

TRANSMITTERS

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The 1936 Lafayette PB-46 Transmitter

The subject of this issue of “Transmitters” is a rather obscure offering from a company that later became Lafayette Radio. Back in the 1930s it was known as the Wholesale Radio Service Co. (WRS), and located at 100 Sixth Avenue in New York City. A look at the WRS 1936 catalog will quickly show they were not just in the business of selling transmitters, but were rather one of those ubiquitous electrical supply houses so popular in the 30s. WRS sold everything from coils to tubes to consumer receivers and ham gear.

The transmitter in question came into my care just over a year ago on the trip to the AWA Conference in Rochester, NY. I had purchased it from a fellow ham who knew very little about it. He had himself purchased it only recently from another ham who was the longtime owner. Unfortunately, little in terms of paperwork or documentation came with the rig, and the long-

time owner was now a Silent Key.

The unit was in surprisingly good condition for a rig now some 73 years old. At the AWA meet, by good fortune, I was able to acquire some old catalogs and other information that helped me date the rig and learn a little bit more about its design and history.

Background

Billed as a “Professional” Rig for the ‘Ham’, the Lafayette PB-46 transmitter was introduced in the 1936 Wholesale Radio Service Company’s catalog. Frank Lester, W2AMJ SK, designed the PB-46 while working in the company’s radio department. Wholesale Radio later became Lafayette Radio and Television. Lester wound up as Chief Engineer and was responsible for the design and manufacture of many receivers, transmitters, and transceivers. He was also eventually responsible for starting Lafayette in the kit business. Lester was with Lafayette Radio for over 20 years.

The Lafayette PB-46 transmitter seems to have been aimed at the moderately upscale ham, although individual units could be purchased separately as components of a “foundation kit.” We have discussed these “foundation kits” before. Cash strapped amateurs could buy each unit as time and budget allowed.

Remember this was 1936, with America just beginning the recovery from the Great Depression. So offering the transmitter on a unit-by-unit basis was indeed a shrewd move.

The PB-46, could be purchased complete with cabinet for \$116.50. Or one could make separate purchases of the CW transmitter (\$49.50), the modulator for phone work (\$39.50), the an-

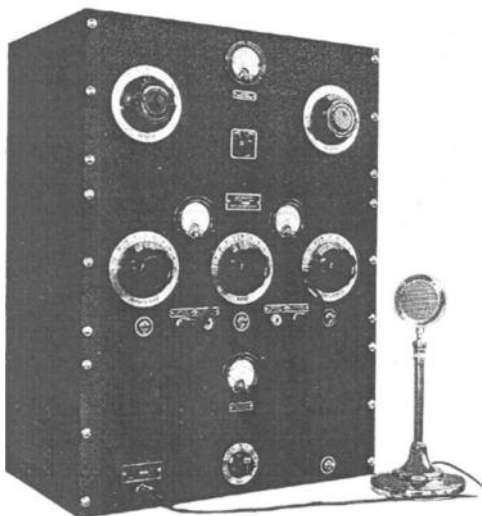


Illustration from the PB46 instruction book

tenna coupler (\$19.95), and the steel cabinet to accommodate all three decks (\$8.25.) Tubes and coils could also be purchased as needed.

Unlike Gross and some of the other manufacturers, WRS doesn't seem to have offered the PB-46 in kit form, but only as assembled and tested units. In its advertising the company stated that each transmitter was tested on both dummy load and regular antennas and that "only a few minutes after uncrating it and making a few tuning adjustments you are on the air with a sharp crystal-controlled CW signal that cuts through QRM like a knife or a phone signal modulated 100% with a tone quality that would do justice to the finest broadcast transmitter."

From an appearance standpoint, the PB-46 has a rather utilitarian look, with form directly following function. It certainly was not as pretty as some of the other transmitters of the day. The front panels of the foundation units were designed for the standard 19" rack mounting. They were finished in what WRS rather grandly called a "crystalline lacquer," otherwise known as "black crackle."

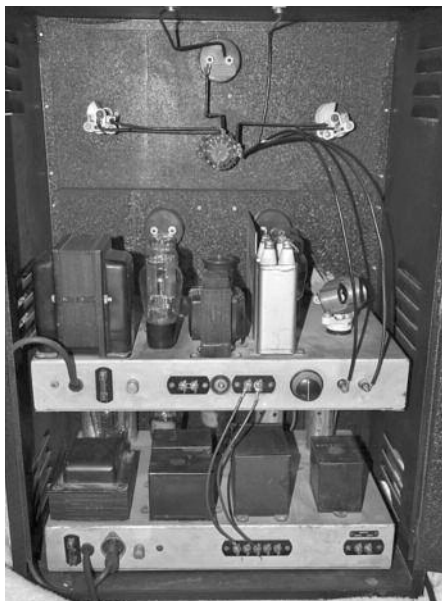
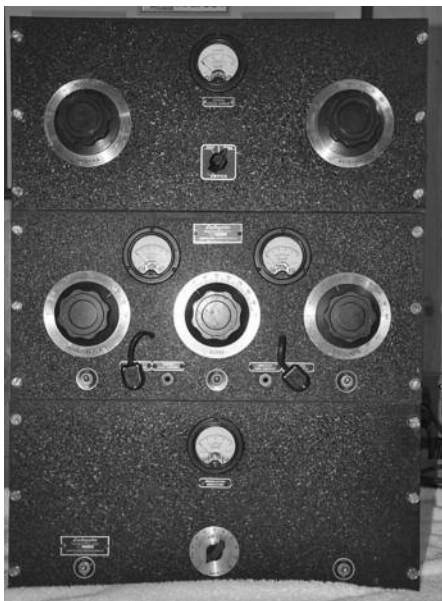
The antenna coupling unit was installed at the top, the RF deck next, then—at the bottom—the heavy modulator section. The RF and modulator decks each have their own onboard power supply, allowing for independent use. Controls and metering jacks are well labeled with the metal tags commonly found on equipment of that era.

The chassis are surprisingly dressy for such a basic rig. Their cadmium plating adds a nice luster, and the wire dress underneath is very well done. The WRS advertising claims of exceptional workmanship were well founded. While perhaps not up to Collins standards, the rig is very sharp, and its component layout would make serviceability a breeze.

Components

The design of the PB-46 RF deck is typical for the day. The output stage uses a pair of 46s in Class C. You may recall that the Gross CB-25 we discussed a few issues back had the same setup. The "Les-Tet" harmonic oscillator, another design of Frank Lester, employs type 53 tube.

As with many of the early rigs, plug in



Front and back views of my PB46 Transmitter.

coils, and crystals enable multiple band operation. The rig covers the 160, 80 and 40 meter bands with an average power output of 45 watts. If one did not mind a bit of loss, it could be operated on 20 meters at a claimed 37 watts of output.

The RF deck used two meters, a lower current unit for the early stages and a higher current unit for the output stage. Like many transmitters of the day, a series of jacks are provided on the front panel so the meters can be switched into the various stages. Also as in many of the early transmitters, the jacks are hot with B+ power, so one needs to be careful when removing and inserting meter plugs.

The modulator, which has a crystal microphone input, uses a 2A6 into a 46 driver and finally into a pair of 46 tubes running Class B. Once again, this is a common design, similar to that of the Gross and other rigs of the day. The frequency response is a very respectable 60 to 17,000 cycles, with an audio output power of 30 watts—perfectly adequate for modulating the pair of 46 tubes in the RF stage.

The front panel of the modulator deck isn't much to look at graced as it is with but one meter, an on/off switch, the gain control pot and a mic input jack. But that is normal for the era. Provision is made for the RF deck's A/C power cable to plug into on the rear panel of this deck.

The antenna coupler deck is quite simple, consisting of but two small air variable capacitors, an antenna power meter and an antenna feed switch. The design is rather clever; one can switch the antenna coupling into a parallel feed with each cap tuning a feed line. Alternatively a series feed configuration could be obtained by switching one of the air variable caps out of the feed line.

The meter uses a thermocouple inserted in one of the feed lines, to give a relative power indication. I found that the spacing of the capacitor plates is surprisingly close, even for the low power of the unit. In fact, during my preliminary tuning, I did experience a flashover. However, the problem appeared to have just been dust, and has not occurred again.

On the air

The average ham of 1936 must have found the PB-46 to be a joy to get on the air. Its self-contained design required but three connections: A/C power, antenna, and key or microphone. The PB-46 manual does a decent job walking the user through the tune-up and operating procedures, with a suggestion that the operator consult either the *ARRL Radio Amateurs Handbook* or the *Radio Handbook For Amateurs and Experimenters*, also known as the "West Coast Handbook," for additional antenna design and theory.

As found, my PB-46 was in remarkable condition, but I'm afraid that I can offer little in terms of an actual on-air use report. I did carefully power up and test my rig, just to confirm it made RF, which it did very well. However I didn't want to try the modulator until I had carefully checked it over. I've been busy over the last several months cleaning and testing, and hope to have it on the air this winter. Thankfully the finish was in excellent condition. Restoration efforts seem to be limited to checking components, and replacing the deteriorated A/C line cords.

In Closing

In the meantime, you may wish to read the excellent article on the Lafayette "Truetest" transmitter by John Dilks, K2TQN, in the May 2010 issue of *QST*. You can also find John's work at www.k2tqn.com. **Note:** *John Dilks' Truetest is pictured in "Selected Blue Ribbon Winners" elsewhere in this issue—ed.*

I'll close with my now standard summary: There is great delight in bringing back this gear, and additional joy in knowing that we are preserving it for future generations of radio amateurs. In many ways we are not so much the owners, as we are the caretakers, of these wonderful radios.

Others interested in, or owning, early WRS offerings are invited to contact me directly. I'd be delighted to hear about your experiences and obtain any additional information on WRS, Frank Lester, or the Lafayette transmitter series.