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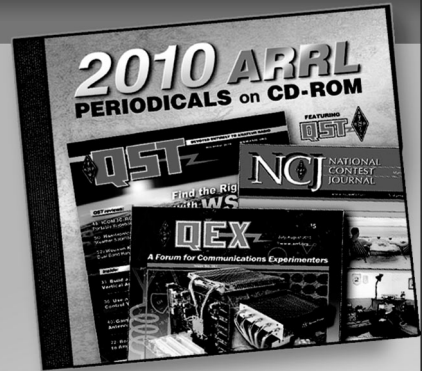
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QST Issue: Nov 1975

Title: Modifying the Heath HW-16 from 15 to 20 Meters

Author: Llewellyn Rose, G5BGA

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Modifying the Heath HW-16 from 15 to 20 Meters

BY LLEWELLYN P. ROSE,* GSBGA

Described here is a simple modification for the Heath HW-16 transceiver which will provide 20-meter coverage. Total cost is approximately \$7, and the conversion can be completed in one evening.

WHEN MY SON enlisted in the Air Force, I inherited the HW-16 that he had used during his Novice years. For my recent move to England, I decided to keep my ham gear to a minimum and the HW-16 appeared to be a good, lightweight companion for me.

The transceiver performed admirably on the 40- and 80-meter bands despite the European broadcast interference. There never seemed to be much activity on the 15-meter band at times when I could operate. As a result, the instruction manual was inspected to see how difficult it would be to convert the transceiver for 20-meter operation. Surprisingly, it was a simple operation, requiring one new crystal and two capacitors along with an easy alignment procedure. The following steps explain the conversion.

Simple arithmetic and reference to the circuit description (pp 54-56 in the HW-16 manual) show that substitution of a 19,545-MHz crystal for the 26,545-MHz crystal will put the 6FA8 heterodyne oscillator on the correct frequency for 20-meter receiver coverage. Remove the chassis bottom plate and the top cover. Unsolder the ground wire from the top of the 26,545-MHz crystal and push the wire aside temporarily. From underneath the chassis, carefully unsolder the crystal pin connections while pulling on the crystal from the top side of the board. Replace the old crystal with the 19,545-MHz unit. Resolder the pins and the ground wire on top of the crystal.

* US Army Standardization Group, UK, Box 65, FPO New York 09510.

Power was applied to the HW-16, and weak 20-meter signals were received. A check of the L1 and C41 resonant frequency showed that the circuit tuned from 17 to 25 MHz. A 100-pF mica capacitor was soldered across L1. The circuit now tunes from 12 to 19 MHz. Refer to the receiver alignment instructions on pages 42 and 43 in the instruction manual. Perform the 21-MHz alignment procedure, bearing in mind that you are actually aligning the receiver for 20-meter operation. Remember that the transceiver now tunes from 14.0 to 14.250 when the band switch is placed in the 15-meter position. At this point the received signals will be somewhat weak. This is because the transmitter pi-network output circuit serves also as the receiver antenna circuit, which has not been adjusted for 20-meter operation thus far.

Transmitter modification involves changing the tap on L12. Unsolder the four wires which connect to L12, remembering where each of them was connected. Unscrew the two 6-32 hex nuts which secure the coil to the chassis, set the nuts and lock washers aside, and remove the coil. The 15-meter tap is located 7 turns from the bottom of the coil (chassis end). Use a pair of pliers to remove the loop that forms this tap. From the bottom of the coil, count up 11 turns (half way between the 15- and 40-meter taps) and grip the wire at this new position with a pair of pliers. Twist the wire to form a new loop. This will retighten the turns on the coil form. Scrape away the insulation on the loop and solder a one-inch piece of bare wire to the new tap. This wire is necessary to reach from the new tap to the wire coming from the band switch. Replace L12 and resolder the four wires which were previously removed. Solder a 20-pF mica capacitor across the two terminals of L9, the

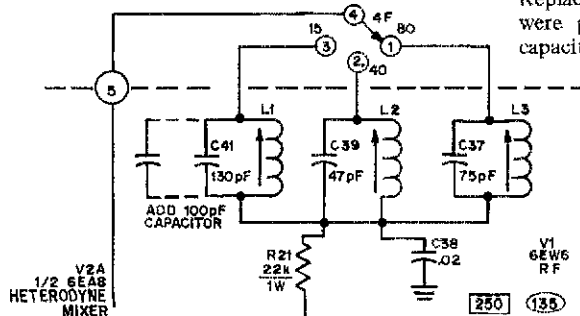


Fig. 1 — Partial schematic diagram showing the addition of a 100-pF capacitor across the rf-stage plate-tuning coil.

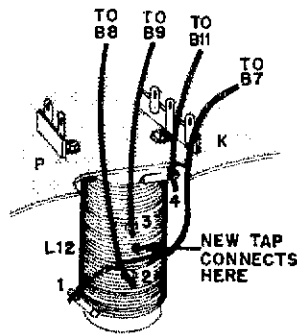


Fig. 2 -- Sketch showing approximate location of the 20-meter tap on L12.

driver-plate coil. This completes the transmitter modifications. Refer to the transmitter alignment section of the instruction manual and perform the 15-meter alignment procedure. Use 40-meter crystals or 40-meter VFO output for 20-meter operation.

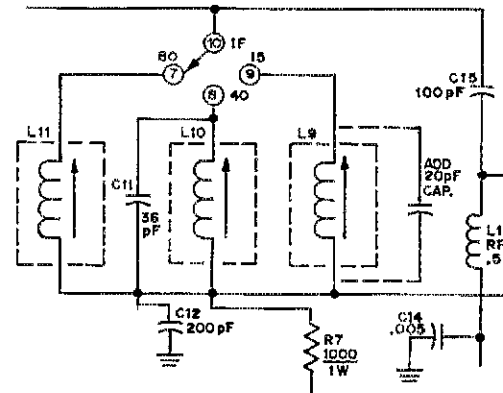


Fig. 3 -- Partial schematic diagram of the driver plate circuit. A 20-pF capacitor must be connected in parallel with L9.

Replace the bottom plate and top cover and the job is finished. It might be well to make a small label, "14.0" and tape it over the "21.0" lettering on the front panel. The HW-16 can be returned to 15-meter service by reversing the foregoing procedure.

QST

Strays

Interested in learning how to get on the Oscar satellites? Send an s.a.s.e. th Hq. for the basic information.

STOLEN EQUIPMENT

ICOM K-20, Serial No. 7128, was stolen from car. Contact Baltimore City Police, case No. 5153189.

Drake ML-2, Serial No. 10284, stolen on September 16. Morton L. Church, WB4AUH, 3860 Abingdon Road, Charlotte, NC 28211.

Recovered by the Cobb County Detectives Dept. of Marietta Georgia, a Clegg FM-27B. Serial No. 27123-376.

Theft from automobile: Heath HW 29 transceiver on Sept. 17. Frank L. Wayland, K3GJL, 374 Hibbs Ave., Glenolden, PA 19036.

METURM 2-meter fm radio was stolen in Sacramento, CA. Serial No. NOC-038. Mac Petersen, W7WKF, 270 East 3300 South, Salt Lake City, UT 84115.

Theft from truck on Sept. 24 in New Jersey. Standard fm transceiver 851T, Serial No. 111057; Clegg FM 21, Serial No. 711; Etron (REPCO) VHF FM Hand-Talkie high band "tracer" with leather case and rubber antenna; Sharp Calculator PC-1802, Serial No. 47271910; Panasonic Underdash FM Stereo Receiver. Reward offered. Gerald Prim, P.O. Box 748, North Arlington, NJ 07032.

RL Drake ML 2, Serial No. 11603. William Tilghman, W4CKW, 448 W. Oakridge, Apt. 201, Orlando, FL 32809.

Clegg 27B FM was stolen from car on Sept. 7. Serial No. 27102-611. R.C. Blodgett, WA2DEW/KV4CQ, 372 Essex Ave., Bloomfield, NJ 07003.

Gladding 25 FM transceiver was stolen from car on Aug. 16. Serial No. 97050743. Richard E. Levandowski, 849 Macbeth Circle, Lakeville, MN 55044.

IC-22, Serial No. 13 12 122, was stolen from car in Dallas, TX. Perry W. Barker, WA5IKU, 2240 Prichard Lane, Dallas, TX 75227.

ICOM IC-22-A, Serial No. 340 1470, and Drake TR-4 taken during a robbery on Sept. 24 at home of W8KPD. Notify Madison Twp. Police, Trotwood, OH, 45426.

SB-144, Serial No. 720168. Carl Sensabaugh, WA4VOC, Rt. 1, Box 349, Forest VA 24551.

Standard 826M, Serial No. 203046. Jack C. Hemby, W5WQQ/WA4SHZ, 3408 O'Hara Rd., S.W. Huntsville, AL 35801.

Regency HR 2A, Serial No. 04 72028, was stolen from car. Reward offered. Harold N. Sharpe, WA7RFR, 1403 9th Street South, Nampa, ID 83651.

Heathkit HW-202 was stolen from auto on August 2 in Columbus Ohio. Also log book and photocopy of license WA8YGY. Paul J. Scott, WA8YGY, 110 Knollwood Drive, Redwood Falls, MN 56283.

Swan 350, Serial No. 171805. Frederick C. Crowell, W9MIB, 5331 Old Georgetown Rd., New Albany, IN 47150.

Swan FM 2X, Serial No. 10451 was stolen from auto in Charlotte, NC. J.R. Morehead, WA4VEG, Rt. 8, Shelby, NC 28150.

Genave GTX-10, Serial No. 11-26, suspected to have been stolen, recovered. Don Osmund, WB9LWN, 533 Brainerd Ave., Libertyville, IL 60048.

HR2, Serial No. 04-02981. William W. Fulcher, K4RTA, 105 Freshrun Drive, Hendersonville, TN 37075.

Drake R-4, Serial No. 1174; Drake T4X, Serial No. 10327; Drake DC4, Serial No. 1777. Leo Jendrazkiewicz, 5459 W 83rd Place, Crown Point, IN 46307.