels.



POWER SUPPLY
Model 1480

Model 1480 Power Supply is designed for 3 or 4 channel units with ample reserve capacity for conservative operation. It employs selenium rectifiers conservatively operated in a bridge circuit. The regulator transformer has both plate and heater supply, providing 1% heater regulation. For 3 or 4 channel operation, it is directly interchangeable with Model 1191 Power Supply.

The same rugged and neat construction and wiring practices employed in our other equipment are also employed in our power supplies.