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Title: The One Eyed Monster or How Television Changed Ham Radio Transmitters Forever.

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OLD RADIO

The One Eyed Monster...or How Television Changed Ham Radio Transmitters Forever...

Our example is the Johnson Viking I. Introduced in 1949 with a kit price of only \$209.50, Amateur Net—less tubes, crystals, key and mike—could also be purchased for \$259.50, wired and tested.

It came in a classy looking cabinet with a modern, yet reliable and proven circuit. The tubes used were well-known at that time and readily available on the war-surplus market at reasonable prices. It had a 6AU6 crystal oscillator, 6AQ5 buffer/doubler and a Raytheon RK-4D32 final amplifier. The 4D32 was also chosen by Collins Radio as the final amplifier tube for their 32V series of transmitters. It was a popular and well-advertised tube of the time.

The modulator consisted of a 6AU6 speech amplifier, driving another 6AU6, which in turn drives transformer coupled class AB2 push-pull 807 modulators. If it was planned to use the Viking I as an exciter for a higher-powered amplifier later on, an additional 500-Ω audio output was possible from the modulation transformer to drive a larger modulator in the amplifier. This would encourage hams to buy the Viking I because it was expandable. The final tube would be link-coupled to the amplifier.

The power supply was very well designed with a pair of 5R4 high voltage rectifier tubes, a 5Z4 low voltage recti-

fier and a 6AL5 bias rectifier.

Provisions were made for VFO control, and Johnson would offer the model 122 VFO, also available in kit form or wired.

Fred Wahlquist, now AA2P, purchased the kit version early on after much reading and research. Fred figured the Viking I was well worth the money. He also purchased the VFO.

Fred said, "It didn't take me long to

put it all together, once I got started."

"My first antenna system was a clothesline that had a metal wire in its center," he continued, "and I used the metal water pipes in my home as the counterpoise. Nobody knew I had a ham radio. It really got out, too."

But being a good neighbor, Fred knew that their television sets might be having some interference. So when *QST* came out in June 1952 with a great article titled, "TVI-proofing the Viking I," by Phil Rand, W1DBM, he decided to improve his transmitter.

Rand also published a handbook called *Television Interference*. In the third edition he reprinted his *QST* article on the Viking I. (It's the one with the red cover and it's worth reading.)

Fred dove right in, taking apart his transmitter and painstakingly following the directions, step-by-step, until he completed the wiring changes and a replica of the shield in the article using rabbit cage wire. Like the one in the article, Fred had a "clean" transmitter, one he and his neighbors could live with. You can see the neat and orderly job he did in the shielding in the photo.

When I disassembled the Viking I to dust it off and prepare it to be photographed, I was impressed with Fred's



Fred Wahlquist, AA2P, in the 1970s.



Viking I TVI shielding with the top cover removed.

construction of the original kit. It was neat and orderly, as good as you might expect from a "factory-wired" job. It really is picture perfect. Except for its age and obvious use, it is almost like new.

By now, you Johnson collectors have probably noticed the cabinet color doesn't look correct. It's not. Fred told me he really didn't like the Johnson maroon color, so he painted it his favorite color, Navy battleship grey. Fred's an ex-Navy radio operator, having served in World War II. So this new color looked great to him, and I kind of like it, too. It may get a new paint job some day, after I finish restoring the older components and test it on the air. If I do, it will be a fresh coat of battleship grey.

The TVI shielding will also remain as a testament to all those hams who really tried to keep peace in the neighborhood,

and modified their beloved transmitters.

Other TVI'd Rigs

I have seen some once-beautiful radios hacked up by prior owners using copper window screen, soldering it to the cabinet and front panels. I've seen cabinets with screen and aluminum shielding riveted and sheet metal screwed through the sides, tops and bottoms. And I have seen entire shielded enclosures for the whole transmitter, with small doors that open for knob turning. These are the ones that are always the last to be sold at hamfests, sold cheaply and most likely to become parts rigs for other non-modified transmitters.

The Viking II and other Later Transmitters

In 1952 when the redesigned Viking II came out it was advertised to be "TVI

suppressed" by using special shields and built-in filters.

Collins redesigned the later-version 32V series transmitters and cabinets. An internal aluminum shield was added around the RF deck, and it had a new cabinet without the larger openings found in the earlier models.

World Radio Labs started to add shielding on the Globe King 500A's and future 500 models.

From then on, as much of the engineering time went into designing the TVI-free part of transmitter as went into the rest of the circuits. The new single side-band transceivers allowed the manufacturers to overhaul their lines completely. The newer rigs were much better, we were told. But the big chassis and cabinets and new AM transmitters became part of the past. They became Boat Anchors.

AUGUST OLD RADIO MEETS YOU'LL LIKE

Rhode Island—I won't be able to get to one of my favorite places on Saturday, August 2, but if you're in the New England area you can. It's the "Yankee Radio Tune Up" at the New England Museum of Wireless and Steam. They host an annual radio flea market at 8 AM, and a small auction at noon. You can find them at 1300 Frenchtown Rd, East Greenwich, RI 02818, tel 401-885-0545. It is located about 10 minutes south of Route 95 (it's easy country driving). They have a wonderful display of radios there; you'll want to bring a camera and stay all day. I promise you, you'll be glad you went. For more information and a Web link, see my Web page, www.eht.com/oldradio/arrrl/index.html.

Virginia—On August 2 and 3, I will be in Berryville, Virginia with my mobile ham radio museum. It's the Shenandoah Valley Amateur Radio Club's 53rd Annual Winchester Hamfest and Computer Show Sunday, August 3, 2003 at the Clarke County Ruritan Fairgrounds in Berryville, Virginia. There will be some overnight camping the night before. Listen on AM for the new museum Collins station/exhibit around 3885 on Saturday night. The Museum's call is W3KY. Then come by on Sunday and see it live. It's a 75A1 receiver and a 32V3 transmitter that was made operational by collector Al Klase, N3FRQ. See my Web site for more information and a link to the Hamfest. Look for my hat at the hamfest and say hello.—K2TQN **QST**

From Phil Rand's 1996 QST Obituary

Philip S. Rand, W1DBM, died November 17, 1995, in Lebanon, New Hampshire, at age 89.... He was an electronic engineer for the Remington Rand Corporation in the late 1940s, when Amateur Radio faced a crisis in the form of interference to the early VHF television sets. Rand worked with the ARRL to develop TVI suppression techniques for channels 2 through 6.

ARRL's then Technical Editor George Grammer, W1DF, designed high-pass filters for the primitive TV sets, while Rand developed new methods of shielding for amateur transmitters.

Rand published articles in *QST* spanning 50 years, from "A Shack on Wheels" (1933) to "The Beeper, An Audible Frequency Readout for the Blind Amateur" (1983).

During the TVI days Rand lived in Redding Ridge, Connecticut, and worked closely with ARRL staff member Lew McCoy, W1ICP (now retired). McCoy remembers Rand displaying in his office a computer that used 12AT7 vacuum tubes—it was the famous UNIVAC. McCoy called Phil Rand "my tutor in TV interference"....

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