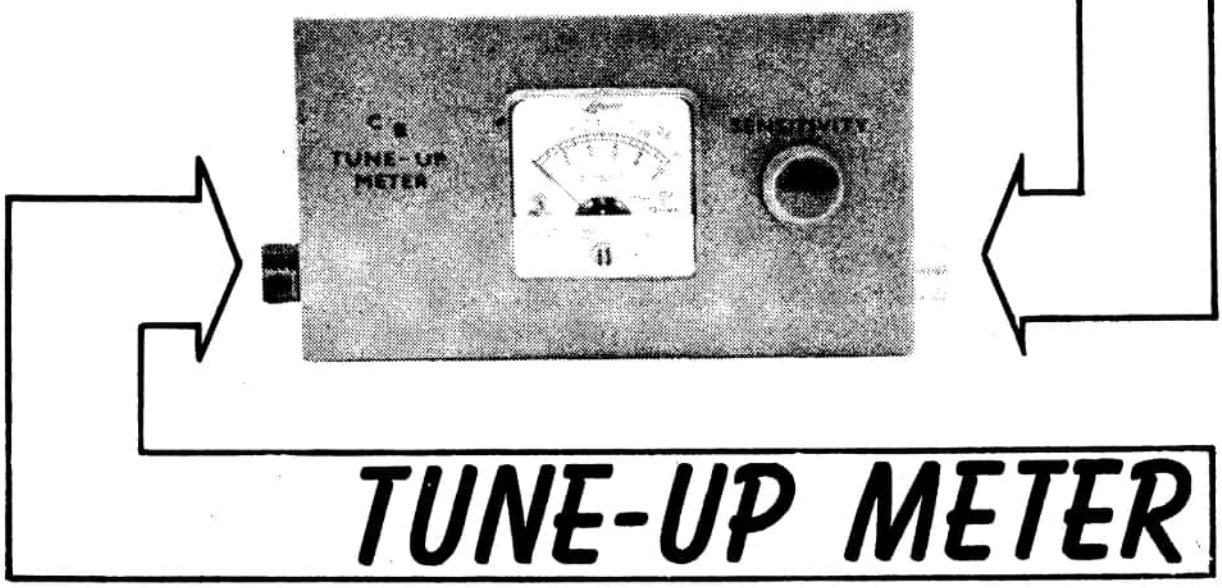
TRANSMISSION LINE



TUNE-UP METER

By Al Toler

OF ALL the methods used for tuning a CB transmitter only the SWR meter (which measures relative power into the transmission line) and the field strength meter (which indicates relative power out of the antenna) are accurate indicators. Light bulbs, terminated power meters and plate input meters just can't do an accurate job.

Unfortunately, it's difficult to tune your transmitter while up on the roof with your field strength meter; and, the cost of an SWR meter somewhat limits its availability for CB. But now, EI's $5 Inline CB Tune-Up Meter brings an accurate tuning indicator within the reach of all CBers.

The Tune-Up Meter samples the power fed into the transmission line. Since maximum power indicates maximum tuning, meter M1 will give the highest reading when the transmitter is tuned on-the-button. The Tune-Up Meter can be left permanently connected in the transmission line.

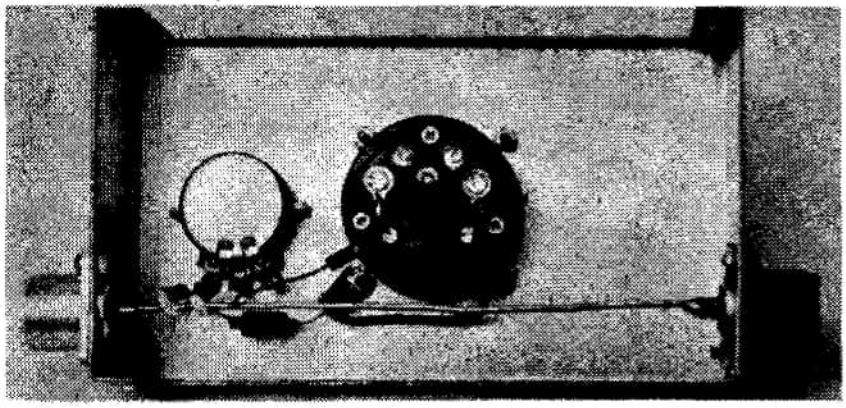
The Meter is built in the main section of a 5¼x3x2⅛-inch Minibox. Coaxial jacks J1 and J2 are mounted on the side panels *as close as possible to the lower rear corner*. A piece of #16 bus bar (or a section of a coat hanger) connects J1 to J2. Connect it as direct as possible and don't use thin wire.

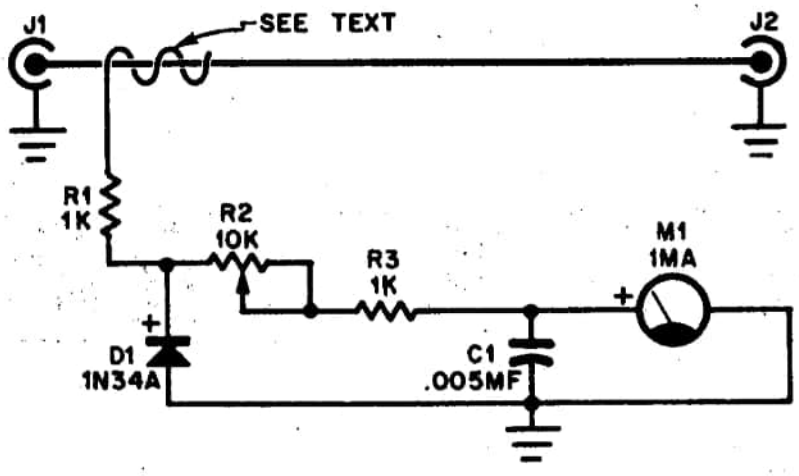
Connect R1 to sensitivity control R2 in such a manner that the top of R1 is ⅜-inch from the bus bar. Insulate R1's free lead with spaghetti and wrap it three times around the bus bar. Make certain the tip of R1's lead does not extend past the insulation.

Checkout and Use. Connect the transceiver antenna jack via a length of coax cable to either J1 or J2. The transmission line connects to the remaining jack. Energize the transmitter and adjust R2 for a convenient M1 reading. Then, adjust the transmitter tuning for the highest M1 reading. At peak reading the transmitter is tuned for maximum power output.

Note: M1's reading depends on both the power output and the transmission line's SWR. Its exact reading is unimportant since low power output and a high SWR can result in a high reading. Similarly, high power output and high SWR can read low. Only the fact that M1 peaks is important.

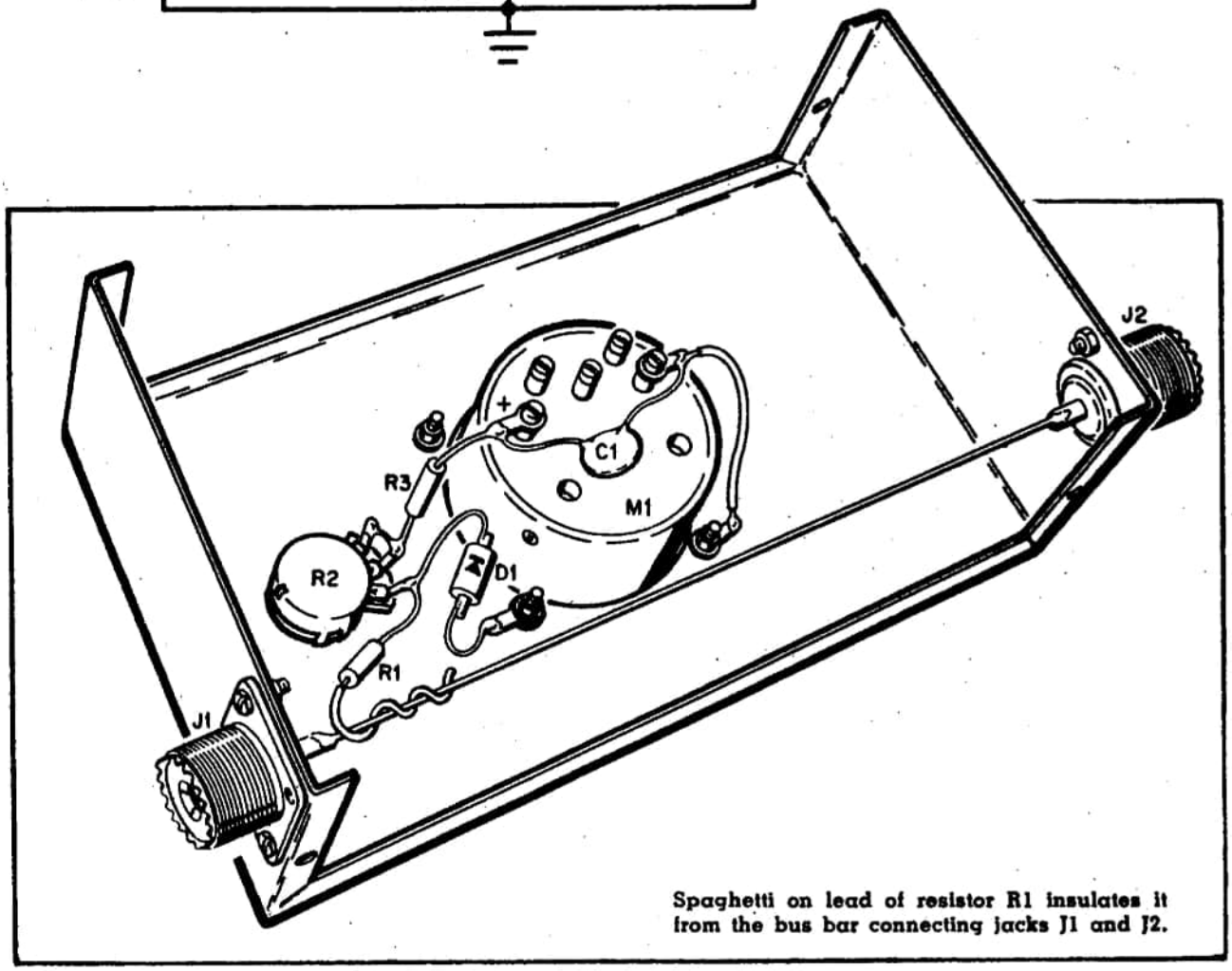
Almost empty Minibox is seen with cover off. Extra terminals on meter connect to its internal lamps which are not used in this application. Any type and size of 1-ma meter will serve.





PARTS LIST

R1,R3—1000 ohms, ½ watt
R2—10,000 ohm potentiometer
C1—.005 mf, 500 VDC ceramic disc capacitor
M1—1 ma DC meter movement, any type or size
D1—1N34A crystal diode



Spaghetti on lead of resistor R1 insulates it from the bus bar connecting jacks J1 and J2.