

RADIO AGE

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TELEVISION "ATTACHMENTS"

by Jeff Lendaro

For years people had been told that television was "just around the corner." The word "television" was first publicized by John Logie Baird in the mid-1920s. Demonstrations by Francis Jenkins and Bell Labs had the public believing television *was* just around the corner. Television had a mystical aura about it, and even entered our pop culture. In 1930, Lee Morse was singing "No more singing in the bathtub with those television phones." Some were afraid of the light from television. While crude mechanical televisions were briefly available during the early 1930s, advances in the art of electronic television quickly brought TV back into the laboratory.

During the height of the Depression, sales of expensive radio receivers were bleak. In 1939, as the country was coming out of its doldrums, the market for high priced radio receivers was further clouded by the promise of television. Why buy a new radio that might

become obsolete when television appears? But, if radios were designed to accept the audio portion of the television signal, then television "attachments" would need only to provide the video portion of the reception. No sense in spending money on an audio amplifier and speaker built into a television set if you already had good ones in your recently purchased home radio. The RCA Victor TT-5 and General Electric HM-171 television attachments were just the answer. Now you could buy that new "designed for television" radio and rest assured that when television came to your area you



Figure 1. RCA Victor TT-5 television attachment and T-62 AM radio. The sound output from the TT-5 plugged into the radio.

would be ready! Fig. 1 shows a typical arrangement — an RCA Victor TT-5 television attachment with an RCA Victor T-62 AM radio. Fig. 2 shows a rear view of these two items. Fig. 3 shows General Electric's competition — a Model HM-171 television attachment beside a Model HM-80 FM radio.

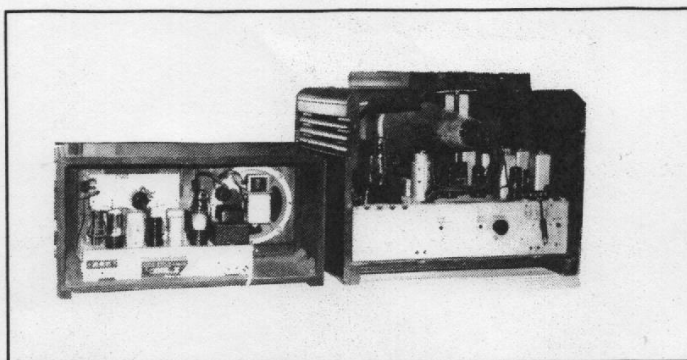


Figure 2. Rear view of TT-5 television attachment and T-62 receiver of Fig. 1. The "equipped for television" jack is in the center of the T-62 chassis rear apron.

This concept led to very artful advertising campaigns by RCA and General Electric. The "Television Attachment" models of 1939 were quite a marketing idea! The additional cost of producing television-ready radios was negligible. All they needed was an extra spot on the band selector or an end push-button boldly labeled "Television" and an audio input jack on the back of the chassis labeled "Television Input." To add some legitimacy, a 5" television receiver was marketed for \$199.00 around New York City with just such an audio output to connect to that radio. GE was quick to relabel the phono input connector on existing designs, "Television Input" and begin their advertising campaign.

Most of the RCA line for 1939 was a little more sophisticated and sported two audio inputs, one for television and the second for a phonograph. Fig. 4 is a reproduction of an RCA Victor ad of this period for the K-81 console, with the "Designed for television attachment" feature mentioned prominently.

During 1939-40, RCA manufactured a mere 578 TT-5 television attachments. During the same period the total sale of

"Ready for Television" radios was over 456,000. There were over 70,000 of the 1939 console model K-80 alone, nearly an eight hundred to one ratio! George Fyler, a GE engineer who worked at the Bridgeport, CT, plant, put the quantity of HM-171 TV attachments at around 200-300. The quantities of GE radios manufactured during this same period are unknown to me, but presumably were large.

The design of the RCA TT-5 and GE's HM-171 had progressed along very different paths. The RCA TRK-5 console used basically the same television chassis as the TT-5 and included a radio chassis. In the TRK-5, the on-off switch and volume control were present on the radio chassis and therefore removed from



Figure 3. GE Model HM-171 television attachment and Model HM-80 FM receiver.



RCA Victor CONSOLE MODEL

K-81

•
New Built-in Loop Antenna
with Tenna Vane Control

•
Improved Push-button Tuning
(8 Stations)

•
12" Electro-Dynamic Speaker

•
New 3-band Clear-vision
Illuminated Dial

•
7 RCA Victor Tubes
Plus Magic Eye

•
Plug-in Connection for
Television Attachment

•
American and Foreign Reception

Designed for
TELEVISION
ATTACHMENT

OTHER FEATURES: Tenna Vane Loop Rotating Control on Instrument Panel; Victrola and Television Attachment Switch and Plug-in facilities; 3-Point Tone Control; 18:1 Ratio Vernier Tuning; Automatic Tone Compensation; Automatic Volume Control; Fire Underwriters' Approval; Magnetite Core "Frequency-locking" I-F Transformers; Rubber-floated Tuning Condenser; Temperature-compensated Circuits; Push-pull Output for finer tone and greater volume.

TUNING RANGE: 3 Bands: 540-1560; 1550-4000; 5800-18000 kcs. Covering domestic and foreign entertainment bands including the 49, 31, 25, 19 and 16-meter Bands, Plus Police, Aviation and Amateur calls.

TUBE COMPLEMENT: 1-6SA7; 1-6K7; 1-6SQ7; 1-6SF5; 2-6F6G; 1-5Y3G and Magic Eye 6U5.

CABINET: A charmingly different radio console cabinet employing elements of design associated with traditional furniture styling. The top is of heart walnut veneer; instrument panel of butt walnut veneer with band of claro walnut veneer at bottom. End rails and wrap-around ends are of heart walnut veneer, grille rails of claro walnut veneer. Dimensions: Height 42 $\frac{3}{8}$ "; Width 30 $\frac{5}{8}$ "; Depth 15 $\frac{1}{16}$ ".

Figure 4 (facing page). Ad for 1939 RCA Victor console Model K-81, noting that this model was "Designed for Television Attachment."

the television chassis. The 1939 RCA 5" television chassis was a new design, barely resembling the earlier field-test table models. Clearly this system break at base band audio was planned.

GE also used their 5" chassis in the HM-185 television console, which included a speaker. Again, the two GE chassis were basically the same. The HM-171 has a 6H6 audio detector next to an empty hole, just the right size for a tube socket. On the HM-185 the detector is a 6SQ7 and the extra hole contains a 6K6G audio output tube. The provision for a loudspeaker was in place and so a speaker could easily have been included in the HM-171. In fact, it was deliberately removed.

The electrical design of the HM-171 is almost identical to the 1938 field-test model IHM-171. This 1938 5" table model, with rounded left side, includes a seven-pushbutton channel selector and a loudspeaker. An early engineering schematic of the IHM-171 dated 1938 confirms such a configuration. Did GE hear of RCA's plan and change the HM-171 to be more competitive? Were the speaker, output tube, and larger channel selector deleted to be price competitive? Or was the lure of a "Ready for Television" radio campaign the real reason?

Before long, companies that were not even making television attachments joined the bandwagon. The concept of "Ready for Television" radio receivers was copied by Motorola, Stewart-Warner, Montgomery Ward, and others. There was also the handful of Silvertone- and Westinghouse-branded TT-5s.

Did these allow Sears and Westinghouse to legitimately offer radios "Ready for Television" to go with their television attachments?

Using a radio receiver for television sound, a concept that may have been abused by the marketing and sales department, really had its roots in the RCA engineering department. During the development of electronic television in the 1930s, it was clear that more circuits and more bandwidth would require more tubes and higher costs. While RCA was developing the famous RR-359 field-test receiver, it was also looking at low-cost small-screen solutions. Early on, it had been decided that one way to reduce the cost of the small-screen receivers was to sacrifice resolution and sensitivity.

The wide bandwidths and use of VHF for television precluded the use of a super-heterodyne circuit with an intermediate IF for the sound as well as picture channel. One early idea that offered substantial savings was to use the sound portion of a shortwave receiver to recover the audio. On the RR-356, the audio signal was output just following the first detector at an intermediate frequency of 8.25 MHz. This scheme would eliminate the sound IF stages, detector, AVC, and audio amplifier. For some reason this concept did not make it into the TT-5. This would require the shortwave receiver to tune to 8.25 MHz. Not all shortwave receivers had the capacity to tune to that frequency, which may have caused confusion. Perhaps the oscillator drift of the receiver or the fear of 8.25-MHz radiation eliminated this plan. Is it possible that RCA had the foresight to know television would go to

FM sound? This certainly would have added complications when existing receivers were converted to FM sound in 1941.

Today these television attachments prove to be very interesting collectibles. While only a handful survive, they are proof that something did actually exist to plug into all those radios with a jack on the rear of the

chassis labeled "television"! It was the first time in history that the word "Television" was clearly visible in such a large number of middle-class homes. I am certain that many of those original radio owners regularly pondered when television would really arrive. For many collectors today, owning a television attachment to connect to that favorite old radio is as much a dream as it was for the original owner in 1939.

Courtesy of Eric Coon