How RCA Electronic Television brought SIGHT to Radio

Historic steps in the evolution of this new science created by RCA Laboratories

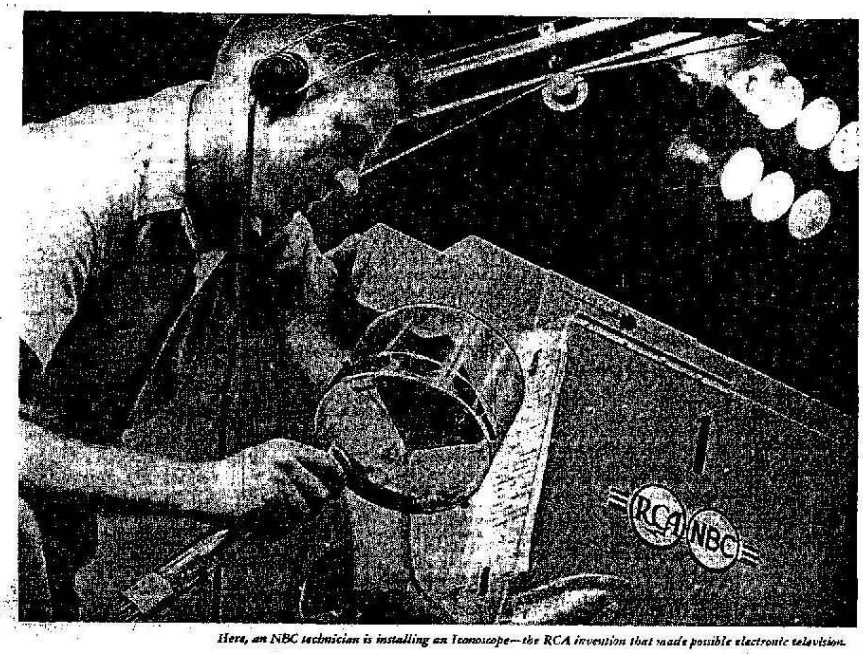
BACK IN 1929 a modest man with a quiet voice calmly announced two inventions . . . two amazing, almost magic devices that made it possible for radio to "see" as well as to "hear."

This man was Dr. V. K. Zworykin of RCA Laboratories. And his research in electronics gave radio its electronic "eyes" known as the Iconoscope and the Kinescope. The former is the radio "eye" behind the camera lens; the latter is the receiver's screen.

Since that red-letter day in television history, ceaseless research in the science of radio and electron optics has established RCA Laboratories as the guiding light of television.

The decade of the thirties saw television's coming-of-age. It brought new scientific discoveries; it developed new techniques of showmanship; it even created new words—televise, telecast, teleview, and relegenic.

In the evolution of television there have been "high spots"; historic milestones of progress; definite "firsts"—made possible by the services of RCA.



Here, an NBC technician is installing an Iconoscope—the RCA invention that made possible electronic television.

1928-1932—From the First Experimental Station to All-Electronic Television

Station W2XBS, New York, was licensed to RCA in 1928 to conduct television experiments. Transmitter located at laboratory in Van Cortlandt Park, was later moved to Photophone Building, 411 Fifth Avenue; then to New Amsterdam Theatre until 1931, when operations were transferred to Empire State Building.

On Jan. 16, 1930, television pictures were transmitted by RCA from W2XBS at 411 Fifth Avenue and shown on 6-foot screen at RKO-Proctor's 59th Street Theatre.

Television station W2XBS, operated by National Broadcasting Company, atop New Amsterdam Theatre, New York, opened for tests July 7, 1930, with the images whirled into space by a mechanical scanner.

Empire State Building, the world's loftiest skyscraper, was selected by RCA as the transmitter and aerial site for ultra-short-wave television experiments using both mechanical and electrical scanners. Operation began October 30, 1931.

Field tests of 240-line, all-electronic television were made by RCA at Camden, N. J., with television signals relayed by radio from New York through Mt. Arney, N. J., for the first time, May 25, 1932.

1936—Outdoor Television

Television outdoors was demonstrated by RCA at Camden, N. J., on April 24, 1936, with local firemen participating in the program broadcast on 6 meters.

All-electronic television field tests of RCA began June 29, 1936, from ultra-short-wave transmitter in Empire State Building and aerial on the pinnacle relaying 343-line pictures.

Radio manufacturers saw television demonstrated by RCA on July 7, 1936, with radio artists and films used to entertain.

1937—Electron "Gun" and Mobile Television Demonstrated

Electron projection "gun" of RCA was demonstrated on May 12, 1937, to Institute of Radio Engineers, with pictures projected on 8 x 10-foot screen.

Television on 3 x 4-foot screen was demonstrated by RCA to Society of Motion Picture Engineers on October 14, 1937; pictures were transmitted from Empire State Building to Radio City.

Mobile television vans operated by RCA-NBC appeared on the streets of New York for first time, December 12, 1937.

1938—Broadway Play Televised

Scenes from a current Broadway play "Susan and God," starring Gertrude Lawrence, were telecast on June 7, 1938, from NBC studios at Radio City.

RCA announced on October 20, 1938, that public television service would be inaugurated and commercial sets offered to the public in April, 1939.

1939—Baseball—King George VI—Football

Opening ceremonies of N. Y. World's Fair televised by NBC on April 30, 1939, included President Roosevelt as first President to be seen by television.

"A first from the diamond," Columbia vs. Princeton, May 17, 1939, televised by NBC.

Improved television "eye" named the "Orthicon," introduced by RCA on June 8, 1939, added greater clarity and depth to the picture.

Television spectators in New York area on June 10, 1939, saw King George VI and Queen Elizabeth at the World's Fair, telecast by NBC.

First college football game—Fordham-Waynesburg—televised by NBC, September 30, 1939.

Television from NBC station in New York was picked up in plane 20,000 feet over Washington, D. C., 200 miles away, October 17, 1939.

Television cameras of NBC scanned the scene in front of Capitol Theatre at premiere of motion picture "Gone With The Wind," December 19, 1939.

1940—Sports—Color—Bird's-Eye Television

Color television was demonstrated on February 6, 1940, to Federal Communications Commission by RCA at Camden, N. J.

First hockey game was televised by NBC camera in Madison Square Garden, February 25, 1940.

Basketball: Pittsburgh-Fordham, also NYU-Georgetown at Madison Square Garden were televised by NBC, February 28, 1940; first basketball seen on the air.

Using RCA's new, compact, portable television transmitter, a panoramic view of New York was televised for the first time from an airplane on March 6, 1940. Television sightseers as far away as Schenectady saw the bird's-eye view of the metropolis.

Premiere of television opera on March 10, 1940, featured Metropolitan Opera stars in tabloid version of "Pagliacci."

First telecast of religious services on March 24, 1940, from NBC Radio City studios, were seen as far away as Lake Placid.

Ringling Brothers-Barnum and Bailey circus viewed on the air, April 25, 1940, through NBC electric camera in Madison Square Garden.

Television pictures on 4½ x 6-foot screen were demonstrated at RCA annual stockholders meeting May 7, 1940, at Radio City.

Republican National Convention was televised on June 24, 1940, through NBC's New York station via coaxial cable from Philadelphia.

President Roosevelt was seen by television throughout the Metropolitan area as he addressed Democratic rally, October 28, 1940, at Madison Square Garden, New York City.

Election returns on November 5, 1940, televised for first time by NBC, showed teletypes of press associations reporting the news.

1941—Home Receivers—Prize Fight—Commercial Television

Television progress demonstrated to FCC on January 24, 1941, included: home-television receiver with 13½ x 18-inch translucent screen; television pictures 15 x 20 feet on New Yorker Theatre screen; pictures relayed by radio from Camp Upton, Long Island, to New York; also facsimile multiplexed with frequency modulation sound broadcast.

Television pictures in color were first put on the air by NBC from Empire State Building transmitter on February 20, 1941.

Large-screen television featuring Ovelio-Suose prize fight on May 9, 1941, at Madison Square Garden was demonstrated by RCA at New Yorker Theatre; also, on following days, baseball games from Ebbets Field, Brooklyn.

Commercial operation of television began July 1, 1941, on a minimum schedule of 15 hours a week. NBC's station WNBT, New York, first commercially licensed transmitter, issued the first television rate card for advertisers, and instituted commercial service with four sponsors.

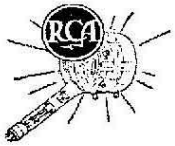
1942-1943—America at War!

Entry of the United States in World War II enlisted NBC television in New York to aid in illustrating air-raid instructions in the New York area.

The Orthicon Camera, an RCA development, was given a more sensitive "eye" that sees under normal lighting conditions without necessity of brilliant lamps as in pre-war television. Experimental "screens" were enlarged and the texture of the pictures made finer.

Today RCA Laboratories, pioneer in the science of electronics, is devoting all its efforts to the war.

Yet, from the discoveries and inventions made under war urgency, will come greater wonders for the Better Tomorrow of a peacetime world.



RADIO CORPORATION OF AMERICA

CREATOR OF ELECTRONIC TELEVISION

SERVICES OF RCA

RCA Victor Division • RCA Laboratories • National Broadcasting Company, Inc.
Blue Network Company, Inc. • RCA Communications, Inc. • RCA Institutes, Inc.
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Courtesy of John Pinckney