

resistance of the closed keying circuit. Reports of missing dots and irregular keying had me burnishing my bug's contacts every other day—or so it seemed—even though the transceiver's sidetone followed my keying faithfully.

An article in July 1982 *QST*⁸ addresses the problem of IC-730 keying but doesn't really help the bug user. My good friend Marv Juze, W6FGD, came to my rescue by pointing out that he had cured the same problem by keying his IC-730 with a reed relay. Since implementing this suggestion as shown in Fig 19, I've had no trouble keying my IC-730 properly (any irregularities may be attributed to my Lake Erie swing!). I've since learned that other locals have enjoyed the same success in keying their IC-730s, so it seems worthwhile to spread the word.—"Uncle Vern" Howard, W6ERS, 733 Plymouth Wy, Burlingame, CA 94010

⁸D. McClure, "Keying Improvements to the ICOM IC-730," *QST*, Jul 1982, pp 23-27.

CONNECTING AN OLD MICROPHONE TO A NEW TRANSCEIVER

□ After acquiring an ICOM IC-735 transceiver, I found that a desk microphone was desirable for use at the home station in lieu of the hand mike that came with the rig. Since my Astatic D-104 mike had served me faithfully for many years, I wanted to use it with the ICOM.

Examination of the rig's manual revealed that the IC-735 was designed for low-impedance ($\approx 600 \Omega$) microphones, and

that approximately 8 V dc is present on the '735's mike-audio line. Clearly, the D-104 could not be connected to the rig without some modification.

The circuit shown in Fig 20 solves this problem. All components within the shaded dashed lines are mounted on a small piece of perf board and installed in the base of the microphone. The circuit's physical layout is not critical.

This circuit has also been used successfully with an ICOM IC-761 transceiver. During testing with the '761, I found that the mike and PTT ground lines must not be connected together. (If they are, a low-level switching noise will be present on the transmitted signal.) Accordingly, the mike ground line must be isolated from the PTT ground inside the microphone.

Pin 1 of the D-104 microphone head is connected to its enclosure (PTT ground) via its mounting screw. To isolate the grounds, break the connection indicated in Fig 20. This can be accomplished by removing the connector from the top of the microphone stand and rewiring pins 1 and 2 as shown.

This modification can probably be used with other transceivers having similar microphone-interface requirements. Be sure to verify the connector wiring and double check to ensure that the dc supply is not short-circuited. An ohmmeter check is also advisable to verify that the two ground lines (pins 6 and 7 of the mike connector) are indeed isolated from each other for transceivers that require this. —David R. Fentem, KW4M, 704 Emerald Forest Cir, Lawrenceville, GA 30244

SWITCH-SELECTABLE SUBAUDIBLE TONES WITH THE ICOM UT-30 TONE GENERATOR

□ I like to work 10-meter repeaters with my IC-735 transceiver, but some repeaters allow access only if my transmitted audio includes a standard subaudible tone. ICOM's UT-30 Programmable Tone Encoder Unit can be installed in the IC-735 (and a number of other ICOM radios) to generate this signal. The UT-30 allows you to solder-select only one of 38 different subaudible tones at a time. Here's how I modified my UT-30 to allow switch selection of its tones.

Remove any solder-blob jumpers at pads P1 through P6 on your UT-30. (New UT-30s include only one—at P4, to set the board to its 88.5-Hz factory default.) Next, wire a 6-inch-long piece of seven-conductor ribbon cable to the UT-30's generator IC as shown in Fig 21. Use a low-wattage soldering iron (15 W or so); a higher-power iron may destroy the IC.

Next, decide where you'll install your FREQUENCY switch unit. (I hot-glued mine to the bottom edge of my IC-735's front

⁹The Electronic Industries Association's table of tone-controlled squelch frequencies lists 42 tones from 67.0 through 254.1 Hz, of which the UT-30 can generate all but four (69.3, 206.5, 229.1 and 254.1 Hz). During 1980, the ARRL Board of Directors adopted the 22 tones from 88.5 through 179.9 Hz for voluntary incorporation into 10-meter repeater systems to provide a uniform national system. See page 48 of Jay Mabey, editor, *The ARRL Repeater Directory*, 1991-1992 edition (Newington: ARRL, 1991), for more information.—WJ1Z

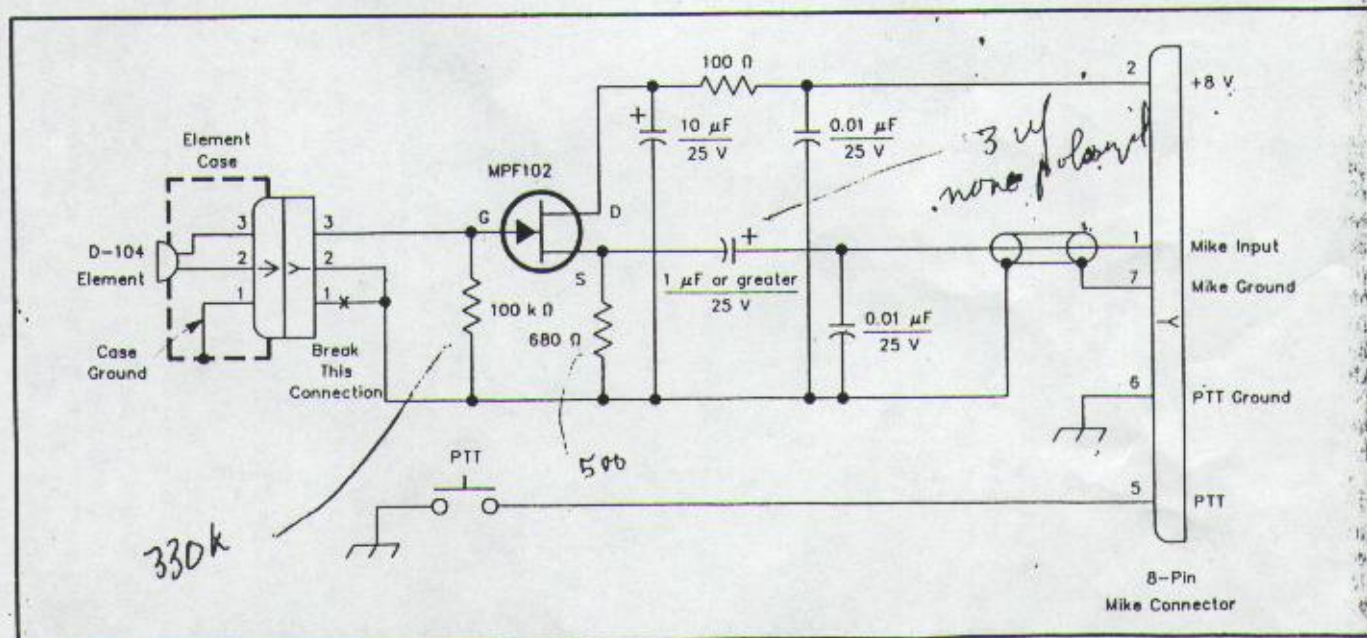


Fig 20—David Fentem connected his high-impedance D-104 mike to an IC-735 and IC-761 transceivers via this circuit, a JFET source follower that acts as an impedance transformer. The resistors are 1/4-W, carbon-film units; the components shown within the shaded dashed box are contained on a circuit board mounted in the mike base. With appropriate mike-plug connections, this circuit is applicable to other transceivers.