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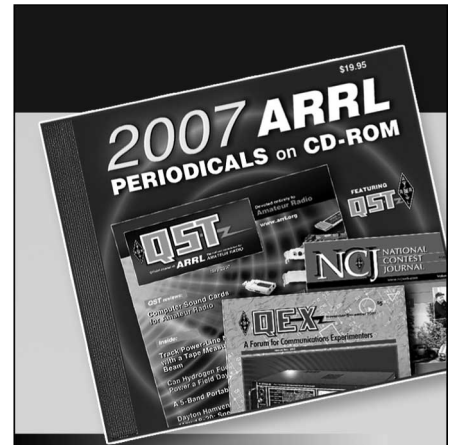
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**QST Issue:** Aug 1975  
**Title:** HW-101 Modification Update  
**Author:** Glen Carlson, W6KVD

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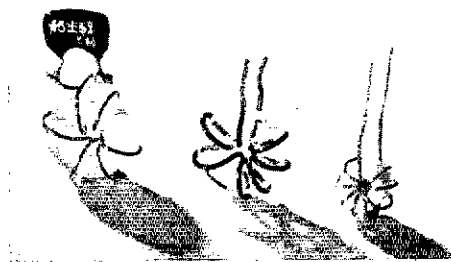


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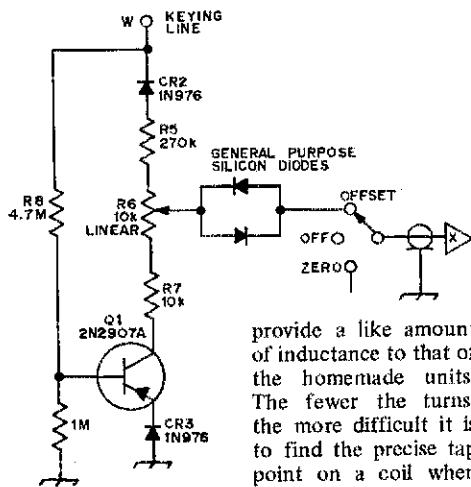
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toroid on the left is made from a slice of 1/2-inch diameter Plexiglas rod with a hole drilled in the center. The unloaded  $Q$  measured 150. The center toroid is wound on a polystyrene washer, and its measured  $Q$  checked out at 160. The smallest toroid (far right) was fashioned from a piece of 1/4-inch diameter Teflon rod. The  $Q$  measured 130.

Proof of the self-shielding properties of the inductors came when a dip meter was used to check the resonant frequencies of the coils (10-pF capacitor across the windings). No dip could be obtained, and this is characteristic of any toroidal inductor.



Test inductors were made using vhf toroid cores (ferrite) of commercial origin. Using the same  $L-C$  ratio, unloaded  $Q$ s between 70 and 90 resulted. Still pretty good, but fewer turns were needed to



provide a like amount of inductance to that of the homemade units. The fewer the turns, the more difficult it is to find the precise tap point on a coil when matching impedances. Therefore, the non-

ferramic cores may be preferred at vhf.

Those wishing to lessen the need for shielding in vhf solid-state transmitters and receivers, or to cut down on the size of the tuned circuits, may be interested in this information. - *WICER*

#### CATV TVI

This information should be of interest to any ham operating in a community or condominium complex served by cable television. After being informed that I was causing TVI on several

occasions, some investigatory work seemed necessary. The problem stemmed from the loss of continuity in the outer shield conductor on the CATV feed line from their main feeder to the subscribers' sets. In each case, the connectors joining the feed line to the main line had corroded to the point where the resistance between the feeder and the main line was on the order of 40,000 ohms. The subscribers still received reasonably good quality pictures, but ignition noise and other forms of interference were also present. The CATV people were advised of the situation and have been most cooperative in resolving the problem. - *Richard M. Purinton, W1SX/4*

#### HW-101 MODIFICATION UPDATE

Several hams have reported to me after making the offset tuning and keying modifications described in March 1975 *QST*, that their transmitters had key clicks when operated in the offset mode. Although I was not aware of the problem, a close inspection of my transmitted signal revealed that I had key clicks also. The following changes were made to correct this problem. Connect a one-megohm resistor from the base of Q1 to ground. Prepare two silicon diodes by connecting them in parallel, with the anode of one diode connected to the cathode of the other. The back-to-back diodes should be connected between the wiper arm of R6 and the offset switch, S1. The circuit changes are shown in the accompanying diagram. - *Glen Carlson, W6KVD*

#### PROTECTING TRANSISTORS IN THE HW-202

Two-meter fm operates using the Heath HW-202 transceiver should be mindful that while the rf output transistor is rather tolerant of operator mistakes, the audio output stages are not so forgiving. Keep the audio output properly loaded into a speaker or earphones. You will save more transistors that way. - *Hilary McDonald, W5UNF/6*

#### LONGER LIFE FOR CIRCUIT-BOARD ETCHANT

Storing ferric-chloride etchant (the type used for etching printed-circuit boards) in a refrigerator will prolong the usefulness of the solution. Chilling the etchant causes precipitation of free copper to the bottom of the container as "mud." The clearer liquid can be poured into another vessel and the "mud" then washed out of the original container with clean water. - *W.H. Fishback, W1JE*

#### RUBBER FEET FOR EQUIPMENT

Many hobby shops stock a large supply of rubber stoppers intended for use with test tubes and flasks. They come in many sizes and are usually slightly tapered. Some have holes drilled through them lengthwise, which would facilitate mounting with sheet-metal screws. The type without holes could simply be glued to the bottom of the piece of equipment. - *Ray Bass, W7YKN*