

Hayseed Hamfest Re-Cap Kit for the Heathkit HP-23 Power Supply

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When I was a new ham in the 1970s, I sometimes operated with my friend Darrell Neron, AB2E. Darrell had a Heathkit SB-102 HF transceiver, which I really enjoyed using because it was a better radio than anything I had at the time. With those fond memories in mind, a few years ago I bought an SB-102 with a matching SB-600 speaker and HP-23A power supply. Cosmetically, everything was in pretty good shape, but it needed some work to be usable on the air. I put the project aside until recently.

In the 1960s and 1970s, Heathkit made several versions of the HP-23 supply and used it to power many of their popular HF transceivers. The radio I bought came with an HP-23A power supply that is about 50 years old (see Figure 9). One potential problem is that the old electrolytic filter capacitors can leak or dry out and fail. There are several options for restoring HP-23 supplies, but I picked the Hayseed Hamfest Re-Cap Kit to retain the original appearance. The kit includes four 135 μ F, 450 V can capacitors that mount on top of the chassis and look just like the originals, although they have modern components inside. I also ordered the three optional electrolytic capacitors that mount under the chassis (two are 47 μ F, 250 V and one is 47 μ F, 450 V).

Updating the HP-23A

Vintage tube-type radios use much higher voltages than we're used to with modern gear (up to about 800 V dc in this case). Make sure the equipment is unplugged and all electrolytic capacitors are discharged to ground before diving in. If you're not comfortable working on this kind of equipment, enlist the help of someone who is.

The kit comes with no instructions and assumes that you have enough experience to safely work on a high-voltage power supply. I found a complete assembly manual for the HP-23A online, and good quality reprints are also available for a nominal fee from the current Heath Company (heathkit.com, look for the **VINTAGE MANUALS** tab).

After looking at the underside of the chassis (see Figure 10), I realized that to replace the capacitors,



most of the other components would need to be removed or disconnected. I decided that it would be easiest to install new components, rather than fight with the old ones. It's just a handful of resistors and diodes, which I ordered from Mouser for about \$12 — well worth it.

Another advantage of using new components is that the modern metal-film resistors are considerably smaller than the original carbon composition units, and easier to work with in the crowded chassis. Carbon composition resistors are known for changing value over the years. However, I found that all but one of the resistors I removed were within 10% of the marked value.

Before disassembly, I compared the power supply wiring to the pictorials in the Heathkit assembly manual to familiarize myself with the construction. Then I removed the parts and can capacitors, making notes about where any wires connected. Then I followed the steps in the assembly manual to install the can capacitors and the rest of the parts. The Hayseed Hamfest capacitors fit perfectly and look just like the originals. Figures 11 and 12 show the rebuilt power supply.

Bottom Line

The Hayseed Hamfest Re-Cap Kit for the Heathkit HP-23 offers a way to modernize this popular vintage power supply while retaining the original appearance.



Figure 9 — The HP-23A was produced in the late 1960s and early 1970s to power Heathkit's SB and HW series transceivers. The power transformer is on the right and a filter choke is on the left. The four black electrolytic can capacitors in the middle will be replaced.



Figure 10 — The Hayseed Hamfest full kit includes three electrolytic capacitors to replace the ones on the left side, underneath the chassis.



Figure 11 — The HP-23A power supply with the Hayseed Hamfest can capacitors installed retains its original appearance. The new capacitors are an exact fit where the old ones were removed.



Figure 12 — Inside the rebuilt HP-23A, the modern electrolytic capacitors, metal film resistors, and 1N4007 rectifiers take up a lot less space than the original components from 50 years ago.

Once I had the parts installed and the wiring reconnected, I followed the resistance checks in the manual. All looked good, so I powered up the HP-23A and measured the voltages. Those looked good, so I connected the SB-102 and slowly increased the line voltage using a Variac (variable transformer) while monitoring for signs of a short circuit. I was rewarded with no smoke, glowing tubes, and some signals on 40 meters. It was clear that the transceiver needed attention, so the next job will be cleaning up the SB-102 and getting it fully operational again.

After the photos were taken, I decided to change the ac power cord to a modern three-wire cord with the green (ground) wire connected to the chassis. I also was concerned about operation of the old circuit breaker (the red **RESET** button), so I disconnected it and added a fuse holder under the chassis.

Although you could buy individual capacitors, cut apart the old can capacitors and stuff new capacitors inside

to maintain the original appearance, the Hayseed Hamfest kit includes everything you need in a well-thought-out package that's easy to install. They offer similar kits for a wide variety of vintage ham radio and audio gear.

Manufacturer: Hayseed Hamfest LLC; hayseedhamfest.com. Price: complete HP-23 Re-Cap Kit with 450 V capacitors, \$144.95; add \$30 to upgrade the capacitors to 500 V.

