73 TESTS

the Knight-Kit G. D. O.

Stephen Abrams W2OKU

BY now the reader of 73 Magazine must be rather familiar with the subject of grid-dip meters. The circuits are basically similar; the sizes of the "boxes," likewise; the frequency ranges, ditto. Why, then, the great number of articles? There are at least two reasons. The first is simple. Give the reader a sample of what is available in specifications and equipment. The second is only slightly more subtle. Occasionally a manufacturer will provide a "something" in his equipment, either making its use more convenient or providing a novel usage, that may make it more worthy of consideration by the buyer. This kit, happily, satisfies both reasons.

Price: $22.95
Time for construction: One evening
Range: 1.5-300 mc

Red	1.5-3.5
Violet	3.4-8.5
Blue	8.2-20
Orange	19 -45
Yellow	45 -110
Green	105 -300

Input power: 105-125 volts, 50-60 cps, at 3 watts

Uses: Determine tuned circuit frequency
Determine circuit Q
Measure inductance
Measure capacitance
Phone and CW monitor
Crystal tester and market generator
Signal generator
Neutralization adjustment
Parasitic and harmonic checks
Coarse frequency measurement

The Knight G-30 lists for $22.95, and is available only in kit form. It covers the frequency range from 1.5 to 300 mc in six bands as listed in the specifications column. The case is of satin finished aluminum and occupies a space of 6¼ x 3⅛ x 1½ inches. The completed unit is quite light, weighing in at 1 lb. 10 oz. This, combined with the serrated dial extending beyond the case, permits easy one-hand operation.

In any grid-dip meter a point of major interest is the frequency scales. In this kit the prewound plug-in coils which determine the frequency range have been color-coded to correspond to similar coloring located on the case below the markings on the clear plastic tuning dial. If you have ever used a GDO and suddenly found yourself wondering which scale should be read you wuold appreciate this feature. The scales are clearly marked on the

(Continued on page 37)

Propagation Charts

David A. Brown K2IGY
30 Lambert Avenue
Farmingdale, N. Y.

The bands listed are MUFs and a higher band will not work for the time period listed. Lower bands will work, but not nearly as well. Times are GMT, not local time.

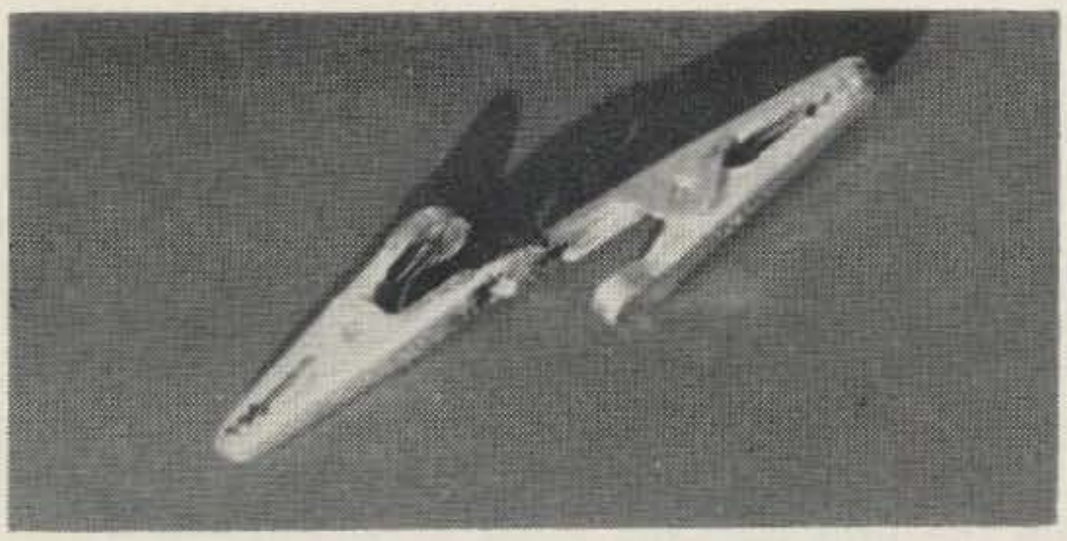
These charts are to be used as a guide to ham load openings for the month of May, 1961 to the various countries listed. I will be interested to hear of your results in using these charts and to know what other areas you might wish included in future charts.

Advanced Forecast: May 1961

Good 6-7, 16-18, 20-31

Fair 1, 3-5, 8, 12-15, 19

Bad 2, 9-11



Quick and Cheap

Experimenters will find a miniature double clip, made by soldering two of the smallest alligator clips together end to end, an almost indispensable aid to breadboard construction of electronic projects. Using the miniature twin-clip eliminates soldering of components in early assembly stages, and allows instant substitution when determining exact parts values for experimental projects. Cost of the midget clips used to maek the tiny twin-clip is 7 cents each in individual quantities, or 44 cents for 10—making the twin-clip's cost negligible in comparison to the cost of parts saved through its use.

. . . K5JKX

(G.D.O. from page 35)

knob with little chance for parallax as there is only small clearance between the scale and hairline. The quality and quantity of the dial markings are suitable for the ranges presented. A particularly desirable feature of this unit is the inclusion of a movable hairline. This permits the exact setting of a particular frequency and a higher than normal frequency accuracy for the immediately surrounding region of the dial. The data plotted in Fig. 1 was taken by setting the hairline to a measured whole-number frequency near the center of the range tested, and varying the dial setting from that point. Setting the hairline parallel to the length of the chassis, as is done in the initial calibration, results in frequency accuracies comparable to other units in the same price range.

The stability of the unit with changes of line voltage was found to be almost independent of operating frequency. The average shift was 190 cps/volt of line variation. As this variation was measured for voltages from 90 to 130 vac (let's hope yours is never worse), ac line stability should be no problem.

Construction of the meter proved to be quite easy as the instructions are almost childishly simple. Care must of course be taken in wiring the rf circuits. The unit was built in the course of one evening with no perspiration appearing on the brow of the assembler. It is pleasant to be able to state that it worked immediately; due credit must again be given to the instructions. It is worth noting here that the manual accompanying the equipment includes, in addition to constructional details, complete descriptions of how to use the GDO in all the applications mentioned in the specs column. Also included is a reactance-frequency nomograph (easy to use) handy for some of the applications: inductance and capacitance determination.

Electrically the circuit is one which has almost become standard. A 6AF4A UHF triode is used as a Colpitts oscillator with the resonant circuit made up of the plug-in coil and dial driven variable capacitor connected between grid and plate. Provision for the use of headphones for audio monitoring is made with a panel jack which simultaneously removes the indicating meter from the circuit. Use as a wavemeter is accomplished by setting the unit for minimum sensitivity which removes supply voltage from the tube, permitting it to act as a tuned diode detector.

All in all the G-30 is a satisfactory example of a device which should be present in every ham shack. As to why you should have one in your shack, I refer you to the list of uses printed here and to the Radio Amateur Handbook (ARRL).

. . . W2OKU