

Exploding the Television Boom

Above: Six-foot square television images, clearly visible throughout Proctor's Theatre, Schenectady, N. Y., were shown by the General Electric Company on May 22, 1930. In nine years, other research workers have been able to make the pictures sharper and more detailed, but they have never been able to equal this demonstration for startling, life-like effectiveness.

BEFORE you plunk down \$350, or more, for a gaudy television receiver, or turn the family savings over to a television stock salesman, heed a friendly word of caution: DON'T!

Much to the embarrassment of sincere engineers and corporations responsible for what growth television has had, there is every indication that an unscrupulous few will attempt to turn this scientific curiosity into a suckers' game.

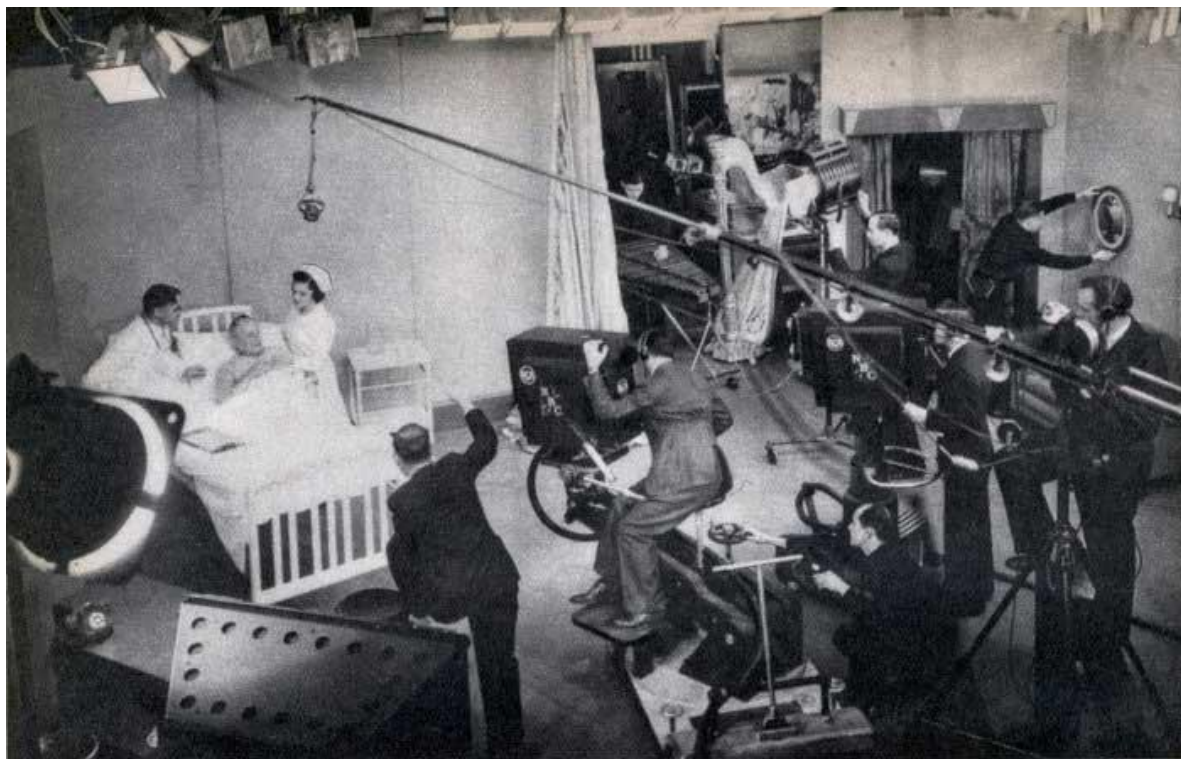
If the above seems a strong statement, read the following by Eugene F. MacDonald, Jr., president of Zenith Radio Corporation, one of the oldest firms in the radio manufacturing business:

Too much publicity of the wrong kind is giving people the idea that television is finally emerging as a public service. It isn't, and this article tells why.

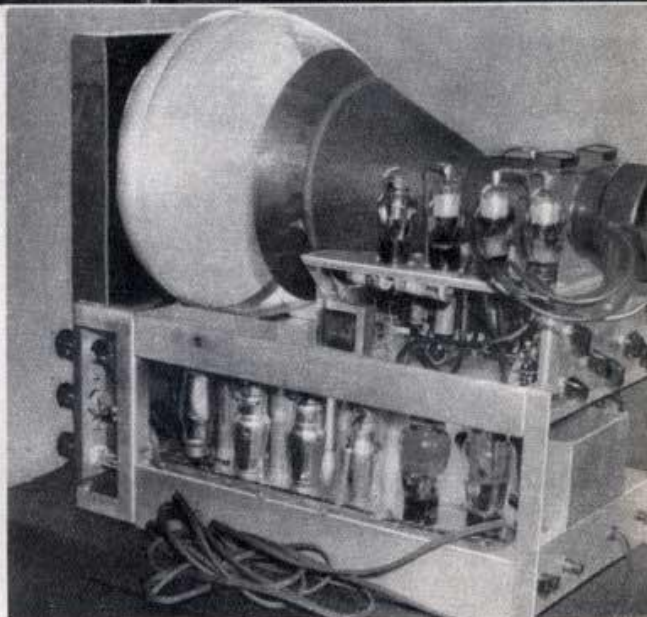
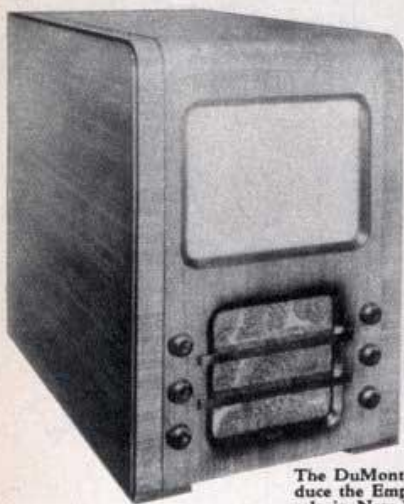
by **ROBERT HERTZBERG**
Editor, MECHANIX ILLUSTRATED

"The offering for sale of television receivers at this time in view of the present state of the art is, in my opinion, unfair to the public, and premature, both for economic and technical reasons . . . general use of television in the home is just around the corner for stock salesmen only."

This blast is quoted from a letter Mr. MacDonald wrote his stockholders, and the



Above: "Camera", microphone boom, lights, stage "props", and much complicated apparatus make a modern experimental television studio look very much like an ordinary movie studio. This picture shows a typical scene of activity in the NBC studio in Radio City, N. Y., the originating point of the programs put on the air by the television transmitter in the Empire State Building.



The DuMont television receiver, a beautiful, carefully-made scientific instrument, will reproduce the Empire State and Chrysler Building television broadcasts. It costs \$395 and is on sale in New York stores. The large white opening (left) is the image screen; beneath is the loud-speaker. The conical device (right) is the cathode ray image tube, and is mounted behind the screen inside the cabinet.

letter was inspired by extravagant and sensational stories carried nation-wide in newspapers. According to the hurriedly written news stories, television was not only "around

the corner," but already a practical, workable fact.

This newspaper field-day was started by David Sarnoff, president of Radio Corpora-

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Typical pictures of families viewing home television. You'd hardly guess that they were taken TEN YEARS apart! Left: Dr. E. F. W. Alexanderson, Mrs. Alexanderson and their children watch a television program transmitted from a General Electric station in Schenectady, N. Y., during December, 1927. Below: A television receiver in the home of an RCA engineer, 1937. In releasing the latter picture, NBC was very careful to state that the receiver was as experimental as the programs themselves.

tion of America, owner of the principal television patents in this country and the company that has done the most here to develop television to date. The newspapers jumped in with both feet when Mr. Sarnoff announced that limited program service would be started from the RCA experimental station in the Empire State Building in April, and the RCA would manufacture television receivers for sale in the New York area.

It seemed of little importance to the newspapers that the "limited broadcast" would be but for one hour, twice a week, and that the telecasts would be conducted as part of RCA's World Fair exhibit.

Almost at the same time, the Columbia Broadcasting System announced that it too would open a New York television station for the Fair. Then Paramount Pictures hit the nation's front pages with grandiose promise for a television set-up all its own—one transmitter on each coast.

Lost in the smoke of the startling announcements were the facts that the N.B.C. and C.B.S. broadcasts would be over only a twenty-five to forty-mile area and that the Paramount plans, while announced in good faith, were on paper only.

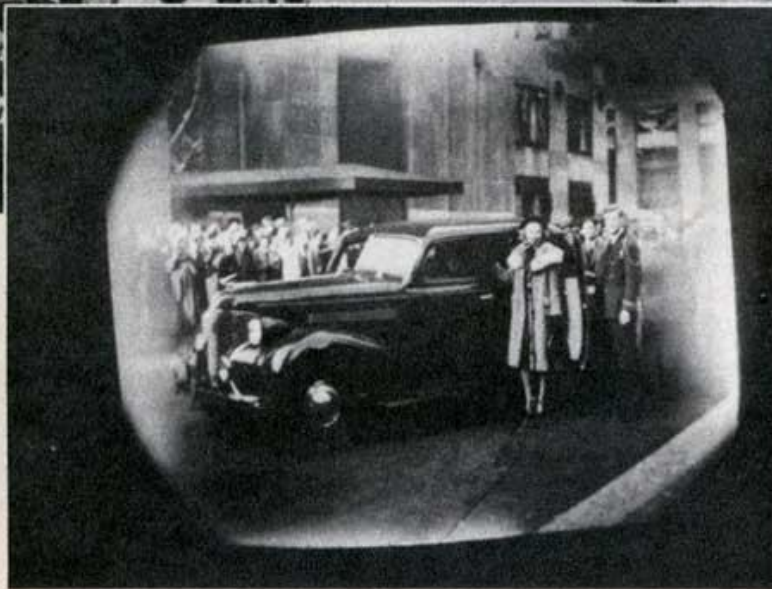
Lost in the smoke, too, was the



Right: Television for the New York World's Fair—The NBC television studio is chosen as the place where the deal is consummated. Left to right: Betty Goodwin, NBC television announcer; Lenox R. Lohr, president of NBC; David Sarnoff, president of RCA; and Grover Whalen, president of the Fair. Not yet ready for national home service, television will be offered to the public as a glorified "peep show" at the Fair.

formerly *Modern Mechanix*





For a couple of years now, NBC has had a fancy "television truck" for outside pick-ups running a round New York. Here it is "televising" the new cars during the 1938 Auto Show. At the left is a reproduction of the image as it appeared on a receiving screen in Radio City. As a publicity vehicle, this truck has been almost too successful, as its picture finds it way into the daily papers frequently and people get the idea that television is really here.

fact that the Empire State television station has been on and off the air now for eight years, and television receivers of one sort or another have been available for the same period at prices less than \$500. In other words, the proposed television was only a resumption of a service started eight years ago!

Why then, was so much importance given Sarnoff's announcement, and the publicity fireworks set off? There are individuals who insist that this publicity was deliberately stirred up. The possibilities boil down to three:

First, New York is having a World's Fair. The World's Fair wants publicity and RCA wants publicity. Television is a romantic subject, and any announcement concerning its progress is inclined to echo and re-echo

in the public prints. Grover Whalen, head of the World's Fair, is a master publicist and it is significant that recent pictures show him seated at a desk with Sarnoff signing an agreement for RCA space at the Fair Grounds, while the act of the signing was being televised.

A gossipy little business paper, *Space and Time*, in New York, has another explanation. It points out that RCA has had several brushes with the Federal Government. Says *Space and Time*: "David Sarnoff came from a (Washington) meeting, having dropped concessions behind he'd rather not have left."

The problem was television. No one could easily prove in a court of law there has been a hold-back in television. But England and Germany have long since had their television. Yet even the U. S. experimental programs

Television isn't nearly as new as most people think. Regular, daily television programs were broadcast by stations in New York, Chicago, Boston and Washington more than 10 years ago. The newspaper clippings below are from the New York Times of 1928.

regular, daily, signals are continued to service the world 5,000-cycle margin to w

- 326-WRNY-920.
- 11:00 A. M.—Keeping Fit — Jack O'Brien.
 - 11:30 A. M.—Television; Volga Instrumental Trio.
 - 12:00 M.—Menu, ham omelet.
 - 12:15—Augusta Spette, soprano.
 - 12:30—Television; Tommy Sparks, songs.
 - 2:00—Children's program.
 - 2:30—Television; E. Howard, violin; W. Scofield, baritone; Pauline Gorink, soprano; B. Valentine, songs; J. Guzik, piano; J. Bauer, tenor.
 - 3:30—Television.
 - 7:00—Tiddbits—Valentine Erskine.
 - 7:05—Cookie Cohen, songs.
 - 7:20—Television broadcast.
 - 7:35—Houdini's Spirit Exposes—J. H. Kraus.
 - 7:45—Television broadcast.
 - 8:00—Edison hour of music; orchestra.
 - 9:00—Television—Hugo Gernsback at Philosop Hall, New York University.
 - 9:30—Television.
 - 9:35—Raymond Hunter, baritone.
 - 9:45—Television.
 - 10:00—Art String Ensemble.
 - 10:45—Fred Mayo, songs.
 - 11:00—Richard Orchestra.

The first regular television-broadcast program on the New York Times of August 21, 1928.

voice-and-music The editors of RADI- selves were not altoget

WRNY television. That



When NBC televised the play "Susan and God", with Gertrude Lawrence and Paul McGrath (directly above) in June of 1938, newspapers and picture magazines treated the event as something sensational and history-making. It was hardly worth getting excited about, as in September of 1928, an elaborate, specially-staged studio production of "The Queen's Messenger", by J. Hartley Manners, (top photo) was televised by the General Electric television station, Schenectady, N. Y. Dire predictions were made at the time that both the movies and the stage were doomed by this marvelous thing called "television", but nothing of the sort happened.

NEW YORK TIMES, MONDAY, AUGUST 13, 1928

WRNY to Start Daily Television Broadcasts; Radio Audience Will See Studio Artists

The first regular broadcasting of images by television over the radio from New York will begin tomorrow. It was learned last night from Station WRNY in the Hotel Roosevelt. WRNY, which is owned by The

transmission as an intermittent high-pitched whirr, varying with the action before the transmitter. Officers of WRNY saw the images at a set installed in a private home a few hundred yards from the trans-

have been so produced that the suspicion would never arise that they constitute the beginning of public programs. David Sarnoff has been justifiably afraid that the introduction of television would injure radio set sales.

He has pointed to what happened in England. He has reasoned that no one would buy a new radio set if he thought television would presently make that set obsolete.

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"But when the Washington crowd got Sarnoff aside and explained their desire to see television under way as a possible great new industry, David Sarnoff changed his mind. He promised there would be television, set the date for March, 1939, and the territory as New York City. Immediately last week the Sarnoff representatives were in Washington refurbishing old lapsed claims to television bands in cities throughout the U.S.A."

Maybe the government did back Sarnoff into a corner and cajole him into some action, even on the threat that the government would step in and develop television, as it has in Germany and England, if American private industry did not promote the new medium. It is silly, however, to believe that RCA or anyone else is deliberately holding back something that possesses such huge potentialities for profit. The radio industry—and RCA is a large chunk of that industry—sorely needs a jab in the arm, and everyone in the industry has been looking forward to the day when the television needle is ready. But it isn't ready now, for reasons to be mentioned, and meanwhile the splurge of publicity is unreasonably ruining the sale of high-priced radio receivers, causing RCA dealers and others to raise loud objections to such misleading publicity.

The third rumored reason for the announcement and publicity itself is found by some in the fact that RCA has spent in television research a great deal of money that might otherwise go to stockholders. The figure given is \$20,000,000, and while RCA engineers have made many notable improvements and contributions to the art, they still have nothing far enough advanced to be turned into mass production and marketed nationally for a profit as are refrigerators, radio sets, vacuum cleaners, etc. Stockholders are probably asking a lot of questions about spending this money which such publicity would answer. It is true that this year, as for some years past, RCA dividend checks are accompanied by a little booklet explaining RCA's progress in television.

What are the real facts at the bottom of the fire that produced this publicity smoke screen, and just exactly what will be the status of television in this country as of March or April of 1939?

We have already told you of the limited broadcast plans, but in his original statement, Sarnoff also stated that RCA would sell television transmitters to anybody who wants to buy them. The first customer turns out to be the Columbia Broadcasting System, NBC's bitter commercial rival. Built by RCA in its Camden, N. J., factory, the CBS outfit is now being installed in the tower of the Chrysler Building, New York. Like NBC's Empire State transmitter, which is

almost within shouting distance, this station's service area will be limited to New York City and its immediate environs. A lot of good that will do people in Portland, Maine, Columbus, Ohio, St. Louis, Mo., Denver, Col., Seattle, Wash., etc.!

How much of a factor CBS will be in television is highly problematical. Once before—in 1931—it bought and operated an RCA television station, made a lot of noise about it, and then quietly discontinued it when it had outlived its usefulness as a publicity medium.

More interesting but less important than the RCA and CBS moves was the entrance of Paramount Pictures into the television field. Paramount has bought an interest in the Allen B. DuMont Laboratories, of Passaic, N. J., a small but well-recognized establishment specializing in the manufacture of cathode-ray tubes (the "projector" of television receivers). According to the printed stories, Paramount will soon be set for big-scale television on a national basis, with transmitting stations on both coasts planned to give the public "this new type of entertainment". When sound broadcasting began to loom as the movies' first really serious competitor, Paramount bought an interest in the Columbia Broadcasting System, and then dropped it when they learned that there was nothing wrong with the movies that good pictures couldn't cure. Now, apparently, Paramount is making another attempt to cover itself, and protect its stockholders by entering television in case it does materialize into something more than hot air.

A visit to the DuMont plant reveals a significant picture of the part Paramount will play. DuMont himself is a two-fisted, aggressive scientist with a splendid technical background, some patents, and a lot of ideas. With Paramount's backing (which does not include control of his company), he is planning to erect a very low power television transmitter (only 50 watts) on top of the present two-story factory building, and to operate it experimentally with a system of his own, different from the RCA one. He will also make receivers—in fact, he's making one right now for the Empire State signals—but under the Paramount set-up the new receivers will reproduce only his broadcasts, not the NBC or CBS ones! How much of an audience Paramount expects to build up in the neighborhood of Passaic, N. J. (population, 62,959) with a flea-powered transmitter is something to conjure with.

"All this sounds very discouraging," you probably are saying. "Hasn't there been any progress in television at all?"

Sure, there's been wonderful progress in television since 1925, when C. Francis Jenkins of Washington, D. C., staged the first important demonstration of radio television before a distinguished audience of government officials. But the technical, artistic, financial and legal problems have been and still are terrific, with many

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angles still to be ironed out by the experts.

Everyone in the industry is in agreement that wide scale television in the United States is impossible in the near future.

Present experience with sound broadcasting is of little help. The only place where television is practicable at all is on the very short wavelengths, and these have a useful range limited roughly by the horizon of the transmitting aerial. That's why NBC grabbed the tower of the Empire State Building and CBS took the Chrysler Building; the higher the aerial, the greater the area encompassed by the horizon. NBC figures on a radius of 25 to 40 miles for Empire State, so "nationwide" television service means hundreds—probably thousands—of individual stations, each designed to cover a specific territory.

Then there's the matter of programs. It would cost a couple of billion dollars—yes, billions, not millions—to connect a coast-to-coast network of television stations by means of co-axial cable, the only successful means so far developed, in order to permit the equivalent of "chain" broadcasting. Lacking this cable, each station would have to stage its own shows, or be satisfied with "canned" programs in the form of movie films. And that's not television (which is defined as "instantaneous sight at a distance"), but radio cinematography. No grade "A" broadcast station uses phonograph records; will they step down a notch and use "image records?"

Add the expense of a very costly television station to the expense of the necessary programs, and you know why there are only two or three television stations actually on the air, for a few minutes, now and then, in all of the United States. About twenty stations have been licensed by the Federal Communications Commission for experimental visual broadcasting (television to you!) but being licensed and being on the air are two different things!

And finally, there's that delicate little matter of the television images themselves. Television people start all discussions of results by saying, rather petulantly, "No one expected high-grade music in 1920, when broadcasting first took hold. Why expect perfect television pictures right away?" The trouble is that in 1920 *any* results were wonderful because there was no criterion, no standard by which to judge them. Today, however, television is terrifically handicapped by the widespread use and high degree of perfection achieved by home movie machines, both silent and with sound, and television engineers bite their nails to keep from screaming when the inevitable comparison is made. In England, which has had several years of continuous television under government sponsorship, the newspapers sadly report: "The trouble is not with television; it is the comparison with the cinema."

Even under perfectly controlled conditions during demonstrations in Radio City, the television images are small (only about 7x10 inches), noticeably dull, and badly distorted around the edges. The first time you see a television program you find it interesting because it's novel and because you have been heavily sold in advance on the idea that television is a wonderful thing; the second time, you realize that your \$50 home movie outfit gives larger, brighter, far more detailed pictures.

Under anything but ideal, protected conditions, television suffers terribly from the minutest electrical interferences. The images will be distinguishable for a while; then an automobile will go by the building and its ignition system, acting as a small but powerful short-wave transmitter, practically wipes the picture off the screen. All you see is a crazy-quilt pattern of lines and figures, as on a cubist painting! Elevator switches, loose electric bulbs, X-ray and diathermy machines of many kinds, doorbells, dial telephones, heating pads, furnace controls, all send out electrical impulses that destroy television images.

This, of course, will be fixed in time, but now the overcoming of this interference is an unsolved problem; both here and abroad.

Much is heard of telecasting abroad, especially in Germany and England. It is true that more telecasts are held, but reliable engineers who have witnessed both domestic and foreign results say our images are as good if not better than those abroad. It is significant that while these two foreign countries do have periodic telecasts, the public does not find them satisfying enough to buy sets for their homes.

Incidentally, television as it is now envisioned has no connection whatsoever with present-day sound broadcasting. A "television" receiver is actually two entirely separate and complete instruments in a single cabinet: One for "short wave" sight and the other for "short wave" sound. The sound, however, is from the television studio, not the regular sound studio, and goes out on a separate short-wave transmitter. There is not and will not be any such thing as a "visual screen" attachment for existing radio sets. If you need a new radio receiver, go out and buy it—right away; you'll want it for regular radio broadcast reception whether practical public television materializes five years from now or ten years from now.

RCA has this to say on that subject: "Television, when it comes, will not supplant sound broadcasting. Sound broadcasting has developed into a satisfying hour-to-hour, public service that provides a variety of entertainment and information which no other medium can supplant. When television is sufficiently developed on a national basis, it will supply public service which will not conflict with, but rather supplement existing services."