

Video Signals Are Carried By Short Waves

The signal which is used in sending out television programs is carried by extremely short waves. Channels assigned to television by the Federal Communications Commission are in the 50-to-88 and 174-to-216 megacycle bands. These signals do not follow the curvature of the earth like long-wave radio signals, nor can they be bounced off the ionosphere (an ionized layer of air many miles away) like short-wave radio signals. Therefore the range of a television station's signal normally is limited by the horizon—in most cases this range is between 40 and 50 miles. Instances have been reported, however, of video signals being picked up hundreds of sometimes thousands of miles from their point of origin, but these are freaks.

To take television programs beyond the horizon, two methods are now in practical use. One is radio relay, the other coaxial cable.

The radio-relay system consists of relay stations placed within line-of-sight distance of each other over a given route. Each station picks up the signal from the one ahead of it and passes it on to the next in line.

Special Cable Needed

The coaxial cable system uses a special type of cable, laid underground, which is capable of carrying television signals. Ordinary telephone cable, which carries network radio programs, is not able to carry the wide-band television signal over long distances. This cable has been installed only by the American Telephone and Telegraph Company, while this company and other common carriers, including Western Union and numerous broadcasters themselves, already have built radio-relay stations.

Both radio relay and coaxial cable are capable of carrying telephone calls, telegraph messages and other communications as well as television programs. The relative merits of each, their initial installation costs, their maintenance costs and the quality of their signals—now are being investigated by the networks and common carriers in order to determine which in the long run will be better and cheaper for television. It is probable that ultimately, when transcontinental networks have developed, they will consist of a combination of coaxial cable and radio relay.

Channels Are Limited

Within the 50-to-88, and 174-to-216 megacycle bands, a total of 13 channels has been made available by the F. C. C. exclusively for television use. A channel is the band that one station in one community will employ. Since some of these channels are adjacent and interfere with each other, it is impossible for all of them to be employed for the use of television stations serving any one community. Therefore, a limited number of channels is available in any one city for television. New York, Chicago and Los Angeles, with seven television channels each, have the largest number. Other cities possess numbers of video channels commensurate with the relative size of their markets and their geographical location—San Francisco six, Cleveland and Denver five each, Philadelphia four.

Toys 'Too Dangerous'

CADIZ, Ohio—(UP)—The children of their little mining town can't ride their tricycles, wagons and scooters on the village sidewalks or street anymore. The village council decreed the toys "just too dangerous."

Millions of Dots Of Light Make Up Video

Television, or video, consists of the transmission of a picture or image from one place to another instantaneously. The lens of a television camera, which starts the sending process by focusing on the image to be reproduced, is similar to that of an ordinary photographic camera. But the television camera has no film. Instead, it has a special tube (either an iconoscope or an image orthicon). The light from the object is focused through the lens on this tube.

Inside the iconoscope is a small metal plate coated with half a million microscopic dots, each dot being a photoelectric cell. Whenever light strikes one of these cells, it becomes charged with electricity. The amount of light determines the electrical charge of each dot, so that the lights and darks of the object are created in a pattern of electrical charges.

Impulses Created

Each of these microscopic "electric eyes" creates an electric impulse of its own. The impulses from these dots are broadcast through the air and are picked up on a receiving tube called a kinescope, which reproduces the picture that they form.

The dots go out on the air in single file, like a telegraph message, and are picked up single file. This process is accomplished so fast that 30 pictures, each consisting of these hundreds of thousands of dots sent out individually are reproduced each second. No action visible to the human eye is too fast to be reproduced by this process.

Two Types of Cameras

Thus the pattern of light and dark spots that is focussed through the camera's lens onto the plate of the camera tube is picked up, one dot at a time, sent through the air, and reproduced, again one dot at a time, on the receiver screen exactly as it appeared before the camera.

The two types of television cameras in use today are iconoscope and image orthicon cameras. The process described above applies to the iconoscope camera, though the basic principles also hold true for the operation of the image orthicon. The iconoscope is the older and less sensitive of the two, having about the same sensitivity as motion-picture film. The amount of light required ranges from 400 to 800 foot-candles. A foot-candle is the amount of light striking a surface one foot from a candle. The image orthicon requires only 50 foot-candles.

The iconoscope and image orthicon are used by NBC for studio programs. The image orthicon only is used for mobile pick-up programs and other events outside of the television studios.

The process of taking these dots off the plate and putting them on the air can be compared roughly to a person reading a printed page. Starting from the left-hand top corner, he reads to the end of the line, then starts the next line and so forth. In the iconoscope tube, an electric "scanner" moves along the plate line by line from left to right, picking up the charges on the dots and sending them out in sequences. This process is known as "scanning," and it is done both by the iconoscope at the camera and the kinescope at the receiver.

Picture in 525 Lines

The image seen on a television screen consists of these millions of dots arranged in 525 horizontal lines. This is what is meant by 525-line definition.

The process of reproducing the picture signal that has been broadcast is, roughly, the reverse

Boyle Says Real Vanishing American Is Indian on Nickel

By HAL BOYLE
Associated Press Staff Writer

NEW YORK — The vanishing American today is the Indian on the old-fashioned nickel.

He is losing face faster than Chiang Kai-shek. No wonder he is looking west toward the sunset. He has had his day. He and the buffalo are going down together.

For the nickel is about as useful to the average man as a golf ball is to a hen. Time was when the nickel delighted the childish heart. Give one to a child today, and the little innocent is likely to inquire:

"What's it for?"

And it is a hard question to answer. The nickel, like the old gray mare, ain't what she used to be.

Victim of Inflation

The coin originally was strictly an inflation product. Now it's a victim of inflation.

It was first minted in 1866 in the high-price times following the Civil War. Before that the people had made small change with half cents, large cents, pennies, bronze

two cents, nickel three cents, and silver three-cent and half-dime pieces.

The new five-cent nickel, which was actually only 25 per cent nickel and 75 per cent copper, quickly rivaled even the Indian-head penny in popularity. It quickly drove the two-cent, three-cent and half-dime out of circulation.

It had a mighty reign. For two generations of Americans it was a basic coin, although by Statute it was tender only in the payment of debts of 25 cents or less.

It Helped Build Fortunes

It helped build fortunes for the Woolworths, the Dukes and many another clan.

What couldn't a man do with a nickel in the good old days? He could buy his wife a pair of earmuffs or a hair ribbon. He could stand up to a bar and get a stiff shot of stomach warmer or a tall glass of beer. It would finance him to a plug of chawin' tobacco, a small pack of coffin nails, or two of the darkest, strongest cigars this side of Cuba.

It would take him to the movies in the era of the silent flickers, when strong men fainted at the sight of pretty Pearl White, tied by villainy to the railroad tracks in the path of the speeding express train, 15 minutes out of Hoboken.

Hot Dog—Remember?

Yes, Sir-r-ree. For a nickel a Sunday swell could thrill his best girl by knocking over five ducks in a row at the shooting gallery. A boy could buy a hot dog, a heaping sack of popcorn, a whopping half-pint ice-cream cone, or enough licorice to bring out the family castor-oil brigade.

They thought so much of this dear old coin that the worst thing you could say of a man was: "He ain't worth a plugged nickel."

And today? It won't even buy the foam on a glass of beer. The only cigar it'll fetch is a skinny thing that looks like a cigarette with jaundice and evaporates in three strong puffs. It won't let you into see a newsreel, let alone a double feature.

In many cities you have to team it up with some pennies to

ride a bus or buy a newspaper, a pack of gum, or a bottle of soft drink, junior size. And the glass bottle is so thick the soda pop looks like the fluid in a thermometer.

No longer will a kind note from the boss and a nickel get you a ride in the subway. It takes two nickels now.

The Democrats used to holler because the Republicans put Andrew Jackson's picture on the \$20 bill. They complained they were so poor they never got to see this picture of their hero. Now the Democrats are wondering if they haven't slogged the memory of Thomas Jefferson by putting his profile on a nickel.

The blamed thing is plumb bent out of value. Today nobody would take the trouble of plugging a nickel.

1,901 Ships Laid Up

NEW YORK, Nov. 24.—(UP)—The United States has 1,901 merchant vessels laid up in the "mothball" reserve fleet, the Maritime Commission announced yesterday.

Circus Manager Forfeits \$400 Bail

SAN DIEGO, Calif., Nov. 24.—(AP)—Arthur M. Concello of Sarasota, Fla., manager of Ringling Brothers-Barnum & Bailey Circus, yesterday forfeited \$400 bail in Municipal Court on charges of violating the state safety code.

Concello was arrested here last September by fire marshals, who accused him of crowding 9,500 persons into the circus tent, when it had a seating capacity of 8,000. He was released on bail to accompany the circus when it left San Diego.

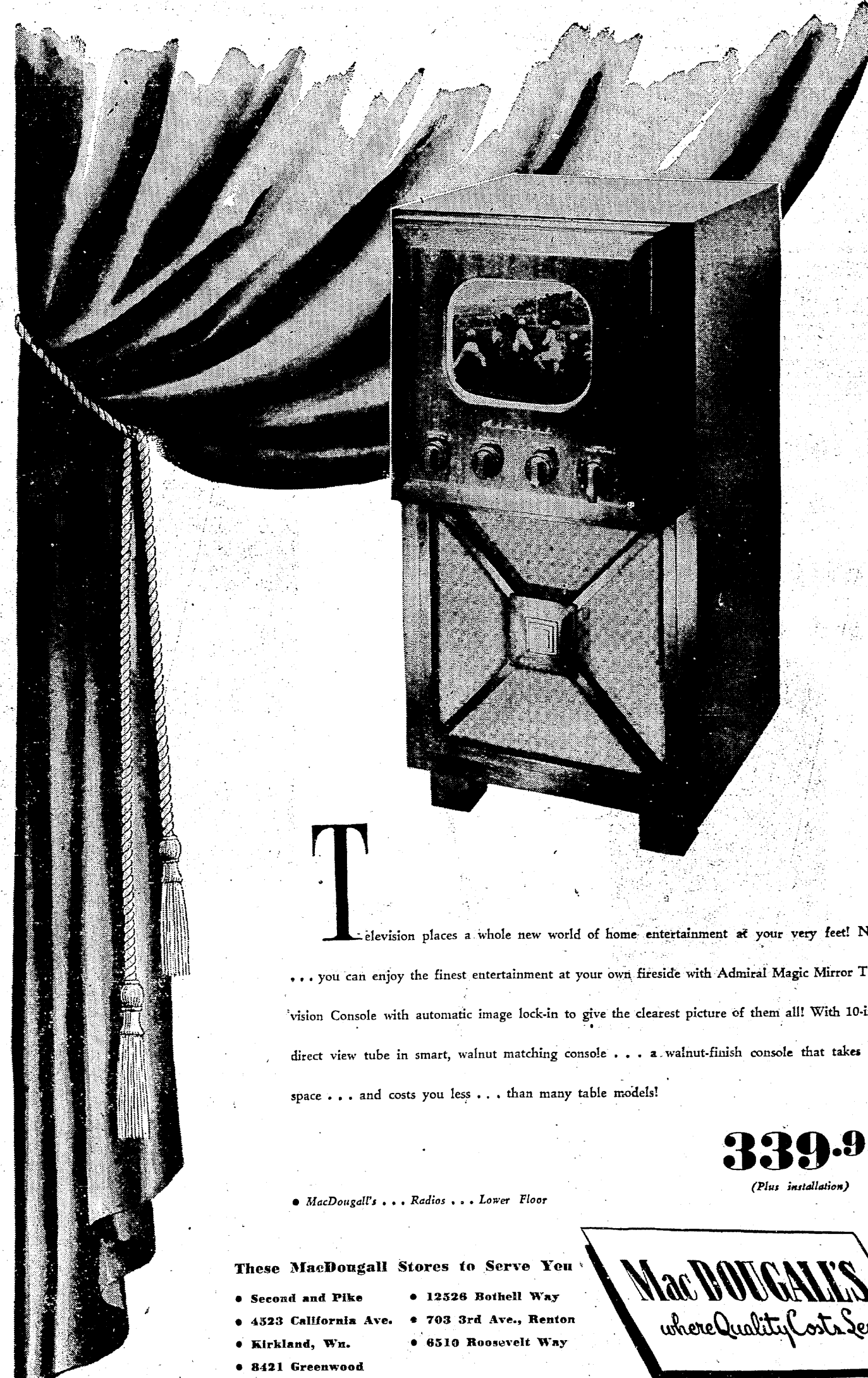
Concello pleaded innocent, and his trial was set for December 2, but the case will be taken off the calendar as result of the bail forfeiture, which was agreed to by the city prosecutor.

Television Headquarters

DUNLAP-FARIES CO.
5007 Calif. Ave. WE. 4060
Serving West Seattle 27 Years

MacDOUGALL'S welcomes KRSC-TV... first television station in Seattle

MacDOUGALL'S welcomes YOU... to a demonstration of outstanding television consoles styled by ADMIRAL



IT'S NEW!

SENSATIONAL PHILCO Television CONSOLETTTE

WITH PHILCO'S EXCLUSIVE AUTOMATIC TUNING

52-square-inches of bright, sharp, clear television picture on the big 10-inch picture tube. Handsome console cabinet in rich mahogany fits anywhere. Automatic Tuning brings in picture and sound... quick as the "click" of the channel selector. Philco 1040.

\$359.50

Plus \$1.80 Fed. Tax
Installation & Service
Warranty Extra

RCA VICTOR
EYE WITNESS TELEVISION
The Onlooker—RCA Victor 8T243

ONLY \$365.00
Plus \$1.59 Fed. Tax.
Installation Extra

Exciting television fun year in and year out—at a price that makes now the time to start enjoying it! The brand-new Onlooker gives you big 52-square inch improved Eye Witness television at an amazingly moderate cost. All controls are simplified—the multi-channel Selector works as easily as push button radio tuning. See the distinguished Onlooker today... see its big bright, steady pictures, lock-in tune with the sending station by RCA-Victor's special Eye Witness Picture Synchronizer. You'll say "This is television the way I want it. It's the Onlooker for me."

SEE US FOR A DEMONSTRATION

THE RADIO SHOP
RECORDS SERVICE
603 BROADWAY NORTH Phone Capitol 2266
OPEN FROM 9 A. M. TO 9 P. M. WEEK-DAYS

Everything you want... and more!

The HARRISON RCA VICTOR EYE WITNESS TELEVISION

★ AM-FM Radio
★ Victrola Phonograph
★ Expert Installation
all for only **579.50**
Plus Federal Tax
Installation Extra

The "Harrison" RCA Victor 8TV321. AC operation.

In one beautifully designed piece of furniture—R. C. A. combines the pleasures of tomorrow—Yours today! R. C. A. Victor's amazing Eye Witness Picture Synchronizer gives television at its best with bright, clear pictures locked-in-tune on the big 52 sq. in. screen.

FN and Standard Broadcast.

New de luxe record changer plays twelve 10-inch or ten 12-inch records automatically with the famous "Silent Sapphire" jewel-point pick-up.

DURING TELEVISION BROADCAST SCHEDULES VIEW THEM AT Melang Bros. 8:30 A. M. to 9 P. M.

Many Other R.C.A. Models On Display

MELANG BROS.
OPEN EVENINGS 'TIL 9 P. M.
6417 Roosevelt Way ACROSS FROM SEARS Filmore 3800

MacDOUGALL'S where Quality Costs Less