

PEOPLE'S

1946  
FIRST EDITION

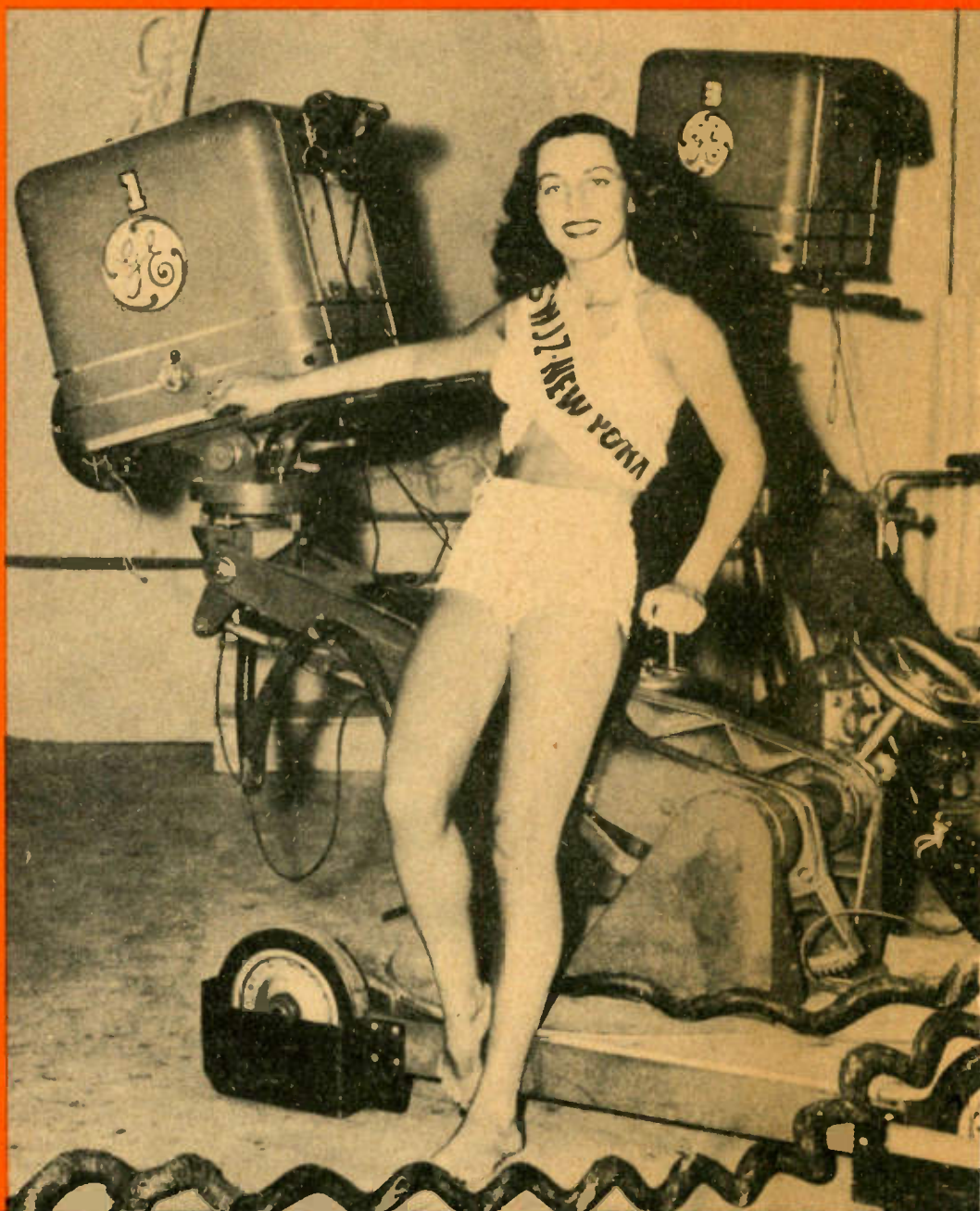
PRICE 25 CENTS

# TELEVISION

## SURVEY

AND SERVICE REPORTS FOR READERS . . . A GUIDE TO WHAT YOU WANT TO KNOW

AN INDEPENDENT PLAIN  
STATEMENT CONCERNING  
TELEVISION FOR ALL  
THE PEOPLE.



Miss Bess Myerson, who was judged "Miss America of 1945," is shown as she posed beside a television camera at WRGB, General Electric's television station while she was Miss WJZ, New York City.

**NOW READY FOR THE HOME**

# Foreword

THE story of Television, as well as the smashing of the atom, must be explained in a non-technical manner, now that World War II has ended, so that the public may know the facts. People generally are not interested in various scientific discoveries except insofar as they concern their daily lives in peace. In wartime certain censorship and security restrictions were essential for the public safety, and some precautions must be continued for our own protection.

The Atom as the "basic power of the universe" and closely associated with the Electron, the "energy of motion," as employed in Television and Radar, will inevitably affect the future of mankind. The public is awaiting a simple explanation of what to expect, now that the "go ahead" signal of reconversion has been given, and post-war "all clear" progress proceeds. We can be devoutly grateful that these advancements were brought to us by the scientific leadership of the Allies and especially by the industrial strength of the United States. Nearly all that has been written or spoken in the past concerning Television is prologue, with an over-abundance of prediction or guesswork. We have entered a new era in which Atomic power plus Electronic speed are about to change our way of life. The curtain is "going up" and a new world appears, brought before our eyes in the home.

Now the story can be told without jeopardizing our safety and serve a constructive purpose as well, by assisting those who are interested in learning only the plain facts about Television from an independent viewpoint. This general survey is intended to explain what the people want to know before deciding to install a television receiver in the home. However, because of rapid changes in various locations approved for television stations, and improvements now taking place, those who wish to receive the latest information or special advice, may make inquiry by using the letter form appearing on the last page. An opinion can be given after furnishing the necessary data. A nominal charge is made to cover in part for the time required and handling.

If the guidance offered herein can be of service to the public in showing the way to some of the thousands and millions of people about to embark on a journey to new vistas through Television, by giving them a plain and understandable explanation, then its purpose will be accomplished. There has been intentionally omitted practically all reference to the functional or mechanics of Television, including studio operation, production of programs, lighting effects, etc., etc. People are primarily interested only in the results obtained and offered to them. There has been an abundance of technical television literature in the past, for those who are interested. Broadcasters must justify their ability to serve the public in order to have and hold the right to use our "free air."

It is hoped that Television, by adding sight to sound will be able to greatly improve upon the broadcasting of Radio, with new types of educational, entertainment and news programs, and prove that civilization continues to progress with each succeeding generation. In this manner it can serve to perpetuate the peace among all people.

—WALTER J. GREENE

# Contents

## FOREWORD BY THE AUTHOR

<i>Part</i>	PAGE
1. TELEVISION TODAY .....	3
2. THE USE OF TELEVISION SETS .....	6
3. TELEVISION PROGRAMS TODAY .....	8
4. THE PUBLIC IS THE FINAL JUDGE .....	10
5. WHAT YOU WILL PAY FOR TELEVISION .....	12
6. TELEVISION RECEPTION NOW .....	16
7. COLOR TELEVISION .....	19
8. FM RADIO AS USED IN TELEVISION BROADCASTING .....	21
READER'S QUIZ REVIEW .....	22

## I

## TELEVISION TODAY

### A Virile Youth Returned From War

The birth of Television is not associated with any particular date. Many "first" claims are made to various phases of the development. Back in the year 1600, William Gilbert conceived of the earth as a great magnet, with magnetic poles and a field of force about it. He laid the foundation for numerous later discoveries over nearly three and one-half centuries. Now, Television has emerged from the experimental and the pioneer development stages, strengthened and greatly improved by advances made during the war. It has been stated by certain inventors and other authorities, that Television in a few years of war development gained about as much as could have been expected in twenty-five years of peacetime advancement.

In plain terms, Television (or, better, radio sight), is the result of radio sound waves (audio) as developed and used in a commercial way for the past quarter century, being combined with sight (video) reproductions on a tube or screen like motion pictures, when synchronized or timed so as to harmonize and appear together. These two factors are the electronic basis or foundation of Television. Today the youth is progressing so rapidly that no one can predict accurately its possible future development. One must realize that radio has developed to its present state since August 20, 1920. On that date the National Association of Broadcasters (N.A.B.) decided that commercial station WWJ Detroit was born, and that station KDKA Pittsburgh was ten and a half weeks younger. Broadcasting then was mostly stutter and static and reception was mostly a matter of "cat's whiskers" and crystals. The development of Electronics during the war deserves further mention here because of its important part in our victory. This was made possible with the aid of the British in the early days, when the United States became the "Arsenal of Democracy." Since then, tremendous improvements have been made. Today, the United States leads the way in progress.

In Television, as in Radar, the picture appearing on the Cathode Ray tube or Kinescope tube, is the very heart of the receiving instrument. The television tube used in the home receiver can be much larger than in some other uses, and furnish a bigger or better picture in a console type set. The pictures now

appear in black and white and by the direct tube views are as large as about twenty inches in size and much larger when projected on a screen or wall. No matter what its size may be, every television tube is made to furnish the same standard picture as regulated by the Federal Communications Commission, which assures only the highest quality reception. In pre-war days, the pictures appearing on the tube were not of the same high standard. As now shown on the tube, and because of the tremendous speed of the electrons moving across the surface of the picture in little black and white dots at the rate of thirty times every second, the result appears to the human eye as one steady picture. This may be difficult to understand, being a newer form of optical illusion. Our motion pictures are produced or shown on the theatre screen at the rate of twenty-four pictures (frames) every second and appear as one continuous picture. They eliminate nearly all of the eye strain and flicker of the early days. In Television, with thirty pictures flashed every second the result compares favorably with the finer illustrations appearing in the better magazines today. Hundreds of thousands of little black and white dots make up both kinds of pictures. If magnified sufficiently these dots can readily be seen, although they are not apparent to the naked eye. Television pictures have greatly improved in the last few years and are easily viewed today, when properly presented.

Now let us take a glance behind the television picture. Just as a matter of general interest, a healthy support is shown for the youth, during the growing years. Some people would like to know who is back of Television in a big way, until it can become self-supporting and established economically on a firm commercial basis. This may require several years, as recognized.

The two industries showing a real parental interest are the movie companies and the radio stations, and both of these enterprises were born about the same time in the last generation. Both have a very close relationship to Television. A large portion of films are being used regularly in television programs and should continue to be used in the future for years to come. There are several obvious reasons of a technical and economic nature for this situation. The other im-

portant interest in television station and studio ownership is the individual radio station, especially those connected with local daily newspaper ownership or control. They evidently realize that Television, with sight plus sound, can furnish "on the spot" news besides many other programs of increased public interest. Furthermore, the Radio networks are anxious to maintain their position and retain their audience following through the use of Television. Some are a bit tardy in formulating plans and obtaining construction locations, although carefully watching and awaiting the results obtained by others who show the way. In addition to the two mentioned outstanding supporting interests in Television, there are some leading department stores who never used radio to any considerable extent showing great interest in Television for advertising and attracting customers mostly through intra-store showing.

Regardless of the large capital investment required, as well as commercial station operating costs, which are not even estimated here, there were over one hundred and twenty television station permits requested of the FCC on V-J Day in August, 1945, and

more than one hundred and fifty applications filed in Washington before the end of the year. These requests came from over fifty of our larger cities located in thirty-one States. There were nine television stations operating in five cities: New York, Chicago, Los Angeles, Philadelphia and Schenectady during the war, on an experimental or commercial basis. Only a few thousand receivers of the pre-war type were functioning throughout the country.

Now, the FCC has issued a list of about one hundred and forty markets approved for either metropolitan or community television stations. This list is furnished as a guide to those residing at or within a radius of about forty miles of these cities. Of great importance is knowing more about receiver installation and where the sets may be expected to perform satisfactorily when installed. The list of cities follows, giving Sales Rank and Population according to the U. S. Census of 1940, as well as the number and type of stations proposed. The Commission may make such changes as deemed desirable from time to time in the public interest, convenience and necessity.

**The complete table of the first 140 market areas, approved for Television Stations, appears on the following page. For those wishing more information concerning the Commission's Rules and Regulations Governing Television Broadcast Stations address—Superintendent of Documents, Government Printing Office, Washington, D. C.**



## II

**THE USE OF TELEVISION SETS****Where Will Receivers Operate Satisfactorily**

After many months and years of experimental study and experience, a group of leading engineers acting as a committee made a final report to the Federal Communications Commission. As a result of this report and numerous conferences, the FCC assigned certain channels for the use of new FM Radio and Television station operation, under Government regulations. Initially thirteen separate channels are provided for Television broadcasting, although not more than seven are presently allotted in any one location. It is estimated that a total of over 400 stations are enabled to operate in the three classes as designated by the FCC proposed television assignments.

1. *Metropolitan stations* are designed to serve a single metropolitan area and surrounding rural area. These are assigned channels in the lower wave length, at least temporarily. 2. *Community stations* are those serving cities which have fewer than two metropolitan outlets; however, there are a few exceptions contemplated. Other channels are assigned to these stations which are considered to be the most practical. 3. *Rural stations*. This is an almost academic classification, since the FCC is not under illusion that people will set up television stations exclusively for rural populations. However, some rural service will be possible by extending coverage of metropolitan stations. There has been reserved for future use, including color television, a large portion of the spectrum in the higher section or wave band (480-920 mc.). However, this is a subject affecting operation of television stations and their transmitter equipment, after further experiments are made.

The public is mostly interested in the present use of Television and that of the early future. This is better understood when one is reminded of the early days of Standard (AM) Radio about a quarter century ago which had all of the growing pains, before reaching the present improved reception, now taken for granted. The next step forward is called FM (frequency modulation) which provides still better reception and after supplementing Standard (AM) Radio should eventually replace the older method of the past generation. Television uses the newer FM method so, when building receivers manufac-

turers should include both methods in the DeLuxe cabinet set models.

At the end of World War II there were only nine commercial television stations in operation and about forty FM radio stations. All of these were assigned new wave lengths which required adjustments in equipment. In the Eastern section of the country there is authorized and established the first Television network, extending from Boston via New York to Washington, including Philadelphia and Schenectady. Accordingly there are television sets now operating in a territory covering an estimated twenty to twenty-five million inhabitants in the section mentioned, who can and do receive regular programs, either broadcast directly or over network "hook-up."

There are two established methods of connecting distant cities for network television reception and a third way has been suggested, although not as yet tested sufficiently for FCC approval. The two methods or links now in use affect all of our larger cities as here briefly described. First, there is the Coaxial cable as installed by the American Telephone and Telegraph Company or Bell System, consisting of many copper wires and able to carry hundreds of long distance telephone calls at the same time, as well as one or more television programs, between distant transmitters. The second approved method is known as the Relay or Link system now in use with towers erected by several companies at various points within wave range. As the television set consists of FM Radio waves for sound, combined with sight or picture signals, they are limited in reception approximately only as far as the distance to the horizon, ordinarily from forty to fifty miles in length. In a few exceptional instances greater distances and areas are covered in the originating broadcast. For example, because of its ideal television transmitter site on Mt. Wilson near Los Angeles at an elevation of over 5,850 feet, the Don Lee Broadcasting System is enabled to cover a radius of many more miles than would ordinarily be possible.

The Relay link or "pick-up" system automatically transmits the signal or electric waves to the next point or tower, and so is able to cover any territory. Over a considerable distance the Relay method is possible

at an estimated construction cost much less than Coaxial cable. However, eliminating entirely the technical and economic sides of network "hook-up", the public is assured of very satisfactory television program reception employing either of the two methods now in use.

The proposed plan of cable coast to coast telecasting is shown in a recent schedule of the A. T. & T. Co. Bell System, which will require a few years to complete. Installation of Coaxial cable between New York and Washington is completed and operating according to the schedule outlined tentatively by the Bell System for nation-wide construction, which is scheduled at upwards of 1500 miles each year to and including 1950 as follows:

### TENTATIVE PROGRAM OF COAXIAL CABLE ROUTES

#### Bell System

#### *Approximate Dates at Which Television Transmission Facilities Might Be Made Available*

1945	New York-Washington (now installed)
1946	New York-Boston (relay link construction) Washington-Charlotte Chicago-Terre Haute-St. Louis Los Angeles-Phoenix
1947	Chicago-Toledo-Cleveland-Buffalo Southern Transcontinental Route (a large part). Will include Char- lotte-Columbia-Atlanta-Birming- ham - Jackson - Dallas - El Paso- Tucson - Phoenix.
1948-1950	Southern Transcontinental (complete) Washington-Pittsburgh-Cleveland St. Louis-Memphis-New Orleans Kansas City-Omaha Des Moines-Minneapolis Atlanta-Jacksonville-Miami Los Angeles-San Francisco

The list does not include additional sections which might be advanced into this period should important television requirements arise which would warrant routes or sections being installed well ahead of telephone requirements.

There is also announced other large scale Relay Systems for Television and FM Radio use. The Western Union Company has been granted permission to construct twenty-two experimental micro-wave relay stations suitable for any communication use. It is stated that this plan when completed nationally, involves an estimated \$62,000,000. expenditure. On the West Coast, between Los Angeles and San Francisco, The International Business Machines Company will install relay stations with terminals in those two cities. Other companies have announced relay link installations either contemplated or in course of construction. They are Raytheon Manufacturing Company, Philco Corporation and General Electric Company. It is fair to assume that both the Relay link and Coaxial cable systems now in successful operation will be extended as deemed practical between larger cities and enable many millions of residents who enjoy electric service in the home to receive Television network broadcasts.

At first the Eastern part of the country now furnishes the primary network coverage, to be followed shortly by the Mid-western and West Coast sections, where individual stations are now broadcasting regularly.

Of great importance to Television reception, it must be emphasized, is the installation of antenna, which involves some added costs. It is far different from standard radio sets as now constructed. Television requires at present specially erected cross bar type antenna to receive both sight and sound (FM) waves, according to tested location and heights. This may be a real problem in larger apartment buildings where there are many antennas erected, but not so important in small apartment buildings or individual homes. As time and experience helps to bring improvements, there should be a reduction in cost as the installations increase, the same as in standard radio during the past decade or more. New and larger apartments may be able to install a central antenna for the "hook-up" of all tenants who so desire, or employ some better method, after further study.

There must be representatives or agents, like that of automobile dealers, who maintain competent service departments in the principal cities. Those ex-soldiers with Radar experience can easily find good employment in Television service work. Fortunately the controls used are not much more difficult to handle than in ordinary radio sets, although special instruction is advisable for at least one in every home where sets are installed.



## III

## TELEVISION PROGRAMS TODAY

### What May Be Expected Tomorrow

The few thousand pre-war Television sets were used primarily to receive experimental programs and operated in most cases until the end of hostilities without special adjustment. Programs are still received by these pioneer sets in several cities, after alterations to meet new channel requirements. With several hundred thousand Television sets installed in the early post-war period, a variety of programs can be regularly received using the improved facilities. These programs will be presented both as "live shows" and film exhibits. For some time this type of combined programs have been given in a few larger cities according to regular schedule.

Television films with Exchange Service are being established along the lines of the motion picture industry. However, the so-called feature or class "A" picture presentation of two hours or more duration, so far cannot be shown advantageously over Television sets in the home for two main reasons. First, these expensive feature pictures frequently require one month or more to produce. Secondly, the eye will not continue to follow on the television tube, as on the large theatre screen, and hold uninterrupted attention without strain. It is possible that this type of enlarged full length picture may find sponsorship later, when the movie industry can produce such pictures more rapidly and when several million Television sets are in operation, nationally. Meantime, class "B" pictures, such as Westerns, shorts and "trailers" advertising the current local showing of feature films, can easily be presented. Other films are being shown over Television, the very same day as taken. Important current events like national political conventions, important personages, etc., which are customarily shown after a week or more as a newsreel short, can be telecast earlier. Then there are the travel pictures and educational films of all kinds, called "visible" education, similar to those shown in schools or universities, for interesting instructive purposes.

In 1945 the State of Virginia passed a whopping one year appropriation of over one million dollars for the use of film education in the public schools. Several sizable film producers are already in the field and hoping for a Television business boom. The biggest so far is the University of Chicago's Encyclo-

poedia Britannica films, covering a wide range of subjects. The March of Time has rounded out its first year of Forum films for schools, and plans eight new titles for the current year. Our Government, Army, Navy and Air Corps, with recruiting pictures for Television must be included. During the lengthy newspaper strike in New York City the Radio and Television were used to give the news as well as show the comics. Such pictures are readily reproduced.

Let us remember that the "live" shows offer by far the greater public appeal. Besides the studio, either with or without audience facilities, Television, unlike Radio, requires about six hours of rehearsal for each hour of production "on the air." Only those who can memorize their parts and perform satisfactorily in pictures are qualified to engage in Television. Much radio talent will be disqualified for the newer art, while others with Broadway stage or Hollywood film background will serve well, in all probability, as performers. This appears to be quite similar to motion pictures in the past. When sound was added to the silent screen many actors had to drop out of the movies, and that was not many years ago,—between the two Wars. New stars were born and more new talent will appear in Television programs.

It is the opinion of the manager of one of the national radio networks that for the man on the Coast to receive the Kentucky Derby and the one in the East to witness, via Television, the Rose Bowl game in California, is still a long way off, possibly starting about the year 1950. However, whatever interests the televiewer, he will no doubt receive on his set, including a variety of sports, fires, parades, or various public events. Set owners will become familiar with the manners and speech of political figures, as well as celebrities, etc., but principally from the local or regional station at first. Presidential addresses to the Nation are possible as planned by President Truman in January 1946, not to mention future election campaigns.

Three networks are prepared to telecast from the Hall of Congress during the current year and have been assigned position for Television cameras in the House of Representatives adjoining the motion pic-

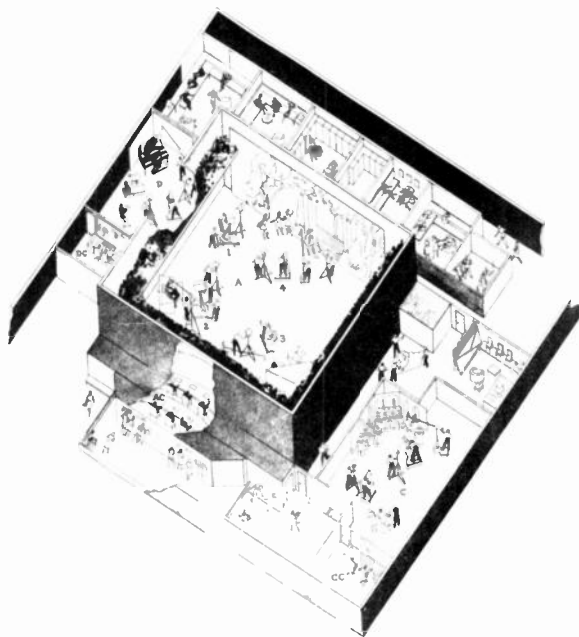
ture cameras in the House Gallery. For those not at present in network cities, able to receive direct on-the-spot broadcasts, one or more manufacturers of Television equipment and receiving sets have devised a way of making films directly from the original broadcast. These can easily be exhibited in other cities either the same or the next day. So, here is a combination of "live" performances and film-repeat showing. Other "live" up-to-the-minute shows on Television are made possible by the use of the "mobile unit," giving an eye witness account not only of various sports events but descriptions of catastrophies, like the Empire State Building crash of a B-25 Army Bomber, with much destruction of life and property, which was telecast on-the-spot, in New York City. The mobile unit is not any more than an auto or small truck carrying at least one camera and certain other equipment necessary to relay both sight and sound signals to the central station, to be telecast from the tower transmitter. It is a larger and much more complete arrangement of the "walkie-talkie" method of radio sound, as well as sight transmission.

Programs of another character, for advertising purposes, have been developed by department stores in this country. These have been arranged largely for intra-store "live" shows. Frequently, models show fashions and also film exhibits of the store's attractive sales offerings. Both of these may be combined for general public telecasting, such as an arrangement

made at the end of 1945 between Wanamaker's in New York City and the Du Mont Television Station WABD, for use of three newly constructed studios in the store, one with an audience capacity of several hundred. Shoppers can thus conveniently witness the programs, as well as the rehearsals, at this so-called "Television City." The Du Mont-Wanamaker Television broadcasts should prove to be advantageous for both parties, to the extent that it attracts more people to the store, where they can learn more about receiving sets for home use, along with other articles offered. Many department stores in the larger cities will be anxious to watch results, as well as various Television equipment manufacturers.

The RCA-Gimbel intra-store Television show in Philadelphia was reported to have been witnessed by over 250,000 persons, proving the intense interest in the new medium as a pulling and selling power. RCA announced plans for a two year nation-wide tour of department stores in the larger cities. This was probably the first demonstration of its kind and should prove to be of national interest wherever exhibited in the future.

Television set owners are assured of regular programs under the FCC requirements. Twenty-eight hours of telecasting per week is the minimum operating schedule. This time can be shared by one or more over the same station, according to the Commission rules at present, in the public interest.



The unique Du Mont-John Wanamaker Television Studios are located in the Wanamaker store at Broadway and Ninth Street, New York City. Studio "A" is equipped with four television cameras. The control room for this studios is marked "AC". Studios "C" and "D" flank the main installation; each with a control room marked "CC" and "DC", respectively. All studios are fully equipped for rehearsals and productions and connected by special wire with the Du Mont Transmitter WABD at 515 Madison Avenue, New York City.

## IV

## THE PUBLIC IS THE FINAL JUDGE

## Television Can "Grow Up" More Quickly Than Radio

The Congress of the United States created the Federal Communications Commission (FCC) as defined in the Communications Act of 1934. The Act remained unchanged except for the Executive orders covering war activities. Under the Act all Radio, FM and Television stations must first make applications to qualify, in order to obtain license or permit to operate. Frequent renewals are required. The Commission, consisting of seven members in all, has limited authority to pass upon what it deems to be in the public interest. The Chairman of the Commission has expressed his opinion that the ether channels belong, not to the networks, stations or the Commission, but to the public. He added the wish that the latter would assume a more active role as arbiters and final judges of radio as a service.

At Rome, Italy, in September 1945, the Pope asked a group of visiting U. S. Radiomen to prevent "abuses." Obviously, many listeners and the FCC agree that some improvement is needed. A more active effort of self regulation appears to be the best answer in Radio and most advisable in the early days of Television. This same course was advocated by the former Chairman of the FCC as being the "more wholesome method" of improving present Radio programs. Now that Television is in a position to avoid some of the errors of Radio, it is apparent that self regulation is essential, as adopted in the motion picture industry over twenty years ago.

In the case of Television, with its movie films entering directly into the home, this self regulation appears to be absolutely requisite. Efforts are being made in Congress to increase the powers of the FCC to include censorship of radio and Television by amending the Act. At present the power to revoke a station's license or decline a renewal (when it appears necessary in the public interest) has kept the radio industry worried. The errors or bad judgment shown in radio productions are not confined to so-called "spot" announcements or transcriptions, which capitalize like a parasite both on the program just finished and annoy the listeners tuning in to hear the next program.

Certain high standard radio stations like WWJ Detroit, which the N.B.A. decided was the oldest station, chalked up another first, by being the first big

network station to ban (1945) all electrical transcriptions. Others have returned to some of the 1929 voluntary regulation by declining to broadcast any "spot" announcements during the evening hours until after midnight. This affects all jingles, etc.

In Television, a new art, wordy announcements, including the urgent need for patent medicines, vitamins, and undignified references to one's personal appearance, have little justification. They must be eliminated from appearing on the screen in the home. Some of these national advertisers are refused the use of certain daily newspapers or periodicals and they have no place in Television at any price. Some radio stations began accepting questionable commercial advertising which was formerly refused. Under the present Communications Act the licensee or station decides as to what may be appropriately used in each broadcast. The advertising agency, with clients spending several millions of dollars annually, is no exception. The sponsor, it is assumed, is a good citizen and has a responsibility to the public if he is to be allowed the use of the ether. If necessary the FCC can be granted added authority; however, self regulation like that exercised over the public performances, including movies and baseball, should first be given a chance. The T.B.A. or Television Broadcasters Association, could easily adopt a self-imposed code somewhat like that of the Motion Picture Producers and Distributors Association, and engage a salaried President or "Czar" with full authority to enforce regulations. There could be such changes or modifications as deemed desirable in the public interest. If the T.B.A. shows its good intentions and wishes to avoid some of the errors of the N.A.B. (National Association of Broadcasters) after a quarter century of Radio, which has a list of nearly a thousand members after completing merger with FM broadcasters, it will adopt an overall code as a guide and without delay.

Either the initial or present Chairman of the FCC is well qualified to pass judgment according to regulations adopted, and act as a final authority for the Association. In the October 1945 issue of American Magazine, appeared an article written by the Chairman of the FCC entitled, "Radio Must Grow Up." Here, in part, is his statement: "I agree and insist

that radio must have just as much freedom of speech as newspapers. But radio and printed advertising are two different things. The eye of the reader can reject an advertisement with a split-second glance. The listener has no such easy choice. I venture to doubt that people want some of the current commercials. Large influential sections of the public are beginning to demand that 'something be done about it.' The industry (must set up) its own system of controlling commercial excesses (and thereby) maintain its full editorial rights and responsibilities. It can be done. There is a saying about 'putting your own house in order before the law does it for you with a rough hand.' It is an old, trite saying, but still true, as many a proud industry, from the railroads to the stock exchanges, knows to its sorrow."

At present the FCC has no direct power to censor radio, but its power to revoke a station's license or decline renewals when it appears necessary in the public interest, serves somewhat as a threat.

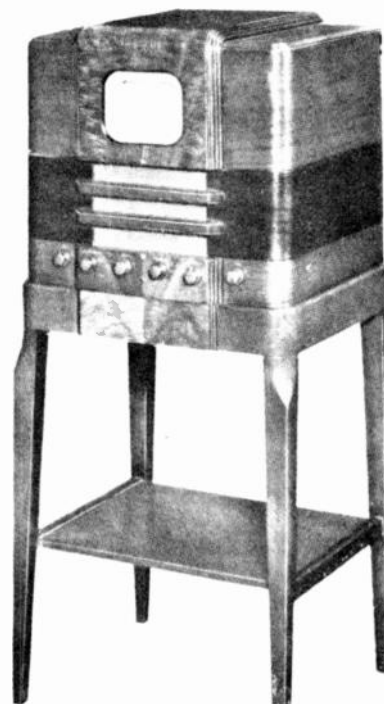
The Chairman of the FCC does not know the answer, he said, suggesting wide public discussion of the problem as here outlined. The trend toward over-commercialization, he said, is today reaching a danger point. Will Television find the answer? The public must be the final judge in any event, and can request that Congress amend the law, in the event that the T.B.A. prefers to avoid its responsibility in the way of self-regulation, like that lack of action as shown by the N.A.B. for many years in the past concerning Radio.



The Viewtone unit is planned to market for \$100. plus antenna installation. It shows an image approximately 5 x 7 inches in size which appears to equal that ordinarily achieved in larger and more expensive receivers, according to the company.

Of course, any Federal regulation would include all forms of broadcasting commercially. Some of those with considerable Television experience realize the importance of carefully presenting shows entering the home. They are advocating that early appropriate action be taken by their Association with its present limited membership, to exercise over-all control. The regulations would include all Television broadcasts, with prohibitions covering crime, sex, vulgarity, obscenity, profanity, costume, dances, religion, locations (bedrooms) and national feelings. Thus, attempt to assure a higher class of program than that of radio. The public about to install Television sets must know that all programs offered to them are fit to enter any home and be received by all members of the family.

The FCC Chairman when speaking of the next 25 years of radio predicted "more exciting and startling developments during the next quarter century. We have not yet evolved a philosophy about this form of communication. The regulatory agency of Government really has no fixed or stable guide posts in the areas of performance of broadcast service." He said, "the N.A.B. I am informed is currently revising its code which in the early days (that is, back in 1929) provided, and I quote, 'commercial announcements, as the term is generally understood, shall not be broadcast between 7 and 11 p.m.' Those who command vast public audiences have especial duties in the days ahead. Let the next 25 years become a true competition in excellence."



The Andrea Model I F-5 Television Sight and Sound set with 5 inch picture tube. At slight extra cost one can get 7 or 9 inch tube images from this receiver by use of Amplifying lens. Cost approximately \$150. without special table, etc.

## V

## WHAT YOU WILL PAY FOR TELEVISION

### Various Receiving Sets Now Being Offered

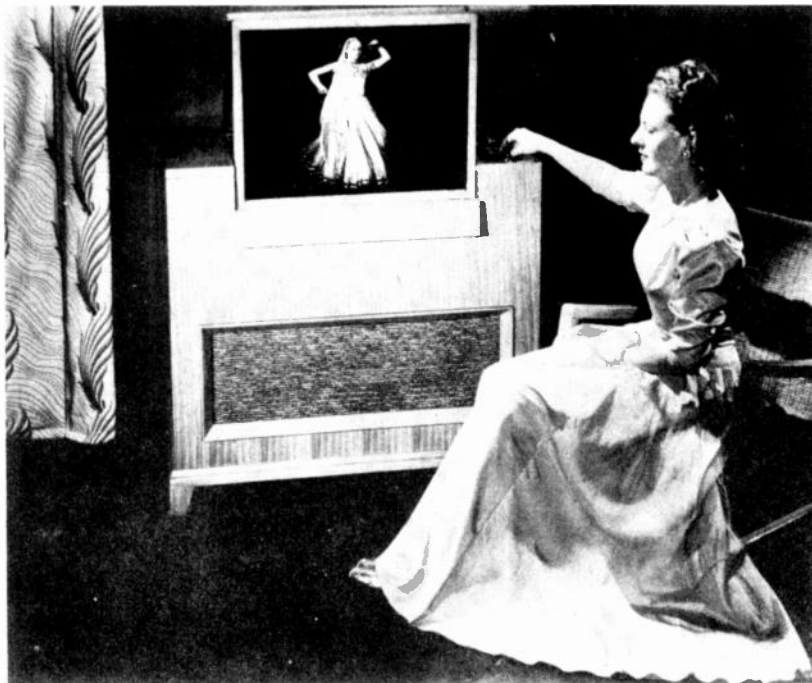
Just before the War, Television receiving sets were in limited production by a few companies and the cost was around \$400 to \$500, several times that of radio sets, for various reasons. The large growth of radio in the United States from an estimated 550,000 sets manufactured in 1923 reached 13,000,000 sets, estimated made in 1941 which were valued at \$460,000,000, or a little over \$35 average per receiver. It was claimed that about 7,000 television receivers were produced and in use before Pearl Harbor was attacked. Today, with the change-over to FM Radio and Television, the costs of receiving sets will doubtless be considerably reduced as mass production increases.

It must be remembered that every Television receiver cabinet houses two separate machines. One for FM Radio (audio) and one for sight (video), both operating on adjoining wave lengths and synchronized or timed so as to perform simultaneously. All of the improvements made during the War in electronics are now obtainable and a large variety of

Television home receivers to fit every purpose can be selected from several responsible manufacturers.

At the end of August, 1945, the War Production Board revoked the order which controlled all electronic equipment and gave the "go ahead" signal to Television. The individual must decide as to his desires and should obtain all data, if possible, from an independent source. This advice may prove to be of considerable value before making final decision.

Pictures from about five to twenty inches in width are obtained directly on the television tube screen and cost from approximately \$100 up to around \$1,000, in the early years of manufacture. As an example, a very small model Television receiver, a table model, which displays an image of slightly under five by seven inches and marked at the minimum price of \$100, was shown in a New York department store by the Viewtone Company, New York City, which promised to go into the production of "hundreds of thousands of sets," as required.



LARGE SCREEN TELEVISION

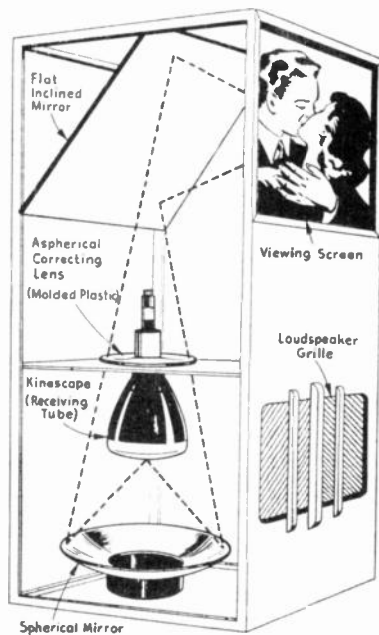
Cased in an attractive cabinet, the new General Electric large-screen television receiver is a reality. The screen measures 16 inches high and 22 inches wide and produces pictures with a brilliance and contrast unattained by earlier models.

Through mass production and time-saving methods used during the War, the cost of manufacturing a small size Cathode-Ray tube was reduced from about \$75 to \$25 each. This is the most expensive single item entering into the manufacture of the two machines of sound and sight which make up every Television receiver.

Other well established large concerns prefer to manufacture the widest range of Television receivers. It is estimated by the Television trade authorities that the cost of good receivers will range from \$150. to \$750. for the de luxe receivers, which include AM and FM radio, as well as Television, in their beautiful cabinets. R.C.A. is one company producing a popular priced Television receiver using the reflected image, as illustrated. Several other models ranging from \$100. to \$400. are included. The R.C.A. Victor Television receiver here shown projects an image 16 x 21 $\frac{2}{3}$  inches, using an optical system. The various features describing how the set works are enumerated by the engineers but better shown by the illustrations. R.C.A. offers a wide range of other receiving sets as shown in photos.

An Assistant Manager to the Westinghouse Home Radio Division called attention to the fact that

*The new RCA Receiver provides bright, high-definition pictures on a built-in screen 21 1/3 x 16 inches, is made practicable by this ingenious optical system, developed prior to the war by the RCA Laboratories. Broken lines indicate the path of light beams from a single picture element on the face of the cathode ray receiving tube to a corresponding point on the screen. A plastic lens is used to bring these light beams to a sharp focus on the screen. The combination of spherical mirror and correcting lens delivers to the screen about six times as much light as could be obtained if a conventional F:2 movie projection lens were used.*



Large-screen television for the home, providing bright, clear, high-definition pictures 16 by 21-2/3 inches in size, was demonstrated by the RCA Victor Division of the Radio Corporation of America. Photo shows an advance development model of RCA Victor's new large-screen television receiver which, it was disclosed, the company expects to market for about \$400.

proper antenna installation is one of the great factors in FM and Television reception. He said, "strict attention to these installations will save the post-war service man a great many headaches, and they should be of little trouble . . . In many locations the set's regularly built-in antenna will provide excellent reception. However, in less favorable places it will be necessary to go to outside dipole antennas and in particularly unfavorable spots, to beam antennas." He continued to state that as more Television sets are in use each antenna installation is the job of a service man. One must understand that these service men are specialists, some who had Radar training with the U. S. Army Signal Corps. The time required and antenna equipment necessary is an additional cost, possibly \$50 to \$60 or more, depending upon the factors involved. The companies manufacturing or distributing television sets must be prepared to install and service them completely. There is also needed definite instruction to those who expect to operate the various controls in order to obtain satisfactory results. This is not quite as simple as with the standard radio. Recently a new electronic device known as the Antennalyzer which solves the problems of location and arrangement to the best advantage was announced at a meeting of the Institute of Engineers. Such aids will prove most useful in Television.

There are some reliable individuals and it is expected that there will be many more with radio repair shops, who will be prepared to offer approved Television service. As the industry progresses, more of this type home receiver service will be available. For example, in New York, in Queens Borough, at Jamaica Avenue and 148th Street, one is likely to see a crowd peering in the window at a Television receiver in operation. At 148-18 Jamaica Avenue, all the Television programs broadcast from the New York City commercial stations may be viewed; offered through the courtesy of the Jamaica Radio and Television Co. Their latest model combines AM Radio with Television furnishing an 8 x 10 inch direct view, the cabinet over-all size is 15 x 17 x 19 inches, table model, costing approximately \$200. for this combined set. It is estimated that an FM and Television receiver would be possible at a slightly higher cost than the new 1946 model of the size mentioned. The company manufactures and installs only completed sets.

For those who wish to build their own Television sets, there is a construction kit prepared for set builders. The parts can be assembled in from 20 to 30

hours, from the step-by-step instructions and the clear, easily read diagrams which guide one against mistakes, according to the manufacturer. Furthermore, a guarantee is furnished with the equipment for check-over at the Television test department and adjustment to deliver the performance of a factory built set, designed for 5 inch screen tube, at Long Island City, New York. The chassis price is about \$80. This may be of interest, especially to young men who are electronically-minded.

Among the numerous other manufacturers of home Television receivers several well established companies were in production before the War. The list includes Du Mont and General Electric Company. As an innovation, Mr. Leonard F. Cramer, Vice-President of the Allen B. Du Mont Laboratories, Inc., demonstrated their latest "teleset" now ready for the national market. This de luxe receiver features images up to 4½ by 6 feet by projecting onto a wall screen, large enough for use at public gatherings or similar group use. The company also features a new 20 inch cathode ray tube which is capable of showing one of the largest direct view images yet devised. The costs vary according to the cabinet used.



DuMont's deluxe model Teleset which provides a large clear picture (18 in. x 13½ in.). In this cabinet, of flame grain mahogany, is the television unit, mechanically controlled, as well as AM, FM, Short wave radios, record player and changer, home recording facilities, and, in some models, album space. DuMont will offer a wide range of ten different models, covering everything from a table model set to deluxe console, as above described.

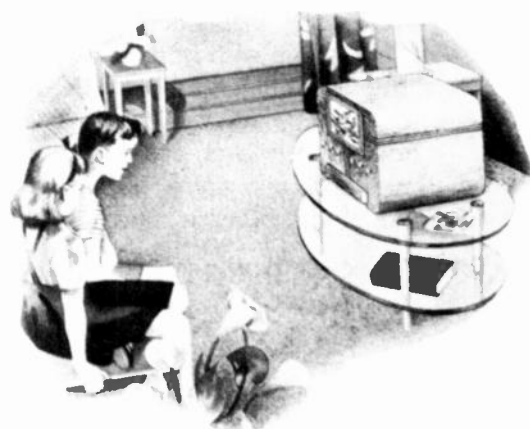
Accordingly, Dr. Allen B. Du Mont states: "A hundred dollars will buy a full hundred dollars worth particularly since such popular price can reflect the money-saving miracle of the mass-production line. . . . All of which boils down to just this thought: Television costs money. Of course if you are satisfied with a small image for individual or, at most, for viewing by two or three persons at a time, sitting a couple of feet away from the tube screen, your Television requirements can be met at a cost of a hundred dollars, plus installation of a suitable antenna. If you want to enjoy Television as a group entertainment, say for six to twelve people sitting eight feet or more from the tube screen, then expect to invest several hundred dollars. Finally, if you want Television on a par with movies, or projected on a screen to be viewed by a roomfull of folks, then don't be stunned by an asking price around a thousand or more dollars."

As stated by Mr. Frank M. Folsom, Executive Vice-President of R.C.A., recently at a meeting in New York, the sets at the start will range from "sight and

sound" table models selling for about \$250 to a large de luxe screen projection receiver priced at about \$450. Size of the television picture, he added, will range from four by five inches to approximately that of a full newspaper page.

It is well to remember that in twenty-five years of radio the United States far exceeded all other countries in both manufacture of receivers and star performers on high class programs. There has been no tax to listeners and no government subsidy for the manufacturers. Television in 1946 will experience its first truly unrestricted period of improved production. It will be interesting to learn whether the present manufacturers will equal or surpass the total number of radio sets made in the third year (1923), according to the records compiled by Radio Retailing.

With the present potential audience of over twenty-five million and uninterrupted production, this goal may be possible. Each new Television set owner will be the best salesman to others, by demonstrating in the home. "Seeing is believing."



R.C.A. offers a wide variety of clear direct picture and screen size televisions up to 22 inches. The above two sets are priced accordingly at popular prices, during the first year of manufacture.



## VI

## TELEVISION RECEPTION TODAY

## The Future Outlook

Radio during the first quarter century of its commercial existence, like motion pictures, has gone through great changes and development in its early period. It is logical to assume from experiments already made that Television will go through various changes as time progresses. The FCC will, "in the public interest," adopt such improvements when they are ready, even if it means transfer to higher new wave bands, which would affect all receiving sets and transmitting equipment. In this connection the purchaser assumes a certain amount of risk.

The present black and white Television is now technically O.K. and reception most satisfactory with the latest improvements made largely during the war period. Probably the greatest equipment improvement is in the camera or television "eye". The new electronic eye was shown at a special performance at Madison Square Garden given for visiting men of the U. S. Navy and did a creditable job. This new tube is more than 100 times as sensitive as any previously used in studios and showed a scene by the light of a single match. In other words, stage shows, which formerly required about ten times the ordinary lighting, can now be shown on television sets at a fraction of the former illumination. The tube, known as the "image orthicon" is only about fifteen inches long and three inches in diameter, of light weight. It can show any image with improved screen brightness under full daylight or subdued lighting, better than high speed film. According to N.B.C. officials, the device "assures Television of the means to furnish a twenty-four hour coverage of events in daylight, twilight or moonlight, either in good or bad weather."

A former "secret" development not intended for peacetime use, was recently explained by the President of R.C.A. at a meeting held in Philadelphia, as a "revolutionary force." Pilotless bombers with Television eyes are now a reality, David Sarnoff declared. He said it rests with man how Television, atomic power and electronics are to be used. "So deft, so all-seeing is the radio-television control, that from launching sites, the operator pressing push buttons can guide the winged missiles as if he were inside its shell. If he sees that the rocket is going to miss the target, he can turn it quickly; he can even make it loop-the-loop." Mr. Sarnoff further stated that Tele-

vision was destined to become a utility in the household and a revolutionary force in world-wide communications. Whenever transport needs vision, Television will supply it; whether on land, sea or in the air, Television will help. It is light and radio combined for the benefit of all peoples.

There was earlier mention made of the two established methods of network "hook-up" or distant television broadcasting, namely, Coaxial Cable and the Relay Link System. A third method has been suggested and deserves mention while it undergoes various tests as announced by the Westinghouse Company in cooperation with the Glenn L. Martin Company. It is called "Stratovision," and based on the principles learned through radar experimentation and development during the wartime years. Initial flight tests of the system known as "Westinghouse Stratovision" are shown in the chart and illustrations. According to the company's vice-president, as soon as necessary equipment is obtained, 14 stratoplanes flying in fixed circular formations at 30,000 feet could transmit four television programs to approximately 78 per cent of the population. If this new idea works, it means a revolution in coast to coast Television reception as well as FM radio. According to the engineer and inventor, "we at Westinghouse feel that technical problems involved in putting this system into operation are capable of solution and easier than those involved in the presently planned systems. We also feel that the economic problem is much more attractive and that it is the only television system yet proposed which will make Television available to millions of listeners in rural districts and small towns."

Let us look ahead at Television as it appears to some of the leaders in the industry. In the broad outlook for the advanced use of Television, part of an address made by Paul Raibourn, Economist, Paramount Pictures, Inc., in charge of Television operation, deserves mention here. He said: "Humanity is indeed fortunate that it has available for the education of all mankind a new instrument, Television, which has the potentiality of bringing the eyes and ears of all together to see and hear the same things at the same instant of time. All men must then think alike and agree in peace. The men who have spent their lives developing television to its present point

should be the same subject of public interest as those who developed the control of atomic energy, for they have probably developed the only means for control in the public interest. Now it is imperative that foreign hates and suspicions must be supplanted by trust and understanding. Television alone holds the promise of being the medium that can bring the people of far places emotionally face to face with each other's manners, customs and problems and thus make them understand that they are all essentially human. The first step in the realization of this design is the establishment of national networks to gather the peaceful spirit of America and then international networks to send it world-wide. The electrical and mechanical means of satisfactorily solving this network problem are a matter of intense study of America's communication and electrical organizations. There are almost daily announcements of new and original ideas. Many more will be presented." Another expression of the social significance of FM and Television was mentioned by Niles Trammell, N.B.C. president, who stated that here "will be their power to enrich the lives of millions of people, and to help them keep pace with the tempo of the new world that is rising from the devastation of war." Mr. Trammell outlined the functions and problems of radio and advertising during the reconstruction period. He said that this nation is entering "the most glorious and fascinating—and at the same time the most challenging—period in the history of American industry. Television will furnish a broad public service of information and entertainment that will be just as new and original and different from anything in the past as was the automobile, the airplane, the motion picture and the radio when they were introduced. Yet none of these important inventions, when first offered to the public had been so thoroughly tested, or had reached a degree of advanced technical development comparable to the television which now is ready for the people of the United States. In view of the time required to develop network interconnections by coaxial cable or radio relay stations, a coast to coast television network will not come into existence immediately. Initially, we contemplate that we shall operate regional networks, which will later be linked together to form a national network." This view was given by the President of N.B.C.

In the year 1916, David Sarnoff, then Assistant Traffic Manager of the Marconi Wireless Telegraph Company of America, made an amazing prophesy as regards radio. Now Brig. General Sarnoff, as President of Radio Corporation of America, and Chairman of the Board of N.B.C., issued a statement entitled "Looking Ahead" from which the following is quoted

in part: "The experimental 'radio music box,' which amazed the world between 1915 and 1920, will serve the eye as well as the ear as the history of radio repeats itself during the next twenty-five years. It would seem reasonable to expect that many millions of television sets will serve American homes within the next ten years. Today more than 50,000,000 broadcast receivers are in American homes. The day will come when all of them will be replaced by television with its programs featuring both sound and sight. Those who purchased a 'radio music box' in the twenties did so in order that they might enjoy concerts, music recitals and sports events, which were advertised as going on in the nearest city. Within the next decade or two, those who acquire television receivers are destined to go sightseeing by radio—not only to the nearest city—but to cities across the continent and across the seas. Television will be a mighty window, through which people in all walks of life, rich and poor alike, will be able to see for themselves not only the small world around us, but the larger world of which we are a part. Let us hope this promised expansion of our physical vision may also broaden our whole outlook of life."

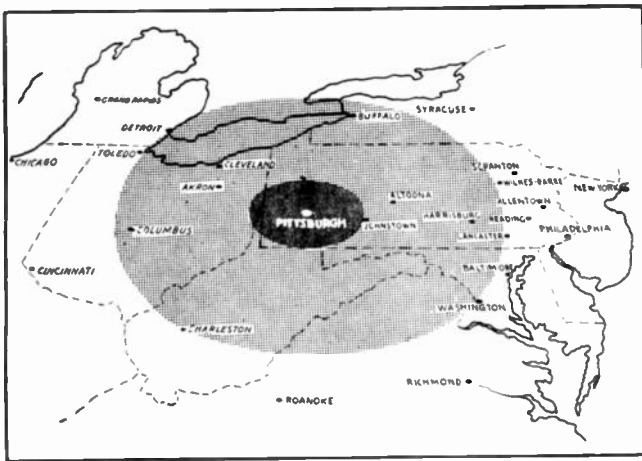
For a detailed prediction of television production and growth in the years 1946 and 1947, Frank M. Folsom, executive vice-president of the R.C.A.-Victor division of the Radio Corporation of America, has made a timely statement. Mr. Folsom predicted a great expansion in the television, radio and phonograph business when reconversion was completed. The company's plants in New Jersey and elsewhere, which turned out a large volume of radio, radar and other electronic devices for the armed forces during the war, increased their working force from 18,000 to 32,000 and expect a post-conversion employment of 23,000. Mr. Folsom said that television was now technically ready to go ahead with production of receiving sets scheduled to begin in April at R.C.A. The industry, as a whole, should sell 300,000 to 400,000 television receivers in 1946 at an average price of about \$300 in areas served by television stations; New York City, Albany, Schenectady, Philadelphia, Washington, Chicago and Los Angeles. In 1947, he forecast, 600,000 to 700,000 sets would be sold at a total retail value of about \$200,000,000. By the end of 1947, he thought 1,000,000 homes would have television receivers and by 1950 from 5,000,000 to 7,000,000, so that country-wide television coverage would be comparable with that of radio. Others have estimated, after making certain tests, that adding sight to sound increases about ten times the effectiveness of broadcasting in both instruction and advertising appeal.

When the FCC issued rules and allocations for television, Mr. J. R. Poppele, President of the Television Broadcasters Association, made this statement: "Television is now ready for the American public. Scores of manufacturers are expected to begin the construction of (1946) television receivers, in all screen sizes and in prices ranging from \$100 upwards. The employment potential in this new industry will be immense and many servicemen returning to civilian life trained in electronic methods and radar will find in television a made-to-order field for their talents.

"New television stations are expected to go on the air late in 1946 with a considerably larger number of stations entering the field during 1947 and 1948. It is to be hoped that by 1950 network television on

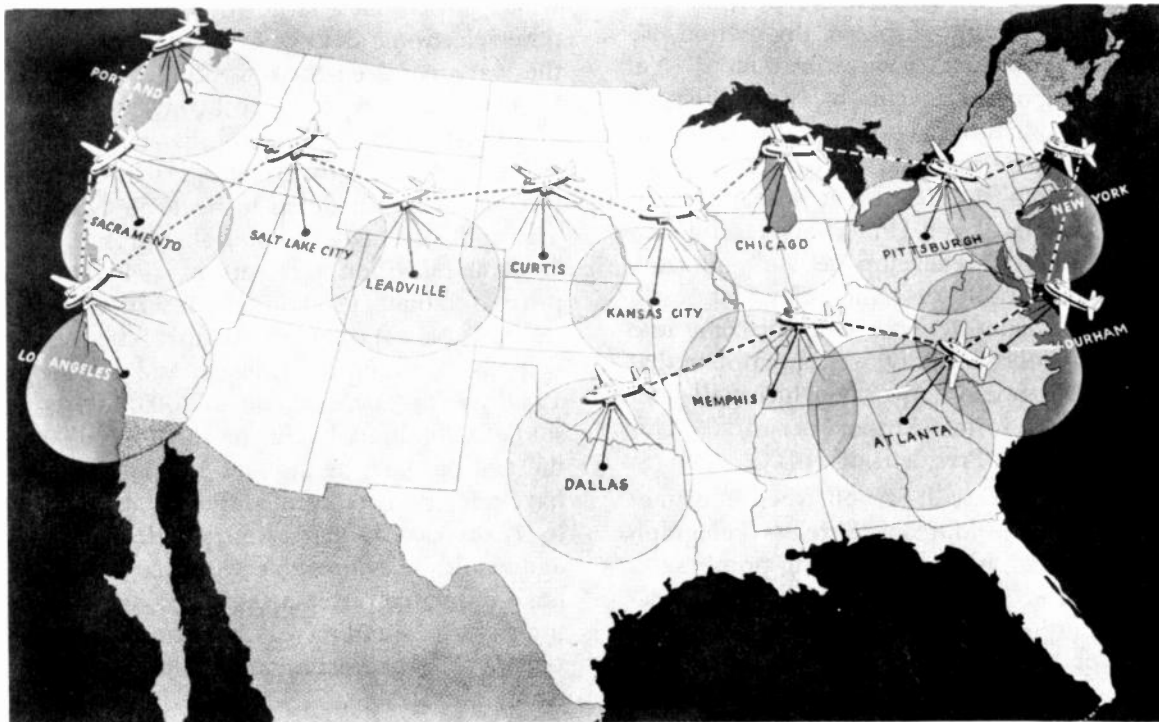
a national basis shall have been achieved. Certainly within a few months network television will be in regular operation between Washington, D. C., Philadelphia, New York City and Schenectady, N. Y." That prediction is now a reality.

It is these four originating stations which cover the first television network and primary market for over twenty-five million people. The future outlook, when over a few hundred more stations obtain permits for construction and install equipment, is destined to affect the home life of us all. Yes, "all that is past is prologue." With television in the future ultimately bringing the world closer together, new international relations toward peace are made possible for the benefit of mankind.



Dark center surrounding Pittsburgh is the average coverage from a ground station. Shaded portion indicates an area of approximately 103,000 square miles which one stratovision plane would serve.

Transmitters mounted in airplanes flying six miles above the earth hold the key to Stratovision—the spectacular new system of nationwide television and FM radio announced by the Westinghouse Electric Corporation. A joint development of Westinghouse and The Glenn L. Martin Company—would be originated in ground studios and "beamed" (solid lines), in much the manner of military radar, to planes for broadcast.



## VII

## COLOR TELEVISION

## A Cause For Some Speculation

Probably the most outstanding new feature contemplated is color television. In the opinion of leaders in both manufacture and broadcasting after years of experimenting, color television is now using an old mechanical device known as the Baird idea of 1928. This can be improved and developed eventually, experts say, into an electronic attachment before very long. The announcement by C.B.S. Vice-President Paul Kesten, that wide-band, full color television is ready to be demonstrated publicly was revealed. General Electric agreed to make the receiver for the Columbia Broadcasting System, which is not a manufacturing concern. It was stated that the first G.E. receiver samples would become available at least for experimental purposes, early in 1946. At the same time studio equipment is to be manufactured by Westinghouse, according to plans. If and when approved by the FCC for the public, this will mean a complete change affecting everyone who owns a receiving set. No one can predict accurately when any commercial transfer to the higher wave band, now reserved by the FCC will take place. However, those who are in the best position to pass judgment have predicted that color television will be approved in about five years. Meantime, the industry and manufacturers of television equipment and receivers for the present standard black and white reception are proceeding without any needless delay. They are ready to begin large scale retail selling and installations in some of the larger cities now.

General David Sarnoff declared that the present systems of mechanically produced color actually represented no advancement on identical experiments tried out and abandoned by the motion picture industry over thirty years ago. The R.C.A. President stated that it was time "the simple facts and truth" of the color situation became known. He remarked that R.C.A. was working toward an all-electronic system of color television with no moving parts and that his engineers estimated the evolution of this system would take until the year 1950. The existing system of color, he mentioned, was neither satisfactory nor practical for home use. This confirms what has been stated by Dr. Du Mont and other leaders in Television equipment development and manufacture, after many years of experience.

Considering that present color television experiments in the higher wave band now require the installation of a fly wheel of about five feet in diameter in order to receive 20 inch pictures in the home, this would seriously hinder the "acceptance of this type of receiver as a piece of furniture," according to Dr. Allen B. Du Mont. The section reserved for television in the higher wave band with greater width, provides for about twice as many channels and assures a nationwide competitive system for many years to come in the United States. At present, about 400 television stations can operate in this country without much station interference. In order to explain the foregoing more clearly, the reader will pardon some detail of a more technical nature. The Commission provided 13 commercial channels for television under 500 megacycles and then the FCC decided that these were insufficient to make possible a truly nation-wide and competitive television system. These 13 channels are each 6 megacycles in width, sufficient for high quality black and white telecasting, according to the standard now appearing. The Commission also made available the space between 480 and 920 megacycles for experimental television, where more space exists in the higher section of the spectrum and where color pictures and improved monochrome pictures can probably be developed through the use of wider channels. Color television requires at least 10 megacycles for the three colors, the same as those now shown in technicolor motion pictures. Each megacycle is 1,000 kilocycles as used in standard radio. It must be stated that receiving sets designed to serve monochrome (black and white) television in the lower channels would not serve polychrome (color) television at all. As a result, the various established manufacturers, some of whom have spent many millions of dollars to perfect present equipment both for station equipment and for the home receiver, have used their best judgment in providing a satisfactory article which will please the public. Most of these companies were doing full time war work in electronics, like radar, and have reconverted to peacetime production quickly, as compared to some other industries in a less favorable position. Other companies have plans to enter the same field.

There are doubtless many potential receiving set purchasers who do not object to discarding or disposing of a monochrome receiver after several years of enjoyment for a color television receiver, which may cost somewhat more, providing that it is practical. The leading manufacturers have been experimenting in color television for some time and will be ready to exhibit their product at the earliest opportunity. They do not wish to be premature in presenting the best possible product to the American public. No one has the basic patents controlling television receivers. Both Du Mont and R.C.A. maintain a high position as to patents issued and pending affecting various parts, like the Cathode Ray tube, which enters into the manufacturing activity. One point should be made clear, and that is progress will not be hampered by the FCC when serving the public interest. It is their duty to pass on all of the technical matters involved, including Radio, FM, Television and Facsimile transmission.

In the opinion of authorities, who are devoting much time to experimentation, both color television and three dimension pictures will take a few more years before they are ready for the public. This opinion was expressed by Dr. C. B. Jolliffe, Vice-President in charge of R.C.A. Laboratories, Princeton, N. J., recognized as an outstanding expert. The statement was made by Dr. Jolliffe at a luncheon meeting of the Radio Executives Club of New York, honoring the Television Industry. On this occasion members were shown some of the latest improvements in various parts, which were made during the war by the R.C.A. Dr. Jolliffe concluded by stating that reaching perfection before giving the public the benefit of enjoying new improvements is not the American way of life. It was not true, he said, in the case of railroads, steamboats, automobiles, airplanes or even in radio, at the start.

## VIII

## FM RADIO AS USED IN TELEVISION

## Better National Educational and Cultural Programs

Frequency Modulation (FM) Radio as distinguished from standard radio, Amplitude Modulation (AM) starts with newly assigned channels for broadcasting in 1946. All new FM receiving sets according to FCC rules must then be constructed to cover the various frequencies as now assigned, from 88 to 108 megacycle band width. There are 100 channels numbered from 201 to 300 inclusive. These numbers are assigned so as to provide for possible expansion of the FM band in the future without disturbing channel numbers of established stations. While this broadcasting is entirely separate from Television audio, the sound waves of both use FM and are radiated in the same general manner. Each broadcast is intended to cover a certain limited or primary market area and the Federal Communication Commission has made the assignments of channels and power accordingly. The television transmitter height determines to a large extent the coverage distance to the horizon which is possible, as was remarked and shown previously. This same factor in FM Radio is controlled largely by the power assigned or permitted by the FCC to be used in any given area. In this manner the distance or coverage of both sight and sound waves are regulated so as to avoid any station interference between cities.

The pre war FM receivers must have converters installed at a small cost, to be enabled to operate on the new high band reception. Manufacturers of FM receivers in the future will be guided accordingly, although a short period of reconversion may justify sets being manufactured to receive both new and old wave broadcasts. Not very many pre-war sets it is estimated now exist and these can be rapidly replaced or remodelled. Considering that these old FM receivers and the new ones cost from \$100 upwards, depending upon the cabinet work and other factors, a substantial saving may be possible in the purchase of television receivers which include FM reception broadcasts separately, if so designed. Anyone living in the five or more centers where television is now available or where early television stations are expected, will do well to obtain further information. It may be possible to secure the very best sound reception offered in the area in addition to television pictures all in one cabinet. Until the full capacity production of such combined receiving sets is reached, it is hardly possible to quote any fair range of prices. Of course, these dual sets will not be made at the popular very low cost in 1946, possibly about \$250 at the start.

Probably the greatest early increased use of FM Radio and Television is planned by the educators of the country who are aware of the possibilities offered. Schools and colleges throughout the country have held meetings in Washington and elsewhere. These gatherings envisioned an eventual system of more than 800 FM broadcasting stations devoted exclusively to educational pursuits. Already 18 states have detailed plans for co-ordinated educational broadcasts, while 11 more states have plans well advanced and still four others have provided a basis upon which to expand. An integrated educational network in each state is the eventual plan.

Television in the classroom in New York City and Chicago Public Schools was assured when the Board of Education of our two largest cities announced comprehensive experimental courses. It was stated that the experiments would be a major educational project during the present school year. The educational value of television should grow up equally with the development of other phases of the art. Leading scientists and other teachers will be invited to take part. In New York City, the Metropolitan Museum of Art, the greatest institution of its kind in the Western Hemisphere, will be reconstructed and expanded during the next few years. Plans include a new Whitney wing, also an auditorium with seats for 1200 persons. Above the auditorium will be a radio broadcasting and television studio through which the Metropolitan hopes to make its art treasures known in every home.

Not only in large cities but our rural districts as well should be benefitted by new FM and Television programs. A former Chairman of the FCC reminded the Commission that there are still wide areas with no service or inadequate service under AM Standard Radio, and that any FM plans should be directed toward elimination of this discrimination against the rural audience. Allowance of more power to these smaller towns and cities with over fifty percent rural listeners, should be classified as such and permitted to lay down a signal within their service area regardless of how many metropolitan areas it may encompass. Thus, FM can easily overcome some of the faults of AM radio in the past. The Chairman of the FCC has asked for legislation authorizing extended federal research in the communication field. He said that lack of funds prevented the exploration of the upper reaches of the spectrum, which was essential.

## TELEVISION QUIZ REVIEW

### A Few Questions and Answers for the Reader

#### Q. IS TELEVISION TODAY SATISFACTORY?

- A. Yes, post-war television with many improvements and FCC Standards assures high grade reception today.

#### Q. WHAT INTERESTS ARE BACKING TELEVISION?

- A. The Radio stations, many connected with newspapers and Motion picture companies are the two largest industries behind television.

#### Q. WHERE WILL RECEIVERS OPERATE NOW?

- A. In January 1946 there were television stations and networks operating from New York via Philadelphia to Washington, D. C., including Schenectady, with market areas covering about twenty-five million people. Besides Chicago and Los Angeles each operating two television stations included about eight million more people in their combined market areas. Over fifty other cities now have plans for television stations.

#### Q. WHAT KIND OF PROGRAMS ARE PRESENTED?

- A. All kinds. Both "live" shows and films, including many forms of good entertainment, educational and cultural, as well as "on the spot" news and sporting events. The "commercials" are unlike radio.

#### Q. WHAT WILL TELEVISION COST?

- A. Post-war television receivers cost from about \$100. to \$1,000. or more, depending upon the owner's choice. Very satisfactory size pictures

can be obtained on some sets costing around \$200. With increased production, average sets can include FM radio for around \$250. or more, depending upon the model selected.

#### Q. WHAT IS THE FUTURE OF TELEVISION?

- A. No one can predict accurately the great future of television. Those who look ahead can see a tremendous force for the good of mankind in television. It will surely influence our daily lives and serve a constructive purpose. Under normal peace time production an estimated one million sets should be in operation by the latter part of 1947, it is anticipated.

#### Q. HOW ABOUT COLOR TELEVISION?

- A. Not until color television is more perfected and practical for home receivers will the larger manufacturing companies recommend this type to the public. The present system of mechanically produced color pictures must first be improved by an all-electronic system which the leading authorities predict will take until 1950 or longer. Meanwhile, progressive Americans will demand the present black and white high class television for the years immediately ahead.

#### Q. WILL FM RADIO REPLACE THE PRESENT (AM) STANDARD RADIO?

- A. Yes. It is expected that eventually the improved FM radio, as used in television, will replace the present standard radio. The Federal Communications Commission has granted hundreds of FM station permits and is prepared to issue many more licenses in the public interest.

(Readers wishing special information may use the inquiry form which follows.)





### **Suggestions How To Make Your Inquiry Complete**

- We ask you to take special care in making your inquiry. Be sure that full particulars are given as to your requirements or preferences. State the approximate size of tube screen you are considering. It is advisable that you indicate the approximate size of living room, or location where Television set may be installed. Give estimated audience viewing desired and seating capacity for groups.
  
- If you would like some personal assistance as to type of antenna, kindly state the number of stories to the roof, also that of adjoining structures. Advice and recommendations will be furnished, if possible.
  
- The cost of this inquiry is limited, and if any special engineer or other inspection reports are required, you will be so informed.
  
- If you would like to know about possible Television reception at some distance from the station transmitter, please indicate the elevation of both locations, approximately.
  
- Should you like to know more about the rapidly changing conditions as to station applications or construction permits in any particular location kindly mention the city or market.
  
- Please sign or print name and address in full before mailing with your remittance. Indicate on reverse side in which one of the three ways, enclosure is made. All letters containing cash should be registered.