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Associate Editor

73 builds and

Tests the

LW-51

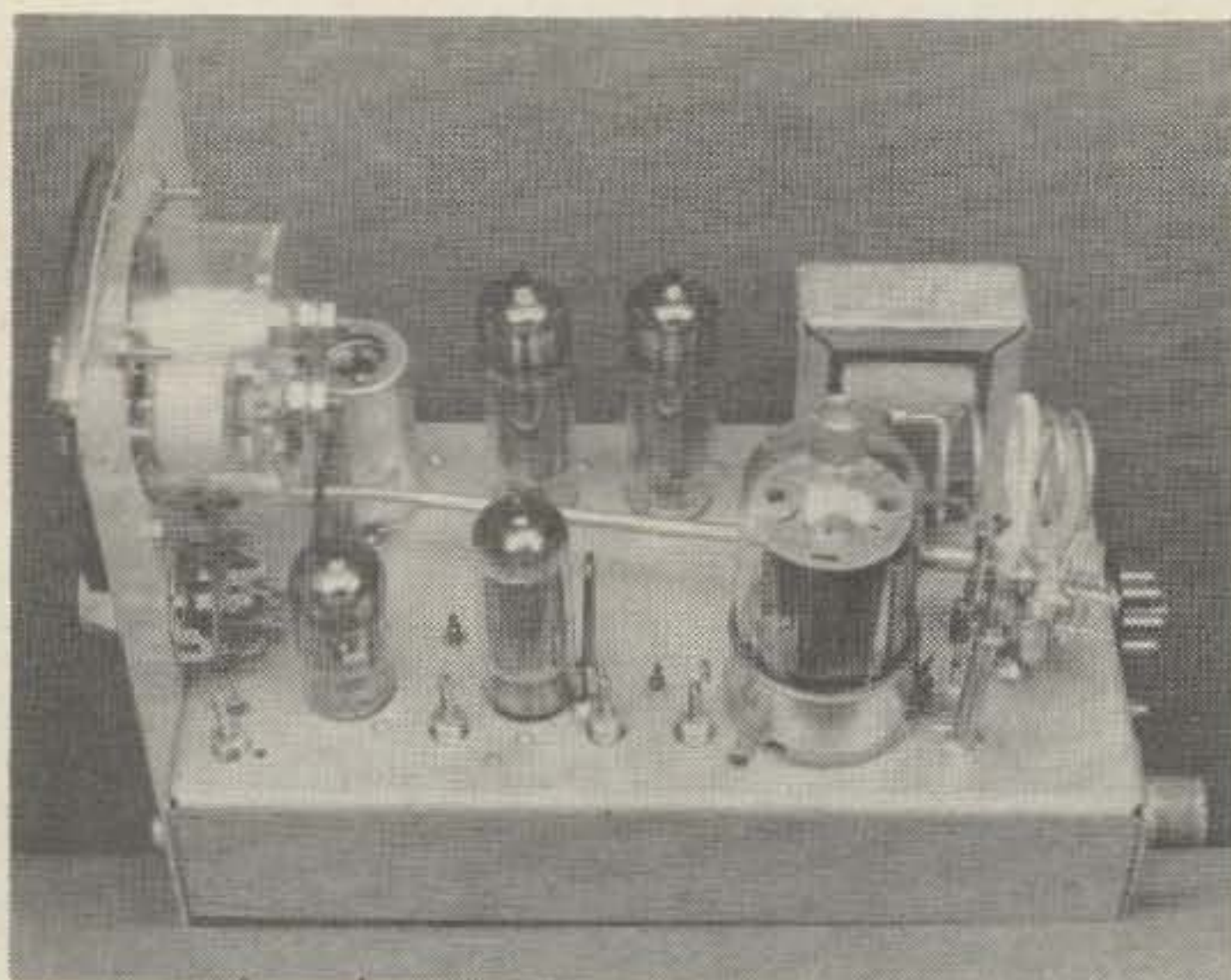
2M Xmitter

It's an old and well known fact that a small company must really have a good product if they are to remain in business with the large manufacturers as competitors. LW Labs, with their new LW-15 2 meter transmitter kit has, in my opinion, such a product. They are not by any means a new company, but they are a small one.

The little 2 meter rig has a lot to offer. The power input is 45 plus watts. The modulator, which is included on the same chassis, supplies more than an adequate amount of audio to fully *plate modulate* the final. Provisions are made for Hi Z or carbon mike input, by using a different mike plug. The rig uses standard FT-243 8 mc crystals and the final amplifier operates straight through! With a price tag of \$59.95 for the rig less tubes, or \$74.95 complete with tubes and crystal. A power supply with voltage regulation and a high and low power feature is \$49.95 complete, wired and tested (model LW-72A).

Circuitry

The rig uses the triode half of a 6U8A in a



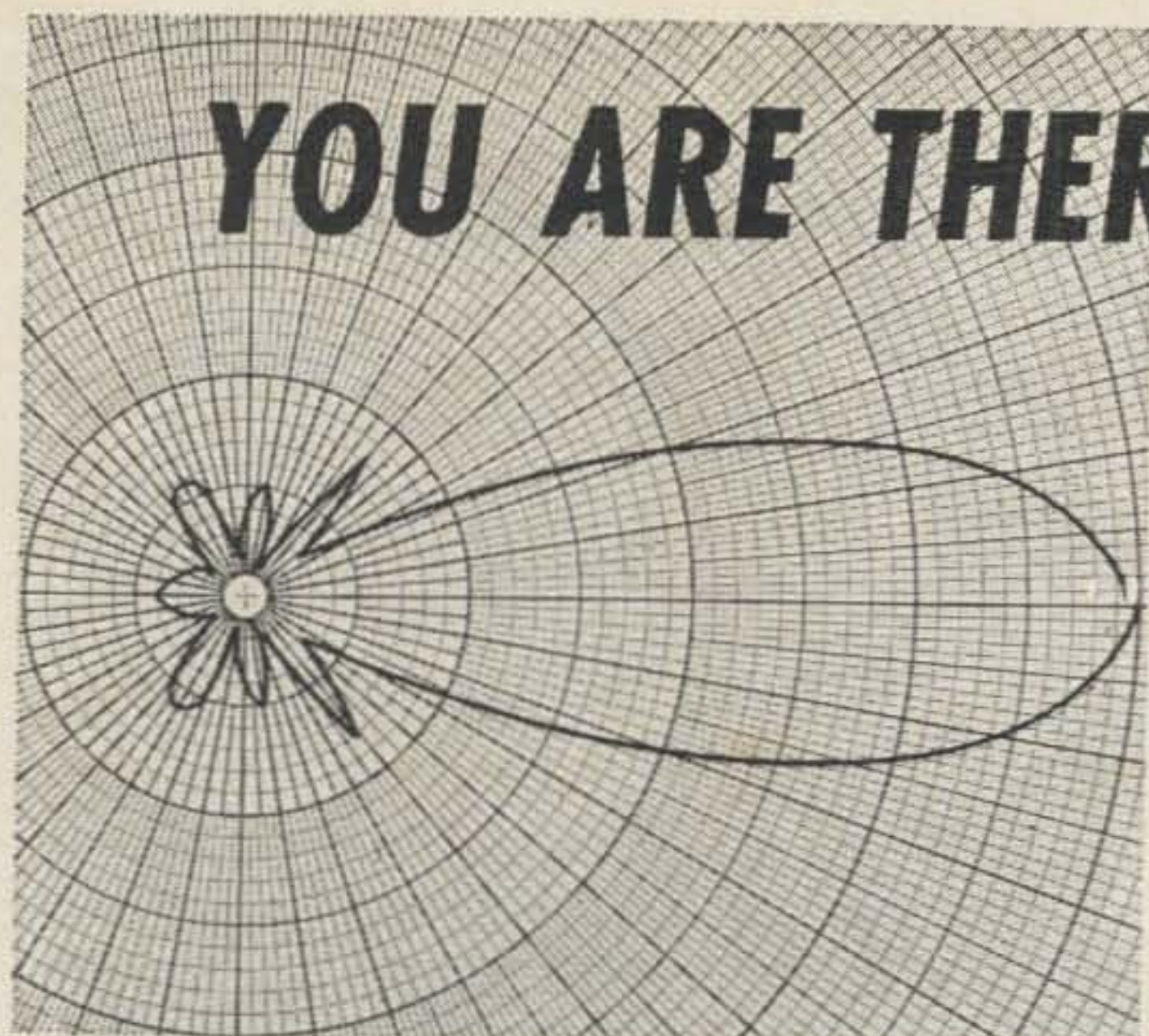
Hartley oscillator circuit, with the plate of the oscillator tuned to 24mc (with 8 mc xtal). The pentode half of the same tube is used as a tripler to 72 mc and it drives a 7558 pentode. The 7558 doubles to 144 mc and is *inductively* coupled to the 6146 final, to reduce harmonic coupling. The final is provided with a good neutralization circuit. If you have built 2 meter rigs you know what a job it can be to neutralize a final amplifier at 144 mc! The final tank is link coupled (and adjustable) to the coax output jack. A variable capacitor is also provided to tune out the reactance in the line.

The modulator uses the pentode half of a 6U8a as a voltage amplifier, feeding the triode half of the same tube. The triode acts as a driver for the push-pull 6CZ5 output tubes. The driver is transformer coupled to the output tubes and they are transformer coupled to the plate and screen grid of the final. The amount of audio modulation is controlled by a pot in the control grid of the triode driver.

The filaments can be connected for 6 or 12 volts, depending on whether you're going to operate mobile in your 12 volt car or use the rig at the shack. The rig also has a diode detector circuit to give an indication of the relative power output and also give the modulation percentage on the front panel meter. The meter is switched to read oscillator, final grid, final plate, rf output and modulation percentage. The meter switch is located on the front panel, making selection a simple and convenient matter.

Construction

As soon as you unpack the kit you notice that there is a big difference between this and other kits. To begin with, the chassis is already mounted to the front panel. The bottom shield and cabinet is in place and it looks as if it is a wired model! All major parts are already mounted! The transformer, meter and



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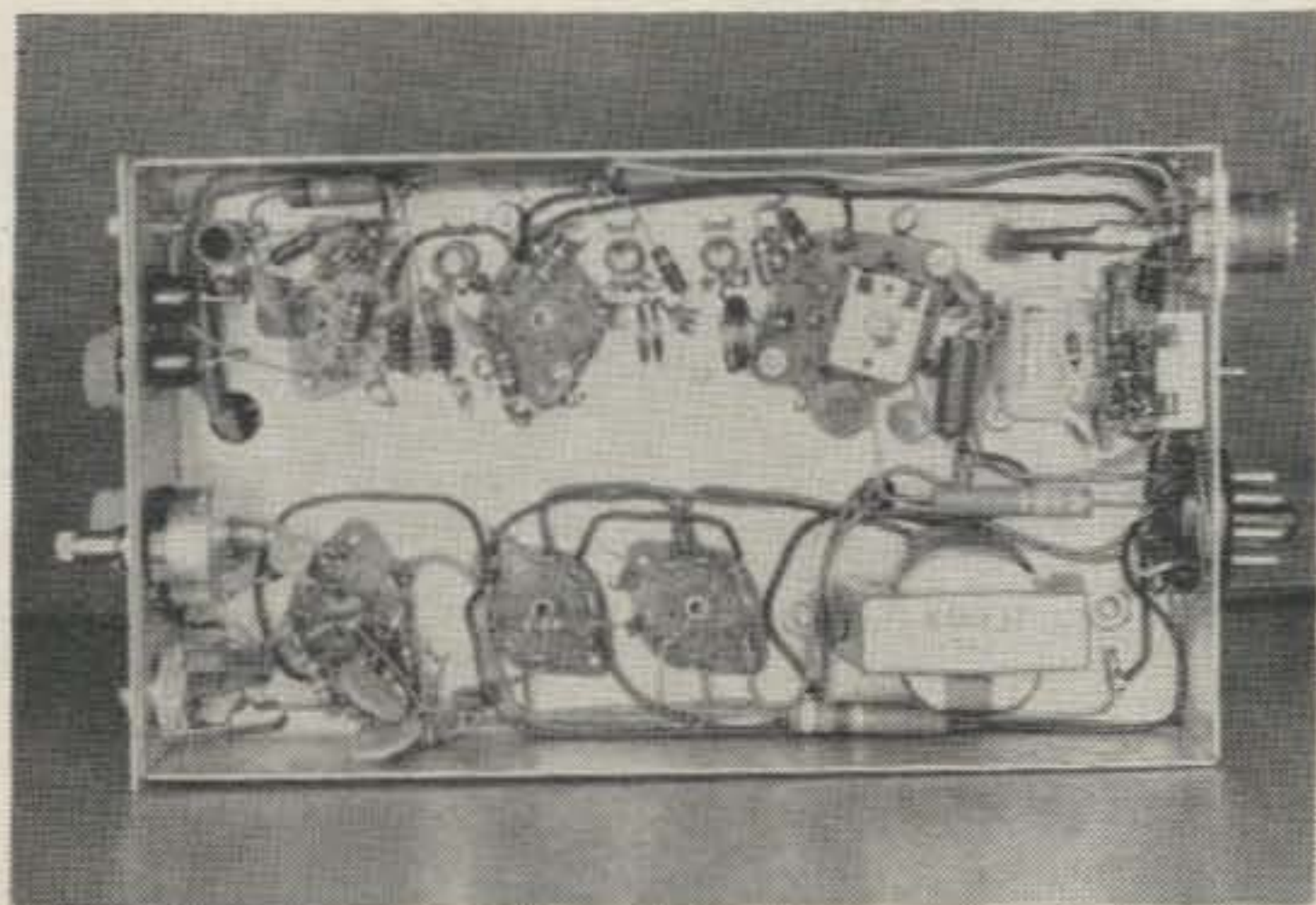
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meter switch leads are already connected and the heavy soldering has already been done! Actually over 100 parts have already been mounted!

The kit builders work comes in wiring the filaments, resistors, capacitors, coils, etc. It's a real pleasure to wire the kit. The instructions and drawings are complete and are written in the way an Amateur would like to have them.

A unique method is used for double checking your wiring. LW has designed a chart which shows all of the connections. As you read across the chart, each connection which should be on the pin that is listed in the block. The builder without much in the way of building behind him will find this a very great help.

Complete alignment information is given by the manufacturer and the rig tuned up as per the script. Neutralization was a snap, unlike my experience with some of the 2 meter finals which I have built before. I was curious to see how the meter worked out on reading modulation percentage. To check it, the rig was connected to an oscilloscope and the meter cali-



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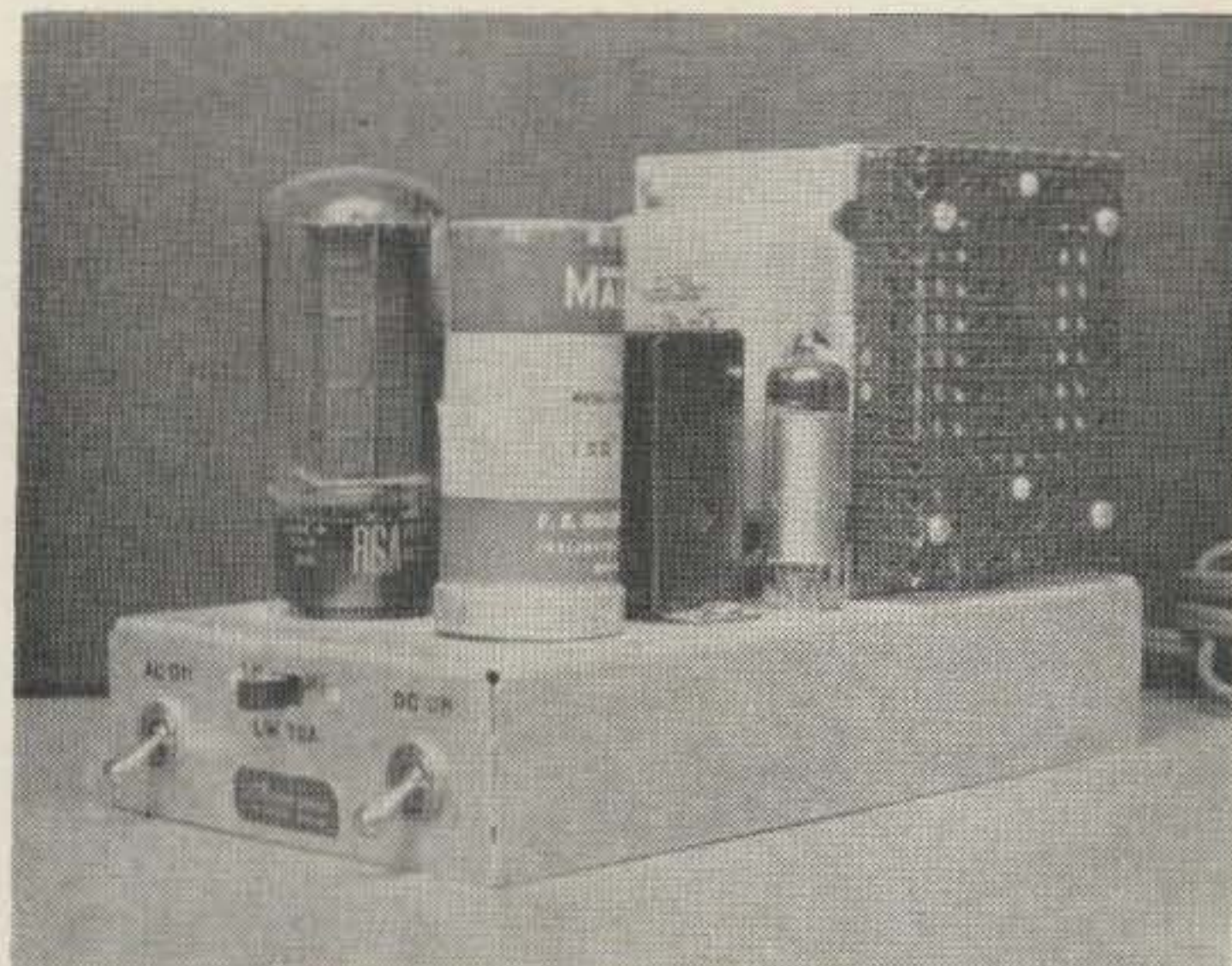
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brated as per the instructions with the kit. I was surprised to find that actually the meter was very close. On sustained peaks, with the meter showing 100% modulation, the scope showed approximately 95%. The meter allows you to get maximum “talk-power” out of the rig without creating interference.

On the air checks showed the rig to be stable and very reliable. Two meter stations up to 100 miles away have been worked with excellent reports on signal strength, stability and modulation. TVI was checked carefully (in a fringe area) and found to be extremely low. With a TV antenna only 12 feet away almost no interference was noted on *any* TV channel, 2 through 13!

The rig has excellent quality parts and material furnished with it and very thorough instructions. The rig comes with a crystal of your choice, alignment tools and excellent protective packing. At \$74.95, I think you will agree that it's a great buy for the VHF man.

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