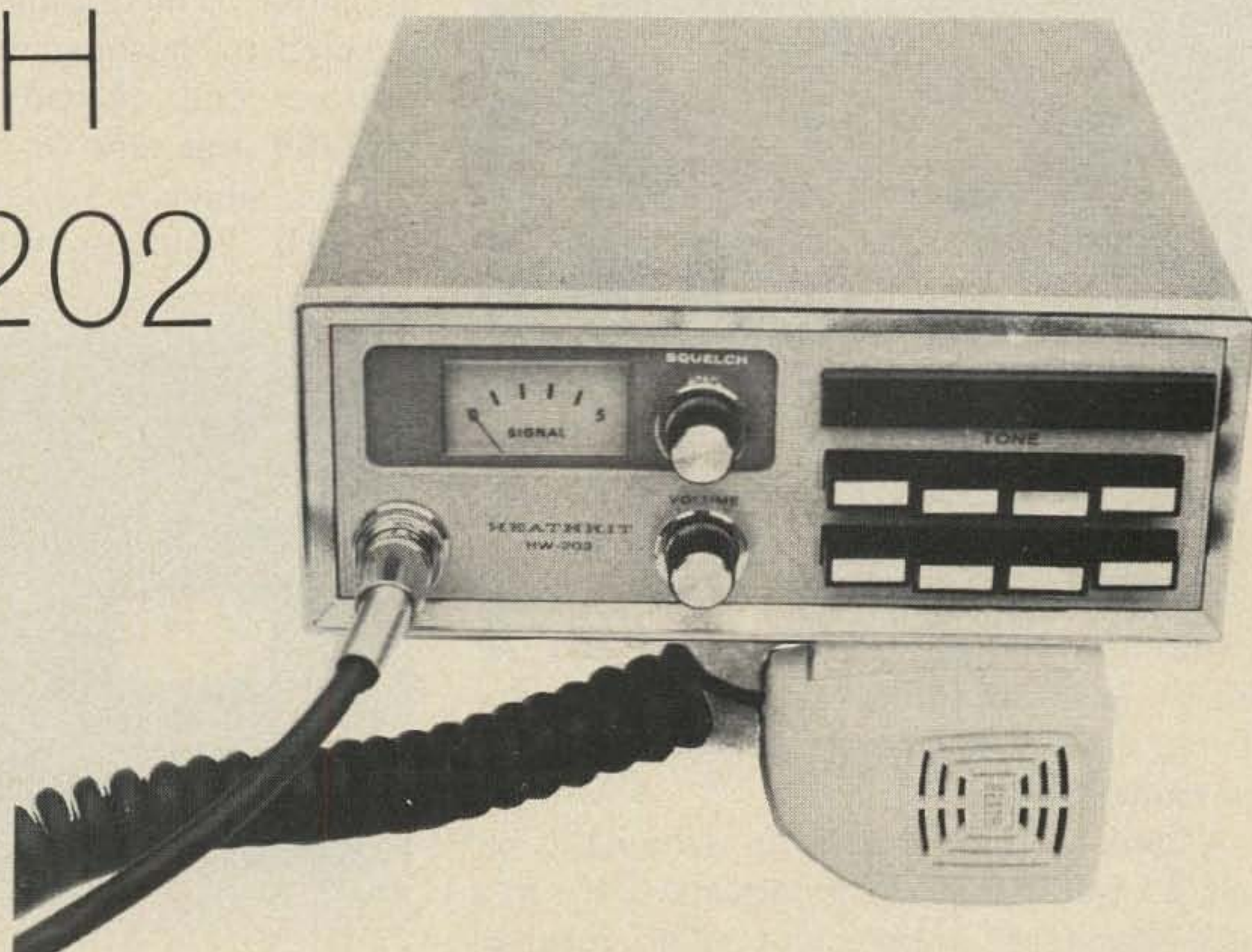


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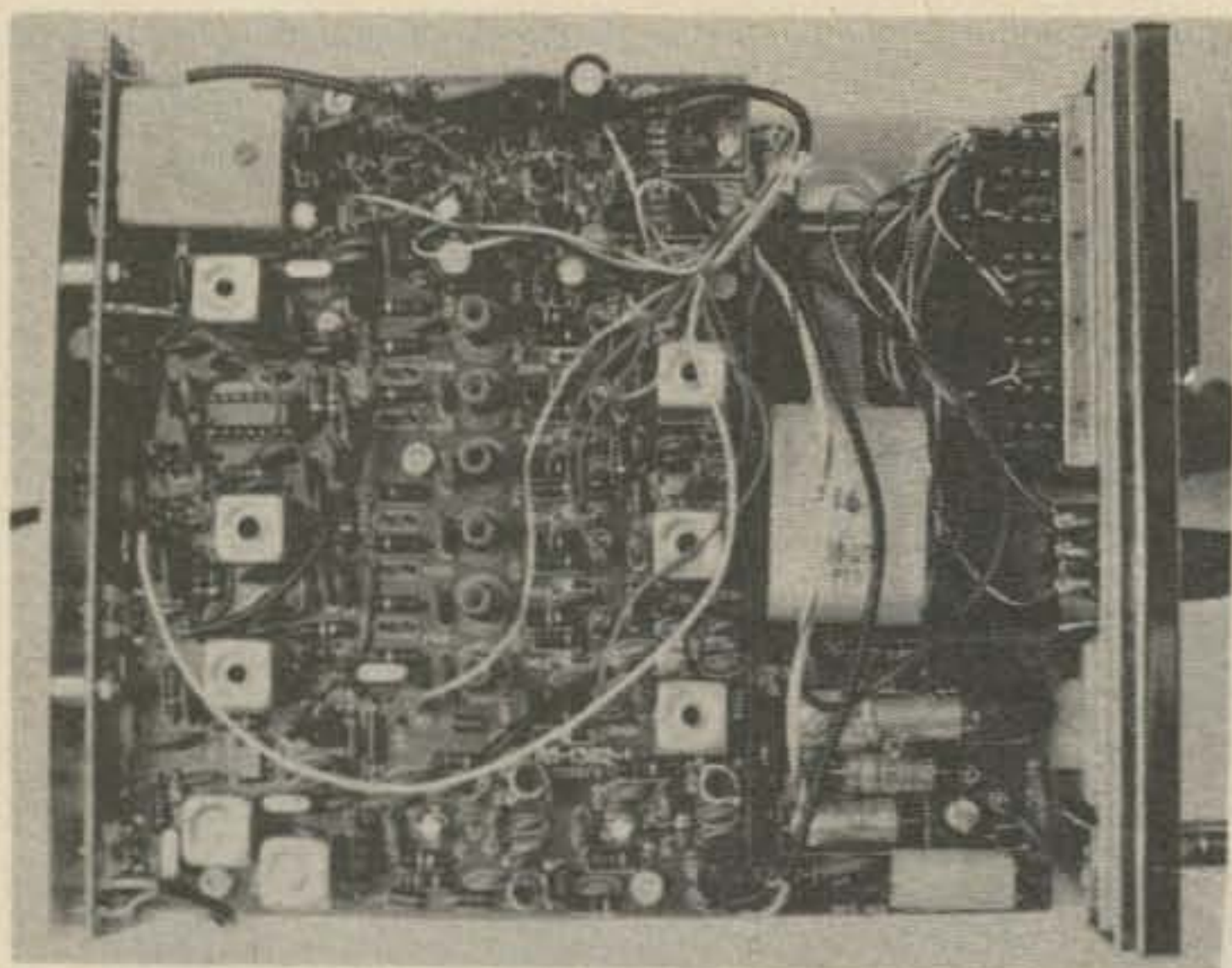
HEATH HW-202



If, for some eccentric reason, you have lately had an occasion to tear yourself away from the rig, you may have heard a song on the broadcast band called "Everybody's Got One" . . . which is also the punch line of a saying popular in some circles, in reference to a delicate part of the human anatomy. Well, now apparently this phrase is applicable to the Heath HW-202, if one listens to and counts the increasing number of these units bringing up the local repeaters. A couple of reasons for this could be Heath's reputation or that it is American made. However, I suspect that the main reason for its popularity is that after catalog shopping and comparing watts and number of channels versus price tag . . . Heath is the winner.

Providing a minimum of 10W out on your choice of 6 crystal frequencies and a sensitivity of $0.5 \mu\text{V}$ for 20 dB of quieting on 6 receive crystal frequencies, this all solid-state little unit is a box full, as can be seen in the photographs. However, other than for the number of components, all construction is straightforward with no difficult wiring or

Rube Goldberg mechanical surprises. In fact, I would say that it is one of the smoothest going-together kits I have yet assembled. Heath's instruction manual, clear and well illustrated as usual, certainly deserves a major portion of the credit for this, especially the pictorial format they have developed. Timewise, you may expect to spend approximately one hour soldering time on the regular-hash filter circuit board, 3.5 hours on the power amplifier, 8.5 on the receiver, 4 hours on the transmitter, and another 5 hours connecting the wiring harness and the circuit boards on the chassis. In case you don't have your pocket calculator handy, that adds up to 22 hours. The etched circuit boards are heavy duty glass-epoxy and no trouble should be experienced with lifting pads during soldering nor warping in mobile installations where high ambient temperature conditions may be encountered. Incidentally, the transceiver is designed to operate within a temperature range of -12 to +122 degrees F (-25 to +50 C) which is well below and above the operating range of most operators! For those who would attempt to

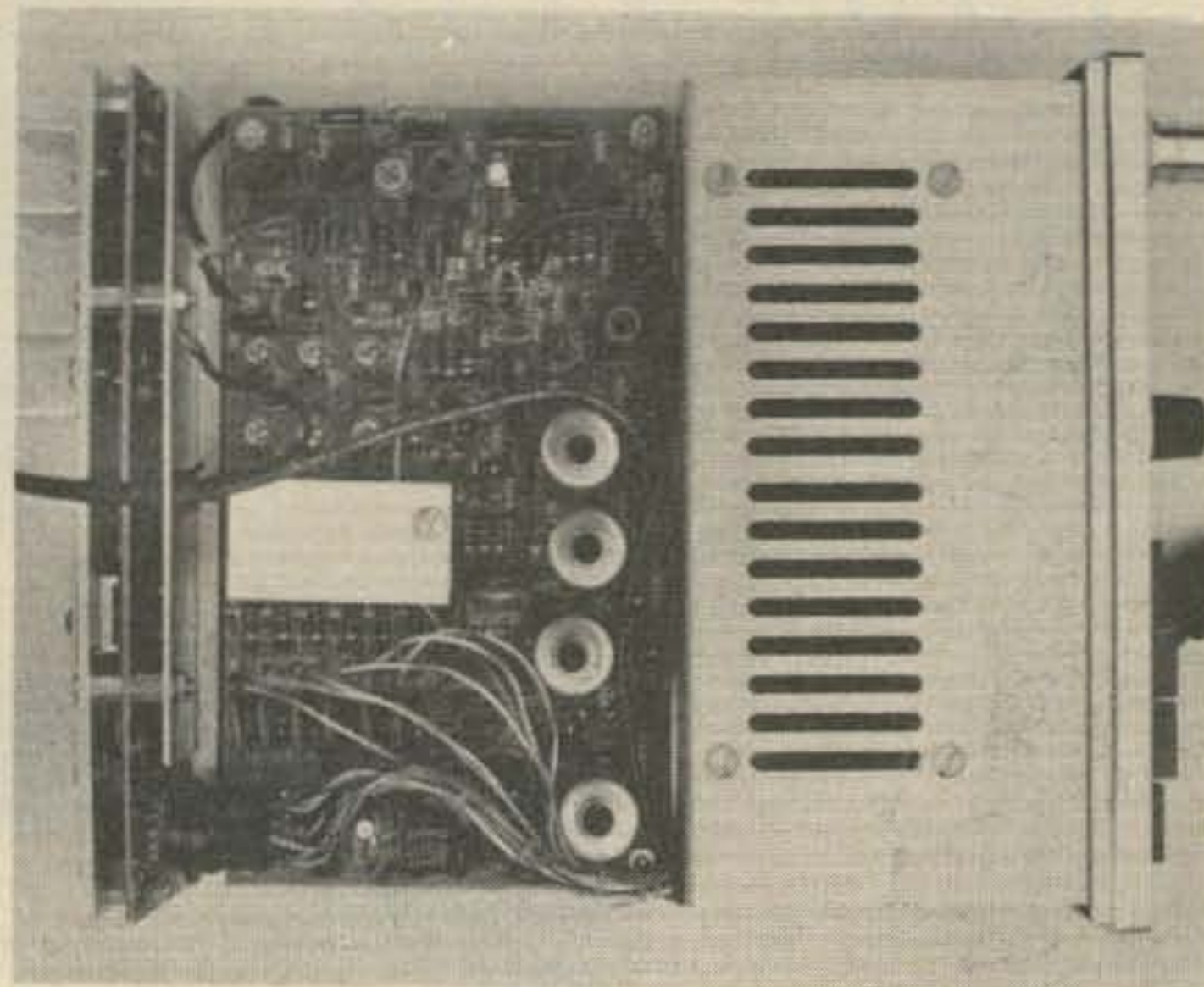


Top View.

construct such a kit as this without the proper solder . . . Heath includes a generous roll. Are there still creatures walking among us who have not gotten the word about the evils of acid core solder? In addition, a .64 x .80 cm open-end wrench is provided for a few moments use.

A look at the transceiver schematic reveals 33 transistors, 23 diodes and 2 ICs in a fairly standard arrangement. The receiver front end consists of an TCA 40673 dual

gate, metal oxide semiconductor field effect transistor (MOSFET) as the rf amplifier, whose output is fed to a second 40673 functioning as a mixer stage along with the output of the crystal controlled first (local) oscillator. The oscillator circuit crystal is selected by pushing the desired front panel buttons and tickled into activity by a 2N2369 and sent to the mixer. The mixer output, which is 10.7 MHz, is fed through a 22 kHz bandpass filter (two double-pole



Bottom View.

crystal filters) and amplified by a MC1350P integrated circuit. Then, the signal is mixed in a 40673 transistor stage with a 10.245 MHz signal from a second 2N2369 crystal

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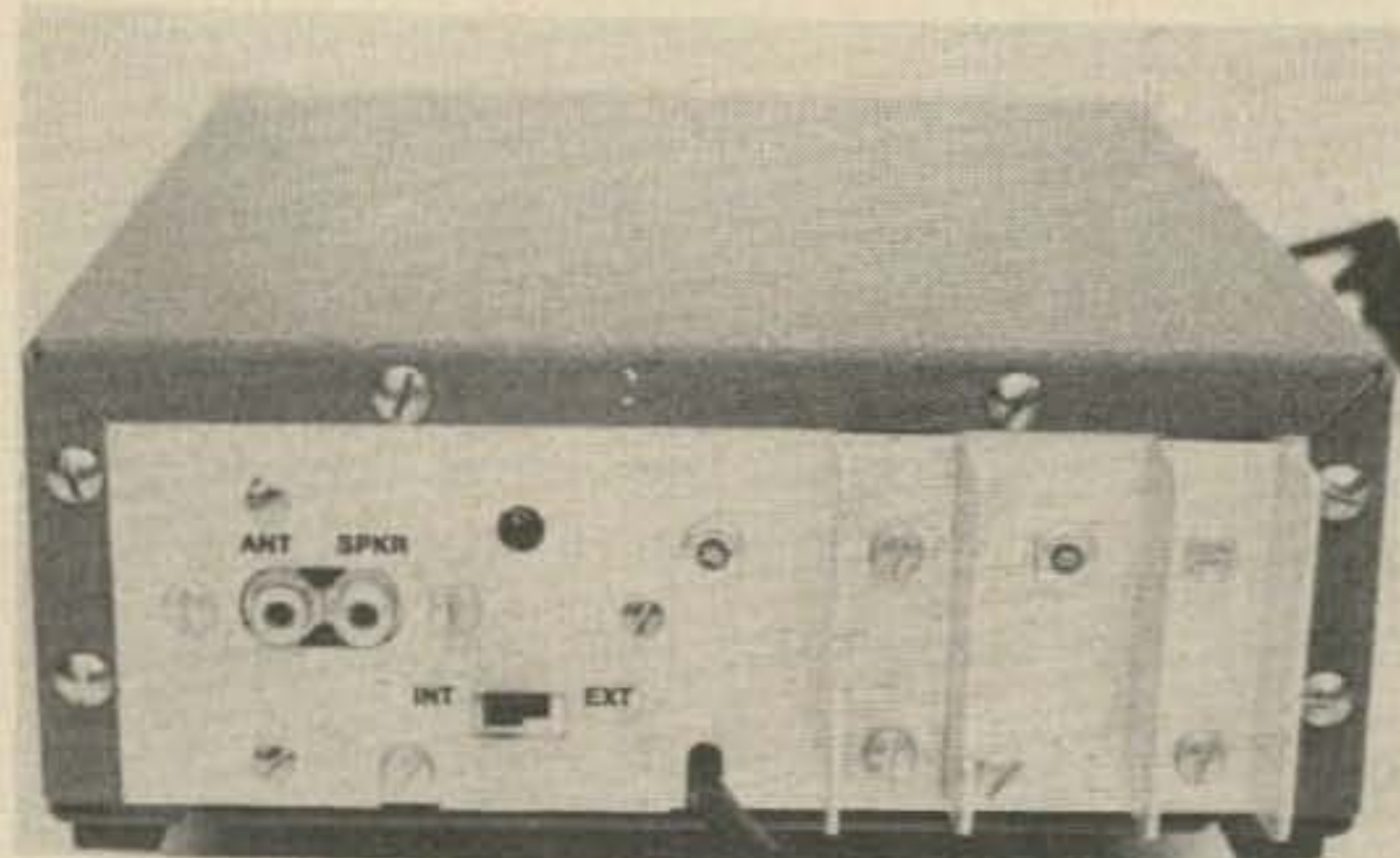
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Rear View.

controlled oscillator. The resultant 455 kHz output is coupled to a MC1357P integrated circuit operating as an additional stage of i-f amplification and as a quadrature detector. Now, as audio, the signal is processed by squelch gate, preamp and squelch amplifiers (all 2N5232As) and boosted by the audio amplifier circuits up to 3 watts to drive the built-in speaker.

W3WTO