There's still some very interesting surplus out there, interesting in terms of price and what you can do with the gear. WD8DAS points out a bargain shortwave receiver.

THE AN/GRR-5 RECEIVER SHORTWAVE FOR A SONG

BY STEVEN JOHNSTON*, WD8DAS

Many amateurs would really like to have a compact, sensitive, stable, general-coverage receiver in their shack but relatively few are willing to pay the price for the digital dreams offered today. An alternative is to scour the hamfests and auctions in search of an older receiver of the National, Hammarlund, or Hallicrafters variety and risk straining your back carrying it to the car! In addition, these battleships rarely survive the test of time (or misguided alignment tools) and usually require work to be put into service.

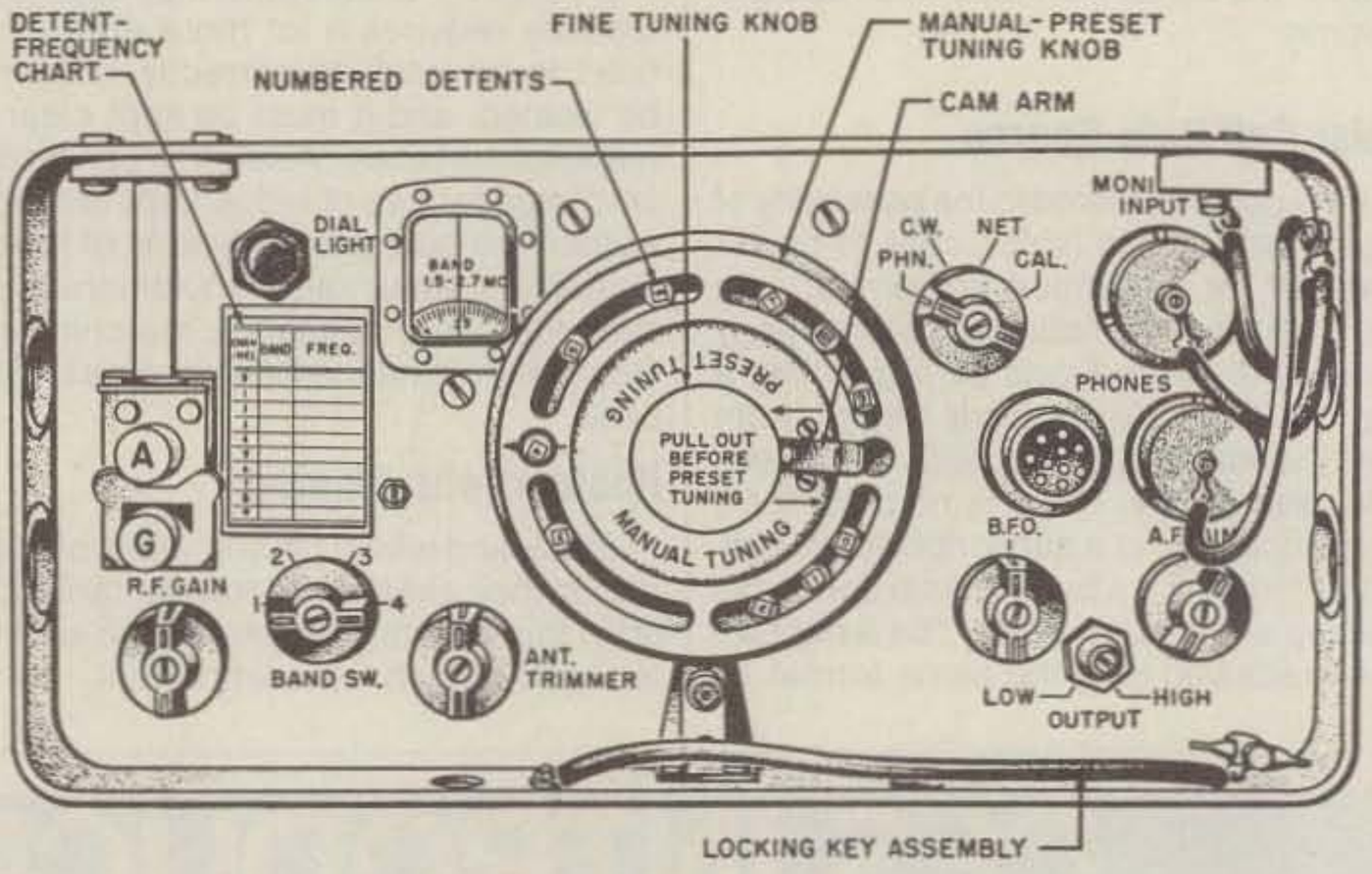
In my case, my pocket has never been full enough to afford any of the new receivers, but my shack has provided a berth for quite a number of the old battleships. In spite of the blood, sweat, and tears shed over the old commercial rigs, they truly can't compare to the one receiver I enjoy the most: the U.S. Army Signal Corps Radio Receiving Set AN/GRR-5.

The AN/GRR-5 is a mobile radio receiver that was used for tactical communications by the U.S. Army and Air Force in the 1950s and 60s. It covers the frequency range from 1.5 to 18 MHz and is capable of copying a.m., s.s.b., and c.w. signals. The front view of the receiver is shown in fig. 1.

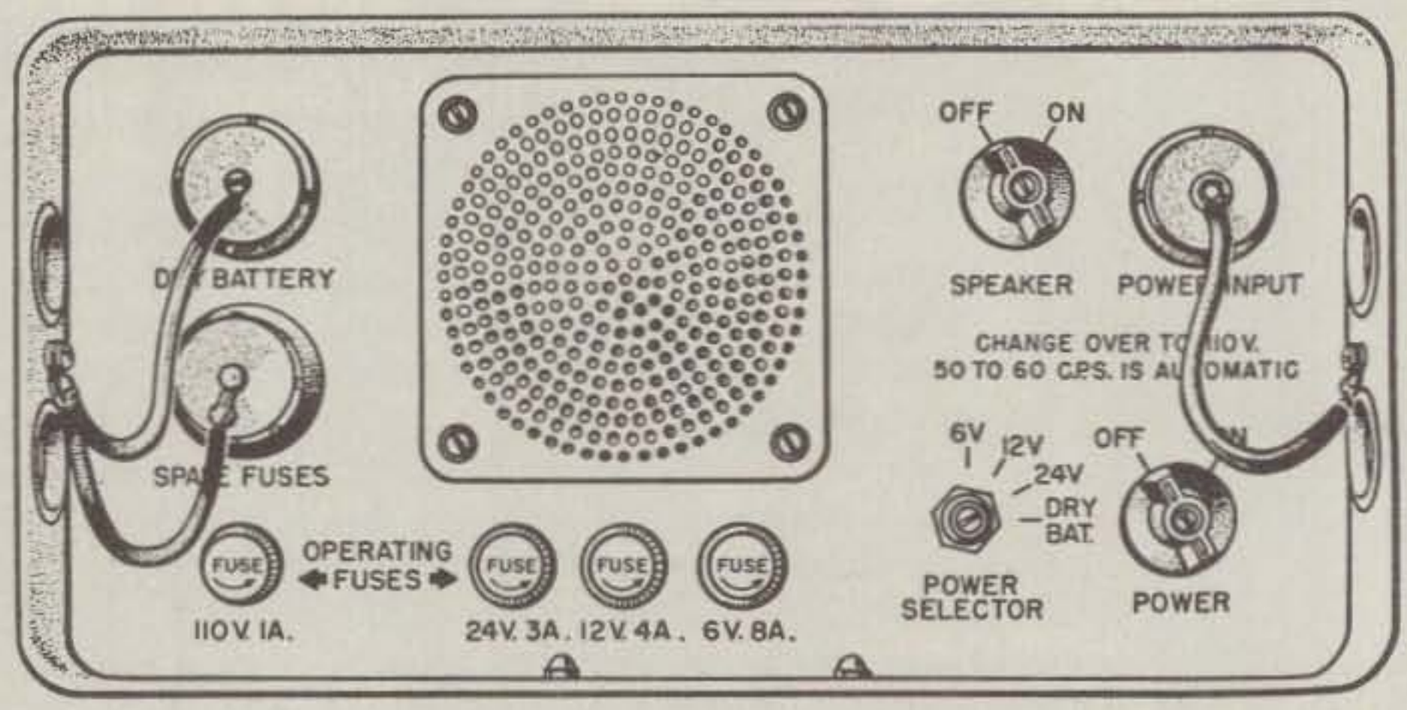
The AN/GRR-5 is actually composed of two main assemblies: the RT-174/URR receiver and the PP-308/URR power supply. These are fitted into a water-tight cabinet (which, of course, has its own designation: CY-615/URR) and interconnected by means of a cable in the case. While I personally have never tried it, legend says that this set will float quite well if "accidentally" dropped into a lake or stream. There aren't many Hallicrafters or Nationals that can make that claim!

Since this receiver was made to operate with a whip affixed to the top of the case, or at best a pull-out reel antenna, sensitivity was a must in the design of this set, and sensitive it is! The r.f. gain control is perhaps the most important control on the receiver in this world of high-power transmitters and good propagation. A hand on the gain will make up for the lack of automatic gain control, and the extra sensitivity often will make the difference when trying to copy Radio Lower Slombovia or a military transport over the Pacific Ocean.

The AN/GRR-5 tunes continuously or on ten preset frequencies. The frequency range is divided into four bands: 1.5 to 2.7 MHz, 2.7 to 5 MHz, 5 to 9.5 MHz, and 9.5 to 18 MHz. If you've never had the opportunity to tune the dial outside of the amateur bands, you're missing some of the most exciting action there is. As I write



Radio Receiver R-174/URR, front panel.



Power Supply PP-308/URR, front panel.

Fig. 1– Front-view drawings of the AN/GRR-5 receiver combination.

*823 Irvington NE, Massillon, OH 44646

Say You Saw It In CQ

this, I'm monitoring McDill Air Force Base on 11.246 MHz, and a little later I'll tune down and listen to the Princess Lines (of "Love Boat" fame) for some quite amazing phone patches.

Some of the other features of the GRR-5 are a 200 kHz calibrator, a wide choice of power-supply operating voltages, and practically drift-free operation—amazing for a tube receiver. In less than a minute the receiver is on frequency to stay. I can tune-in a single sideband station, set the b.f.o. for nice audio, and listen for an hour without retuning. The 1.5 volt filaments in the tubes generate only a small amount of heat, and the sealed cabinet tends to keep the internal components at a constant temperature.

The PP-308/URR power supply is quite interesting as well. It was designed to supply the 90 volts and 1.5 volts to operate the RT-174/URR and to house the loudspeaker. Power input to the set can be any of the following: 115 volts a.c., 6 volts d.c., 12 volts d.c., 24 volts d.c., or dry cell batteries (90 and 1.5 volts d.c.). See fig. 2 for input connections. The PP-308 makes the set quite versatile and fun, especially if you haul the receiver into the wilds and operate with the receiver atop a pile of dirt and power supplied by batteries. At our last Field Day site the Sunday morning c.w. crew was awakened by the beautiful strains of "Waltzing Matilda" on Radio Australia (thanks to the GRR-5 and convenient pile of dirt)!

All this considered, the GRR-5 still would not be such an amazing receiver if it were not for one factor: the price. The AN/GRR-5 is usually priced in the $20.00 range at hamfests, and quite a few are floating around. The Fair Radio Sales Company (P.O. Box 1105, Lima, OH 45802) at one time offered the AN/GRR-5 receiver/power-supply combination for $49.50, but the 1982 catalog listed the

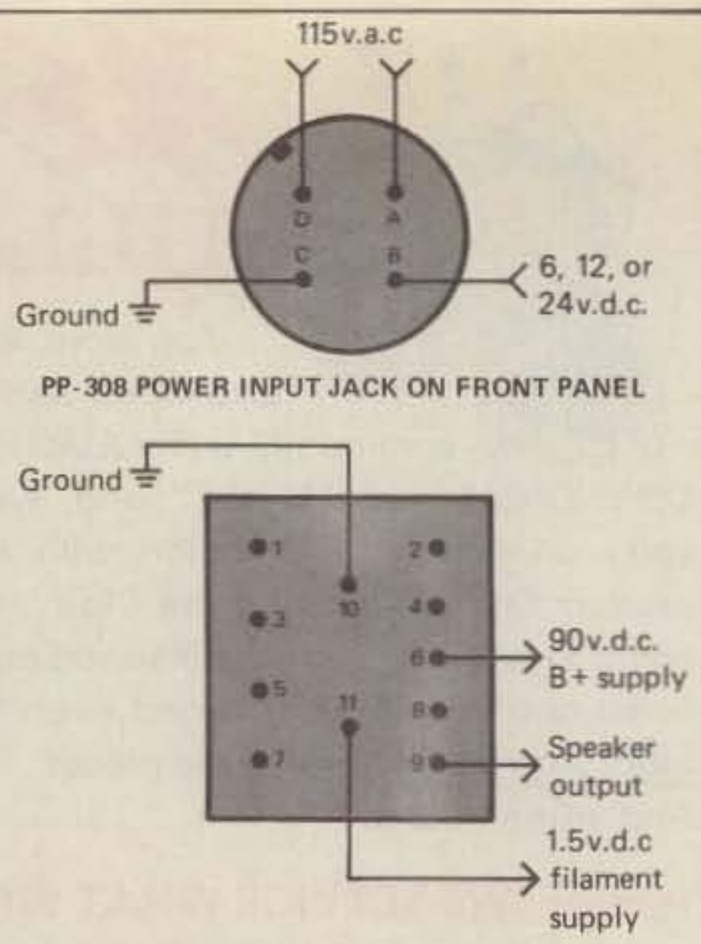


Fig. 2– Power connections for the RT-174 receiver and PP-308 power supply.

power supply as unavailable and the RT-174 receiver for sale at $18.95. I don't believe I've ever seen such a nice general-coverage receiver for such a low price.

Of course, if you purchased the receiver alone, a power supply would be necessary. One alternative is to obtain the power supply offered by Fair Radio; it allows operation on 115 volts a.c. only and contains a loudspeaker. It is offered for $30.00 and would probably do the job. A more economical solution would be to build a supply from junk-box parts. Since the RT-174 requires only two voltages for operation, the supply would be fairly simple to construct. The audio and power connections are made through an 11-pin connector on the rear of the chassis. This connector is also available from Fair Radio should you choose to buy the receiver alone, but the supply could just as well be wired directly to the RT-174. The arrangement of the pins is shown in fig. 2.

Once you get the set in operation, the question of antennas arises. Successful reception can be had with just 10 feet of wire strung around the room, since the GRR-5 has amazing sensitivity. For the die-hard operator, an outdoor antenna is the way to go, but it is important to remember to ride the r.f. gain control to keep the receiver from overloading. A good policy is to keep the a.f. gain set midrange and use the r.f. gain to set the sensitivity.

Overall, the GRR-5 receiving set is quite a nice general-coverage receiver for casual tuning around the shortwave bands. It would make a nice receiver to begin exploring the world of radio *outside* the amateur bands and an interesting conversation piece for the shack. At $18.95 or so you can't go wrong. One thing to watch for: you might catch the "green fever" and become addicted to these old moisture- and fungus-protected radios. I hope your family can stand it! CQ

Bencher 1:1 BALUN

- Lets your antenna radiate, not your coax
- Helps fight TVI—no ferrite core to saturate or re-radiate
- DC grounded—helps protect against lightning
- Heavy brass contact posts; non-rusting materials throughout
- May be used with antenna tuners; rated 5KW peak
- Handles substantial mismatch at legal limit
- Built-in center insulator; Amphenol® coax connector
- Rugged UV resistant custom Cycolac® case, not plastic plumbing parts

ZA-1A $17.95
3.5-30 mHz

ZA-2A $21.95
14-30 mHz, with hardware for 2" boom

Available from your dealer. In U.S.A. add $2.00 handling

BENCHER, INC.
333 W. Lake St., Chicago, IL 60606
(312) 263-1808

CIRCLE 25 ON READER SERVICE CARD

Apple II Slow-Scan TV

PhotoCaster...
A feature packed system to take, store, transmit and receive color and black-and-white photos with your Apple II computer.

PC-100 (Disk software, I/O board, manual, demo tape)..... **$499.95**

PC-101 (Above plus Panasonic TV camera, RGB filter accessory)..... **$749.95**

- **15-day money back trial on factory orders.**
- **Write or call for details.**

Visa and MC orders accepted. Add $5 (PC100) or $10 (PC-101) for shipping and handling. CA res. add applicable sales tax. Dealer inquiries welcome.

Apple II TM Apple Computer, Inc.
PhotoCaster TM COMMSOFT, Inc.

COMMSOFT
665 Maybell Ave., Palo Alto, CA 94306 • (415) 493-2184

CIRCLE 39 ON READER SERVICE CARD

Say You Saw It In CQ