



Knight-Kit C-540

THE Knight-Kit C-540 transceiver is a compromise design. That is, it combines the ease-of-operation and price advantages of a single-channel transceiver with the multi-channel flexibility of more expensive rigs. Although it has a single-channel transmitter, the crystal socket is mounted on the front panel. This permits you to change the transmitting frequency conveniently by plugging in another crystal.

The receiver is tunable over all 23 channels. There is no provision for crystal-controlled receive. Two useful features on the C-540 are a noise-limiter on-off switch and a tuning-dial pilot lamp.

The \$44.95 Standard model is for base use (that is, it is equipped with a 117-VAC power supply only). The Universal model, available for \$49.95, has all the operating flexibility of more de luxe transceivers. The Universal model power supply works on 117 VAC and 12 VDC.

Power-supply switching is taken care of by the input-power cable. Connect the AC cable and the power supply connections are set up for 117 VAC. When the DC cable is used, the internal vibrator is connected.

Like most other basic transceivers the C-540's circuit has no frills. The receiver section has one stage of 455-kc IF amplification. The antenna is coupled directly to the mixer since there is no RF amplifier. The squelch is adjustable and as we said, the noise limiter has an on-off switch. Transmit/receive switching is electronic (no relays).

The transmitter output is link (rather than pi-net) coupled to the antenna and is designed to feed into a 50-ohm impedance.

Putting It Together

Typical of Knight-Kits intended for the beginner, there are loads of pictorials so that each one covers just a few construction steps. All resistors are supplied on a marked card and color-coded lengths of hookup wire are precut to size.

While the assembly, even for someone who has not built a kit before, should present no problems, there is one thing to watch out for. The chassis we received had edges like a razor blade. Therefore, *before* you start assembly smooth all chassis edges carefully with a file.

Another problem involved the panel-support brackets, which are welded to the cover. One of our brackets was broken off and was packed with the power transformer. Also, one shield-base tube socket was missing.

Though the IF transformers are supplied prealigned, the RF and oscillator coils must be aligned. Generally speaking, the front-end could be aligned by tuning in a CB station or by using a 5-watt transceiver or walkie-talkie to provide the test signal.

Naturally, if the test signal is a received station alignment can be quite a problem since the stations go on and off the air. The preferred procedure is to provide your own test signals with another transceiver, or better yet, a *pair* of walkie-talkies—one operating on channel 1 and another on 23.

The procedure without instruments is to tune in a station on channel 1, with the dial set to channel 1, and adjust the oscillator coil slug for maximum signal strength. Then the dial is moved to channel 23 and a trimmer on the main tuning capacitor is adjusted until the high-end signal is received at the correct dial marking. Since the coil slug and capacitor interact to a considerable degree, it takes many tries before the dial finally is calibrated.

Unlike crystal-controlled transceiver kits, which do not require critical receiver oscillator alignment, the C-540's receiver oscillator must be precision aligned. We found the receiver oscillator adjustment to be critical. So much so, in fact, that even when we used a stable signal generator for dial calibration it was difficult to maintain calibration. The slightest vibration and the dial calibration is off. Just lifting the transceiver slightly and dropping it on a table is enough to detune the receive oscillator.