

## Reference Files for “Vintage Low Power” by Ralph E. Taggart, WB8DQT

The following reference information is provided to supply more detailed information relating to the selection and construction of a low-power vacuum-tube transmitter as described in the “Vintage Low Power” article that appeared in the January 2012 issue of *QST*.

### Transmitter Construction References

- L.G. McCoy, W1ICP, “The Mighty Midget,” *QST*, Feb 1966, pp 54-57. Two stages in a single tube with 10 W input on 80 meters.
- D. Mix, W1TS, “A Simple Transmitter for the Beginner,” *QST*, Oct 1968, pp 22-28. A two tube, two-stage design with a power input of 10-12 W. Although designed for 40 and 80 meters, changes to accommodate 20 or 30 meters are easily implemented.
- L. G. McCoy, W1ICP, and G. Wilson, W1NPG, “A 10-watt One-Tube Transmitter,” *QST*, Mar 1971, pp 25-28. This is a two-stage design covering 20-160 meters.
- S. Johnston, WD8DAS, “The Two Tube Tuna Tin Transmitter (T5),” *QST*, Jan 2003, pp 39-42. A clever repackaging of the Don Mix design, including useful circuit changes and an up-to-date listing of parts sources. This project proves that low-power vacuum tube transmitters don’t have to be large.

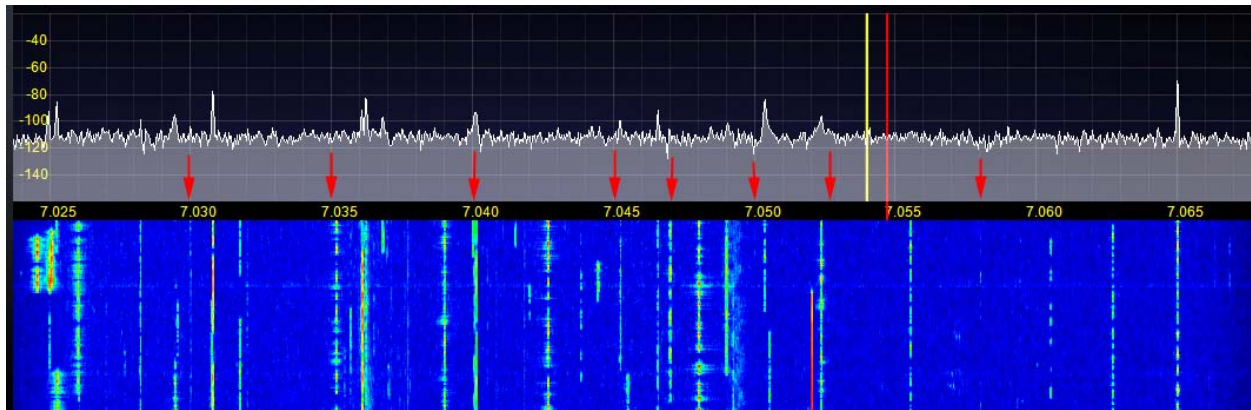
## Sources for Parts and Components

- D. Morrison, KG4HSY, One-tube 6AG5 transmitter kit ([www.glowbugkits.com](http://www.glowbugkits.com)).  
A very complete kit that can be built for 30 or 40 meters. With 1 W output, the transmitter provides excellent keying with vintage or modern crystals and all provisions are included for interfacing with an external receiver.
- Antique Electronic Supply ([www.tubesandmore.com](http://www.tubesandmore.com)) — almost everything for relatively simple projects such as those listed above.
- Brian Carling, AF4K ([s88932719.onlinehome.us/crystals.htm](http://s88932719.onlinehome.us/crystals.htm)) — Modern crystals for amateur frequencies in vintage FT-243 holders.
- Digi-Key Corporation ([www.digikey.com](http://www.digikey.com)) — chassis, resistors, fixed capacitors, power transformers, knobs, panel meters and hardware.
- Hammond Manufacturing ([www.hammondmfg.com](http://www.hammondmfg.com)) – power transformers, RF chokes, chassis and cabinets.
- Mouser Electronics ([www.mouser.com](http://www.mouser.com)) — chassis, resistors, fixed capacitors, power transformers, knobs, panel meters and hardware.

## Figures with Expanded Captions



This is the author's version of Don Mix's, W1TS, transmitter from the October 1968 issue of *QST*. The shorter tube to the right of the transmit crystal is the 6C4 oscillator. The 5763 final is partially obscured by the plug-in tank coil, the only significant deviation from the original circuit. Controls along the front side of the chassis include the power switch below the pilot lamp to the left, the manual TR switch further to the right, the TUNE control to the left of the final plate current meter with the LOAD control on the right side of the meter. The rear panel includes a standard receptacle for a 3-wire computer ac power cord, a fuse holder, the KEY jack, and two SO-239 coax connectors — one for the antenna and the other for the receiver.



High-tech provides some support for low-tech. This is the “panafall” (a combination of panadapter above and waterfall below) display provided by the FLEX 1500 SDR transceiver showing a segment of the 40-meter band from approximately 7.025-7.065 MHz. This was late morning during SKN 2011. I added the red arrows above the frequency calibration bar to show the frequencies of the crystals I had available. When the band is this busy it can be a trial to find a crystal that will work, especially when you are running very low power. This type of display nicely highlights any gaps in activity as well as showing activity over time. I was parked at 7.047 MHz and the signal on that frequency is Carl, W2IQK who I was working at the time. Both of us were using homebrew tube transmitters, with Carl running 200 W to my 4 W. Although the W1TS transmitter and the FLEX 1500 come from different eras in the history of Amateur Radio, they play together very well.



Martin, KØBXB, does like to build transmitters. This is his copy of the W1TS transmitter, which is quite compact since he used an external power supply. This is a fine transmitter when using vintage crystals and will perform nicely with modern crystals with some modest changes to the oscillator circuit.



Bob, N9HAL, built this fine replica of a early-50s 6A7 single-tube transmitter. This transmitter keys impeccably with vintage crystals but such designs, including more modern versions using the 6CL6 pentode, tend to have significant “chirp” when using modern crystals.



While most vintage projects are obviously scratch-built, there is at least one current kit on the market. This rig, the AC-1 ([www.glowbugkits.com](http://www.glowbugkits.com)), features printed circuit construction, low-voltage ac input for the integral power supply, all necessary TR switching, a crystal for both 40 and 30 meters (it can be built for either band), a cabinet, and a 6A7 tube. It puts out a 1 W signal and, as a result of the low power, keys beautifully with vintage or modern crystals. It would also serve nicely as a driver for a more powerful two-stage transmitter.