

Heathkit HP-23RL Review Mike Yancey, KM5Z

A while back, I took it upon myself to buy the club's Heathkit HW-101 loaner rig - no new hams wanted to borrow a 30-year-old tube rig - because I like the 'green' gear, and I really enjoy old radios, tube radios, and the repair and tinkering thereof.

The HW-101 has been fun to work on, and I've enjoyed modest success applying the 30-odd-years of mods and improvements to the old beast. The rig looked unmodified from it's original build. It's stamped with a date from an early 1970's visit back to the factory for a repair. I know that Don, W9VE had also tuned it up and looked after it. I still have a couple of mods to make, but overall reception and audio are much improved.

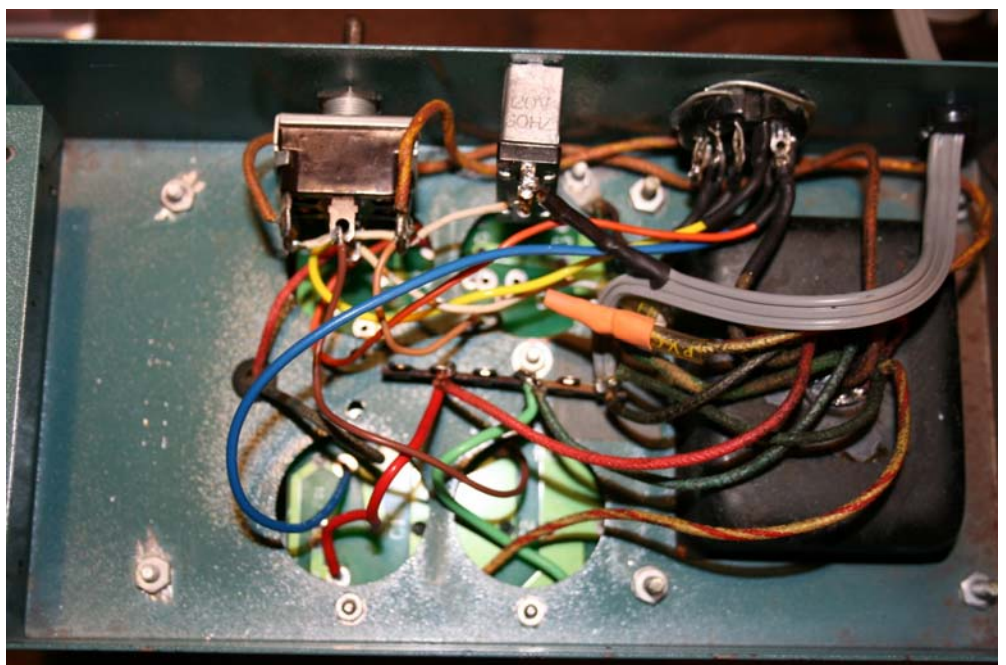
But after I'd been successful at not frying myself with high voltage and the rig still worked (better than before, actually!), I turned my attention to the power supply. The HP-23B that came with it worked OK, but I knew it was a matter of time before an aging capacitor might suddenly die, and it might take the crucial power transformer with it. I tested all the existing components and although some were still in spec, the resistors had gone a bit high, and one of the capacitors was basically an open circuit, reducing it's ability to provide clean power.



I looked around and found a swell solution that wasn't too expensive. The Heathkit Shop (<http://www.theheathkitshop.com/heathkithp-23rl.htm>) has an option that replaces the four tall capacitors on the top of the chassis and also all of the point-to-point wiring below with a single PC-board. He sells a complete replacement kit (\$56), but since I have sources locally, I opted for the \$20, PC-board ONLY option.

It arrived in a padded, plain-brown envelope. (No sentence that starts like that could be very good). I stuffed parts on the board - instructions are VERY sketchy, and not provided: you have to download them from his website: <http://www.theheathkitshop.com/downloads/heathstuff/hp23rl/>

However, parts placement is pretty clear, and with a bit of care, you'll have a populated board in short order. This is probably only about 25% of the effort though: the entire bottom of





the HP-23 needed to be gutted - everything but the transformer, the choke, the switches and the 11-pin connector. The original builder (no doubt a pimply young Novice building his first rig?) left lots of globs of solder on each connection, and flux was still encrusted everywhere. It took quite a while to disassemble the underside. I went a bit further than the instructions because I wanted to redo the 11-pin connector that supplies power out to the rig. I cleaned that up as well and put black shrink-wrap on each of the connections.

The instructions are careful to mention you need to attempt to save some of the solder-strips from the original parts, clean them up and re-mount them. The wires from the

transformer are only so long and the tidy thing to do if you can't reach your destination is to plant the transformer wire on a solder-strip and extend from that point to your destination.

Final connections are tricky, particularly since there are a couple of spots on the HP-23RL board where you cannot solder from the top since you've already mounted the filter capacitors. However, with a little maneuvering, all the proper transformer, switch, choke, and 11-pin-connector leads are soldered to this board. The board mounts above the chassis with some 1/4" stand-offs.



The under-chassis is greatly simplified by using the single PC board.

Initial Start-up was with a Variac to prevent any 'magic smoke' from being released. Once it was assured all connections were correct and no shorts or connection mistakes were made, the supply was returned to full-power.

Results - I tested the receive audio and it appears (subjectively) to be a bit quieter. Hum is reduced a bit. But the primary goal was to reduce the risk of component failure and protect the unique, high-voltage transformer by using modern components. It went together quickly, although disassembly of the old wiring was a bit time consuming. Bias voltage was up (probably due to the better quality components), so I had to readjust the bias a bit. The board supports both fixed bias and adjustable (at the power supply).

Caveats – Instructions are skimpy. Also note the DANGER of working with High Voltages - this power



supply produces several medium (-130v, +250, +300 volts) and one high (820 volts) voltages. This project should NOT be taken on without care, planning, and proper tools. There be 800-volt dragons therein. You'll also need to be very familiar with the layout of your variant of the 4 different HP-23 models and whether you'll need the fixed or power-supply adjusted bias.

Audience – Anyone who loves the old boat-anchors, but is NOT concerned with keeping ALL of it's parts original. Heathkit Shop also has a similar board for the Drake AC4R supply (it was mentioned in a recent issue of QST). Those seeking an original 'look' would probably wish instead to re-stuff capacitors and keep the original point-to-point wiring.