

## 73 Tests the Knight Kit C-577 Compressor

Hams have long known the advantages of compression in the modulation of a transmitter. You can look back at old handbooks and see the very complex and cumbersome equipment that used to be necessary to add compression to a transmitter. Then you can look at the neat, compact Knight C-577 and see how far we've come. This simple, easy-to-build compressor/preamplifier connects between your microphone and transmitter mike input in a few minutes. Then it can be switched in and out of the circuit with adjustable compression and output to provide you with maximum audio for any situation.

The C-577 comes as a kit. The "job" of building it takes about an hour even for butterfingers. Almost all of the parts are on a sturdy printed circuit board and the C-577 uses three modern silicon transistors for reliable operation. The circuit board mounts easily with the controls and common 9 v battery in the attractive 2 $\frac{3}{8}$  x 6 $\frac{1}{4}$  x 3" sea blue and silver case. Then it's ready to connect to your transmitter with the double shielded cables that are provided in the kit for use with push to talk switching.

Once the C-577 is connected up, you find that it offers preamplification for low level mikes—up to 26 db at 1 kc. Compression can start as low as 2 mv with full compression limiting output to 50 mv as desired. The input and output impedances are more than 50,000 ohms and frequency response is within two decibels from 300 to 5000 cps. Because of the transistorized-battery operation, hum and noise are more than 50 db down from the maximum output.

The compressor boosts the output of your modulator when you mumble, then limits it when you talk too loudly to give a high average level of modulation. You can easily adjust the unit so that your transmitter will not over-modulate no matter how hard you shout! The big advantage of a compressor such as this over the more common speech clippers is that it introduces very little distortion. All broadcast stations use compressors; I'm sure none use clippers. Of course, hams don't want high fidelity in frequency response, but we do want low harmonic and intermodulation distortion so that our signals are clean and pleasant to listen to. Clippers are notorious for harmonic distortion—that's why they have to be followed by filters. The distortion that a compressor introduces is mostly a matter of phase and amplitude, which is not unpleasant.

I connected the C-577 to a 50 watt 6 meter AM transmitter, got into a contact with a ham just about on the limits of my modulation, and tried the switch test. He said that it made quite a difference. Without the compressor, my voice was weak and partially unreadable. With the compressor in the circuit, it was much stronger and R5 copy. Even with deep compression, the sound wasn't too bad. In fact, my voice is pretty bad without the compression. At any rate, you can always reduce the compression a bit if there are any complaints. The attractive edgewise meter tells you how loudly to talk.

At \$19.95, the Knight C-577 is an excellent buy. You'll never know the difference a compressor can make until you try one.

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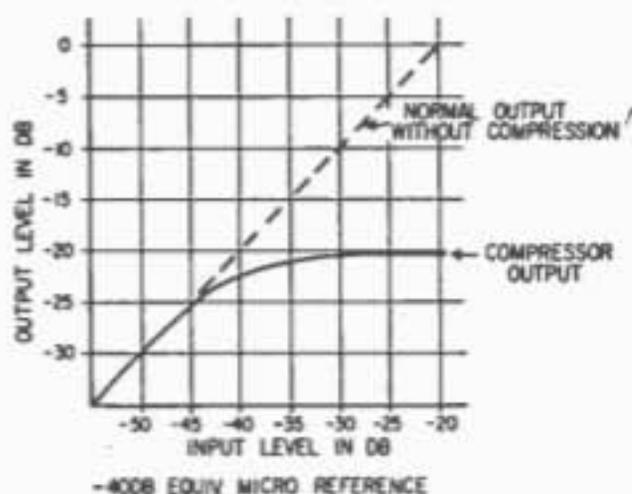
# LAB CHECK

cedure with no careful balancing required for optimum performance.

**Build It Yourself.** The kit is not even a one evening project; if you can't throw it together in an hour or so you're doing something wrong. All the electronics—actually a handful of components—is assembled on a wide-spaced printed circuit board. And special precautions have been taken to insure that even the newcomer to construction will have no trouble with the kit. For example, the transistors aren't wired to the board; sockets are used so there's no chance of damaging the transistors with excess soldering heat. Then, the printed wiring is protected with a special coating except at the soldering points. Even if you crash in with a 150 watt soldering iron there's virtually no chance you'll flow solder across two "wires." (Though you should not use an iron rated higher than 75 watts.) And typical of Knight-Kit the connecting wires are pre-cut to size and ends stripped.

The compressor uses a standard type 2U6 9-volt transistor radio battery which should last from three to six months depending on the service periods.

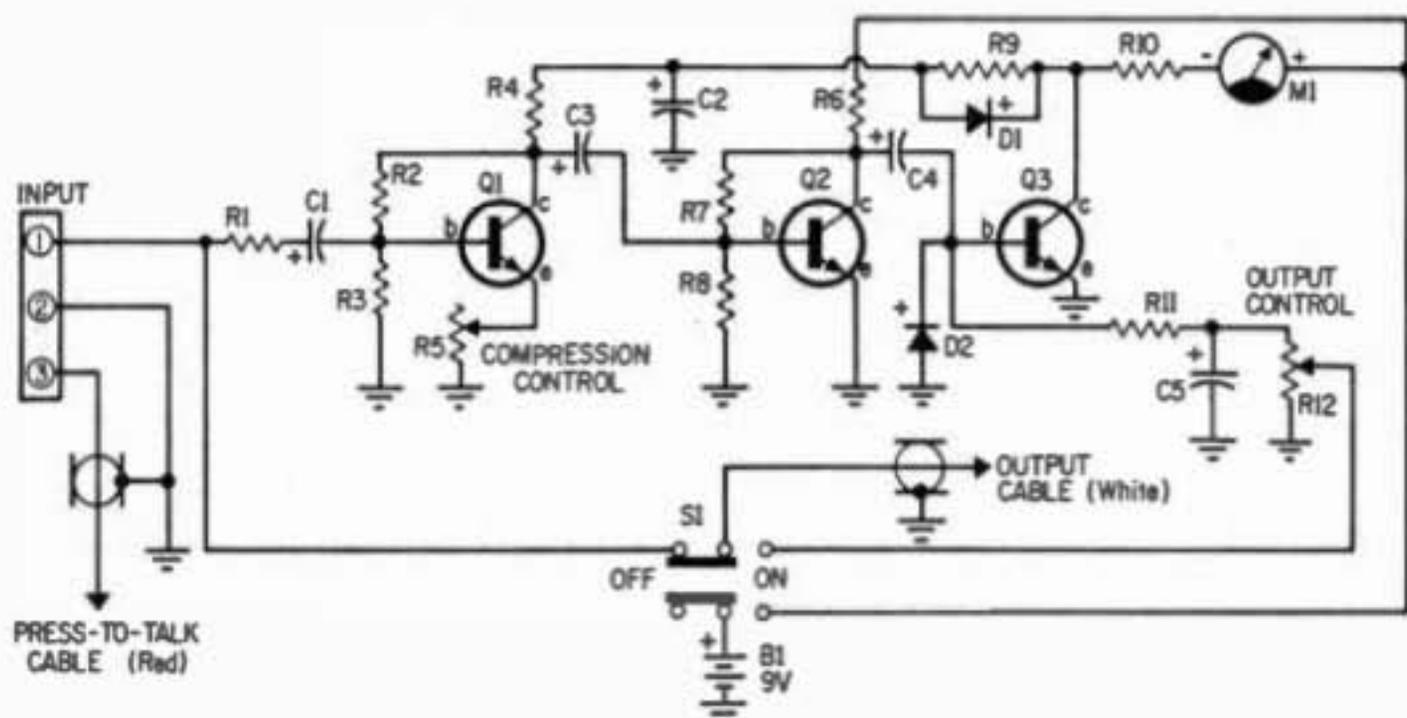
**Our Comments.** The C-577's performance is very good, about the best we've run across in CB compressors. However, there's one note of caution. The C-577's input impedance is in the order of 250,000 ohms. This value will load down a high impedance



Graph plots C-577's compressor performance with controls adjusted as per unit's manual.

ceramic (or crystal) mike, resulting in some low frequency attenuation. While the attenuation is not severe, at most making the signal crisp which is the way it should be, if your transceiver already has low frequency attenuation built into the modulator to improve communications quality, combined with the attenuation caused by the compressor's mike loading the resultant modulation can be shrill, or at best *thin*. If such is the case simply change to a dynamic mike; not only will it not be affected by the loading but its relatively smooth frequency response will result in a superior modulation quality.

The kit's \$19.95 price (less battery) makes the Knight-Kit C-577 the best buy in Allied's 1966 catalog. So, if you want to compress or clip your audio check your 1966 Allied Catalog (page 73) or write to Allied Electronics, Dept. JR, 100 N. Western Avenue, Chicago, Illinois 60680.



More than just a diode clipper, the C-577 begins to compress the audio signal at -45 db.