

Classic Radio

Restoring an Heirloom: The Gonset Twins



The Gonset G-66B and G-77A Twins.

The Gonset G-66B receiver and G-77A transmitter make up the famed “Gonset Twins” that came from Burbank, California in the 1950s. They run CW and AM. My father, Charles B. Persons, W0LOJ (SK), built WELY Radio in Ely, Minnesota, in 1954. The Gonset Twins are family heirlooms from this era. The radio station was sold in 1959, but the Twins came with us to a suburb of Minneapolis, Minnesota.

Gonset Twins for Remote Broadcasting

I was only seven at the time my family ran the radio broadcast station, so it was an adventure. A radio trend back then was to do live remote broadcasts from civic events via radio relay to a studio, so they could be put on the broadcast station live. The FCC autho-

rized 26.47 MHz for that use. To make it work, my father purchased the Gonset Twins in 1958.

Touted as ham radio equipment for mobile or home, the Twins were designed with Hammertone gray paint and chrome steel front panels. They were built small enough to fit under car dashboards of the time.

Because the receiver and transmitter are separate, they were divided so the transmitter was in a remote broadcast car while the receiver was at the broadcast studio. The transmitter is VFO or crystal controlled. In this case, a crystal was used to put the transmitter exactly on frequency.

Gonset Twins Operation

The Twins are dedicated to operating over the 80-, 40-, 20-, 15-, and 10-meter bands with slide rule tuning. The conversion from 28 MHz to 26.47 MHz involved re-tapping one coil in each unit, and some minor retuning.

The G-66B receiver is a 10-tube superheterodyne. There is an RF amplifier with two 265 kHz intermediate frequency (IF) stages. The BFO knob is calibrated to tune upper or lower single sidebands. There is a speaker in the power supply module, attached to the rear of the receiver.



The receiver with the front panel removed.



The transmitter and power supply uncased.



The transmitter vibrator was cleaned.



The transmitter power supply and modulator chassis.

The G-77A transmitter is AM and CW, but no sideband. It has only three tubes in the RF chain, using a 6146 final tube amplifier handling 50 to 60 W input with 30 to 40 W of output power on AM. The trunk-mounted power supply and modulator has five tubes, including a 6DQ6 pair.

A simple 9-foot steel whip on a car's rear bumper made a great antenna for the range of 15 miles or fewer that was necessary to get the signal to the studio. The transmitter has output tuning and loading controls, so it can tune into a reasonable load without the need for an antenna tuner.

Gonset's Quality Design

Preparing to restore the Twins brought back so many memories of my childhood experience with them. I kept remembering using the pair as a 15-year-old Novice, taking the Gonset Twins, a 12 V storage battery, and a wire antenna in a wagon behind my bicycle during the summer.

Gonset provided a detailed instruction manual with photos. Written in pencil are modifications my father made to broaden the audio frequency response to make it closer to broadcast quality. He used a broadcast microphone too. Gonset was progressive by utilizing silicon solid-state rectifiers that plugged in like fuses. The originals still work.

Restoring the Gonset Twins

I'm a retired radio engineer, so I put my skills to use with this restoration. Blowing dust out was just the beginning of the project. Paint fell off the meter pointers. I had to carefully disassemble the meters and apply a drop of paint on each with a cotton swab. I cleaned and lubricated the switch contacts with CAIG Labs DeoxIT D100L solution.

The front-panel knobs were aluminum, and they were not in good shape after so many years. I put each one on a drill press to gently remove tarnish with a Scotch-Brite Hand Pad. Then a coat of polyurethane went on to keep them looking good.

I replaced the twist-lock aluminum-canned electrolytic capacitors. Because the Twins were designed for mobile use, they were very compact, and there was no extra room for me to do the work myself. Instead, I hired Hayseed Hamfest in Cedar Rapids, Iowa. They put new radial-lead capacitors in new twist-lock cans that fit exactly where the original, now failed, capacitors were. The capacitors were not cheap, but they solved the problem while keeping to the original Gonset factory design.

The receiver and transmitter each have power supplies capable of operating from 6 and 12 V dc, and 115 V ac. Vibrators are used to chop dc, so it can be fed into the power transformers. Neither vibrator worked at first. I found a "Hints & Kinks" item in the March 1957 issue of *QST* that was helpful. It showed a way to connect a 40 W incandescent lightbulb in series with a vibrator attached to 115 V ac, for up to 15 minutes, to clean the vibrator switch contacts. That got the receiver's vibrator working. This wasn't the case with the larger vibrator in the transmitter power supply. I had to carefully pry the vibrator's can open at its base to gain access to the switch contacts. A burnishing tool and some DeoxIT restored normal operation.

Results

I spent 40 hours cleaning, replacing components, and tuning. That included troubleshooting and replacing carbon resistors and capacitors that went out of tolerance. The Twins are beautifully hand-wired, and the original receiver book was very helpful in the receiver tune-up.

Testing the rig, with the required interconnect wiring, worked out great. I made contacts around Minnesota on 80-meter AM with good signal reports during the day.

All photos by the author.