

U. S. Television Hits New High In Development

Broadcasts Now on Regular Schedule From New York.

Prepared by National Geographic Society, Washington, D. C.—WNU Service.

Television broadcasts in the United States are now on regular schedule and manufacturers have begun the wholesale production of receiving sets as the American public begins to realize the value of this new form of education and entertainment. The inaugural telecast in this country was produced on April 30, 1939, when President Roosevelt opened the New York World's fair.

Since then television has launched into the air an eye-and-ear-witness impression of the king and queen of England visiting the fair, of a canary circus, of a baseball game, a boxing bout, a ballet, a swimming contest, a marionette show, a six-day bicycle race, the docking of the new liner Mauretania, a track meet, and a fashion parade.

Experts point out that important differences between radio and its sister science of long-distance seeing place difficulties in the way of a nationwide television network to parallel radio hookups. Yet, the American people who promptly invite each new scientific marvel into the living room, are showing a lively interest in television, although the majority of them are still beyond the reach of current programs.

Twenty Tubes to Set.
Television has put into American homes the most complicated instrument yet devised for popular use—a radio set plus. It has about 20



MASS PRODUCTION. With television sets now on sale at regular retail prices, manufacturers have begun assembly line production of receiving units. This picture shows standard instruments in the process of being assembled.

tubes. One of them is the giant cathode-ray vacuum tube 27 inches long that creates the television picture on the top of its flattened bulb by means of a tiny "pencil" of streaming electrons. It has sound controls for volume and high and low pitch adjustments. It has sight controls for focus, speed, size, and centering adjustments of the picture.

Television has also put into circulation a new vocabulary—telecast, to correspond to broadcast; video frequencies, as differentiated from the sound wave frequencies of radio; "ike," instead of "mike," for the Iconoscope, which corresponds to radio's microphone.

Ultra-Short Waves Used.

From the giant antenna on the Empire State building a quarter of a mile above the earth, the radio waves that carry the sound part of the program are launched into the air exactly as in ordinary short-wave radio transmitting. The ultra-short waves that carry the visual part are of such high frequencies that instead of kilocycles (thousand cycles) they are listed in megacycles (million cycles). Sound, even that of a symphony orchestra, usually is transmitted in a group of frequencies not more than 5,000 cycles wide. But a good television image requires frequencies jumping from 30 to 4,000,000 cycles within a second's time. In addition, two series of waves—synchronizing impulses—must be broadcast to keep receiver and transmitter in perfect step. A lag of less than one-millionth of a second in the receiving set would make imperfect television pictures. From the outset it is apparent that television is at least three times as complicated as radio.

An added difficulty is the fact that the very high frequency television waves do not bounce between the earth and a reflecting layer in the sky as do the longer waves used in sound broadcasting. Such repeated reflection permits radio waves to reach far over the horizon—in fact, to follow the curvature of the earth completely around the globe. Television waves shoot straight off through the reflecting layer into



BEAUTY MAKEUP. The young lady clad in war paint is not preparing for a part in a horror thriller but is merely "making-up" for a regular television broadcast. Special skill in the use of rouge and paint is required to give good picture reproduction in telecasts.

outer space and are lost. They usually cannot be captured by television sets much beyond the horizon. Draw a straight line, representing the path of television waves, from any point on the earth's surface, and you will recognize that they soon part company with the curving earth. To be sure of "viewing in" on a television program, therefore, a receiving set should be close enough to the transmitter to be within the television horizon. From the lofty antenna on the Empire State building, sets within a radius of 55 miles regularly receive the program, as well as some sets from 125 to 150 miles away.

Resembles Ordinary Radio.
Outwardly the television receiving set most generally in use resembles a large radio console with an extra row of buttons and a propped-up lid. The television image—a vision indeed—appears beneath the lid, where the televised scene in perfect miniature comes to life on a glass plate 8 by 10 inches.

Presiding genius of the television receiving set is the 27-inch funnel-shaped vacuum tube, standing upright like a lily. As a loud speaker translates silent radio waves into sound, this tube translates invisible waves into a visible picture. Its narrow stem contains an electron gun primed with cathode-ray ammunition. Its broad top is capped with a glass plate curved to shield the vacuum within from the atmospheric pressure above. The under surface of the glass is coated with a chemical mixture, zinc sulfide, which is capable of fluorescing (emitting light) when struck by electrons. An electrical impulse from the transmitter modulates the beam, or ray, fired from the electron gun; when the electrons hit the fluorescent surface the glass shows a tiny point of light which is bright or dull according to the intensity of the modulated beam of electrons.

Two Miles a Second.
The electron stream is shot in machine-gun sequence across the face of the plate from left to right at a speed of two miles a second; then it zips back to the left at double quick time and repeats the bombardment. With about 600 "shots" in a row, it makes 441 trips from left to right to fill in the picture completely from top to bottom. This action is controlled by electro-magnetic force. (Whether each tiny "shot" of the electron bombardment



AID IN CRIME WAR. Here is a test telecast being made to determine the value of television in criminal identification by reproducing fingerprints. Officials claim that in cases where speed is important, fingerprints could be broadcast to operatives away from police headquarters, eliminating the delay caused by mailing the prints to a central bureau. registers as light or shadow is determined by what the television camera has revealed of the object being televised.) The 441 scanning lines for each picture are completed too quickly for the human eye to detect the electron pencil in action, and the resultant illusion is comparable to the illusion obtained from the movies, which project 24 still pictures per second to create the impression of movement. The television image is created by a rapid succession of 30 complete pictures per second.

NATIONAL AFFAIRS

Reviewed by CARTER FIELD

Cynics suspect President would be pleased if business slumped a little thereby justifying his remarks on failure of congress to pass the spend-lead bill... Now Senator Wheeler looms as possibility for the Democratic nomination for President... Roosevelt seeks a way to make the administration the leader in the improvement in business.

WASHINGTON.—There are some people so cynical that they suspect President Roosevelt would be pleased if business did slump a little, or at least fail to continue the pickup which has been in progress, so as to justify his sharp comments on the failure of congress to pass the spend-lead bill.

Perhaps the worst feature of the situation is that there are plenty of business men and investors who agree heartily with the President as to the effects on the country's buying power of this eleventh hour retrenchment drive by congress.

Plenty of argument is being made on the other side, those holding this view citing two important factors. The first is that actually the appropriations of the session of congress just closed were not small. Actually they were more than a billion dollars in excess of those of the previous session. The second factor is some recent reports, one from the New York employment agency, indicating that despite this feeling on the part of the President, and the gloomy agreement with his views on the part of many business men, employment by private capital is on the increase, whether it is sufficient to take up the slack or not.

This last factor was rather curiously demonstrated by a Harry Hopkins department of commerce report showing business improvement. The timing of this report caused considerable amusement in Washington, as it was published on the front pages of many newspapers in juxtaposition with the gloomy statements of the President.

Should Stop Feeding Out Pessimistic Propaganda

But assuming that Mr. Roosevelt does want business recovery to continue, and that he would be distressed to have his gloomy forebodings sustained, there is one thing he certainly ought to do. This is to give peremptory orders to the federal reserve board to stop feeding out pessimistic propaganda by the back door.

Various lieutenants of Marriner S. Eccles have caused much more pessimism in New York and Washington by their "confidential" comments to their personal friends among stock brokers and market operators than did the President's own statement. The trouble here is that these reserve board attaches convince the very people who are generally disposed to "copper" anything the President says.

As a result a great many persons who might be making investments or buying securities have been holding off. There is no doubt about the accuracy of this. A canvass either in New York or any other city boasting a financial center will disclose fears of the business situation which can be traced directly to pessimistic views expressed privately to this or that banker or broker by some official of the federal reserve board.

Wheeler a Possibility as Nominee for President

If candidates for the Democratic nomination for President were going to run like horses in the derby, it would not be a bad idea to put a little money on Sen. Burton K. Wheeler of Montana, for "show."

For the Democratic sweepstakes next June the odds-on favorite is still Franklin D. Roosevelt, the second choice is John Nance Garner and the horse that didn't even look as if it were going to get away from the starting post, just a little while back, Wheeler, is now in third position and going strong. The really important point is that this recent spurt of Wheeler has resulted in his passing Paul V. McNutt, and for significant reasons.

Six months ago Wheeler scoffed at the idea he might be nominated and would carefully explain to admirers just why the then political setup made it impossible. The key log in this setup, as Wheeler's friends then understood it, was that Roosevelt would never accept Wheeler as a "compromise" candidate.

Since that time Roosevelt has poured a lot of oil on the Montana senator. He has sent for him again and again, first on the railroad legislation but gradually on other things. Examination of the list of

White House appointments—which are made public every day—for the period from February to the adjournment of congress, will show a perfectly astonishing number of talks between the two.

Montana Senator Plays Ball and Keeps His Word

Many of us in Washington have believed since the fight to enlarge the Supreme court, in which Wheeler was made the leader against the President, that Roosevelt would never forgive him. Some of us still believe that. We simply cannot remember any other man who has fought Roosevelt and been forgiven and we find it difficult to conceive of his doing it in Wheeler's case. But we may be wrong. Whatever one may think of Wheeler, he is very likable personally as well as a forceful character. He plays ball and keeps his word. He seldom promises anything that he cannot deliver. His judgment as to what can or cannot be done is excellent.

Roosevelt has not found many among those whom he has actively liked since he entered the White House who have possessed all those qualities. For instance, Senators Sherman Minton of Indiana, and Joe Guffey of Pennsylvania, who were as enthusiastic about the "purge" as Tommy Corcoran and Ben Cohen. For instance, the great Marathon orator, whom the President made Democratic leader of the senate, Alben W. Barkley of Kentucky.

So it just may be that next June, if the President discovers he cannot nominate a man who agrees with him 100 per cent, he might turn to Wheeler rather than see the nomination of someone eager to tear down more of the New Deal than Wheeler. Always assuming of course that Roosevelt is not nominated himself.

It must be remembered that Wheeler has been so liberal for years that some have called him a Communist, that he was one of the most active of the "For Roosevelt Before Chicago" club, and that despite the fact that the White House ignored him on patronage in favor of his bitter political enemy, J. Bruce Kremer, Wheeler never opposed the President on any important issue until the Supreme court battle.

Incidentally both Garner and Jim Farley are friendly to Wheeler.

President Seeks Credit for Improvement in Business

Improvement of business despite defeat of the spend-lead bill, bumper crops on top of carry-overs and big crops abroad, and the obvious intention of the G. O. P.-Conservative Democrat coalition to upset more New Deal apple carts when congress meets next January—all these are spurring Franklin D. Roosevelt to develop a new theme. Call it new rabbits from new hats, if you like, but what the President needs is something to bring about three things:

1.—Make the administration the leader in the improvement of business—in other words, get the credit, thus upsetting the picture now that the improvement is in spite of the New Deal.

2.—Divert Capitol Hill from its conservative course toward undoing New Deal reforms by giving congress something new to fight over—but not at the risk of another major defeat on the eve of the national conventions and the election campaign.

3.—Work out some bigger and better way of handling the farm surplus and low farm price situation. Not necessarily, for example, letting prices slide away down to encourage consumption and exports, and compensating the farmers directly by AAA checks, but something as radical as that.

If Roosevelt can produce formulas for these three problems, he may have the political bear by a nose-rind instead of by the tail next winter.

Watch for Another Fireside Chat or Big Set Speech

So when the President gets round to another fireside chat, or has to make a big set speech on some occasion this fall, it will probably be the most interesting of anything he has ever made, and this is no reflection whatever on the importance of many of his former speeches and fireside chats. In the very nature of things the President, being distinctly on the defensive at the moment, is almost sure to follow old military strategy and take the offensive. But he must take it so spectacularly that he will get the country talking about what's new, rather than what happened a little while back.

There is another difficulty in his problem, which would be plenty hard without it. The additional hurdle is that Roosevelt is a very stubborn man, a man who hates to admit defeat, as evidenced by his recent reference to the Supreme court packing battle.

So Roosevelt will find himself anxious to inject into his new theme, whatever form it may take, some thing in with the old battles. He wants vindication on his advocacy of the spend-lead bill that congress rejected. He wants vindication on the neutrality program that he demanded and that congress turned down.

Regarding this last, everything depends upon what happens in Europe. It may easily be that events in Europe will convince the country, long before congress meets again, that the President was right. (Bell Syndicate—WNU Service.)

WHO'S NEWS THIS WEEK

By LEMUEL F. PARTON

NEW YORK.—With Edward R. Stettinius Jr. as chairman, the newly announced war resources board can be expected to function smoothly. The chairman of the board of the United States Steel corporation goes from his home at 21 East Seventy-Ninth street to his office at Broadway and Rector by subway to save moments. He eats no lunch to save more time. He cuts through formalities with his many business callers and saves more.

Stettinius is that reputed rarity, a rich man's son who has made good. His father became an industrial leader in St. Louis, and was invited to become a Morgan partner. The son lost little time after his graduation from the University of Virginia in beginning his business career, not because he had to, but because he wanted to work. He was 24 years old when he went into General Motors in 1924, 31 when he became vice president, 34 when he was made vice chairman of the finance committee of U. S. Steel and 38 when he took the top job as chairman of the board.

Modernity stands out in the strong lines of his figure, his crisp speech, and his attitude toward problems of politics and business. They say he nearly fainted when he first saw the office furniture of the 21 floors of the Steel Corporation building after he became chairman. The rolloper desks and similar items were unchanged since the days of Judge Gary. The refurbishing began immediately under Stettinius and was thorough.

Mr. Stettinius plays neither bridge nor golf; he takes his exercise on the bedroom floor, and occasionally goes out to his 500-acre farm in Virginia.

OWEN A. TOMLINSON, the man who forbade the building of an 11-foot mound on the top of Mt. Rainier so that it might retain its laurels as third highest mountain in the United States, was once a captain in the Philippine scouts under Gen. J. G. Harbord. Before that he was a buck private in the United States army, in which, altogether, he served 14 years, participating in the Filipino insurrection. He was born in Whitestown, Ind., 57 years ago, and in 1923, after leaving the army, he was appointed superintendent of the Rainier National park.

When Tomlinson, sorrowfully, refused to permit the Tacoma chamber of commerce to pile, as it were, Pelion on Ossa, thus bringing Rainier a foot higher than Massive of Colorado, he underwent some of the tribulations that used to be his when, as lieutenant-governor of the sub-province of Ifugao in the Philippines, he had some 130,000 head-hunting savages to handle. However, report has it that public clamor is dying down, a tribute to Captain Tomlinson's persuasive tact in convincing his fellow statesmen that little of the genuine honor lies in the artificial adding of cubits to stature.

GEN. JUAN YAGUE is named by Generalissimo Francisco Franco as minister of air in the new cabinet he has formed and of which he has named himself as premier. So far as advice from Spain are concerned, this is the most favorable news concerning Yague heard since the fall of Toledo.

Outspoken always, he is the man who, in preliminary maneuvers of the advance upon Lerida, accused Franco of sanctioning the bombing of open cities and of sounding off too eloquently in praise of German and Italian contingents in the Rebel army. For this contumacy, report had him behind bars and later a suicide—both, to quote Mark Twain, greatly exaggerated.

Later, when he was removed from command of his Moroccan corps, a personal disaster, specifically, the garrote, was reported to awaiting him.

And so what? Nothing short of bestowal of the aerial portfolio and the consequent strengthening of the falange as the backbone of post-war Spain. (Consolidated Features—WNU Service.)

Lion Hunter Is Given Sentence For Auto Death

Scion of Ancient British Family Is Guilty of Killing Cyclist.

LONDON.—As a penalty for killing a young cyclist, a member of one of England's richest families has been sentenced to three years' penal servitude and disqualification from driving for 20 years.

He was told by Mr. Justice Charles, who presided: "You have been found guilty, and very properly, of as bad a case of manslaughter by driving a car in a criminally negligent manner as I can well imagine. You drove like a lunatic.

"It is only by the intervention of Providence that you have not more deaths at your door. Your sentence must necessarily, not only from a punitive point of view, but as a deterrent to others, be severe."

The judge's words were listened to without a sign by the prisoner at the bar.

Capt. Raymond Vincent de Trafford, 39 years old, of Birmingham, England, salesman, lion hunter, point to point rider, former guards officer, divorced husband of Chicago's Alice Silverthorne, son of the late sportsman, Sir Humphrey de Trafford, brother of the present baronet of that name, a line descended from William the Conqueror.

Manslaughter Is Charged.

De Trafford was accused of the manslaughter at Cheltenham of Victor Edwin Drinkwater-Lunn, 19 years old, of Cheltenham.

Prosecutor Cartwright Sharp stated that the case related to a section of about seven miles of the Evesham road from Beckford to Cheltenham race course.

De Trafford had a glass of beer at the Beckford hotel, but showed no signs of intoxication.

At the Beckford hotel a gardener, William John Hopkins, 63 years old, wanted to get to Cheltenham, and De Trafford gave him a lift.

Hopkins asked him not to drive so fast, but De Trafford said: "Are you nervous?" laughed, and drove on even faster and on the wrong side.

After they had gone three miles De Trafford bumped into the back of a truck, but drove on.

Crushed by Passenger.

He drove on, and came to where a cyclist was approaching.

He was still on the wrong side of the road, and Hopkins shouted to him to get on one side and avoid the cyclist.

There was a collision and the cyclist shot over the hedge and was killed.

When the police arrived De Trafford kept on repeating that it was the cyclist's fault because he had not got a rear light.

This, Prosecutor Sharp commented, was rather peculiar, as the cyclist was approaching him.

De Trafford, in evidence, stated he had had a number of riding accidents, and some years ago he was shot in the stomach and nearly died.

He had always been of a nervous temperament and was worse after the shooting accident.

The reason he was on his wrong side when he struck the cyclist was that he was overtaking a car and the cyclist was hidden by an oncoming car. He did not see the cyclist.

The first he knew of the accident was his windscreen breaking and Hopkins saying: "You have killed a man."

The jury was absent 13 minutes before finding De Trafford guilty of manslaughter.

Crazed Captain Gives 20 Tourists Terrifying Ride

STOCKHOLM.—Twenty tourists returned with shattered nerves from a pleasure cruise between Oscarshamn and Oland island aboard the steamer Jarl. They said that Capt. E. Anderson suddenly went mad. He first ordered the ship full speed ahead, then full speed back, over and over again.

When the first mate tried to persuade him to leave the bridge the captain knocked him down. Passengers joined the crew in subduing the captain. Before being locked in his cabin, however, the skipper assaulted one passenger, nearly strangled a stewardess, and broke loose long enough to toot the SOS signal whistle.

The first mate took the ship to Oscarshamn, where the captain was detained. He pleaded that he had suffered a nervous breakdown and did not know what he was doing.

Worker on Sand Is Drawn Into Big Concrete Mixer

LONDON.—Richard Martindale, 32, was killed here when he was dragged with 18 tons of sand into a huge concrete mixer.

He was supervising the pouring of large quantities of sand into the mixer, when a blockage occurred in the narrow neck of the funnel and checked the flow. To make it flow more easily he jumped on the sand in the mouth of the hopper. It was at this moment that the sand freed itself. As Martindale jumped the sand sucked him down into the mixer.

Brighten Tea Towels



"Lucky you—to be embroidering us on a set of tea towels!" say these cross stitch bluebirds. We're in simplest stitchery and colorful floss—so you're sure of a grand result! Pattern 1983 contains a transfer pattern of 7 motifs averaging 5 by 7 1/4 inches; materials required; illustrations of stitches; color schemes.

Send 15 cents in coins for this pattern to The Sewing Circle, Needlecraft Dept., 82 Eighth Ave., New York, N. Y.



MORE PLEASURE PER PUFF... MORE PUFFS PER PACK IN CAMELS!

By burning 25% slower than the average of the 15 other of the largest-selling brands tested—slower than any of them—CAMELS give smokers the equivalent of

5 EXTRA SMOKES PER PACK... AND COSTLIER TOBACCO



EXPENSIVE TOBACCO—yet so inexpensive to smoke. Recent impartial laboratory tests of 16 of the largest-selling brands show:

1 CAMELS were found to contain MORE TOBACCO BY WEIGHT than the average for the 15 other of the largest-selling brands.

2 CAMELS BURNED SLOWER THAN ANY OTHER BRAND TESTED—25% SLOWER THAN THE AVERAGE TIME OF THE 15 OTHER OF THE LARGEST-SELLING BRANDS! By burning 25% slower, on the average, Camels give smokers the equivalent of 5 EXTRA SMOKES PER PACK!

3 In the same tests, CAMELS HELD THEIR ASH FAR LONGER than the average time for all the other brands.

For cooler, milder smoking... and more of it per pack... smoke America's favorite—long-burning Camels.

CAMEL

PENNY FOR PENNY—CAMELS ARE YOUR BEST CIGARETTE BUY!