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QST Issue: Nov 2002

Title: The Black Box

Author: John H. Dilks III, K2TQN

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OLD RADIO

The Black Box



Front view of the 6L6/807 transmitter from an article in a 1949 issue of *QST*.

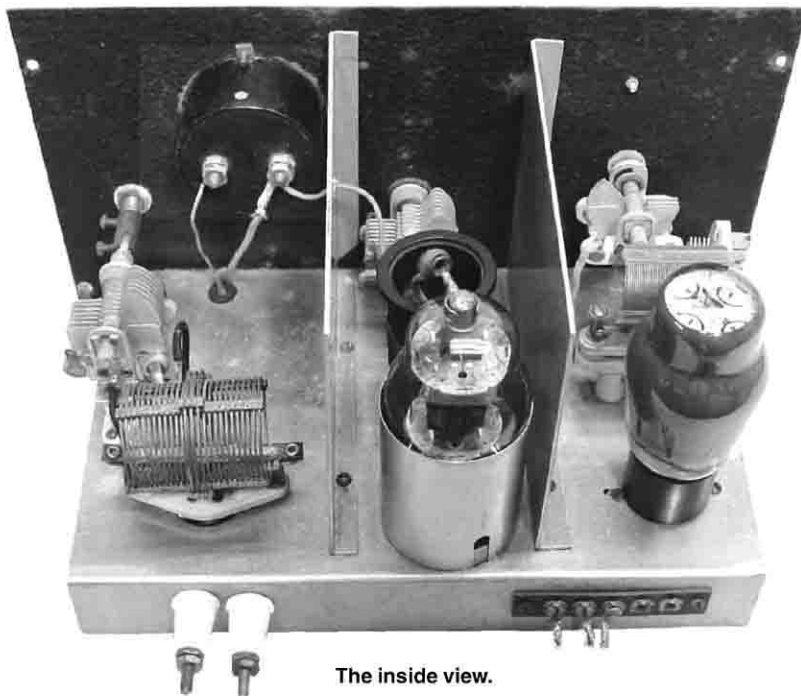
In the days when most hams built their own stations, every winter ARRL would provide great construction projects in *QST*. January 1949 was no exception. On page 48 there is a nice 35 to 50 W rig. The basic circuit, still popular with collectors today, is a 6L6 oscillator driving an 807.

Albert Hayes, W1IIN, ARRL's National Emergency Coordinator, writes that the acquisition of a war surplus PE-103A dynamotor got him thinking he needed a portable/mobile/emergency transmitter. The dynamotor is a motor-generator that runs off of a car battery and delivers 500 V at 160 mA. This would provide enough power for a two-tube rig.

He decided on using the popular 807 tube as a final, probably because they were plentiful and inexpensive. He determined the rugged 6L6 would have enough power to drive it. The 6L6 would also be a VFO so he could change frequency. It would be used on CW in the 80 and 40-meter bands.

W1IIN also placed a nice antenna tuner in the circuit. It is designed to be used with a 135-foot antenna fed at the center with 300-ohm twin-lead, providing series tuning on 80 and parallel on 40 meters.

Mine is constructed on a $6\frac{1}{2} \times 10 \times 2$ -inch chassis. The oscillator and antenna tuning circuits are shielded by two stationary aluminum partitions bolted to the top of the chassis. The cabinet is made by Bud, and is $7 \times 7\frac{1}{2} \times 12$ inches wide. (The article's chassis and cabinet is each 2 inches larger.) The cabinet also has a lid to make it convenient to change the plug-in coils for each band. As it is a low power rig, it would be an easy radio to replicate today with some junk box parts. Every part is common or easily substi-



The inside view.

From January 1949 *QST*

This comment was attached to the original article.

"With surplus vibropacks and dynamotors still readily available, there is no reason why every amateur should not provide himself with a transmitter which can serve his community when the wires go down in time of emergency. The little rig described in this article was tailored specifically for a popular surplus dynamotor, but readily adapts itself to almost any portable supply you may have available. Give it a try—you'll find it a lot of fun to build and use, and you will be preparing yourself to be of public service when your neighbors need you most."

tuted with something similar. A few trips to some local hamfests should produce enough parts to make a nice copy.

The radio in the photos was built from that *QST* article. My friend and fellow collector Pete Grave, an SWL from Pennsylvania, found this at a hamfest and thought it would be a good subject for the Old Radio column. He was right—when he called on the phone, I immediately drove over and picked it up.

I plan to "recap" and resolder the parts to insure a good solid circuit. Then I plan to get on 80 this winter and have some fun with it using a transformer power supply I have lying around. (W1IIN also used his in his home with a transformer power supply that gave it a solid 50 W out. He said he had a weekly schedule with HH2BL on the low end of 3.5-MHz band with it.)

"Recapping" is the process of replac-

ing the older paper capacitors with new ones. The original ones in this transmitter are wet with oil that has leaked out of the parts and would cease to function in short order. For a few dollars I can put in new ones that will last for years.

It's always fun to find a radio built by a ham that was featured in *QST*. It's interesting to see how closely the builder followed the original circuit and layout—or not. Many times you will see substituted parts and small improvements. Sometimes you will find extra holes where he moved parts around trying to get it to work.

If anyone needs a copy of the schematic, I'll place it on my Web site: www.eht.com/oldradio/arrl/index.html.

Time to get your antennas tuned up for winter. Look for me on the bands and maybe at a winter Hamfest.—K2TQN 