

bandwidth conservation is really important or even helpful when heavy congestion is encountered. Rapp knew more than he was telling here, that was obvious. Our calculations seemed to indicate that the QRM power level per unit bandwidth, on the average, is not affected by the bandwidth of the transmissions. Yet narrow bandwidths are desirable as c.w. has proven for years. But then there may be something wrong with comparing phone and c.w. since the information or word-per-minute rates are drastically different. *Could it be that the information rate is the fundamental quantity and not the bandwidth?* If we got phone bandwidths down to a few hundred cycles, this should reduce QRM because of the very narrow passband needed for reception. But would the phone system now be so much more sensitive to interference that we would still be back where we started? No, Rapp is right, it is best not to pursue this line

of reasoning. After all, if there were something fundamentally wrong with bandwidth conservation for amateur and military usage, the boys at Rand or M.I.T. or someplace like that would have caught it by now.

So now I'm convinced bandwidth conservation is important and has a bright future. What about Rapp's v.s.t. scheme? I know enough about the Vocoder to realize that the system really works. Furthermore, it was developed at Bell Laboratories and that's also where s.s.b. originated. But if we push v.s.t. and it goes over big, this could result in the outlawing of s.s.b. on the ham bands. This might be hard on some of the boys, but after all, one has to be willing to pay a price for progress—I guess.

All of this still leaves me with a decision—the contract Rapp left expires in 60 days. What do I do?

... W2CRR

73 Reviews

The Paco Model G-15W Grid Dip Meter

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The grid-dip meter is a most useful accessory around the ham shack. Instrument manufacturers have obviously recognized this to be a fact, for the latest issue of Electronics Buyers' Guide shows 15 companies fabricating the little gems.

This is not the place to explain what a dipper can do. For the curious we seriously recommend a quick check with your favorite handbook. For the better informed we here present data on the PACO Grid-Dip Meter.

Condensed Specifications

Frequency range: 400 kc to 250 mc.

Functions: Grid dip meter, absorption wavemeter, modulation indicator, and other uses related to these three basic functions.

Size: 7½ inches long, 2¾ inches wide, 2½ inches deep. One-handed operation.

Power: 115 volts, 60 cycles, approximately 10 watts.

Shipping weight: 3 pounds.

Grossly

Condensed specifications are shown in the accompanying table. This will show the unit to be more or less typical of units in this price range. How does the device differ from the competition?

Removing the little gem from its packing (very well packed, by the way), I immediately found myself holding it just like the pictures shown. The size is such that it fits into one's hand very naturally and easily. It has a heavy feel—I was under a first impression of a steel case. It's actually of fairly heavy aluminum, with a pretty hefty coat of grey paint.

For clarity, the various scales are printed in alternate bands of black and red. These are clearly indicated by alphabetical letter. The corresponding coils are color-coded in a manner similar to the resistor code: the first coil

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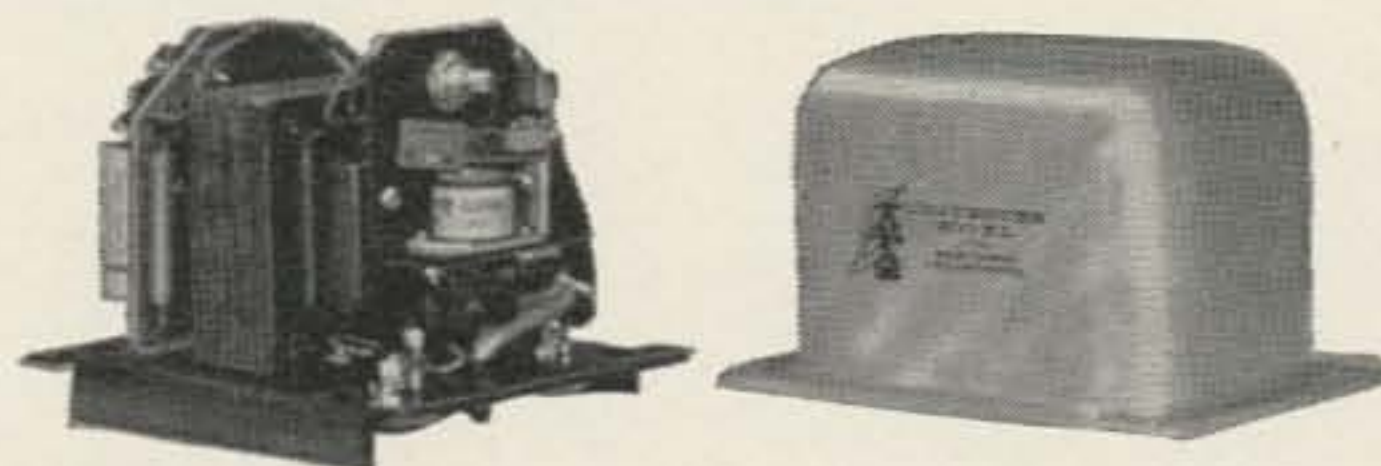
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is brown, the second red, third is orange, etc. So, going on the assumption that you know the color code, grabbing for the proper coil is child simple.

Functions

The device works well. The well-written instruction manual shows 15 different things that this little machine will do. One of them is to give an indication of modulation percentage. This is unique with PACO, and is obtained simply by altering the grid circuit configuration. It is particularly suited for telling the ham exactly what he wants to know: if he is at or near 100% modulation.

A phone jack is included so that the unit can be used as either an oscillating detector or for audibly monitoring phone transmissions.

The usual diode/dipper switch is included. This unit seems to have higher than average sensitivity in the diode position. Specifically, a two meter rig with a pair of 2E26s in the final gave a quarter-scale deflection of the meter at a distance of about 6 inches. I suspect this is due to the half-mil movement and the lower than average value of grid resistor, 10K ohms.

Another unique thing, or at the very least unusual, is the inclusion of a serial number on the unit. Especially among the smaller kits this is probably a worthy innovation.

On the subject of physical examination, it might be worthwhile to point out that the internal appearance is neat. But one must remember that the oscillator section of any grid-dip meter is invariably set up for *very*

short leads in order that the thing will function well on the higher bands.

The instruction book seems to cover every conceivable point. Uses, trouble shooting, maintenance, guarantee (very reasonable terms, 90 days) and parts list are included. 13 pages cover 15 suggested uses, with the understatement that "other uses will become apparent." A chart included so that unknown capacities from 50 mmfd to .007 mfd can be measured.

Comments

There is a minor set of small false dips on the highest range, but these are, first, insignificant, and second, typical of every dipper I have seen.

The meter zero adjustment is a bit sensitive, but this is a result of designing the unit so that in effect the scale is expanded. As a result, the dips are quite pronounced and obvious. The byproduct is a seemingly overly-sensitive zero adjustment.

One-handed operation is not only feasible, but practical.

Frequency accuracy is within a few percent on each of the 4 ranges checked.

We had the gadget about a month or so and finally managed to drop it. As luck would have it, it landed on the coil—on a cement floor. Now the PACO might be rugged, but not *that* rugged! A new coil was ordered, and less than a week later we had it. Quite a change compared to some manufacturers, and most comforting to know that the company stands behind you. . . . W5SUC