



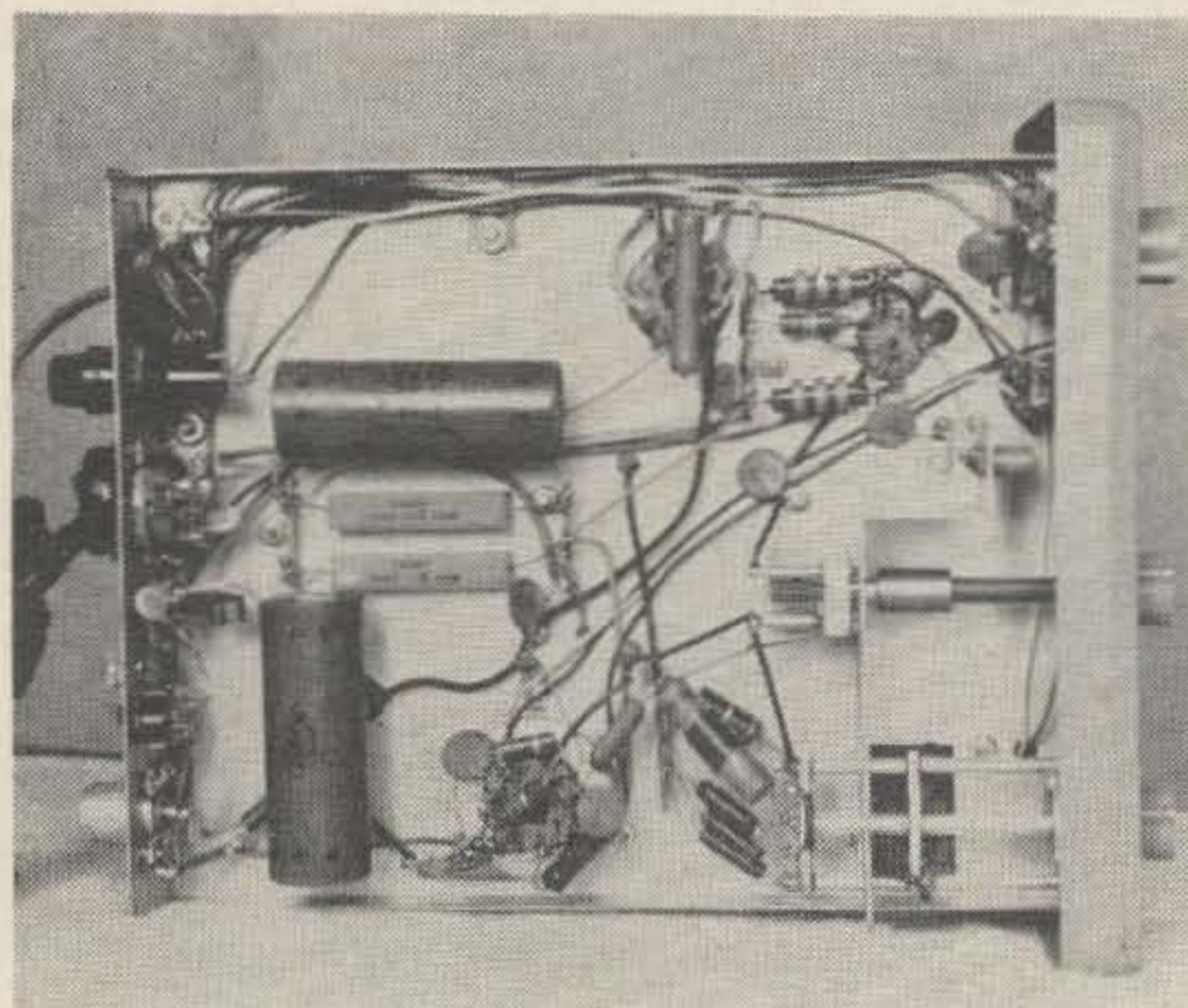
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73 Tests the Eico 723

THE EICO PEOPLE have brought out a transmitter which is obviously intended for the Novice, though any amateur would be happy to own it for a standby rig. Economy, ease of construction, and simple operation are among its virtues. Priced at \$49.95 in kit form and providing 60 watts CW input on 80, 40, 20, 15 and 10 meters, the rig also has provisions for an external VFO and a modulator when the Novice ticket is exchanged for a General.

The rig has three tubes; a 6CL6 oscillator, a 6DQ6B final amplifier (each of these stages has its own bandswitching plate tank circuit), and a GZ34 rectifier in the power supply. A complete diagram of the 723 is shown in Fig. 1.

The 6CL6 functions as a Colpitts crystal

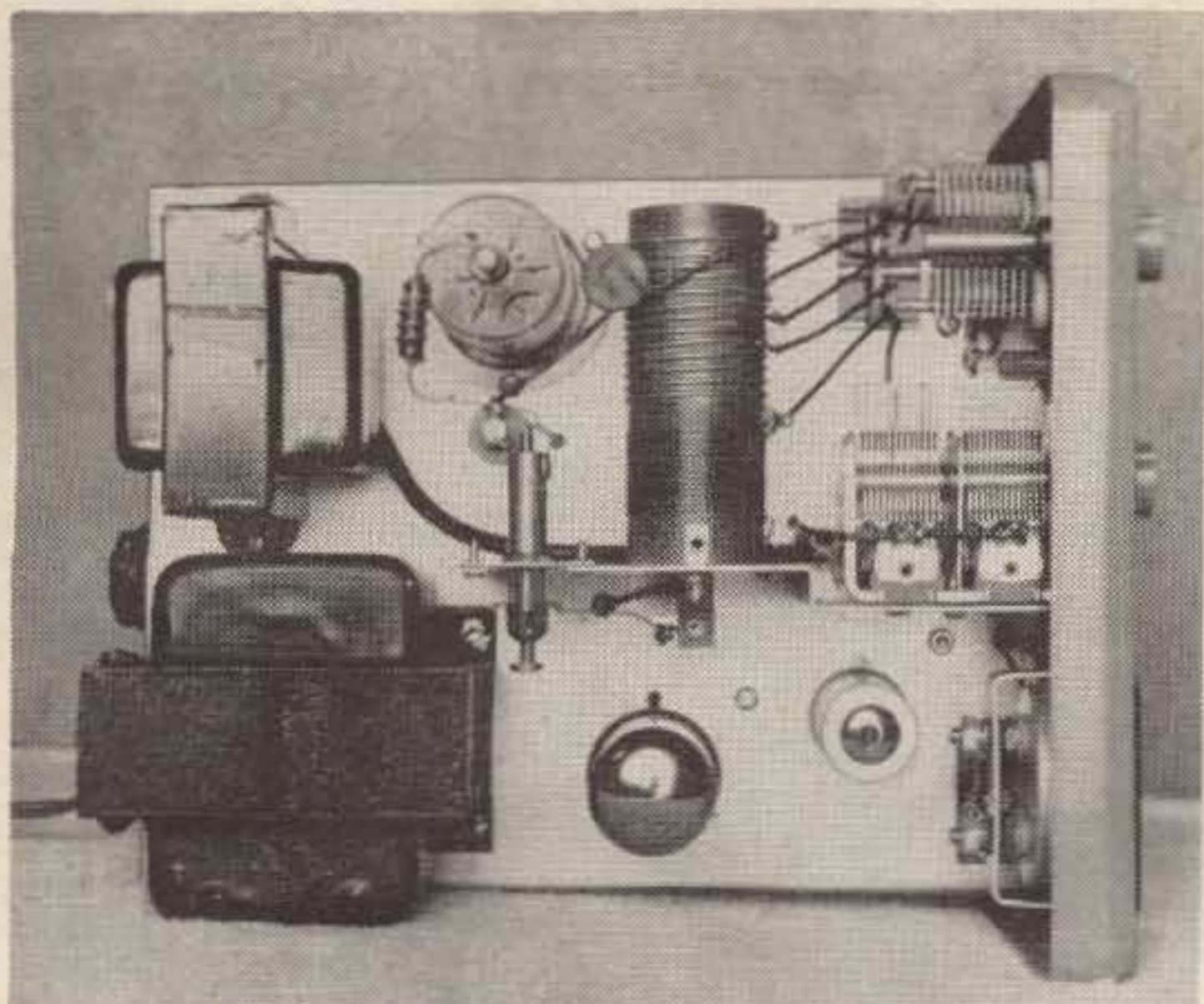


controlled oscillator. There are two inherent characteristics of this circuit which make it very desirable. First, very little current actually flows through the crystal, thereby reducing the possibility of crystal heating. This greatly reduces any tendency for the crystal to change its resonant frequency. This also eliminates the possibility of the crystal being fractured by excessive current.

Secondly, and most important in a rig of this type, the circuit provides relatively high output at multiples of the crystal frequency and it can be tuned to the desired harmonic by the plate tank circuit. This eliminates the necessity of an additional tube for a buffer-doubler. It also allows the use of 80 meter crystals for 80, 40 and 20 meter operation, while 40 meter crystals may be used on any band, 40 through 10 meters.

Although there is no buffer stage between the oscillator and the final amplifier, frequency shift due to oscillator loading is minimized because the frequency determining portions of the oscillator circuit (the crystal and control grid) are isolated from the oscillator plate tank circuit by the screen grid.

The final amplifier is quite conventional, with the 6DQ6B pentode operating as a class C power amplifier. The final operates straight through on all bands, with the exception of 10 meters, where it functions as a frequency doubler-final. A band-switching pi-network tank circuit serves to match the final to the antenna. Loads of 50 to 1000 ohms may be matched by this circuit. A somewhat unusual feature is an additional 1000 mmfd capacitor



which may be switched in parallel with the 900 mmfd variable used in the pi-network, if proper loading is not possible with a particular type of antenna at the lower frequencies.

Cathode keying is used in the 723, with both the oscillator and the final being keyed. An octal plug on the rear chassis apron permits an external modulator, such as an EICO Model 730, to be placed in series with the final amplifier B+ line. With this arrangement, 50 watts input may be expected on AM phone.

An external VFO may be used by simply plugging its output into the crystal socket on the front panel of the rig. In the event that the VFO does not have a self-contained power supply, Eico has conveniently provided 500 vdc at up to 15 ma and 6.3 vac at the octal socket on the rear chassis apron.

The power supply utilizes a GZ34 rectifier tube, sometimes called a 5AR4, and a 5-25 Henry swinging choke, along with two 40 mfd capacitors. This circuit does a good filtering job and provides good regulation on CW. In the event of ac power failure, the octal plug may be connected to an external emergency power supply, such as a mobile battery operated vibrator supply (see Oct. 1960 issue of 73 Magazine for a delux "Three-way Power

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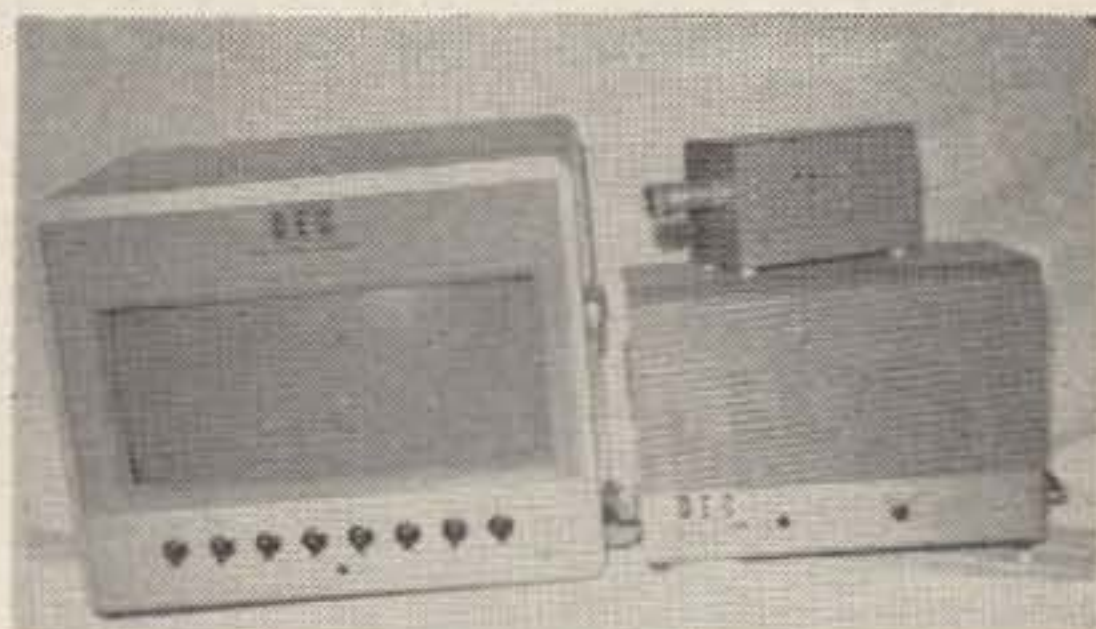
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Supply"). Even if the emergency supply does not put out the maximum amount of 500 vdc @ 150 ma, the rig could still be used on an emergency basis at reduced power.

Another feature is that 117 vac is automatically applied to pins 2 and 7 of the rear socket when the Function switch is placed in the "XMIT" position. This voltage can be used to operate an antenna change-over relay and other devices.

Construction of the kit proceeded without difficulty and no mistakes were found in the instructions. The 160 steps, which sound like a great deal, were easy to follow and were assisted by large, clear fold-outs. Total time required for assembly will run from about 14 to 20 hours, depending on kit building experience. In spite of the relatively small overall size, the under chassis wiring is not at all crowded and should be no problem to someone constructing his first transmitter.

Three amateurs used the rig, each under different conditions and with various types of antennas. Results were as good or better than expected. Most who have used this little rig were surprised at the way it "got out." The cabinet design also is impressive, particularly when you consider the low price. At \$49.95 the little 723 is a good buy for the Novice or others who want a good standby rig.

... W3UZN-W3WTO

SPEC'S

Power Input: 60 Watts CW; 50 Watts AM-Phone, with external modulator.

Output Load Z: 50-1000 ohms.

Band Coverage: 80, 40, 20, 15 and 10 meter Amateur Bands.

Operation: Crystal control, with provisions for external VFO—Also Plate Mod.

Tubes Used: 6DQ6B final, 6CL6 oscillator, GZ34 rectifier.

Power Requirements: 117 VAC, 60 cy, 140 Watts.

Cabinet Size & Weight: 6" High, 8½" Wide, 11¼" Deep. —15 pounds.

Price: Kit—\$49.95

Wired—\$79.95

