

## TV An Aid To Industry On Land, Sea and Air

Television is on the verge of bringing about a new technological revolution—or evolution—in industry on land, sea and in the air, even under water and beneath the surface of the earth.

Most people today think of television as a medium of home entertainment, but electronic engineers and associated sciences with special new equipment are making surprising applications of TV in industry.

It is enabling engineers to record an operation at which he may not necessarily be at the scene—some mining operations, underwater exploration such as ship salvage, or in explosive or chemical plants and other dangerous manufacturing operations.

Television can be put to work in plants where many operations must be watched at once—steel mills, widespread traffic control—where central supervision is necessary as where a movie studio director wants to sit at his desk and watch movements in several studios. Remote supervision of operation at vehicular tunnels, at dams and on power lines are other avenues for investigation by television application engineers.

**IN DANGER ZONES**  
These engineers lifted television out of the amusement field and gave it to the scientists at Azusa, California, to aid in getting close-up views of dangerous operations of high-thrust rocket motors at the Aerojet Proving Grounds.

High-ranking U.S. Navy officers, seated in a conference room 700 feet away from the

test pits, saw the rockets being fired as clearly as if they were only a few feet away. Such close observation allowed the Aerojet engineers time in which to detect any evidence of fuel leaks or malfunctions of the firing system which could result in an explosion and major damage to the rocket motor or its entire test set-up.

It marked the first time observers have witnessed at extremely close range details of the rocket engine operation during firing while out of range of this dangerous operation.

Television has been put to work watching the water level in a boiler at the Hell Gate power plant of the Consolidated Edison Company, permitting the plant engineer, more than a city block away and eight floors removed, to keep constant check and prevent expensive damage if water level changes went undetected.

Similar equipment could be used to observe such operations as the coal feed to pulverizers or stokers, to watch temperature gauges in large warehouses and read electric meters at remote points.

Intra-store television which consists of non-broadcast shows or displays piped from a central studio in the store to receivers distributed about the premises, provides an interesting new field of application already tried by some large metropolitan department stores. The investment for such an installation can be tailored to the store's requirements and need not start out as an elaborate system.

## First Set Was Used In 1884

The first television set was successfully operated in 1884. It was mechanical and electrical rather than fully electronic. Years of painstaking research passed before an all-electronic system could be devised that could transmit and reproduce the pictures well and dependably.

It was in 1873 that an Irish telegrapher named May got the television bug. He stumbled on the fact that electrical impulses could take the form of light and figures that eventually a way could be found to transmit light impulses from point to point.

The race was on. In 1876 Alexander Graham Bell unveiled his group of scientists figured that what Bell did for sound they could do for sight.

In 1880 they proposed a machine with a bank of light-sensitive electric cells upon which a lens formed an image of the scene in front of it. Actually it was a camera, except that it was provided with this bank of light-sensitive cells instead of film. Selenium, whose electrical resistance is affected by light, was the essential element in these cells.

### SCANNING DISC

In 1884 in Germany Paul Nipkow was granted a patent on the first television method using a scanning disc. This consisted of a single selenium plate on which a lens threw an image.

Revolving in front of this plate was a disc with a spiral of holes running from the outside similar to the groove of a phonograph record.

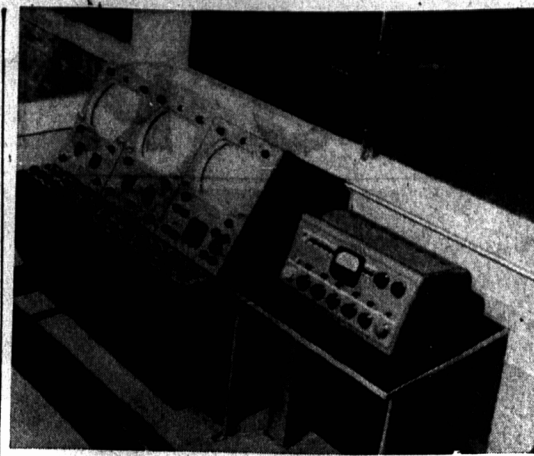
One hole would pass across the top of the plate, the next below it and so on until the disc had made a complete revolution, producing the illusion of a complete picture.

The transmitter and receiver were essentially the same in principle. They were synchronized, so that the revolving disc of the transmitter and that of the receiver maintained the same rate of speed.

It would, but it was crude and impractical. To get television as it is today the world had to wait for radio, shortwave, radar and frequency modulation.

## Teacher Troubles "Our Miss Brooks"

One of the top five television shows in Canada is "Our Miss Brooks," scheduled to be seen on CFCY-TV. This program brings you the hilarious adventures of Eve Arden, who is a schoolteacher, but not the kind of schoolteacher most of us are used to seeing. She certainly gets into a great deal more complicated situations than any schoolteacher ever does. This show is now carried as part of the CFCY-TV network program.



Television and Sound Control Board

## "Instant Transmission"

(Continued from page 1)

### Official Opening Planned In Fall

The official opening of the CFCY Television Studio will take place sometime during the fall. This is due to the fact that some lighting equipment has not yet been installed, and the staff will require time to familiarize themselves with the lighting equipment and the operation of the live camera before live telecasting from the studio can get underway.

## The Difficult Age Group

The eight to 12-year-old age group is perhaps the one that will give the most difficulty in connection with television.

The 10 or 12-year-old boy is beginning to have definite ideas and opinions which differ from those of his parents.

He has his own ideas of what he should do, and when he should do it. For example, the parent may find difficulty in convincing him that 11 p.m. is too late to stay up watching television and that he should have been in bed much earlier.

A healthy child needs not only rest and proper diet but a proper amount of exercise and fresh air.

In some homes having television, there is a noticeable decline of outdoor activity not only by the children but also by the parents.

## TV's Robin Hood Popular Show

It's not often that a weekly TV film serial feature commands top rating in competition against "spectacular" live shows, but that is the position that Robin Hood, which CFCY-TV hopes to fit into its programming.

Each week it lures an audience of some 32,000,000, not all children either, by a long (bow-and-arrow) shot.

TV Guide says a strange new language is invading American backyards and playgrounds. Small fry having swapped their 10-gallon hats for beanie-green caps and broad A's are shouting things like, "have at it chaps," "murder them Normans!" or "Hi-yo varlet."

"If cops 'n' robbers has taken on a 12th century look and sound, blame a telefilm from Britain. The Adventures of Robin Hood," the magazine says.

With film star Richard Greene as the Sherwood Forest counterpart of Gene Autry, Roy Rogers and the rest of the ranch boys, the series is a canny mixture of 12th century derring do and 20th century TV know-how.



RICHARD GREENE as Robin Hood



BERNADETTE O'FARRELL as Maid Marian

**FIRST MILE BROADCAST**  
Television outdoor pickups were transmitted a distance of one mile at Camden, N.J., in April 1936.

## Difficult to Explain How Picture Comes to Home

Nearly everyone, at one time or another, wonders how the television picture gets to the screen of their TV set and sometimes notices the eye of the person shown. The eyebrow is particular. It is composed of small black dots, whereas the forehead and cheeks are composed of lighter grey dots.

The television picture is composed of tiny electrical impulses, riding a searchlight type of ray or beam. To visualize this, let's take a spotlight and stand at the back of a "drive-in" theatre. Now, if we take the light and start at the upper left hand corner of the screen, and flash the light across to the right side, we have "scanned" the screen. Moving the light beam down a few inches we now go from right to left across the screen. Again we have scanned the screen: with the light.

Now we take the light and put it on a mechanical device which whips the light back and forth at a tremendous speed, moving down a few inches each time it goes across. We turn the machine on and the result to our eyes is that the whole screen is brightly lit.

### OPTICAL ILLUSION

This, of course, is an optical illusion, as we know that one small spot of light moving rapidly is covering the screen so swiftly that the light can't dissipate rapidly enough to give away the idea.

This is basically what happens in your television set. A small light or scanning beam is mounted at the back of your tube. It whips back and forth at a tremendous speed across the screen, and each time it crosses, it moves down a fraction. The light from this beam strikes the inside face of the tube and illuminates small particles of phosphorescence on the inside of the face of the tube.

This process happens so rapidly that to the human eye it looks as if the whole screen were being lighted by a floodlight.

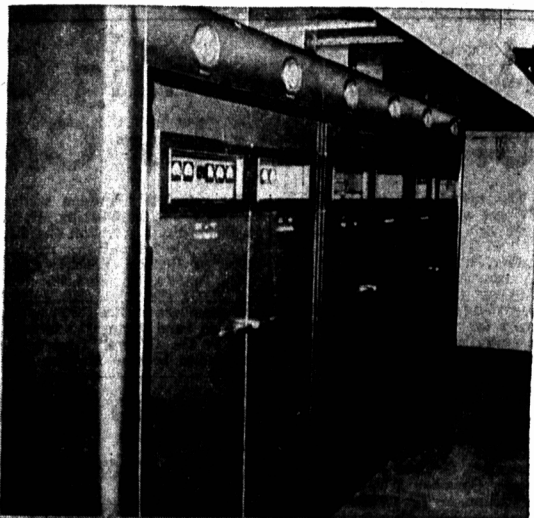
Now, once again a comparison. Take this newspaper and look at some of the pictures very closely. About an inch or two from your eye. Notice the tiny dots that compose the picture. Some

are black, some are white, some are grey. Pick out a picture and notice the eye of the person shown. The eyebrow is particular. It is composed of small black dots, whereas the forehead and cheeks are composed of lighter grey dots.

Now, combining our two comparisons, we come to the marriage of the image to the scanning beam or tiny moving spotlight. Say, for example, that the scanning beam has moved down the picture of Prime Minister St. Laurent. We took this picture and put it in front of a camera. As soon as the camera was turned on, this small beam started to scan the picture. As it moves from left to right, it picked up reflection from the skin color. Therefore it bounced back charged with the energy it received from the reflection. Now as it goes on its way, it brings back energy from the surface it hits. But on this picture of the Prime Minister, there is a dark eyebrow. The scanning beam darts across the eyebrow, but because it is dark, there is little or no reflection. The beam bounces back without having picked up any energy, and a negative or black pulse is registered.

### "Howdy Doody" Tops For Kids

The children's favorite "Howdy Doody" show is scheduled to start on CFCY-TV every day, Monday through Friday. This program is specifically aimed at all ages of young fry. It has everything in it, including characters like Timber Tom, Phineas T. Bluster, Clarabel the Clown and the Flub-a-Dub. Therefore, it's not hard to guess where all the children are going to be every evening when "Howdy Doody" is on the air.



Part of the huge television transmitter which stands in the Television Building at Strathgartney.

# Congratulations and Best Wishes to CFCY-TV



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