

Recent Restorations and Acquisitions

National NC-2-40DT

The National NC-2-40DT has been in the "boat anchor" collection at K9STH for many years. However, it was recently completely restored both electrically and physically. The NC-2-40D series is unique in the fact that, although there is no "band spread" control, the receiver does cover the 80-meter, 40-meter, 20-meter, and 10-meter amateur radio bands across the entire dial as well as being general coverage from 480 kHz through 30.5 MHz. This is accomplished through an internal band switching involving a moving coil rack and associated circuitry.

When the receivers was manufactured (circa 1947) the 15-meter (21 MHz) band had not been allocated for amateur radio use. The 160-meter band actually occupies a significant portion of the general coverage band so another "band spread" was not needed.

The speaker cabinet is slightly smaller than the receiver. However, the basic styling is the same. The audio quality of the 10-inch speaker inside the cabinet is considerably better than that from most "modern" communications receivers, especially those utilizing much smaller diameter speaker cones and plastic speaker housings.



Front of receiver



Inside of receiver



Speaker

Vocaline Amateur Radio 70 cm Transceiver

During the 1950s, the Vocaline Company introduced a series of “free running oscillator” transceivers for the Class “B” Citizen’s Radio Service. These units used a single tube as both the transmitter and the regenerative receiver. Additional tubes were used for the audio circuitry (same tubes used for both the receiver and the transmitter modulator). These units operated in the 240 MHz band and ran about 300 milliwatts output. By the very early 1960s, because of the inherent stability problems of this type of units, the FCC eliminated the Class “B” Citizen’s Radio Service and the units went the way of the dodo bird!

In the mid 1950s, Vocaline modified their Model 425 unit into the Model AT-30 intended for the amateur radio market. The AT-30 is tunable for at least 420 MHz on the “low end” and 450 MHz on the “high end”, thus covering the entire 70 cm amateur radio band. Since these units use “free running” oscillators, the frequency stability is, to put it bluntly, dismal! However, they were one of the first attempts at making commercially available units for the 70 cm amateur band. Very few of these units were ever made. They do have between 300-milliwatts and 500-milliwatts of r.f. output (0.3-watts to 0.5-watts).

The bandwidth of the regenerative receivers used in the various Vocaline transceivers is very broad. However, the receivers are relatively “sensitive” with signal levels of well under 1-microvolt producing a signal that can be easily copied. Due to the instability of the transmitter, it does require either a very broad receiver (like the regenerative receiver in the unit) or else a very “steady” hand while tuning a “normal” receiver attempting to “follow” the transmitter as it “moves around” in frequency.

The Vocaline Model AT-30 at K9STH is serial number 0044 which is indicative of the few number of these units that were built. This unit is fully operational. However, the only transmitting has been done using the unit was into a dummy load since the technology is definitely not compatible with “modern” equipment.



Vocaline AT-30

Gonset Communicator I

Several years ago a very "shabby" Gonset Communicator I was acquired at K9STH. Recently, it was decided to restore this unit. The first photo is of the front panel of the unit (with all electronics removed) and the second photo is after the complete restoration. The cabinet (which includes the front panel) was stripped and repainted in colors that more correctly represent the Communicator IIB. Since the cabinet was badly rusted, a "crackle" finish was applied instead of the original hammertone type of finish.

An overlay was prepared which approximates the original letter on the Communicator I (except for the Gonset logo). However, with the front panel being painted in which instead of the gray hammertone, it was decided to make the lettering in approximately the same color as the knobs and receiver dial. This overlay was printed on an overhead transparency and then was coated with clear Krylon for protection. After applying the crackle, the cabinet itself was painted with ASA-61 gray as were the speaker grill and cover for the tuning eye tube.

All the electrolytic capacitors and paper capacitors in the unit were replaced as were the interconnecting cables between the power supply, transmitter, and receiver. After alignment, the transmitter put out almost 5-watts, and the receiver LDS is right at 0.3 microvolts.

Although not a true restoration due to the fact that the colors have been changed from the original, the unit is attractive and the operation characteristics are excellent.



Original Panel



Restored Unit

*Knightkit
TR-106 6-meter Transceiver
V-107 VFO*

The Knightkit TR-107 was acquired, along with the V-107 VFO, in early 2006. Although in relatively good condition, it did require substantial repair work and repainting to get it in operating condition. The unit was designed in the mid 1960s and, like most AM 6-meter equipment of the period, the receiver is not the most stable around. However, after about a 30-minute warm up, it does "steele down" and is definitely stable enough for AM operation.

The sensitivity is very good (the receiver has a Nuvistor "front end") and the transmitter puts out over 10-watts.



Basic Knight TR-106 6-meter Transceiver



V-107 VFO

Hallicrafters S-40B



This Hallicrafters S-40B receiver was received in fairly rough condition. Restoring involved replacing all electrolytic capacitors and paper capacitors in the unit. The cabinet required repainting and other physical components required cleaning, etc.

After restoration, the receiver definitely meets original performance specifications of the receiver.