

The GU-1820 Ac Generator

— 100 pounds of portable power from Heath

A major problem in any emergency planning or Field Day preparation always seems to be finding a generator. Most commercially-available gas generators are either too large or too expensive to be practical for most hams to own. Finding a generator to borrow or rent isn't always easy, either. Now Heathkit™ has helped to solve this problem with the introduction of the Heath-Watt portable generator.

The Heath-Watt uses a five-horsepower four-cycle engine to drive a generator capable of providing 2200 Watts of continuous ac power. This is more than

ample to power, for example, a complete two-transmitter Field-Day operation if linears aren't used.

The only assembly involves mounting the engine to the main frame and assembling and mounting the generator itself to that frame. When the packages containing the kit arrived at the 73 ham shack, the question arose as to who should put it together. I am fairly handy with a soldering iron, but it is widely known that I am dangerous with a socket wrench in hand. It was therefore decided that I should be the kit builder—the others felt that if I could do it, *anyone* could!

Well, I did it. The total assembly time was about six hours, although that time included several delays for rag chews, refreshments, and snide comments from the more mechanically-adept members of the staff. This was not, however, the most enjoyable time I have had putting a Heathkit together.

I've always had a suspicion that the Heath technical writers are at their best when describing electronic assembly and not so hot on mechanical steps. This kit seems to prove that hunch correct. Don't get me wrong—if you follow the manual, you will end up with a work-

ing generator, but I feel the instructions are not as clear and straightforward as I've come to expect from Heath. Part of the problem is that the terminology of generators is not as familiar to most of us as is the language of electronic construction. I found that frequent reference to the pictorials both for parts identification and for an understanding of what each step entailed was necessary.

Construction of the Heath-Watt itself presented few problems. The only real difficulty encountered was in forcing a bearing into the end casing of the generator. Heath provides a wooden dowel to use with a hammer to drive in the bearing, and the instructions note that "it may be necessary to strike the wood bearing driver with considerable force to seat the bearing properly." The instructions are correct on that point. It took such "considerable force" to drive the bearing in that the wood dowel split in half long before it was seated properly.

In fact, we never could get the bearing in flush with the end casing and, as a result, a plastic bracket that mounts over the bearing ended up with a slight bow. This problem caused us some concern, but did not appear to affect the perfor-



Heath's GU-1820 ac generator.

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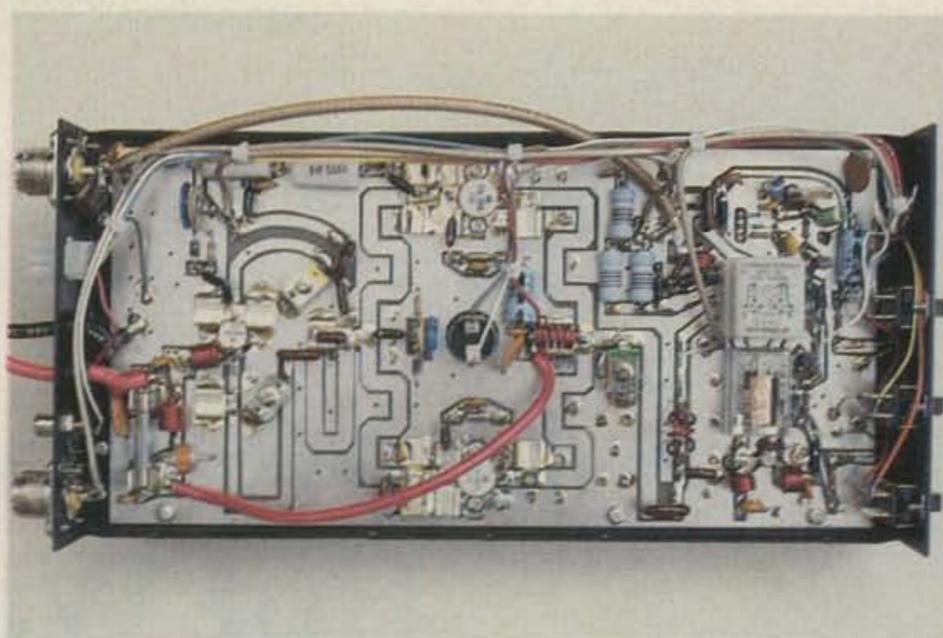
time you operate SSB with the delay switch in the FM position!

The B1016 can draw over 20 Amps of power (it's fused for 35) at 13.6 volts dc, so care should be taken in choosing a power supply. For a VHF contest weekend, I used a hefty Astron RS-35M supply, rated at 20 Amps continuous duty, and it barely got warm. The heat sink on the amplifier itself gets pretty hot after three or four hours of screaming "CQ contest" into the microphone, but at no time did I cause the temperature-sensing protective circuitry to cycle. At 170° F., a

thermostat shuts the amplifier off, and doesn't return it to normal operation until the temperature drops to 140° F.

Who Needs 160 Watts?

Even in the flatlands of the midwest, a powerful amplifier is useful for FM operation. It is comforting to know you have an extra margin of power when mobiling at the fringe of a repeater's coverage area, and it's a pleasure to carry on simplex conversations over distances that would normally require a repeater. Nevertheless, two-meter SSB is where the B1016 really shines. You haven't lived



Bottom view of the Mirage B1016.

until you've worked some two-meter SSB DX, and the B1016 will allow you to do it on a regular basis! For more information, contact

Mirage Communications Equipment, Inc., PO Box 1393, Gilroy CA 95020. Reader Service number 488. ■

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performance of the generator. A suggestion to Heath: Either manufacture the metal parts with slightly greater tolerances or provide the bearing already pressed into place.

After assembly and fueling, the gang stood back and held its collective breath while the starter cord was pulled for the first time. The engine started beautifully, and the light bulb connected to the output lit just as Heath said it would. After letting the engine run long enough to make reasonably sure that the mechanical parts were working correctly, we hooked the output (through a step-down transformer) to an oscilloscope to have a look at the waveform. It definitely wasn't as clean as the mains, but the frequency was very close to 60 Hz and the line voltage was right on the money at 117.

After ensuring that it was safe to connect equipment to the output, we hooked up a transceiver to see how the Heath-Watt would do at providing useful power. It did very well. The TS-530S ran just as it did when connected to New Hampshire Public Service. The nicest

news of all was that the receiver suffered no interference at all from the generator—it was just as quiet as when running from the mains.

The generator's first real test came a few weeks later at the 73 gang's Field-Day site, where it was the sole source of power for our class 2A station. The Heath-Watt ran flawlessly for well over 24 hours and, although it was possible to tell by the sound of the engine when a rig was keyed, it handled the load of two transceivers, assorted keyers, lights, and rotors with no trouble whatsoever.

As generators go, the Heath-Watt was rather quiet. We set it up about

one hundred feet from the operating tent behind a large boulder and had no noise problems at all. The hundred foot hike through the brush for refueling did make that part of Field Day more exciting than usual. Heath says that the generator's half-gallon gas tank will provide about 1 3/4 hours of operation at 50% load. That estimate seems conservative, and there were times when it seemed as though the gas would last forever (those were usually the times an operator was waiting anxiously in front of a battery-powered rig to take over when the generator died). It would be nice if a still-larger gas tank were avail-

able—a generator should not really have to be fed every couple of hours during an emergency. A tank twice the size would produce half the aggravation.

The Heath-Watt seems to be the ideal answer for an individual or group wanting to have emergency power capability at a reasonable cost. This generator is relatively inexpensive for the amount of power it produces and is small and light enough so that storage and transportation are not a real problem; one man can easily move it if necessary.

For more information, contact Heath Company, Benton Harbor MI 49022. Reader Service number 487. ■



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