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Classic Radio

The Harvey-Wells Story

John Morse Wells and Clifford Akers Harvey started the Harvey-Wells Company in Southbridge, Massachusetts, around 1940. The company was well known for manufacturing large numbers of high-quality radio crystals and developing radar during World War II.

The Men Behind the Name

John Morse Wells (1903 – 1989) held the call sign W1ZD, which he obtained around 1926 when it was possible to choose your call sign. He was known for grinding his own crystals when few amateurs bothered to do so. Wells wrote numerous ham radio-related articles, including "A Multi-Stage Crystal-Controlled Transmitter," in the June 1926 issue of *QST*. He was a lieutenant in the US Navy Reserve with the Atlantic Fleet from 1924 to 1941. Before amateur radio phone patches became popular in the 1960s, Wells developed a phone patch of his own design that allowed hams to connect distant people with local telephone lines via amateur radio.

Clifford Akers Harvey (1908 – 1987) held the call sign W1RF. In 1932, he started his first business venture, Hendricks & Harvey Co., which manufactured police radios, transceivers, transmitters, and crystals. It was followed by Harvey Radio Labs from 1933 to 1939, featuring HF, VHF, and UHF radios. He designed and built many of his devices from scratch, including his family's televisions. Harvey also designed the first radio-controlled residential garage door opener and a car telephone (so he could call his wife from the car). He even built a radio-controlled riding lawn mower. During his amateur radio career, he collected more than 10,000 QSL cards.

The Bandmaster Transmitter

Shortly after Harvey-Wells was formed, they produced the Bandmaster transmitter from the late 1940s to the mid-1950s. It was a very desirable radio that produced 50 W of AM and CW power on all amateur bands from 80 to 2 meters — an impressive achievement. It was their best-selling amateur radio product.

The Bandmaster looked different than other transmitters of its time. It was tall, rather than wide, and measured 13¼ × 9¼ inches. The black cabinet had a good-sized circular meter in its center and easy-to-read white labels on its buttons and switches. There was a paper chart on the front panel labeled **CHANNEL**, **BAND MC.**, and **CRYSTAL RANGE** that specified transmitter tuning and range settings.

Harvey-Wells produced three models of the TBS-50 Bandmaster. All of them started with five tubes, including an 807-tube final amplifier. Bandmaster models included a CW-only Junior TBS-50B that cost $87.50; later Junior models included break-in keying and a choice of a variable frequency oscillator (VFO)

The TBS-50 Bandmaster.

ARRL exhibit.

Harvey-Wells AR-2A and ATR-3 aircraft radios.

or crystal for frequency control. The Senior TBS-50C came with all the same features as the Junior but added AM capability using a carbon microphone.

The Deluxe TBS-50D used five vacuum tubes and cost $137.50, roughly $1,700 in today's dollars. It included a three-tube audio preamplifier for use with a crystal microphone. With the optional modulator installed, four more tubes were added, including two 6L6G plate-modulator tubes in a push-pull configuration that could provide 100% plate modulation to the 807 final. Bandmaster transmitters were crystal-controlled, but an optional VFO was available that attached to the bottom of the cabinet.

Other Bandmaster accessories included a 120 V ac vacuum-tube power supply for $39.50, a DPS-50 dc-powered dynamotor power supply for either 6 or 12 V operation, and a 6 V vibrator-powered VPS-50 power supply. An optional AM modulation kit was available for the Junior transmitter that, according to Harvey-Wells, would "make a Bandmaster Senior out of your Junior."

Other Harvey-Wells Products

In addition to the Bandmaster transmitters, Harvey-Wells' amateur radio product line featured the AM/CW R-9 receiver, manufactured from 1954 to 1956. It covered 80 to 10 meters using a double-conversion design with three tuned RF circuits, nine tubes, and a built-in ac supply. Harvey-Wells also produced a matching transmitter, the T-90, that produced 90 W CW with break-in keying and 75 W AM phone on 80 to 10 meters. It required a separate power supply, and it was also available with a Bandmaster Z-Match automatic antenna coupler that included a wattmeter and a dummy load.

From 1948 onward, Harvey-Wells created and sold amateur radio products and police, public safety, and aviation radios. They designed and manufactured a UHF aviation transponder to identify aircraft — this basic design is still used today. Their aircraft radios included the AR-2A and the ATR-3, and an aircraft receiver and transmitter combination that covered the 200 – 400 MHz band (which was the aircraft band at the time). The four-tube AR-2A receiver also included the 550 – 1600 kHz AM broadcast band and the 20 – 40 MHz band that was used for airport towers. The crystal-controlled eight-tube ATR-3 transmitter produced approximately 10 W on 3.106 MHz for aircraft-to-tower communications.

All Good Things Must Come to an End

In 1955, hurricanes Connie and Diane caused massive flooding and damage to the Harvey-Wells manufacturing facilities in Southbridge, Massachusetts, which ended their production of electronics equipment. The remains of the company were sold to Bay Pathe in 1955, and later to Whitin Machine Works in 1957. A portion of the company survived as Harvey Radio, which owned broadcast stations.

ARRL Exhibit

Hamilton Agnew, K4HKA, recently discovered that he was related to John Wells, W1ZD, and he has researched their family history. He has since generously donated radios and artifacts from Harvey-Wells to add to ARRL's Harvey-Wells radio collection. He, along with other Harvey-Wells family members, visited ARRL Headquarters in August 2023, where he gave an informative PowerPoint presentation about the history of Harvey-Wells Company. It is available for viewing on YouTube at **www.youtube.com/watch?v=Rqm8oZ0QNAQ**.

Related to Agnew's visit, ARRL staff assembled a display of Harvey-Wells amateur radio equipment in the lobby, which was enjoyed by visitors for more than a year. The display is now located in the ARRL Heritage Museum.

We want to extend our thanks to ARRL Volunteer Ray Thornton, W1YFF, who used Harvey-Wells radios when he was a young ham, for restoring many of them.

All photos provided by the authors.