Television in Review Teleview Programming

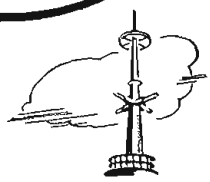
Editorial Education

Spring *1944*

In TELEVISION

FIRST THINGS FIRST

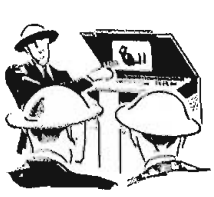
1929—TELEVISION GETS ITS ELECTRONIC "EYES." Not until television rid itself of mechanical devices and became all-electronic was its success assured. The development of electronic "eyes," the Iconoscope and Kinescope, by Dr. V. K. Zworykin of RCA laboratories, gave television a clear track.



1936—OUTDOOR TELEVISION demonstrated by RCA at Camden, N. J., on April 24, 1936, with local firemen participating. Radio manufacturers saw television demonstrated by RCA July 7, 1936, with radio artists and films used to entertain.

1941—HOME RECEIVERS with screens 13½" x 18" shown. Television pictures 15 x 20 feet projected on theater screen by RCA electron "gun." Commercial operation began July 1, 1941, over WNBT, New York station of NBC.

1938-40—BROADWAY PLAY...SPORTS EVENTS TELEVISED. Hockey, football, baseball, the World's Fair, the circus, a Broadway play and a presidential convention were some of the things RCA helped bring under television's gaze.



1942-43—AMERICA AT WAR. NBC television enlisted for civilian defense instruction. Television given a stronger "eye" by the RCA Orthicon Camera. RCA developments now await only the end of the war to become fully effective in television's onward march.

IT is a matter of record that RCA services made possible these and other historic milestones of progress. Their importance in shaping the whole course of television suggests how great will be the role of RCA as television expands in the postwar world. It will include the manufacture of transmitters, receivers for homes and theaters, tubes, studio and associated equipment. And because television's growth will require a smooth-working combination of science and showmanship, RCA will be working closely with NBC and other television broadcasters to assure that the public gets the best service available.

RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION · CAMDEN, N. J.

LEADS THE WAY . . *In Radio . . Television . . Tubes . . Phonographs . . Records . . Electronics*

Television

Editor: RICHARD HUBBELL

Associate Editors: T. R. KENNEDY, Jr., J. RAYMOND HUTCHINSON

Television is now entering its most important period - the final planning stage. It is in this period that there must be full cooperation among the many varied interests.

Broadcasters, advertisers, engineers, film companies, show people, unions, educators, artists, manufacturers and the Government must all work together in solving the many problems still facing this new industry.

We will do our part through complete, unbiased, authoritative editorial discussion of all significant developments in television and its allied fields.

Frederick A. Kugel

PUBLISHER

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REPORT ON CBS POST-WAR TELEVISION POLICY

THE impact of CBS' recent announcement on television is still reverberating throughout the entire television and radio industry. In view of the possible effects that this statement might have on the future of television and because of the strong reaction it has produced, TELEVISION will attempt to present the significant facts of the case as well as the opinions of the major interests in sight and sound broadcasting, from which definite conclusions will be drawn. The crux of CBS' policy is the use of the higher frequencies (from 200 megacycles up). CBS claims that the knowledge and utilization of these high frequencies is almost at the tips of the fingers of the video engineers, and that the use of the higher frequencies would insure much finer pictures and color television. A good part of the rest of the television industry contends that the use of the higher frequencies for television is still largely in the theoretical stage.

CBS' Case

They claim: Pre-war sets can never receive pictures broadcast on higher frequencies and wider channels.

"The public has invested perhaps $2,000,000 to date in television sets. But by the time the first million sets are sold, the public investment in receivers alone will probably top $200,000,000 — a hundred times as great as it is now. Manufacturers and broadcasters have probably invested $20,000,000. But before the first 100 broadcasters have completed their first two years of television broadcasting, their investment will probably represent another $50,000,000."

"Thus the total investment to date in television on the old standards is trivial compared with the billions of dollars which must go into television in the next ten years, if it achieves its full potential."

"Delay, itself, may prove decisive. If the lag lengthens, if sets are sold for four or five years on pre-war standards — a later change to higher standards might go by default, for fear of jeopardizing too large a public investment. And American homes might be indefinitely deprived of brilliant, detailed television pictures."

"If on the other hand the interval is shortened to the utmost by a concert of purpose and effort between Government and industry — if pictures on the new and higher standards can be demonstrated in a year — if receiving sets can roll off the line in another year — then the public should be told and told fully."

"Under such a plan, present broadcasters could continue broadcasting on the low standards until the high standards are ready. They could close down the old transmitters when they open up the new. Families which can afford receiving sets which may be useless in a year or two could be encouraged to buy, with full knowledge of the probable impending change. To facilitate an early FCC decision in favor of the higher frequencies required for this improved television, the CBS report urges immediate concentration of effort by all television laboratories to complete experiments on which "CBS knows that 80%, perhaps 90% has already been done—and has been tested in the crucible of war."

"This much seems sure — a single year of concentrated effort in a dozen engineering laboratories should prove

the case for better television pictures, or else disprove it. Hundreds of American engineers have done ten times as much, in two taut years of war, as remains to be done in one full year of peace. They have done the impossible. This is not the impossible. This is the mathematically probable."

Mr. James L. Fly, Chairman of the FCC, entered the CBS' side of the controversy on May 2nd, when he attacked a NEW YORK TIMES editorial, which came out in favor of present standards. He announced his opposition to any move to freeze television standards at their present level. He took to task set manufacturers for hoping to sell a lot of stuff that would not give the best possible service! Mr. Fly declared that it was unwise at this point to close the door on the creation of immediate post-war video standards if injury to the great number of persons was to be avoided.

The Case Against CBS

The television and radio industry has risen almost as a body against CBS' post-war policy. **The Television Broadcasters Association** issued the following release:

"The public statement on television, issued on April 27 by the Columbia Broadcasting System is contrary to the carefully considered recommendations of engineers of the industry comprising the television panel of the Radio Technical Planning Board."

"The CBS statement deals in the realm of speculation and is not based on experience or sound technical principles. It is a reflection upon the competence and integrity of television engineers who have carefully considered all these matters. It is the considered opinion of the Television Broadcasters' Association, Inc., that the present standards, based on sound engineering judgment, provide an excellent basis for commercial television in the post-war era."

"The present television receivers in the hands of the public, manufactured five years ago, do not take full advantage of the quality of the picture which the present standards provide. The public will be agreeably surprised at the picture quality which the post-war receivers will provide, based on present transmission standards.

"The present-day television system is capable of reproducing pictures of equivalent or even better quality than 16 mm home movies. Television receivers will be available in the post-war period to fully utilize the potential quality of the present transmission system."

Allen B. DuMont in advancing his personal views stated:

"The manufacturing companies supporting the present standards are all engaged in essential war work and are in a position to know of improvements prompted by military demands, while CBS is not engaged in such manufacture."

Dr. Alfred N. Goldsmith, in a recent speech before the Radio Executive Club, stated:

"It has been suggested that television might go to higher frequencies. But grave problems would then at once face this young and promising field of television broadcasting, and these problems might well take years to solve."

E. K. Jett, newest member of the FCC, has stated:

"If materials and manpower become available at a reasonably early date for the production of television transmitters and receivers, the wisest course of action would be to proceed under the existing commercial standards of the commission. In other words, there should be no delay in

promoting the full commercialization of television beyond the time required to manufacture equipment in conformity with existing frequency allocations and engineering standards of the Commission.

"I do not mean to imply that we should cease to consider proposals to effect worth-while changes. Indeed, there may be time to consider and adopt some desirable changes; for example, the RTPB may be able to show that certain changes can be made without delaying the manufacture and sale of equipment. It would be very unfortunate, however, if the public is deprived of television service simply because there may be a theoretical basis for certain worthwhile improvements. *Obviously, any theoretical proposal could not be accepted unless it can be backed up by practical tests and demonstrations in the field. Therefore, proposals involving extensive research and development should not be allowed to interfere with progress under the existing system.*"

Conclusions

Before any intelligent, impartial decision can be reached, the following questions must be answered:

1. What progress have engineers made in the higher frequencies?

2. Is it worth keeping television from the public for possibly five years, so that a receiver purchased after the war will not become obsolete five years later?

3. Both the Government and industry are counting heavily on television to absorb a large number of veterans after the war. How will this be possible if television is delayed for even one year after the peace?

In trying to answer the first question we find that by far the majority of video engineers, while agreeing with CBS as to the **possibilities** of use of the higher frequencies, favor adopting present standards. However, it does seem inevitable that **some day** the higher frequencies will be developed sufficiently so as to provide a superior television. But it is the **"some day"** factor which ties this answer to the last two questions. For here the **time element is the all-important point.** And it is here that we take issue with CBS. In their announcement of policy CBS states "If pictures on the new and higher standards can be demonstrated in a year — if receiving sets can roll off the line in another year — then the public should be told and told fully." ***IT IS OUR UNRESERVED OPINION THAT IF THIS THREAT OF OBSOLESCENCE IN SO SHORT A TIME HANGS OVER THE PUBLIC AND THE TELEVISION INDUSTRY, THERE WILL BE NO TELEVISION DURING SUCH PEROD.*** Only an exceedingly small part of the public would buy sets with the knowledge that their sets might become obsolete in six months or even two years. This negligible buying power could not possibly allow manufacturers to get into production. The very future of television would hang in the balance. There would be no mass employment in this much "counted-on industry."

Paul Hoffman, President of Studebaker and Chairman of the Board of Trustees of the Committee for Economic Development, told the Sales Executive Club on March 14th:

"Our postwar sales executives must make use of new instrumentalities if they are to create the volume of consumer purchases necessary to support our greatly expanded production facilities. The most far-reaching

and comprehensive new instrumentality for the presentation of new ideas is now on the threshold — television."

"In 1940, 46,000,000 people were gainfully employed. If the intelligent advertising and sales use of a nationwide television system increases the demand for goods and services by only 1%, the effective result will be to create, in terms of 1940 employment standards, 460,000 new jobs. I would not be the one to say that a so far-reaching development as television could not be responsible, within a decade after its full commercialization, for increasing the demand for goods and services by as much as 10%. That would mean potentially 4,600,000 new jobs that have been created as a result of the increased purchasing of goods and services brought about by television."

The stimulation of production and buying power predicted for television would not be there. This delay could conceivably affect our entire economic postwar picture.

Recommendations

TELEVISION therefore recommends that we first wait for the final report of the RTPB which is the only group qualified to recommend television action from an engineering viewpoint. If in their final decision the RTPB recommends present standards we suggest that the FCC seriously consider the idea of freezing these standards for a period of at least five years. At the end of this period, engineers will probably have mastered the higher frequencies for television. This might mean the probable scrapping of existing equipment at that time, although there is the possibility of a gradual transition. However, both the public and the industry will be forewarned on this. And TELEVISION believes that the public will buy receivers in spite of these restrictions, especially when one considers that for approximately $200.00, a person may enjoy five years of television, and of a quality at least comparable to the best in home movies. This five year period will enable manufacturers to swing into full production and take their place in the economic structure of this country. And if and when a switch over to higher frequencies takes place after five years, the public will certainly benefit by it. It will mean new and increased production on the part of the manufacturers, which means increased employment, and will insure color and finer pictures for the purchasers of new receivers. The public will by no means be swindled because the $200.00 they spent for a receiver gave them only five or less years of entertainment. And there can be no question of the quality of the entertainment they will receive, for the industry knows that to sell receivers there must be good programs.

In this suggested course of action the public and industry have everything to gain and nothing to lose. The freezing of standards will aid in the experimentation and development of television. The Government need have no fears about the industry opposing new standards in five years because of heavy investments in equipment. The Government and public have only to turn to FM and the rapid strides it has made in face of the eventual scrapping of a large percentage of present broadcasting equipment and the obsolescence of millions of radio sets to realize that the scrapping of obsolete equipment in favor of new and better methods is only a step forward and a challenge to industry to make new profits through new business.

F.A.K.

Television in review

THE first significant development of 1944 was the preliminary report of the Radio Technical Planning Board (RTPB) at the winter convention of the I.R.E. It was significant in that it gave evidence that the RTPB had begun its deliberations. Back in the fall of 1942, FCC Chairman Fly had suggested to industry that it establish a radio technical planning group to study the effect of wartime technical progress upon radio services and recommend to the FCC practical standards and frequency allocations for existing and contemplated new services. The RTPB was the result, and it really got under way early in 1944.

Television Panel

In all, thirteen panels were established within the board, each comprising engineers of the industry who are specialists in the subjects assigned for study to the respective Panels. Panel Six was assigned the technical problems of television, and Philco's Research Director, David Smith, was named chairman. This Television Panel in turn established six Committees, consisting of leading television engineers of the United States, to study the problems and recommend solutions to the particular technical phases of television, assigned to the respective Committees.

Unanimous Agreement

For the past six months these television engineers have been considering all technical matters pertaining to television, and they have made their recommendations to the main Television Panel. On April 14, 1944 after thorough consideration of the recommendations, the Panel voted UNANIMOUSLY to accept the proposal for visual transmission, including a frequency allocation plan for 26 television channels, covering the band o frequencies from 50 to 246 megacycles.

(*See "The RTPB Television Panel Report"*)

A. T. and T. Plans

Another important development was the announcement of the American Telephone & Telegraph Company of their plans to spend one hundred million dollars or more on television development. The President of the A. T. & T., Walter Gifford, stated:

"We plan to try out shortwave radio relay systems for long distance telephone service and for television. We know the coaxial cable worked very satisfactorily, but we do not know whether or not radio relay systems will work better or prove more economical. *We are in the communications business and we intend to use the best and most economical means, whether wire or radio.*"

T.B.A.

The third important event was the organization of the Television Broadcasters Association on January 17t For the first time, this new industry had a cooperative group to serve a its Board of Trade. (See "Television Broadcasters Association".'

CBSalvo

The CBS announcement of postwar policy on April 27th was the fourth major event. (See "Report on CBS Post-War Television Policy".)

Other events which indicated trends in their respective fields were:

Advertising

Advertising agencies are stepping up their activities in television. Many new appointments have been made in setting up video departments. Agencies are now actively using the facilities of Du Mont and General Electric to get some idea of the problems with which they will be confronted in producing television shows.

Stations

There are now close to fifty applications for commercial licenses and approximately twenty for experimental purposes. These seventy-odd applications have been filed by approximately sixteen broadcasting companies, six manufacturers of radio and electronic equipment, two department stores, three film companies, four publishers and seven miscellaneous companies. There are many others filed but not yet announced by the FCC.

MARK WOODS, president of the Blue Network, stated:

"While we own no television stations today, I am convinced that television will prove to be the greatest medium ever developed for entertainment and advertising. The Blue Network is planning to file for its own stations in New York, Washington, Chicago and Los Angeles. We are encouraging Blue affiliates to file, as soon as possible, for the construction of both FM and television transmitters. Just as soon as material becomes available, both the Blue and many of its affiliates will be prepared to move into both these fields."

POSTWAR STANDARDS were commented upon by NBC President Niles Trammell on May 8th, when he stated:

"It is unfortunate that statements have been made in the press recently which would tend to confuse the public as well as the broadcaster on the future of television. Apparent confusion has developed within the past week as to what technical standards and frequency allocation are best for television and when television should be launched as a service to the American public."—(See "Report on CBS Post-War Television Policy".)

Film Industry

The Independent Theatre Owners Association, a theatre booking combine of about one hundred fifteen movie houses, has taken a stand against television and has released this formal protest:

"Be is resolved that the Independent Theatre Owners Assn. is unalterably opposed to producers or distributors of motion pictures allowing any of their product to be used for television production in any way shape or manner, inasmuch as such reproduction would be in direct opposition to motion picture theatres with no admission fee being charged, and thus would consist of unfair competition."

In an accompanying resolution, it was decided to send a copy of the decision to all "such producers and distributors of motion pictures."

NBC's NILES TRAMELL also stated recently that if Hollywood film companies would not make moving pictures for television, then the broadcasters would make them themselves.

Plans have already been made for the installation of large screen television at the ROXY and PARAMOUNT theatres in New York.

RKO has two television men surveying the field and practically all the other companies are actively investigating television.

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as the FCC sees it

by JAMES LAWRENCE FLY,

Chairman Federal Communications Commission

(The Editors of TELEVISION asked Mr. Fly for a statement on when the Radio Technical Planning Board might be expected to submit its recommendations to the FCC. How soon after that the Commission might set postwar television standards and frequency allocations? Would television broadcasters and manufacturers begin to set up the postwar industry before standards and allocations were fixed? Also, what is to happen in large metropolitan areas where many television operators are seeking licenses — will companies share time on the same channels and possibly share the same transmitters for the next few years? Mr. Fly's answers are printed below.)

I REGRET that I am unable to furnish replies to many of the questions you raised. Nor do I know of any one man who could answer them with any degree of assurance at the present time.

I understand that the Television Panel of the Radio Technical Planning Board is holding frequent sessions in an effort to make its recommendations as promptly as possible on television allocations, standards and other matters. Mr. D. B. Smith of Philco, who is Chairman of that Panel, could supply you with more specific information on its activities. (Editor's Note: RTPB declined any *specific* information about its Television Panel's report.)

At the same time our own Commission engineers are making continuing studies on post-war frequency allocations for all the radio services. The overall job is an extremely complex and difficult one.

While the final determination of what areas of the spectrum television will occupy and the standards which will govern its development rests with the Commission, we are extremely gratified that the best technical minds in the industry —represented on the Radio Technical Planning Board —are now studying these problems. No time limit has been set for the Board to report its final recommendations to the Commission.

In the end the Commission will have to decide the best place for television in the interests of the greatest number of people. But in arriving at its decision, you may be sure, it will make use of the best advice it can obtain.

Until these studies and recommendations by the industry are presented

(*Continued on page* 48)

DIRECTORS OF T.B.A.

Seated, left to right, Paul Raibourn, Television Productions, Inc. (Paramount); Robert L. Gibson, General Electric; Allen B. Du Mont, Du Mont Labs., Inc.; F. J. Bingley, Philco Radio & Television Corp. Standing, left to right, Will Baltin, Secretary-Treasurer of T.B.A.; E. A. Hayes, Hughes Productions; J. R. Poppele, WOR, and Worthington Miner, CBS Television. Directors not shown are O. B. Hanson, National Broadcasting Co.; Curtis W. Mason, Earle C. Anthony, Inc., and Lewis Allen Weiss, Don Lee Broadcasting Co.

Television Broadcasters' Association

THE pitfalls, indecisions and wild adventures that characterized radio's birth will not be duplicated in television. Unity of action and spirit and the determination to bring onto the American scene an instrument of high quality that will provide for millions upon millions a service of entertainment, education and information unequaled in the history of mankind, is the dominating factor behind the Television Broadcasters Association, Inc., organized last January.

The birth of the Association has, in itself, become one of the most significant developments in television this year. For the first time organizations, whose scientific experts have labored for years to perfect television, are banded together for the purpose of launching television on a nation-wide scale. TBA members include: Philco, NBC, General Electric, Howard Hughes Productions of Hollywood, CBS, Don Lee, Allen B. Du Mont Laboratories, Earle C. Anthony, Inc. of Los Angeles, Television Productions Inc. of Hollywood,

(*Continued on page* 48)

Television—a new dimension in department store advertising

by I. A. HIRSCHMANN

Vice President of Bloomingdale's and Metropolitan Television, Inc., Founder and President of the New Friends of Music, Member of the Board of Higher Education of New York City. Recently returned from Ankara, where he served as special representative of the War Refugee Board attached to the United States Embassy in Turkey.

THE retail merchant looking for vital, dramatic material for television shows will not have to go far afield. The ideal program material for his purpose will be right there in his store.

At Bloomingdale's we have had some experience with television, dating back several years. In the Spring of 1939 we presented, for the first time in any store, a millinery fashion show telecast from an improvised studio on the 6th floor to our fashion departments on the 3rd floor. Equipment at that time was crude, and the models had to stand stiffly, gripping an arm support to keep them in camera range. The brilliant Kleig lights necessary for illumination caused beads of perspiration and cast such deep shadows that our charming models looked like post-pneumonia cases. Yet, the response was startling. Crowds were packed around the receiver. For the first time, people were seeing on one floor a fashion show that was taking place three stories above.

Store Television Popular

Some time later we participated in fashion shows in dramatic form, and also in a highly-successful aviation program over WNBT. But all that has been done in television so far seems but a few faltering steps. We have not utilized the rich imagination and endless ingenuity of our window display department, which have made New York store windows a theatre which plays to huge audiences every day.

We have also installed television receivers in our windows at various times so that passers-by could watch the opening of the World's Fair, national political conventions, and other news events of wide interest. I have reason to believe that many people enjoyed these thoroughly, and felt grateful to Bloomingdale's for making them available. All, perhaps, except the traffic policeman out in the street. He couldn't see the show from his post of duty.

Not long ago, when a pressure cooker was introduced at Bloomingdale's, a demonstrator drew crowds all day, month after month. To people who knew from experience that a pot roast required hours of cooking, there seemed to be endless fascination in watching a device which did the job in thirty minutes.

After the war, new electronic cooking equipment will make the pressure cooker look as primitive as a fireplace with a kettle on the hob. Complete re-education in cooking and other household tasks will be required in order to utilize new equipment, and television will be the medium through which it will be done most effectively.

Sitting comfortably at home, and not having to push her way through a crowd to watch a demonstrator, a woman can see the wonderfully appealing drama of a more leisurely life for her, unfolding before her eyes.

Thinking of our audience only in terms of women, however, is an error. Demonstrations of ingenious labor-saving devices always attracted a good many men, and they were usually the first customers. We must remember those men, and gratefully too, and not angle our shows exclusively to women.

All of the standard, staple means of showing merchandise, such as model room exhibits and fashion shows, can come to life when adapted to television. In the future, I hope that no one will unveil a model room complete to the last flower arrangement. A television series should start the day the decorator starts planning a room, and should follow through the painting of the walls, the selection of drapery fabrics, and the placing of the furniture. And the decorator should explain every step of the way her reasons for her selection.

At fashion shows, there will be no excuse for a commentator growing lyrical over the right clothes to wear at the opening of the opera, the races, or a beach club, while models strut down a runway. Let the fashion show be staged in its right locale, so that people will see clothes against the backgrounds where they will be worn.

Experimentation Needed

Retailers and manufacturers who expect to sit around and wait for this

(*Continued on page* 38)

ACTION SHOT OF EARLY TELEVISION EXPERIMENT IN BLOOMINGDALE'S DEPARTMENT STORE. Fashion shows picked up from sixth floor studio were seen on wired receivers on third floor. Because of lack of sensitivity of early cameras, depth of focus obtainable was very restricted. This picture shows how models were forced to fit themselves into rigid arm and back supports in order to stay in focus. Note also they are standing on a sliding platform arrangement, which was used to push them before the camera and then pull them away. Camera was fixed in position. Post-war television, of course, will have none of these restrictions.

Building a television station

by JAMES D. McLEAN

Mr. McLean, Commercial Engineer, with the Transmitting Division, Electronics Department, General Electric Company, tells how to file for a television station and gives approximate cost of building a transmitter.

IN the writing of this article I have assumed that the reader has the conviction that television will grow into a profitable industry for those with the vision and courage to pioneer in its development. Rather than attempt to cover the reasons for this growth of a new industry postwar, I have assumed that the reader has the desire to own a television station, and the money or credit to finance its construction. On this basis, I have outlined steps which should be taken to get into this new industry, what equipment will be needed, and approximately how much it will cost, based on prewar prices.

How to File for a Station License

To begin, the prospective television station owner should retain the services of a competent consulting engineer or firm of consulting engineers and legal counsel who can assist him in the preparation of his license application which must be filed with the Federal Communications Commission. This technical and legal guidance will help him to determine the answers to a number of the questions which are included in the F.C.C. Form 330, questions which should be answered as completely as possible when the application is filed. These questions include the location and extent of studio facilities, the location of the transmitter site and antenna supporting structure, the area to be covered, the transmitter powers and frequencies and other similar details including the choice of equipment to be installed.

Technical information on television studio and transmitting apparatus can be obtained from the manufacturers of such equipment so that the detailed descriptions required in the F.C.C. application form may be completed. For example, General Electric has filed complete technical descriptions of several types of television equipment with the F.C.C. so that applications for construction permits may be made as easily as possible.

By visiting as many as possible of the television stations which are active today the prospective television broadcaster can determine the types of studio, transmitter, portable pick-up and relay equipment which he will require. Such visits can also provide a background of knowledge of the space requirements for television studios and the personnel necessary for proper operation of the facilities.

Upon completion, the application should be filed with the F.C.C. in Washington where it will be placed in the pending file. It will remain there until the time when the Commission can formally consider it. Such formal action is not being taken at present because of the war.

Building a Television Station

A forty kilowatt television station is the largest that has been built to date. General Electric has such a station in operation at Schenectady, N. Y. The television equipment needed for such a station includes studio camera channels, 35-mm motion-picture channels, studio control, monitoring and switching equipment, a forty kilowatt visual transmitter and a twenty kilowatt aural transmitter, visual and aural antennas, and such basic studio equipment as cameras, microphone boom and microphones, studio lights, and motion picture and slide projectors. Air conditioning, substation equipment, wiring devices, transformers, and other electrical apparatus are required for the establishment of complete facilities. Roughly, the cost for such a station not including the land and building may range from $200,000 to $300,000, based on prewar prices.

Because the transmitting antenna should be installed at the highest possible location in the area, to obtain the best coverage, additional equipment (cost included in above rough estimate) usually will be needed to relay the television programs from studio to transmitter. For example, at Schenectady our programs are relayed from our studio in the city to our transmitter 12 miles away, from which the program is broadcast to the Troy-Albany-Schenectady area. Equipment needed for such relaying includes a visual transmitter and receiver, an aural transmitter and receiver, and visual and aural antennas.

Equipment needed for a typical small television station with a four-kilowatt system includes two studio camera channels, two 35-mm motion-picture channels, studio control, monitoring and switching equipment, a four-kilowatt visual transmitter and a two-kilowatt aural transmitter, visual and aural antennas and, again, such basic studio equipment as cameras, microphones and audio equipment, studio lights, and motion picture and slide projectors. Here, again, studio - to - transmitter, or point - to - point relay equipment may also be needed, as will other electrical apparatus described previously, such as transformers, wiring, substation equipment, etc. A rough estimate of the cost would range between $100,000 and $175,000 based on prewar prices and not including the buildings and land.

The prices mentioned above will vary widely depending upon the number of cameras, control rooms, and the extent of the motion picture projection equipment required for a particular studio design. It is also impossible, at present, to estimate the postwar price of television transmitting equipment because such factors as labor and material costs cannot be determined.

The prospective television broadcaster should take immediate action to assure himself of early delivery of this equipment after the war.

Television servicing, post-war type

The war has given us the opportunity of seeing many things in a new light. One of them is radio servicing. Ordinary radio servicing problems are childishly simple, compared with the sheer complexities that television will introduce once the postwar mass production of sets gets under way. Upon the shoulders of countless "service dealers" will fall the task of *keeping television sold* once it goes into the home.

The American radio industry now has the opportunity of dispensing forever with the huge servicing headache of past years by getting up a nation-wide organization. The time to plan the job is now, for the opportunity to do it as easily may never come again.

Dealer Policy

A national radio body, say the Radio Manufacturers Association, should take over the job. The platform might be something like this:

As America will some day take great pride in the quality and performance of its postwar radio merchandise, equally lofty and thorough should be the radio servicing designed to keep the merchandise sold and in good working condition.

The set owner should not be forced to "go around the corner" to have a receiver repaired. The dealer who sold the set initially should be equipped and anxious to do the job in accordance with the standards of the factory that built the instrument. Dealers who are not equipped to do servicing should be required to qualify.

Identification should be provided for qualified men.

Uniform Charges

Standard prices should be charged.

It should be the duty of the manufacturer to keep shops that cannot meet required standards from representing his products.

The set owner should be provided with the means of complaining when he thinks a job has been done improperly, or has cost him too much.

Means should be set up to keep the entire national servicing organization going continuously with factory efficiency.

When the State licenses an electrician or other professional workman it provides him with a card of identification stating that at the time of examination the holder was found competent, but the State *DOES NOT ASSUME RESPONSIBILITY* if the workman overcharges or does a poor job.

Radio never got that far. In the future it will have to go farther. Receiving instruments will be more complicated. In television and other kindred services such as FM the job of installing the antenna should be part of the job of selling a set.

Installations

Until apartment houses begin to install efficient all-wave centralized antenna systems that have outlets in every apartment, a complete antenna system engineered for the receiver it is to operate with, should be sold as part of the outfit. Tubes are now sold in every receiver, as part of the instrument, so why not the antenna. In addition, the dealer should make sure

the receiver will work in the required location.

Sales Insurance

No receiver actually is "sold" until it is installed and works to the customer's complete satisfaction. Anything short of this always results in ill-will and the dealer is the loser. So why not do the job right in the first place. Why not call it "sales insurance", and charge for it. Customers would be glad initially to purchase insurance of long and continued operation of their instruments.

In television a complete job of sales insurance MUST be done before a single instrument is sold. The public should be educated in a few basic television facts about the complex problem of getting adequate picture reception in a metropolitan area such as New York or Chicago. Before a set is sold, the dealer should be required to ascertain by test what kind of reception is possible. A portable receiver should be taken to the roof of the building in which the regular television outfit will operate and a careful study made on all channels.

Only then should the dealer be permitted to say: "Yes, I can fill your order."

Specific Recommendations

If an organization such as the R.M.A. is to take over the job it might:

1—Set up facilities nationally to *certify* service dealers, both as to equipment and men.

2—Establish a register of competent service dealers in various communities, and regularly make available to the public by letter or appropriate advertising a list of such dealers.

3—Having *sponsored* an organization of registered service dealers, the sponsoring body should guarantee to the public all work done by its members.

4—Not allow uncertified dealers to sell service on any sponsored line of merchandise, nor allow any uncertified organization, either sales or service, to deal in any product of the R.M.A. that requires special or expert treatment.

5—Urge all sales or service organizations to qualify or merge with organizations which can qualify, thus forming a service "pool" to handle all such jobs for a group.

6—Establish a public relations department, the duty of which will be to clear all matters relating to the dealer and the public and periodically make public a report.

7—Establish a service man training school, with a rotating group of factory engineers as instructors.

8—Provide channels through which customer complaints can be made and quick results achieved. Results should be in the form of a survey, and an adjustment, if work has been done improperly or too costly.

9—Set up and publish a cost list of standard repairs and replacements.

10—Establish a time list for doing basic jobs, with enough flexibility to take care of unusual cases.

11—Set a code of costs for diagnosis calls, etc., and make the customer understand that this will benefit him because even now he often pays dearly for some service not rendered at all, or done imperfectly.

12—Canvas the customer list periodically to ascertain the state of customer-dealer relations.

—T. R. K.

TELEVIEW

The Allen B. Du Mont Laboratories

This is the first of a series of Televiews of outstanding companies in the television industry.

Allen B. Du Mont

It is a young organization. It has none of the over-cautious "It can't be done-ism" of the more established companies. Instead, there is a positive, pioneering, "let's-try-it" atmosphere. It exudes youth. Du Mont's policy is to hire young men just out of college before they begin to lose their enthusiasm for pioneering and creativeness, and perhaps this accounts for some of the record of progress which the Du Mont Company has made in a little more than a dozen years of corporate existence.

Allen Du Mont's early life followed a pattern very much the same as other leading men in radio and television today. He was an amateur wireless operator and, during school vacations, went to sea as a radio man. He received his electrical engineering degree from Rensselaer Polytechnic Institute.

One of his first important jobs was with the Westinghouse Lamp Company where, in 1927, he received the first award for the outstanding accomplishment by an employee for the year.

Soon after Du Mont joined de Forest as Vice-President in charge of engineering. Up to this time his experience had largely been in the electronic tube field. But here, because of Dr. Francis Jenkins' association with the company, he had his chance to work on television. There was a short flurry of excitement, but it proved short-lived. The Jenkins mechanical scanning system just wasn't capable of producing fine enough pictures for entertainment purposes.

Du Mont thought the whole theory of mechanical scanning was wrong and decided to retire to a small home-shop and struggle with the cathode-ray tube. In the basement of his New Jersey home, aided by two glass blowers, he began making these tubes.

Their commercial use was as an indicator for testing and recording various electric phenomena.

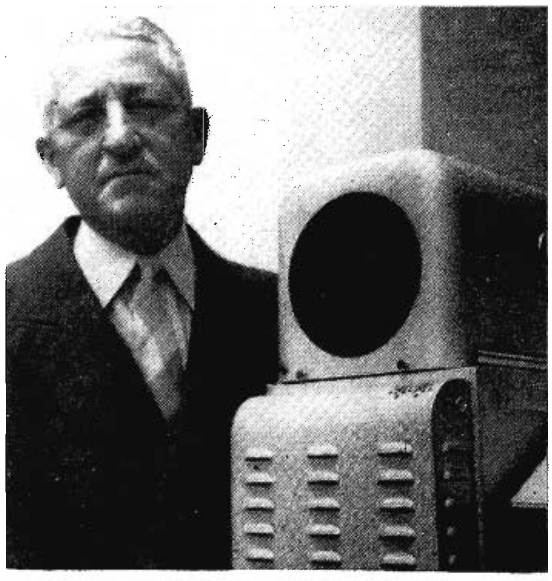
The organization grew—overflowed into a store — then to an adjacent store, and so on until it filled five stores. At about this time Mortimer Loewi stepped into the Du Mont organization. Loewi, a man of great imagination and drive, saw the possibilities Du Mont had in television and, being a Wall Street man, devoted his energies to the financing of the company. The going was not easy. Investors still regarded television as a pipe dream. Du Mont had practically no capital, and it was obvious if they were to go further than the at-that-time-limited cathode-ray-tube-business that additional finances would be necessary. Friends and enthusiasts being exhausted, Loewi turned to the film industry. With nothing more than a letter of introduction, he set out for California. He first met Adolph Zukor and then the financiers represented by Stanton Griffis became interested and not long afterwards Paramount Pictures purchased a half-interest in the Du Mont concern. The cathode-ray-tube man's worries were over.

Paul Raibourn came into the picture at this point, representing Paramount as Treasurer of the company. He is now, in addition to being Treasurer of Du Mont, President of Television Productions and Economic Adviser to Paramount.

When the New York World's Fair opened in 1939 and programs, based on the practical electronic scanning technique, went on the air, Du Mont was ready with television receivers. Several thousand were sold.

In the early 1940's, the Du Mont television transmitter, W2XWV, was installed at 515 Madison Avenue, in midtown New York. The transmit-

Dr. Thomas T. Goldsmith, who heads the research activities of the Du Mont organization.



Mortimer Loewi now Lt. Commander, U.S.N.R.

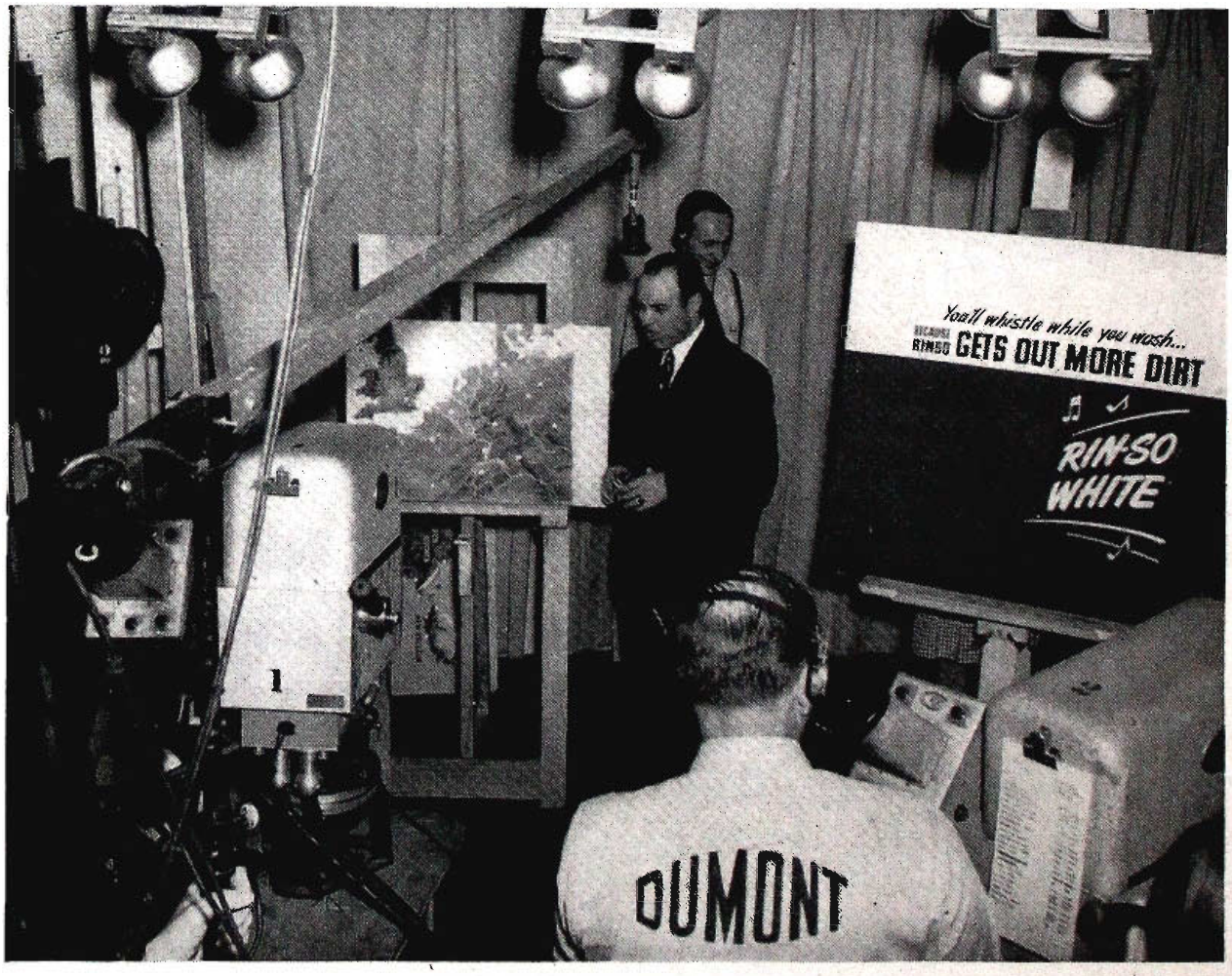
Leonard F. Cramer, Vice-President in Charge of Sales

ting antenna atop the 42-story building, rises some 650 feet above sea level. For a couple of years, the station was largely an engineering undertaking in which various technical problems were studied and worked out.

Soon, however, limited programming got under way, despite the fact that, with the advent of war, television progress seemed to have suffered a body blow. Interest in it generally sagged, but the Du Mont station remained on the air. Engineers, executives, and office workers, who had put in a full day at their war-time jobs, were to be found hard at work in the evening hours, operating the station.

The facilities at the Du Mont studio are extremely limited. There is not much more than 100 square feet of space available for the stage. The lighting equipment consists of a few banks of incandescent lamps. And yet, in spite of the limited facilities, the station has been a proving-ground in programming, with many of the leading advertising agencies putting on weekly shows. Unfortunately, in spite of good intentions, the quality of the programs is very low. They are lacking in showmanship, except in rare instances. However, it won't be long before television executives realize that the field of programming belongs not to the engineers or radio producers, but to the men with actual experience in visual entertainment, i.e. the theatre and film industry.

Du Mont has come a long way from the Upper Montclair home shop. Today four plants are busily turning out millions in war equipment. With the abilities of Du Mont and the resources and "know-how" of Paramount a brilliant future seems inevitable.



General Manager of Du Mont Station, Sam Cuff, at his maps during the telecast "The Face of the War."

Television plus showmanship equals new industry

by THOMAS H. HUTCHINSON

A veteran television producer speaks out on the subject of handling video commercials. Mr. Hutchinson, formerly Director of Television for NBC and Television, Director of Ruthrauff and Ryan Advertising Agency, has been specializing on the selling power of television.

IS the American public going to accept "commercial messages" in conjunction with television programs as they are being handled today on the radio? This is a subject that could be discussed for many hours but it seems to me the only practical solution is to begin trying right now to find out the answer through actual television broadcasting.

For the past six months one American manufacturer has had a weekly television program on the air. From the experience gained in these 26 programs, we have learned some of the things that we can and cannot successfully do in television. I'll admit we have only scratched the surface but I do know that it is the only practical way to find out the answers to problems that must be solved in the very near future. The economics of television demand that advertisers shoulder the larger part of the costs of television programs, and we must find a way to sell goods by means of television and still not annoy our audience.

One report we had on a recent television program was that the commercial was the best part of the program. I realize of course that from one point of view this is a criticism and that opinion might be construed to mean that the entertainment portion of the program was pretty bad — but by present day standards that was not true — the real answer is, the program was good but the commercial was better, and if we all would hold this up as an objective in television programs, the audience would welcome the sponsorship that we must have to help finance this new industry.

Low Cost

The challenge of television to the program builder is one that will take many years to meet successfully. It will demand — first of all hard work — for there is nothing easy in producing a good television program. It will take ingenuity, thought, heartache and criticism. This new art will only finally be mastered after thousands of hours of programs have been put on the air. Good television programs can be produced at a cost that will be far below some of our present day estimates — and with good programs will come new and better receiving sets — networks not only spanning this country but linking us to audiences in other countries and other hemispheres.

There are nine television stations in the United States today which are broadcasting television programs, and we program builders have the opportunity of experimenting now and making the mistakes that we are all bound to make without those mistakes being too costly. So far our experiments

with commercial messages on television have proved that this medium opens up a new field in advertising. While we have not come to any definite conclusion as to positive "do's or dont's", we have found that the success of a commercial depends for the most part on its visual interest.

I would say that our most successful television commercials today have had a whimsical element, not that we have attempted to play down the sales message, but we have endeavored to make the audience smile while it was being given. We have found that still pictures or any static advertisement is not good television. You need motion in putting visual commercials across. Demonstrable products will always be the easiest and their value can be heightened if a certain amount of ingenuity is incorporated into the presentation.

Good Commercial

One of our most successful series of commercials has been for Spry. We found that it was quite possible to go through all the steps in making a cake and thus show the possible purchaser what she had to do in her own kitchen. In one instance we took advantage of the interest in the television studio crew and incorporated an electrician into the cast. This enabled us to have our demonstrator show him how a cake was made and then visually present the recipe on the television screen. The natural sequence to informing the electrician as to how a cake was made was to have him make the cake himself on the next broadcast. This gave us an opportunity to insert comedy into the commercial routine and still put our message across. In some cases we have built an entire television program around a commercial by referring back to the action that was started early in the program. This has proved a very successful method of handling a commercial if sufficient interest is aroused in the first scene.

No Second Rate Programs

Any television program that is broadcast today — or will be on the air at the end of the war — must compare favorably, at least in the mind of the viewer, with the finest entertainment in the world today. We have no right to expect our television audience to be satisfied with a mediocre musical group, playing only passibly well, when by a turn of the switch they may listen to a symphony orchestra. We cannot expect our television audience to stay at home and watch a third rate presentation of a dramatic story, when the finished motion pictures that are being presented today in their local neighborhood theater can be seen with very little trouble and expense. I think this was proved in England during their operation before the start of the war. The B.B.C. maintained a fairly creditable television program schedule during 1937 and '38 and almost from the start of this program service sets were available to Londoners but the number of sets sold was very disappointing. There apparently was an apathy on the part of the public as far as television was concerned.

In spite of this, the television program schedule was enlarged and the experience attained by the B.B.C. at Alexandra Palace was incorporated into the program. Before the end of 1939 the programs were much higher in entertainment value than they were at the start of their operations and as programs improved and the hours of television available to the public were lengthened, interest in television increased. Just before the war the sale of television sets in England had reached a place where it seemed as though this new industry was finally on its way. There is no doubt in my mind that we here in America must

(*Continued on page 22*)

Programming

THIS department will not attempt to record every television program which is broadcast. It will cover only those programs which are of significance in the development of television as an art, as a new form of journalism and as an advertising medium.

Nature of Television

Every art form, every entertainment medium, has certain characteristics of its own. There are things it can do better than any other medium. This holds true in theatre, movies, radio, literature, painting, music. To establish an entertainment medium its individual characteristics must be recognized and developed. It cannot just imitate something else, no matter how successfully it may carry off the imitation. That goes for television. It is not the same as movies, even though it can transmit a movie perfectly. It has powers far beyond being a substitute for celluloid, a new way to distribute the Hollywood product.

Television is very different from sight-less radio, which is basically incomplete, appealing to the ear only. The adding of vision to blind radio will be more revolutionary in its effect than the adding of sound was to silent movies. Vision is our dominant sense—most of what we learn we learn by seeing. Hearing is a minor sense, more important than smell, touch, or taste, but far less important than sight. When silent movies were turned into talkies, a minor sensory appeal was added to a medium based on the dominant sense. In television it is the other way around. The dominant sense, sight, is added to a medium based on a minor sense — hearing.

This has produced a most powerful medium for the molding of public opinion. It is more than a new frontier in business and art. It is a social force of great power, which will affect your habits and way of living as much as the telephone, radio, airplane, or automobile.

Television is big. It's wide open. Its future is all before it . . . and it depends primarily on the programs we build, for its technical future is assured. In this column, "Programming" we are looking for developments which point the way.

Poor Programs

It would be nice to write that this department is cramped for space, because of a plethora of excellent "live" productions. Unfortunately, this is not the case. The program end of television has been an arid wasteland, almost devoid of imagination, showmanship and (what is equally important) any indications of a knowledge of the nature of television.

Almost without exception, the "live" television programs recently pumped into the ether of greater New York have not been worthy of mention. The great majority have been so bad that they unquestionably do harm to television — as well as to those who produce and appear in them. Unfortunately for the audience, the people putting on the worst shows seem to be the most pleased with themselves. Therefore we fear they will keep on driving the tele-audience away from their old, pre-war vintage receivers.

To be sure, there have been a few oases in this desert of dullness, but for the most part video programs have underlined one fact: The

big bottleneck in television will be in good writers and directors, artists and executives with imagination and showmanship who understand their medium.

Naturally, there are some extenuating circumstances: Manpower shortage, lack of new equipment. "C'est la guerre" is a standard alibi today, but it stretches thin when substituted for showmanship, imagination and artistry.

Progress

The only sustained progress in television programming has come in those few instances in which broadcasters have set up well-equipped program development laboratories, and staffed them with artists who worked, slept and talked television seven days a week, fifty-two weeks a year.

A corroborative example of this is the work now being done by Thomas H. Hutchinson, former Program Director of NBC Television, who headed up one such "program laboratory". Hutchinson has been concentrating on the development of methods of handling visual-aural commercial material — i.e., how to sell soap and Spry on television — and the results are a forward step in advertising methods.

* * * *

PROGRAM:

"Wednesday at 9 is Lever Brothers' Time."
(Wednesday evening, 9:00-9:30 P.M.)
Dumont Television Station W2XWV—New York
Agency: Ruthrauff & Ryan
Client: Lever Brothers—(Rinso, Spry, Lifebuoy)
Director: Thomas H. Hutchinson
Commercial Copy: Reggie Morgan
M.C.: Patricia Murray
Cast: Jimmie Jemail with five guests; Walter Munroe, Sam Cuff.

Program caught on April 12th, followed usual format of this series, which began November 3rd, 1943. Program content of series has been uneven, with emphasis on the development of commercial messages, which have consistently been the brighter portion of the show. The April 12th broadcast was one of the best of the series in both departments.

Opening commercial featured trade-name of SPRY with jars of product in close-up on revolving turntable. First half of the show featured Jimmy Jemail, the "Inquiring Fotographer" of the "Daily News". Jemail proved a "natural" for television, demonstrating innate sense of showmanship and smoothness in handling his five interviewees in a visualized presentation of his column. The five guests were introduced briefly in front of the camera in a conventional manner, but without wasting time in unnecessary patter. Jemail wound up each interview in a snappy, well-paced fashion. Particularly effective was Ernie Burnette, song-writer of "Melancholy Baby" fame, and the fifth guest, a comely girl who wanted to learn how to kiss, — a ticklish situation, but Jemail carried it off in good taste, without sacrificing showmanship. Despite conventional formula, this clicked because of Jemail's sense of timing and human interest.

Commercial Spot

Middle commercial on show was a particularly effective demonstration by Walter Munroe, legit actor cast as a "studio electrician" who is being taught to bake a cake by Patricia Murray, the deft M.C. of series. Commercial angle shows ease with which anyone can learn how to bake with SPRY — it's so easy! Acting abilities and personality of Murray and Munroe put commercial over with a bang, showing that the straightforward "demonstration" type of commercial handling is high-

ly effective when presented simply, and informally, by a director who knows how to use his cameras, and who can bring out the sense of intimacy so inherent in television.

Second portion of the program was Sam Cuff with his familiar "Face of the War" news commentary, which has been improving steadily in recent months. Addition of new maps, bringing out geographic contours and using better contrast range was highly effective.

—R. W. H.

GENERAL ELECTRIC (Schenectady) has been exceptionally progressive, telecasting about nine hours a week and judging from the variety of the programs, they are trying everything.

DUMONT (New York), puts out six hours weekly and is providing a field day for the advertising agencies. They have been learning a lot about the problems of programming — mostly what not to do.

BALABAN & KATZ (Chicago) have been handicapped by lack of good scripts and actors, but they too are trying out every possible type of program. They are working very closely with advertising agencies and have started a special course of instruction for the local radio executives.

PHILCO (Philadelphia) has been transmitting a schedule of films and sporting events, picked up from remotes during the past year, having been forced to give up their large studio early in the war. With the extremely limited facilities at his command, Philco Program Director Paul Knight has been doing an excellent job on these sport pick-ups. Philco executives have indicated that they are considering inaugurating an expanded schedule of live programs but as yet no announcement has been made.

TELEVISION PRODUCTIONS (Hollywood) has been maintaining a regular, though limited schedule of film and live entertainment under the direction of Klaus Landsberg, operating with a very small staff.

DON LEE (Hollywood) has been on the air with live programs on alternate Mondays, operating on an extremely limited basis.

Editor's Note: NBC and CBS (New York) are planning a limited schedule of "live" programs, which will be covered in our next issue, as will any significant programs originating outside of New York.

Television Showmanship

(*Continued from page* 20)

build interesting television programs if we expect the American public to buy receivers.

Novelty Wears Off

The novelty of television wears off in a very short time — almost in a matter of days and the purchaser of a television receiver demands good programs.

It is up to television program producers to experiment now with everything they can think of so that, when television sets are offered for sale to the American public, programs will be available that will be worth looking at. Program facilities as they exist today are far from satisfactory. Studios are too small, personnel is not available because of the war, materials are unavailable, but in spite of all this much can be learned in present day television programming. There are so many unanswered questions that no one who is at all interested in this new media can afford to sit back and wait for some one else to find the answers.

TELEVISION CURRENTS

A regular feature by Dr. Alfred N. Goldsmith

Dr. Goldsmith, one of the country's leading consulting engineers specializing in television, radio, facsimile, and the optics of motion pictures, built his first radio set in 1901, and has been a part of the industry ever since. He is the only scientist to have been president of both the Institute of Radio Engineers and the Society of Motion Picture Engineers. He is at present serving as Vice-Chairman of the Radio Technical Planning Board, and Chairman of Panel No. 1, "Spectrum Utilization."

A Place in the Sun for Television

TELEVISION'S recent history is peculiar. Here is an art obviously of great human interest and benefit. It offers an unparalleled industrial opportunity in timely fashion. Yet in our country television has been something of a stepchild in certain industrial and Governmental quarters.

For years the radio industry agreed to disagree on television methods and standards. Part of the clash of opinion centered on important technical and operating points. But another part seemingly reflected individual engineering ambitions or commercial aims. A group divided within itself commands little respect. The outcome was dreary. The public became confused as to television prospects. Government grew puzzled anent what to do with the ugly duckling.

Television has endured particularly unhappy times in dealing with its frequency allocations. By contrast, our cousins in England met a far easier problem. They received television service ready-made from a private corporation enjoying a government-assigned and approved monopoly. Since the number of channels required in a given locality was small and no rivalry was permitted, suitable bands were easily found. True, program diversity and audience program selection went by the board. But in America the task is far more difficult. There are many competing interests desirous of offering television service. Some of these are well qualified and deserve support. In the long run, our American system of competitive and privately-operated broadcasting will successfully render a great service here

The British believe that television is best operated on frequencies near 40 megacycles. This is a frequency region once happily occupied by the old television Channel 1 from which television was then ousted in favor of frequency-modulation sound broadcasting. And now frequency modulation, that enthusiastic aspirant for radio honors, also seeks television's old Channel 2 (which is its present new Channel 1). Governmental services, aviation radio, and a number of other claimants cast acquisitive glances at television's present frequencies, scattered and "choppy" as they are. All in all, television has been shoved and elbowed. It needs assurance of an adequate frequency band and stability of operation for the impending period of commercial television development. Fortunately these matters are being systematically studied.

At the suggestion of Government, industry, and engineering, the Radio

(*Continued on page* 32)

Who will control television?

by ARTHUR LEVEY

A new slant on the struggle for telepower, and some pertinent facts about large screen television by the President of the Scophony Corporation of America, a veteran movie and television executive. In 1929, in cooperation with Oscar Deutsch and Simon Rowson (of Gaumont British) Levey founded Scophony Ltd. to develop large screen television. In 1942, the Scophony Corporation of America was founded, in association with Paramount Pictures, and General Precision Equipment (a part owner of 20th Century Fox, Inc.).

CONTROL of the infant industry of Television has been held by the radio and big electric companies during the past decade. The reason may lie partly in the technical similarities of television and radio — the latter being an incomplete form of sight-and-sound broadcasting. The reason also lies partly in a series of economic circumstances, not the least of which is the fact that radio broadcasters had to stake out a precautionary claim in television and claim it as their child in order to protect and stabilize their "blind" radio business.

During the last few years, however, it has become apparent that this control of our most powerful medium of entertainment will not go unchallenged. New "pure television" groups as well as motion picture companies have set themselves up in competition. Their challenge has been aided by the way in which American television program development was kicked around by the Radio Industry from 1937 through 1941.

Not only has competition appeared in the field of television broadcasting to the home, but also in an entirely separate television field — large screen television in theatres.

Some Tele companies may fold

I can well understand that the Big Electrics and Radio Broadcasters are apparently up-in-arms over this menace to their domination and the coming invasion of their exclusive field by the motion picture industry on an ever-increasing scale. Recently the head of one of the largest broadcasting corporations unveiled a threat directed at Hollywood which stated, in effect, that unless Hollywood made films for the broadcasting companies to televise, the broadcasters would produce their own pictures.

In my opinion the motion picture industry need have no illusions about the situation. We may be witnessing the opening skirmishes in warfare between great corporations for the domination of the giant new industry, Television. This maneuvering is, even

now, going on behind the scenes, and when television really expands in the postwar years, we may see the eventual elimination of some of the present chief contenders from the video broardcasting field.

It would be foolish for the motion picture industry not to realize the resourcefulness of its chief antagonists in the postwar television arena, and to take the necessary measures to strengthen and consolidate its position in the entertainment world by a unification of its interests in the domain of Television. The Film Industry cannot expect to succeed in postwar Television without plans or preparation. There is no doubt that major film companies, endeavoring to operate separately and in rivalry in the television field, would be placed at a considerable disadvantage and might well produce a result whereby powerful interests outside the Film Industry could play one company against another.

Movie Companies' Advantages

In view of the imminence of television, I do not think anyone can venture to predict with certainty the future of the motion picture industry during even the next decade. It may be said that those movie companies already associated with Scophony (SCA) are simply trying to shift their fortunes with the tide of technology, but what else could sound business policy dictate?

Announcements of the Radio Group and the Telephone Company and general news of television all are rising to a powerful crescendo, and the leaders of film companies whose activities are not already coordinated with television must, in the interests of their stockholders, soon show the necessary initiative and enterprise to be ready for the coming television boom.

The movie industry has obvious advantages over the radio industry in television, including many years of experience in the arts of visualization, showmanship, etc., and today controls star names not only for the box office, but useful also for television and advertising purposes. In addition, the five major film companies control among them more than 6,000 leading motion picture theatres throughout the country, which means they would dominate the field of theatre television. The radio industry might only have access to these theatres when transmitting events of outstanding interest to which it had secured telecasting rights.

Eighteen foot picture

Of course in any discussion of theatre television, one thing usually taken for granted is: *Television pictures will be large enough and of good enough quality to make theatre television a box office success.*

But are we safe in making this assumption? Do we have any *concrete evidence* to offer in proof?

Evidence does exist. It might be in order to glance at it.

Fifteen years ago Scophony Ltd. was organized in England for the purpose of developing large screen television along unorthodox lines, quite different from the conventional cathode ray tube method used by all other television experimenters. (From 1929 to date nearly $2,000,000 —400,000 Pounds — has been spent by Scophony in experimental and research work on television alone.)

On February 2, 1939, Scophony Ltd. exhibited its big-screen television to a paying audience for the first time, televizing the Boon-Danaher boxing match for the championship of Britain. A television picture 18 feet wide was shown in the Odeon Theatre, a 2000-seat house in Leicester Square, London, and created a

sensation among motion picture and radio people, as well as in scientific circles. Although the price ranged up to $5 a seat the public interest was such that the police had to be called in to control the large crowds seeking admission. The theatre was filled to capacity, and many were turned away.

In the subsequent eight months, up to the outbreak of war, many other important news events were televized for two London theatres, the Odeon and the Monseigneur Theatre, at Marble Arch.

The *London Observer* reported:

"The Derby and the World Welterweight Boxing Championship were successfully seen by packed houses at the Odeon Theatre, Leicester Square, on the Scophony 18-foot screen. This is the biggest television picture shown publicly anywhere in the world."

The *London Daily Telegraph* said:

"The Armstrong-Roderick fight, which was shown at the Odeon Theatre, was extraordinarily good. Every blow struck could be seen, and the whole fight followed very closely."

Similar comments appeared in the entire British press.

As a result of these successful performances of its television projectors, we were given a contract to equip 60 additional motion picture theatres of the Odeon Circuit in Great Britain. (This was not carried out because it was apparent that war was imminent and that television transmission would have to cease because it could serve as a beacon and guide to enemy aviators.)

The facts are, therefore, that up to the outbreak of war in September, 1939, Scophony had *successfully shown to paying audiences the largest television pictures publicly demonstrated anywhere in the world up to that time.*

Scophony made television history in America too, having been responsible for the first large screen installation shown experimentally in a commercial program at the Rialto Theatre, 42nd Street and Broadway, on June 21, 1941, when a capacity audience saw the famous horse, Whirlaway, winning the Futurity Race at Aqueduct Track as the Race was actually being run. Both audience and management expressed delight with the results achieved.

These demonstrations had given proof that theatre television could become a reality, opening up an immense new field.

The ease of control and compactness of gear are two features of Scophony television projectors which American motion picture exhibitors will no doubt appreciate. The technique employed is very similar to that of the present day motion picture projector, since the light source makes use of a *standard* type high intensity arc lamp.

Receiver Prices

Our prewar laboratories had also developed a small television projector for clubs, bars, and schools, giving a picture 4 *feet wide,* projected from the rear on to a portable screen.

This prewar model was made to sell in England at about 150 pounds (approximately $750.00 prewar value of sterling).

Two other models were demonstrated at the Annual Television and Radio Show at Olympia Hall, London, in August, 1939, just before the outbreak of war, a "standard" home model giving a picture 24 *inches by* 20 *inches* in size, and a "junior" home receiver giving a picture 18 *inches by* 14½ *inches* on a perfectly flat screen. The "standard" home receiver was made to sell on the London prewar market at approximately 80 pounds ($400.00 at prewar sterling

rates) and the "junior" model at 70 pounds ($350.00 at prewar sterling rates).

The price of Scophony television projectors for the postwar American home depends upon how quickly the public demand and mass production develop, but the aim is to produce a home set giving a 24-inch wide picture to be retailed at $199.50 *when mass produced*. These sets will make use of wartime developments.

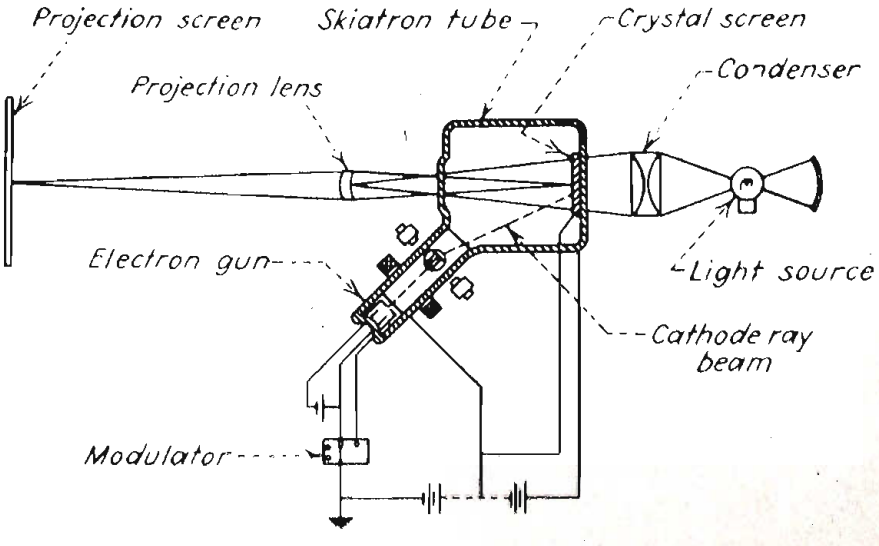
Exit Cathode Ray

Since the establishment of Scophony in this country, the motion picture industry as well as the radio and television industry are beginning to realize that *the cathode ray tube may eventually give way to a superior means* of producing a really large and bright television picture of excellent definition. The Skiatron method is now becoming generally recognized as worthy of consideration — when put forward as the probably ultimate solution to the television problem. It will be recalled that the eminent scientist and internationally known television authority, Dr. Alfred N. Goldsmith, told newsmen at a recent Radio Executives Club meeting that of the three most promising methods of theatre full-size television pictures, two were Scophony inventions, i.e., the Supersonic Cell and Skiatron Electron Opacity Projector.

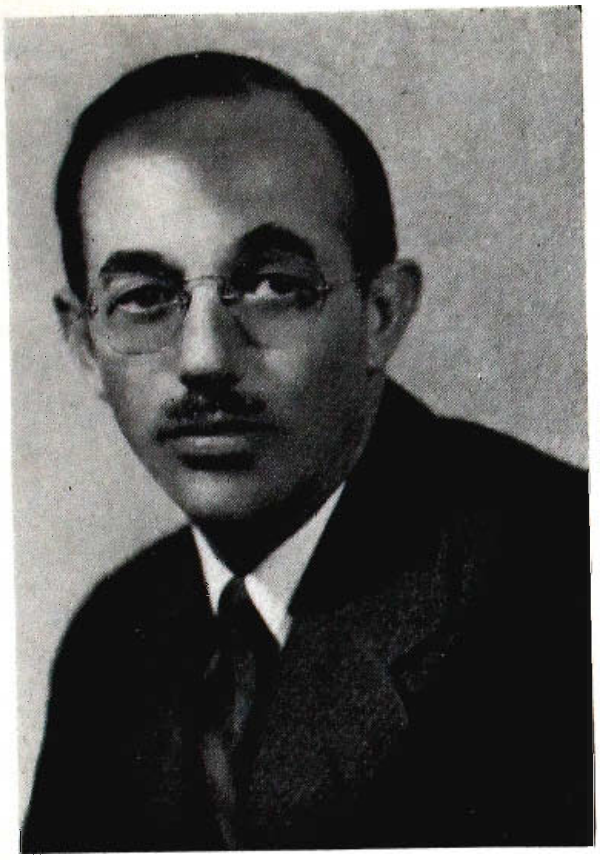
When the veil of military secrecy is lifted, an astonishing story will be revealed by Scophony, as to its unique contribution to the war effort.

Dr. A. H. Rosenthal's invention of the Skiatron projector is so fundamental that I venture to predict it will remain a fundamental television design during the next ten or twenty years, just as the motion picture projector invented almost a half century ago has remained the basic standard with refinements added through the years. I wish to observe, however, that a developing and expanding art such as television requires most careful and judicious planning. It has already been suggested in England, and I believe it is equally of interest here. that in order to get television moving quickly in postwar, it may be worth while to consider temporarily reinstating the service on standards very similar to those already approved by the FCC in June, 1941.

In other words, it may be best in the immediate postwar period for the existing television system to be run side by side with an improved system in an experimental stage — then by gradual solution of the technical problems the improved system may shortly arrive at the stage whereby it would fulfill all requirements essential to its introduction into commercial practice.



A schematic diagram of the Scophony Skiatron projection tube, of Dr. A. H. Rosenthal, Research Director of SCA. The cathode ray beam is shot from the electron gun and scans the crystal screen. The alkali halide crystal screen can be rendered opaque in this way, making it possible to "build up" a picture which can be held constant for a frame period and then "wiped off". A light behind this "electronic lantern slide" arrangement projects the picture through a lens system and on to a screen, as in a movie projector.



Television networks

by O. B. HANSON

A down-to-earth viewing of the problems of networks, by the Vice President and Chief Engineer of the National Broadcasting Company, a Director of TBA, a member of the Television Panel of the RTPB, and the National Defense Research Committee.

To envision even an approximation of the status of television, two years, five years or ten years after the war, comes close to the realm of crystal-gazing, for, as television approaches its objective as an established communications service, the hard realities of business appear and must be correlated with the engineering aspects of the art.

In the early years of a new technical development, emphasis is placed on the engineering phases, but when, as in the case of television today, the majority of the key engineering problems have been solved or are known to be solvable, the time comes when commercial prospects must be investigated and analyzed. In any line of manufacture, a product cannot be turned out with profit unless a sizable demand awaits it and promises a return from sales that justifies the investment and leaves a reasonable margin as a reward for enterprise.

Certainly, television cannot pay its way as a single station operation, excepting in areas of dense population.

Networks Essential

Today such facilities are extremely limited although the prospects are favorable for their eventual installation. In a letter to Mr. Niles Trammell, president of the National Broadcasting Company, Mr. K. S. McHugh of the American Telephone and Telegraph Company stated that 7,000 miles of coaxial cable suitable for interconnecting television stations would be available by 1948-50, assuming that the war ends within a reasonable time. See "Television In Review."

But optimistic as this statement appears, the proposed cable circuits outlined would reach only the principal cities of the nation. Thousands of smaller cities and towns, now adequately reached by sound broadcasts,

would still be outside the service areas of video stations.

Whether these off - the - main - line communities will obtain their television programs through radio relays will again depend on the economics of the problems that will be presented in each instance. Until such relay stations have been erected, operated and maintained for a reasonable time on an experimental basis, the dollar-and-cents feasibility of the plan must remain in doubt. From a technical viewpoint the practicability of relays was demonstrated by the Radio Corporation of America in pre-war tests conducted between Riverhead, Long Island and Radio City during which video programs were transmitted a distance of 75 miles using three relay stations. The knowledge thus gained, coupled with the conviction that lighthouse relays could be designed to function with a minimum of supervision and could be turned on and off by remote control as needed, favors their acceptance.

Antenna Height

But there are other inherent obstacles that must be faced. The quasi-optical nature of radio signals in the spectrum allotted to television places certain limitations on the distribution of programs by an individual station. Antenna height, it is true, increases the distance over which a program can be sent, but in America there is only one Empire State Building. In many cities of large population, an antenna 300 feet above ground would be the maximum obtainable. Thus, while WNBT with its 1,280 foot antenna is able to lay down a consistently good signal up to 70 miles from New York City, a station radiating from a 300 foot mast could not be expected to deliver programs to the same area without a sixteen-fold increase in power over that used by the NBC outlet. Because of this restricted coverage of low powered key stations, more intermediate relays would be required to supply a usable signal to affiliated stations beyond the horizon. And more relays mean a greater investment justified only by the returns obtainable from the added transmitters.

Theoretically, a television signal transmitted with average power gives an acceptable image at approximately twice the horizon distance. This means that the signal, at the point where it would be expected to leave the earth's surface tangentially is refracted slightly to provide service beyond its normal terminus. Occasionally however, this limiting distance can be, and is, exceeded successfully, as in the New York - Schenectady network. Here the signal from station WNBT on the Empire State Building reaches a G-E receiving station on the Helderberg Mountains 120 miles distant. Reversal of this pioneer network has not been possible because of the location of the up-state transmitter which radiates primarily to the north, east and west. Only a system of relay stations would solve the north-south relay problem which faces us in this instance.

Television Growth

In the same way and to the same degree that the layman looks upon television in its present state with awe and wonder, others have let their imagination run the full gamut when considering the eventual possibilities of the medium. Although nationwide television is an almost certain accomplishment of the future, some writers already have predicted television on a world-wide scale. Such a network is, of course, a possibility, perhaps during the current century, but the obstacles concerned are so vast in the light of our present knowledge of waves and wave propagation that engineers are inclined to postpone consideration of the project until a workable, trouble-free domestic system

(*Continued on page* 34)

Television and Education

TELEVISION, the art of seeing afar, is a challenge for education. The inherent psychological factors of immediacy, spontaniety, and reality of the art give dynamic impetus in creating and maintaining the fundamental desire to learn.

It will be the policy of this editorial column to present the salient factors of television in relation to education. Constant alertness to the field will be essential for the greatest intelligent use of the potentialities of the newest member of the Audio-Visual Aids.

A brief resume of educational activities in television is in order. The Department of Secondary Teachers of the National Education Association, through the Committee on Television, has participated in educational television for six years. Evaluation of programs, — color, theatre, commercial, and projected television demonstrations, and actual class use of television have been a part of the record. In addition, scripts were written and presented in the first educational series for 14 weeks over Station WNBT. A number of illustrated lectures, and television demonstrations have been given before national and local educational meetings. Actual experimentation was used to determine the types and techniques of useful telecasts, the findings are available in a number of educational journals. Definite plans for utilization of television, in every school in America at the earliest feasible opportunity, are formulated.

Courses Given

New York University, the University of California, the Yale Drama School, along with Purdue University and the State University of Iowa have not only offered courses in Television, but assisted also in having students participate in actual programs. A number of High Schools have also participated in programs or had television demonstrations, and Audio-Visual Courses have included consideration of the art applied to education. Educators are aware of television.

Loyola University in New Orleans which owns and operates Station WWL, the local CBS outlet for radio, has applied for a license to operate a television station. There can be no doubt that educational radio stations, as well as every radio station, are preparing for the day when they will offer television and FM service.

The use of Audio-Visual Aids in training the Armed Forces presents an amazing story on the values of visualization. Television inherits this experience full-grown, to be repaid perhaps in better educational telecasts, including service for rehabilitation of men in service and industry. Practical college courses in the Audio-Visual Aids will include adult, as well as regular educational television service.

Programs Broadcast

WCBW has included the museum in educational programs, WNBT the ARP lessons reaching 200,000, WPTZ excellent material from the Franklin Institute, WRGB has brought a number of student groups before the cameras. Established viewing groups are essential also, for reception is an integral part of tele-

casting. There is a willingness on the part of stations to try out educational ideas, therefore it is urgent that educators become more active and vocal in their objectives.

As we check recent happenings, and look ahead, there is much activity of promise. The Fifteenth Institute for Education by Radio devoted one session to Television and Education under the leadership of Dr. Leonard Power. His topic was "Television, Challenge to Education". Kenneth G. Bartlett, Director of Radio and Acting Director of University Extension, Syracuse University presented "Application of Television to a University Extension Program". Carl H. Menzer, Director of Radio, State University of Iowa reviewed the experiences of the University's television Station W9XUI. (Dr. E. B. Kurtz, of the same school presented "Teaching by Television" before the Institute in 1934).

The New School for Social Research, New York City, has recently presented a five weeks' course on "Television is Here" in which outstanding educational leaders participated.

The Radio Executives Club, New York City is presenting a Television Seminar. Here is additional evidence of useful education in the Television field.

We of TELEVISION will work toward the goal of complete cooperation between telecasters and educattors. In line with this program we will present a series of articles on the use of television as an educational medium. The first article is on the museum's role in television written by John E. Abbott, Vice President of the Museum of Modern Art. (See "Television and the Visual Arts").

J. R. H.

Television Currents

(*Continued from page 24*)

Technical Planning Board has undertaken the task of preparing recommended system specifications and frequency allocations for the postwar radio services. There has been offered to one of the Committees of its Panel 6, dealing with television, a plan for television allocation which may reach the Panel in the near future. The plan provides for a group of major or high-power channels suitable for market-area coverage, and a number of local or low-power channels for more limited coverage. Its details are ingeniously and practically worked out. While the outcome remains to be seen, probably Panel 6 will ultimately recommend a plan not differing widely from that now proposed to its Committee.

The final frequency-allocation recommendations of the Radio-Technical Planning Board cannot be issued until after Panel 2: Frequency Allocation and Panel 1: Spectrum Utilization (and particularly the former) have fully completed their work. There are troublesome complexities to their problems. The magnitude of the jobs can be gauged from the fact that nearly five hundred experts are now involved. Many old and new radio services must be considered. Likely enough, fair and just proposals will win the Panels few friends. Yet the Fall of the year should see good progress toward definite plans and recommendations from the Board to the Federal Communications Commission and the industry.

Television can bring the joys of radio sight *and* sound to the millions. It can carry drama, comedy, music, news, religion, and instruction in clearest form. It can serve the people well. It offers prosperity to the radio industry. And, by way of a pleasant change from the past, it needs and expects vigorous and sympathetic support from all alike.

Television and the visual arts

by JOHN E. ABBOTT

Can a museum reach a new and broader public? Can television supplement and extend museum techniques? Will television qualify as an art form? These are the questions asked by John E. Abbott, Executive Vice President and a Trustee of the Museum of Modern Art in New York. He is also Director of the Museum's famous Film Library, Chairman of the Historical Committee of the Society of Motion Picture Engineers, and Chairman of the Board of the International Film Archives.

ANY working association between television and the visual arts belongs to tomorrow — not a distant, undefinable tomorrow, but the tomorrow when the war has ended and science can again take up its peaceful pursuits.

In the meantime, we can speculate, hope and plan about that future. Can the new developments in television make it the medium by which the visual arts can be broadcast as successfully as radio has made possible the broadcasting of symphony concerts? Can it serve a museum's purpose?

The primary purpose of the Museum of Modern Art is to help people enjoy, understand and use the visual arts of our time. By enjoyment we mean the stimulating pleasure and recreation offered by direct experience of works of art; understanding, we believe, can be aided by answering the questions raised by works of art such as why? how? when? where? what for?; and we feel certain that the layman will be encouraged to use the arts if he is shown how they may take a more important part in his everyday life, both practical and spiritual.

This purpose and these methods have been carried out to a certain extent, through exhibitions in the Museum's galleries, which last year were seen by more than 350,000 people; by publications for its 6,000 members; or through its scheduling 577 showings of its 131 circulating exhibitions in 235 towns and cities outside the metropolitan area. Though this large personal attendance is gratifying it is imperative that we bear in mind that Crosley rates 10,000,000 listeners to the Philharmonic broadcasts.

New Techniques

That television can multiply a museum's usefulness by bringing it to a much larger public than can find the time or facilities to visit galleries is a foregone conclusion. Can television do more than that? Can its technique supplement museum techniques?

With the advent of practical television, we will have a new method of reaching the public and, we hope, a new synthesis of all our activities. Television's potentialities conjure up visions of an exhibition which would not be limited to a view of the finished work of art itself as it hangs on the gallery wall with only a written label or the artist's preliminary sketches to explain it to the public. Through television the audience could be taken to the artist's studio and see him at work, watch how he develops his concepts and materializes his ideas. We can show them the background and significance of the exhibition in their homes before they come to see the works displayed in the museum. Television can borrow from the technique of the films and

Visual Arts — continued

show, in a series of close-ups, a study of detail in a manner that the most assiduous visitor to a gallery could never hope to have through his own eyes. When these things are technically feasible, television has almost limitless possibilities as an educational medium by which people can learn to enjoy, understand, and use the arts.

A most interesting example would be the contribution of television to the understanding and appreciation of the theatre arts.

No matter how many sets, still photographs, or drawings, you may show of an outstanding example of theatre or ballet design, the vitalizing agent is lacking. Dance and theatre art is art in motion, it is the counterpoint of the line, color, shape and space of the sets against the movement and color of the figures on the stage. The television program of this exhibition would first analyze the designs for the sets and costumes, culminating in an actual attendance at those scenes of the production which best showed the complete effect.

Television An Art?

But what of television itself as an art medium? May not its history parallel that of the films and photography, which, with Industrial Design, are as much a part of the program of the Museum of Modern Art as are the traditionally considered "fine arts", painting and sculpture?

In a foreword to the BULLETIN of the Museum's Film Library, Iris Barry, curator of the department, tells how the motion picture was originally regarded purely as a recording instrument, as an extension of experience. "Yet in this profane art", she writes, "whose history is strikingly unlike the history of the other visual arts, a new method of communication has been invented. As a medium which exercises a powerful influence on society and is peculiarly characteristic of our culture, it concerns students of sociology as profoundly as it concerns students of the fine arts . . . an understanding of the film becomes essential to any well-grounded education, since it exercises so profound an influence on the attitude to life of the millions who attend film showings."

Is television a medium by which the visual arts of today can be gained? Is it a medium to which the foregoing statements about films can be applied? Is television a new entrant into the field of the visual arts?

Television Networks

(*Continued from page 30*)

has been perfected and put into commercial operation. The knowledge they will gain in so doing is a prerequisite to global or even inter-continental television.

Television, even as it functions today, stands as a tribute to the accomplishments of scientific research. The electronic system of television has been developed mainly within the past 15 years and has been out of the laboratory less than 10 years. Yet the broadcasting of sound alone, uncomplicated by the simultaneous transmission of images, has a history extending back to 1910. When television has reached a similar age, assuming that the pre-war rate of improvement can be maintained, the existence of networks, whether by coaxial cable or micro-wave relays should make it possible to deliver a picture of a New York scene into every home in America. Complete and comprehensive service of this nature was the original objective of sound broadcasting. There is every reason to believe that television, given an equal period for expansion, will reach the same desirable objective.

The RTPB Television Panel Report

THE report of the Television Panel of the Radio Technical Planning Board (RTPB) is nearly complete as we go to press. The recommendations for the visual standards and frequency allocations have been unanimously approved by the members. There still remains some work to be done on the aural standards, and there has been some discussion of dropping FM on the sound channel in favor of AM.

The Television Panel will meet on May 18th, presumably to settle this matter. This does not mean, however, that the report will then be available to the public. Copies of the report will then be circulated to all of the RTPB Panels and it will be examined by Panel No. 2 on frequency allocations, in light of the requests for space on recommendations submitted by various other panels.

RTPB Thinking

However, to give some indication of the trend of thought within the RTPB Television Panel, here is a portion of a Report of Progress.

"It is generally agreed among engineers of industry that television must be allocated frequencies in the lower portion of the VHF band if television is to become immediately available to the general public as a broadcast service. Television is no longer a technical experiment, and it has behind it many years of technical development. Its standards and performance have proved to be most practical, and it is ready to enter the phase of commercial expansion.

"In considering suitable frequency allocations for commercial television in the immediate post-war period, the following points should be borne in mind:

1. That the frequencies assigned to television should be placed in that portion of the spectrum in which practical experience has been gained.
2. That the frequency assignments for a television broadcast service be those upon which adequate power can be generated to meet the problems of reception in the home.
3. That a sufficient number of channels be assigned to provide a nation-wide service and, further, to permit a number of programs services to be given in each area and to stimulate competition.
4. That in choosing the relationship in the spectrum of one channel to its neighbor, the problems of receiver design with respect to selectivity are adequately considered.
5. That the service range of stations and the geographic spacing of adjacent channels be carefully studied in order to arrive at the required number of channels to adequately meet a national commercial service, as mentioned in Item No. 3.

The Television Panel also "looks forward to the eventual establishment of a television service of exceptional quality. It appreciates that considerably wider channels will be required for such service. Standards for such service can be set up only after experimentation on channels higher than those assigned for six-megacycle operation."

"Accordingly, the committee recommends that a number of channels at least twenty megacycles in width and in as continuous groups as possi-

(*Continued on page* 42)

EDITORIAL

Television — A test case for free enterprise

America's next billion dollar industry is in sight — literally and figuratively. Literally, because it is television, sight-at-a-distance. Figuratively, because it is at last a practical reality, ready to go as soon as the war is won, *if the electronics industry and our government will plan it that way.* For the first time in history *we have the opportunity to take a highly-developed, completely unexploited science and out of it create an industry, a brand new industry which must be built from the ground up, and which will provide hundreds of thousands of new jobs.*

This is an opportunity and *a challenge to our system of free enterprise* which we cannot overlook. The circumstances which make it so are simple — and indisputable.

Shortly before the outbreak of this war, television had reached a state of technical perfection which made it ready for introduction on a commercial basis. But, perfected though it was, its economics frightened many prospective telecasters, who already were engaged in the highly profitable radio and movie business.

They reasoned as follows: If pushed aggressively, it might outmode the existing motion picture and radio industries. On the other hand, if introduced very gradually, so as not jar the status quo, it might conceivably take years to become a paying proposition.

Then too, receivers were expensive and prices could not come down until they were built on a mass production basis, which meant building new manufacturing facilities. But the public would not buy receivers until good programs were available, and somebody had to break the ice. RCA, through the National Broadcasting Company, was willing to go ahead — and a monopollergic FCC put a halt to that, perhaps fearing RCA would corner the market.

Television slumped into an era of squabbling and indecision, which it took a war to end. But end it the war did. Every available engineer, every manufacturing facility went into military production. Warring factions suddenly learned how to cooperate with each other in a common effort. The introduction of television as a new medium of entertainment and education was, of necessity, postponed until the war is won.

Pre-War Economic Problem Removed

The coming of war delayed the public introduction of television, but it also had a most unexpected and far-reaching end result. *It removed television's pre-war economic problems and replaced them with a set of favorable conditions.*

In April 1942, the radio manufacturing industry suspended commercial operations, converting itself 100% to war work. To satisfy the staggering demands for military electronic equipment enormous new manufacturing facilities were built, increasing pre-war facilities twelve to fifteen hundred per cent and more.

The question now arises what to do with these facilities after the war, for the demands of aural radio alone will not be sufficient to keep many of them going. *Only television offers the promise of sufficient business* — and many of these new factories, convertible to peace-time use, are particularly suited to the mass production of television equipment and can take advantage of wartime improvements.

Favorable circumstance number one: Postwar facilities for mass-produced, popular priced television receivers and transmitters are now in existence.

What about the public? Will it want television?

A recent survey by RCA indicates that a very high percentage of American homes will be ready and eager to buy a television receiver in the $200 to $300 price range as soon as programs become available. This survey was made in eleven cities covering a cross section of the entire public, including many people who have never seen a good television program, and who presumably have been exposed to no stimulus to purchase a receiver. Remember also that for nearly two years, no new radios have been manufactured for public use. Old receivers are wearing out, and a steadily growing demand for new and better sets is being built up.

Resistance to Television

To build and maintain television equipment trained electronic technicians are needed. *In war plants, the Army, and the Navy there are today several hundred thousand such people, only a small percentage of whom can be absorbed by postwar aural radio,* even taking into consideration the development of FM and airplane communications. *To find jobs for this host of skilled workers, a new frontier must be opened up in electronics.* The only frontier in sight is television. In all its phases, industrial and artistic, it can offer direct employment to several hundred thousand men and women during the next few years. It can do this without destroying jobs in any other industry, without causing technological unemployment.

To be sure, there will be some resistance to the growth of television. There has been a good deal already from established industries, notably certain radio and motion picture interests who view it, as a threat to their profits. This, of course, is inherent in the structure of our economic system and is to be expected. A typical example is one well-known radio executive who not long ago said with a deep sigh, "Well, I guess we can't put off thinking about television much longer".

Seventeen years ago, before the radio broadcasting business was very profitable, radio broadcasters and producers of *talking* pictures were looked upon as "radicals", disturbers of the peace in the realm of silent movies and old fashioned, acoustical phonographs. Now, with a very profitable business on their hands, some of these former liberals have turned into conservatives.

Television has become the "radical", even though it is backed by some eminently respectable corporations and inventors.

Technological improvements have always faced a measure of opposition from "vested interests" even though they are beneficial to mankind as a whole. Sometimes this opposition has caused an improvement to be withheld from the public for decades. The history of communications is full of examples.

The resistance to television in the United States probably has been inspired largely by a lack of understanding — and because of the pressing necessity of keeping one's business out of the red, or else. But now, as more and more people are taking a considered look at television, they are realizing that it will not "kill" radio or movies any more than the telephone "killed" the telegraph, than the airplane "killed" the train. Resistance to television is being converted to a more benevolent state of mind by the remembrance of what happened to the old gramophone business. It did not pay attention to technological advance and the rise of radio with its improved sound reproduction. Result: it went out of business almost entirely, and then experienced a phenomenal re-birth when it took advantage of technical improvements.

Challenge to Free Enterprise

Our free enterprise system has come in for considerable criticism, has been called inefficient and outmoded. *In the postwar development of television we have a nearly perfect test case to prove or disprove these charges.* All the elements of a laboratory department are present: A set of known quantities and circumstances, i.e., the technical state of television and the economic situation of the electronics industry. We have a specific force — American freedom of enterprise, which, barring governmental restrictions, is being applied to these qualities. The conditions under which the experiment is to be conducted are relatively favorable, and we can estimate what the result should be. Whether or not it approximates our estimate depends on the potency and flexibility of our specific force. *It is an opportunity which American industry and government have never had before and may never have again.*

—R.W.H.

Television-Department Store Advertising

(*Continued from page* 11)

medium to develop, and who count on finding pat formulas available at exactly the right moment, will find themselves unprepared — and dated.

With this in mind, Bloomingdale's with Abraham and Straus Inc. have established Metropolitan Television.

Possibilities of television for retail store promotion suggest a three-ply program! First, presentation of the store's goods over a regular television channel.

Second, a program seen only in the store by means of the new "Jeep" equipment, which sends programs from one department to receivers in another part of the store.

Third, news programs shown on large screens at key points throughout the store. I believe that the television news programs will be so engrossing that it will be difficult for us to lure customers away from home and into the stores, unless we offer assurance that they won't miss their favorite news program.

Here is a challenge for the retailer, and more than that, an opportunity.

Joyce on television in retailing

THOMAS JOYCE, Vice President of RCA, told members of the Sales Executives Club. "Only about five per cent of the department store advertising revenue goes into radio broadcasting. That's because department store executives have found through actual experience that they must show their goods in order to sell them. Television will do just that."

Take a store like Best's for example, which has a nation-wide reputation in baby wear. In the average year, there are born, in the area served by NBC's New York television station, 190,000 babies. If Best and Company — or some other progressive department store — has a weekly television program which will show the expectant mothers, the mothers and the mothers-in-law — not to mention the fathers — how to take care of the baby, there will be an enormous and eager audience.

On such a program would appear the outstanding authorities in the field of baby care, to show the mothers in the New York Metropolitan area — as well as elsewhere, if Best and Company chooses to use network broadcasting — the proper care of the baby.

Everything used on such a program would actually be a commercial — although not directly intended as such. The bassinet, the baby powder, the baby oil, the diapers, the toys, the food, the dresses, the shoes, the furniture, the room decorations, the outdoor playthings — every stage property, so to speak would be of interest to the hundreds of thousands looking in. The desire of these mothers to give to their babies the advantage of all the things shown on the television program would translate itself into purchases which, in turn, would translate themselves into more jobs.

Television may enable department stores to compete effectively with mail order distribution. Daily "television specials" with a telephone order service will make shopping easier and may reduce distribution costs. One sales demonstration can reach hundreds of thousands — or millions — of possible buyers. Whereas newspaper "specials," before the war, were largely designed to get the customer in the store, the "television special" — occurring at a different spot in each day's program — will be an inducement to watch the sponsor's entire program of advertised goods; and therefore will pay for itself in added sales, with far less inconvenience to the customer.

Thomas Joyce

The place of films in television

by GEORGE T. SHUPERT

Facts about the use of telecine, written by a Paramount television executive. Mr. Shupert had a background of fourteen years in financial work and investment banking before he made a profession of his hobby, movies, and went into commercial movie-making. Two years later he joined Paramount as Sales Director of the Industrial Film Division and now has become a key figure in its television structure.

WHAT are we going to use to program a television station? Will it be live talent, spot news, sporting events, motion pictures, or something entirely new?

With the interest of so many people centered on television, this question is being asked every day.

Undoubtedly, good use will be made of many types of programs. Each will have its own fans and each will serve a somewhat different purpose. Motion pictures will have certain advantages and inasmuch as this is to be a discussion of the role of motion pictures in television, a few of the advantages of a motion picture television program follow:

Motion pictures afford letter perfect performance due to time and care in editing. There will be no embarrassing mistakes before the electronic camera. The advertiser knows *exactly* what his audience will see and hear.

First big networks

From one to a hundred or more television transmitters can offer the *same* program either simultaneously or at different times. This will probably be the first means of conducting a program over a large number of stations at the same time. It certainly cannot be done in any other manner until a network of stations is connected by cable, relays or a combination of the two and these facilities will take both time and money to construct.

Films offer a permanent record of what actually went on the air. This should aid in future program planning and may prove very valuable from a legal standpoint.

In addition to the television program, prints of the film can be shown to non-theatrical audiences. The advertiser can use prints to show dealers, distributors, and their salesmen the type of advertising support he is giving them. They can also be shown to good advantage for consumer audiences not served by television.

Elaborate live talent shows can be recorded on film from the receiver in the studio and later telecast from other stations in different service areas. This will dilute the cost of the program.

News events can be recorded on film at the time they happen and televised at the peak of audience availability.

Motion picture films can be produced when and where talent is available.

Series of television programs recorded on film in advance of telecast assures continuity. Sudden illness of principal talent will not make costly last minute changes or substitutions necessary. Remember, in television you can't read from a script and it takes time to memorize lines and action.

Production short cuts known to capable motion picture producers will assure reasonable costs.

Initial cost and maintenance of television transmission equipment and personnel capable of telecasting film programs is much less than for live talent programs. This is an important consideration if television is to get off to a fast start once hostilities cease.

Insures Perfection

For the present at least, television cameras are not as sensitive to light as are motion picture cameras. As a result it is not possible to get nearly as great a depth of focus in "live" television cameras today as you can get in movies. Therefore you can achieve more satisfactory pictorial qualities right now by shooting a program on film, and then running that film off on your telecine channel. However, this marked difference between the depth of focus in "live" television and movies should be radically altered by the improved light-sensitivity which may be available in postwar television cameras.

Films especially produced for the purpose or film from existing libraries will undoubtedly be used to cover transitions in live talent shows thus creating a greater feeling of reality.

The minute movie type of film transcription offers an economical means of spot advertising.

50 Years' Experience

The technique of producing good film programs has already been developed by 50 years of experience and film makers know what will please an audience.

The use of motion pictures for advertising purposes is not new. Many of the problems that confronted the producer of industrial films are also going to confront the producer of television programs — as well as a lot of new ones. Perhaps a study of the experiences of Industrial Film users will prove helpful in arriving at the answers. *After all, in spite of all that has been said about television's spontaneity, immediacy and intimacy . . . television in your home is really a motion picture and what makes a motion picture interesting should also attract and hold the television audience.*

Another thing to remember. Speaking generally, it isn't going to make a great deal of difference to the viewing, listening audience whether the picture he sees in his home on his receiver is being recorded from live talent in the studio or from a film made several months ago — *as long as it is well produced and interesting.* It must be good or it will not hold the audience! Sporting events and spot news may be exceptions to this from a technical standpoint but they cannot be relied upon to furnish us with the bulk of our television fare.

Of course cost is a very important consideration. Television will undoubtedly be supported by advertising much as is standard radio today. The advertiser will not support it unless he gets *more* than his money back. He will have to be shown that television pays and right now there

is not a great deal of proof to offer . . . because the medium is too new and receivers are not widely enough distributed to make complete surveys.

So let's draw on the experience of Industrial film users and see if we can find some of the answers.

Greater Impact

A recent survey was made comparing industrial motion pictures with other advertising media. In many instances the cost per thousand of audience of Industrial movies was less than that for full page ads in national magazines — based on those who read the ad through. This seems to be a fair basis for comparison, because a motion picture usually gets the complete attention of its audience. While in many instances, films cost more to make and distribute than other media, *in every case checked the advertisers felt that the greater impact of the motion picture was well worth the additional expense.* In other words, they felt that it was a lot better to spend say $10,000 for a film that would do a job well than $5,000 to obtain poor or questionable results.

These results seem to be confirmed by a recent survey conducted by N.B.C. which indicated that television advertising is 10 or more times effective than all other advertising media used in their test.

This does not prove that advertising films or televisions are the only good advertising media. Far from it. Newspapers, magazines, billboards, radio and other established advertising media have proved their worth and will always be with us playing their very important role in moving our nation's goods. The approach to television from the advertiser's viewpoint undoubtedly should be from the angle of what it will do for him — not, what does it cost in comparison with something else.

Perhaps the bicycle and the automobile will help illustrate this point. They both afford a means of transportation but one costs a lot less than the other to purchase and operate. If the bicycle will adequately fill the bill, it is uneconomic to use an automobile. However, if the automobile will do the work better . . . and cheaper in the long run . . . it is equally uneconomic to use a bicycle.

So it seems reasonable to assume that motion picture film, because of its many advantages may well prove to be the background of a television program for some time to come. What better medium can be used than the one which has entertained upwards of 80,000,000 people a week in our nation's theaters . . . the tool that has cut the training time of our citizen army from months to weeks and the medium of persuasion which, through the antics of Donald Duck told us why we had to pay higher income taxes . . . and made us like it?

RTPB Report

(*Continued from page* 35)

ble be allocated for experimentation above the six-megacycle channels and that no standards be prescribed for such operation until the experimental program indicates the necessity for such standards. It should be understood that at least thirty channels, the exact width of which will be determined by experimentation, would be required for a national allocation of television broadcast service in this region.

"It was felt that ample provision should be made at such frequencies for experimentation with color television and high definition monochrome television. It was the firm belief of the committee that it would be premature to consider standards for television operation in wide channels at ultra-high carrier frequencies since laboratory and field experience with television systems operating at these frequencies is wholly lacking."

Video selling in 1895

by PATRICIA MURRAY

A note on the striking parallel between commercial movies of fifty years ago and television today, by a veteran television actress. Patricia Murray can claim to be a veteran despite her youth, for she began her experience on NBC in 1938—the year before she graduated from the University of Pennsylvania. Additional television work followed at CBS, and for RCA at the World's Fair as "Miss Television." Today she is mistress of ceremonies on the Lever Brothers program over W2XWV in New York, and is television editor of Printer's Ink.

ALTHOUGH advertisers realized the potentialities of motion pictures for product promotion fifty years ago, the method of reaching a mass audience this way has always been a problem. Now, after a turbulent history of ups and downs, it would appear that the commercial film industry is on the brink of a successful era, via video.

Some films which had been made for commercial purposes in the season of 1895-1896 turned up recently in the Fun Film Library in New York. Methods of distribution in those days were undeveloped. The first one attempted, so far as can be ascertained, met with overwhelming success and, paradoxically, dismal failure.

The films were shown on the roof of the Pepper Building, at Herald Square, New York, on the site now occupied by R. H. Macy & Co. Advertisers were delighted with results

A "frame" from the Dewar film

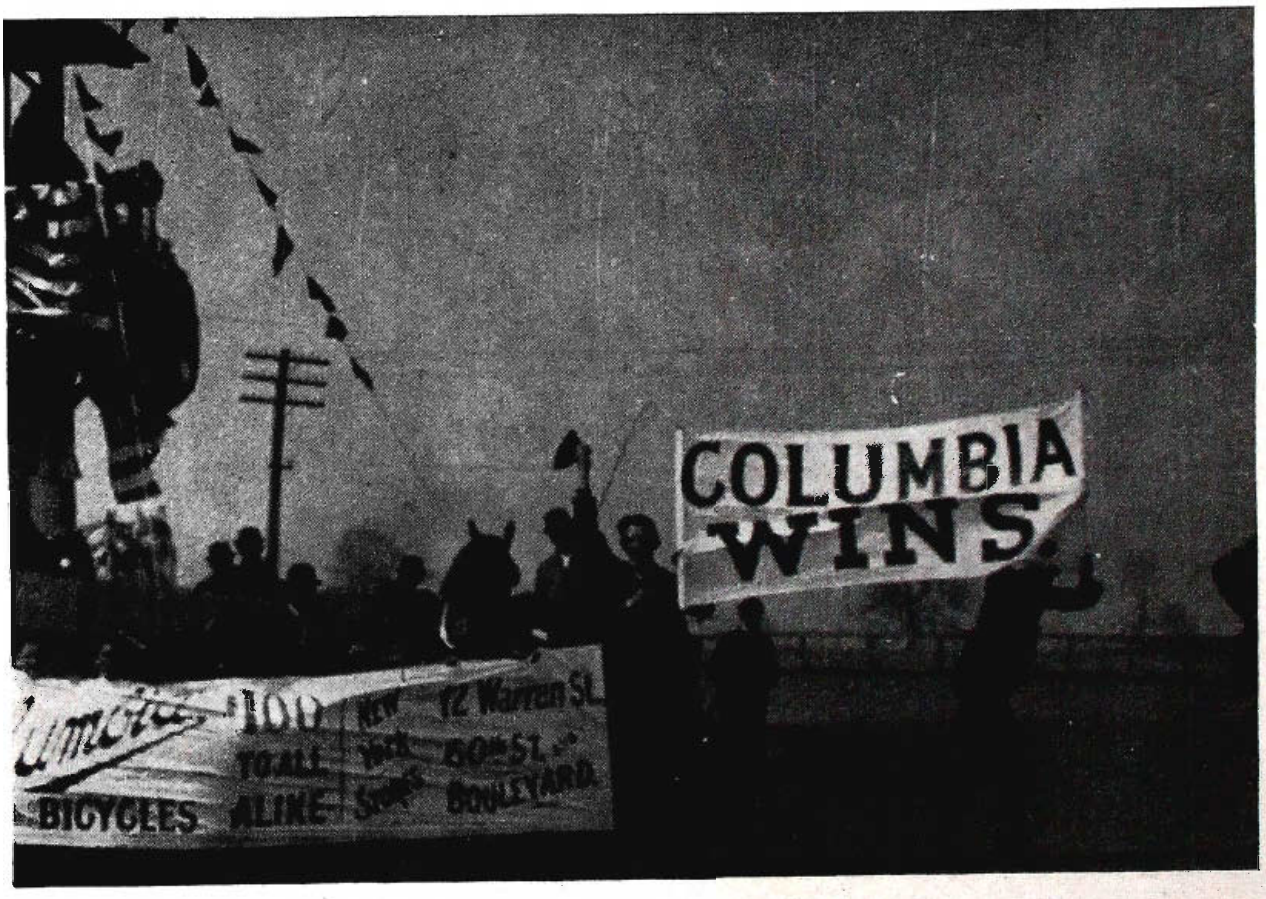
of their promotion, and rightly so. Great crowds flocked through the streets to watch the antics and activities of the film figures, propounding merits of various products. Onlookers jammed the sidewalks, overflowed into the streets. Traffic was forced to a standstill and, consequently, this type of commercial film presentation was banned.

The Fun Film Library has prints of five commercials made in the 1895-1896 season for Maillard's Chocolates, Dewar's Whiskey, Columbia Bicycles, Piel's Beer and Hunter's Rye Whiskey.

The Maillard film reached back into history. It is claimed that the Maillard formula for chocolate, served in liquid form originally, was prepared for the pleasure of Cardinal Richelieu, who had great fondness for that food. The films opens showing the Cardinal, in an obviously depressed frame of mind and spirit, sitting dejectedly at a table. In the background, a banner, full width of the setting, carrying "Maillard's Fine Chocolates" in large letters, kept the name of the sponsor before the audience throughout the film. Eventually, a monk, bearing a tray with a cup of steaming hot chocolate, places the beverage before the Cardinal. The latter sips and is suddenly infused with new life and vigor. The film ends on a joyous note, showing the beneficial results of consuming the Maillard's product.

The film for Dewar's Scotch Whiskey, long before it became a Schenley product, opens with a Scot in jacket, sporan, plaid kilts and socks, at a table pouring himself a drink. Back of him, three life-sized paintings, presumably of celebrated Scots, line the wall. Above the paintings, on the molding, is inscribed "Dewar's Scotch Whiskey".

The Scot enjoys himself so thoroughly that ultimately a similar effect is observed upon the three figures in the portraits. They become more ac-



From the film selling Columbia bicycles

tive as their interest in the leading man increases. When the latter rises to give vent to his buoyant spirits, the three background figures step out of their frames to participate in the party. The scene concludes with a merry Highland Fling performed by all four characters.

This film for Columbia Bicycles depicts a bicycle race. Scene from the movie was shot at Columbus Circle, New York City. Course of the race was laid on a wide boulevard, known today as Central Park West. Commercial angle of this film presentation was achieved early by a large banner, telling product's name and price and also giving location of New York dealers, held aloft by a number of smiling youngsters. When the contestants have crossed the finish line and passed from the camera's view, two men hurry into the center of the course with another banner, which proclaims, "Columbia Wins".

Infinite improvement in movie production has been accomplished since the Gay '90's, though from the angle of public acceptance it is evident that the early advertisers employed a rather heavy technique from the start.

Tele Parallel with 1895

Today, on the 50th anniversary of movies, we are finding a parallel with these primeval film commercials in early television.

Films for product promotion will be increasingly employed in television because of their dependable character. As time goes by and the television audience increases in size, it will become more and more important that nothing misfires in the demonstration of a product.

For example, at a luncheon a few months ago, a gentleman delivered a lengthy discourse on the excellence of a certain paper cup. The talk was climaxed with a demonstration. The man poured water into his cup and was horrified to see the water stream to the floor as though nothing had been in the way of its progress.

A short time ago, a dog food commercial was televised in New York. Leading role in the skit was performed by a dog. Two dishes of food were offered him. The first dish he declined quickly and definitely. When the second dish, containing the sponsor's product, was offered to him, he first appeared very disinterested. With a little urging, however, he finally took a sniff. An expression of delight came to his countenance and the television audience could see beyond doubt, that it was this for which he had been waiting.

After the show the producer confessed that he had been in agony throughout the performance, fearing the lights and confusion would bewilder the animal, and he might balk on his performance. Such an experiment, possible today without calamitous effect in event of failure, would hardly be practical in days to come.

Since, upon occasion, it is perfectly possible for a dog to decide he just isn't interested in eating; for non-run stockings to run; for non-breakable and shatterproof glass to both break and shatter; or for innumerable other objects to do exactly what they should not do, it would seem logical for an advertiser to take proper precautions against any such mishaps. This he could and probably will do with moving picture shorts, which can be economically produced, edited to a high degree of perfection, and widely distributed—a visual-aural outgrowth of today's transcribed commercials on the radio.

As F.C.C. Sees It

(*Continued from page 8*)

to the Commission and overall standards laid down, and until the materials situations is eased, manufacturers cannot, of course, go ahead with the production of peacetime television sets.

As you know, the Commission's policies with respect to the granting of applications for radio stations are presently governed by War Production Board restrictions on the use of critical materials. We at the Commission are in no position to say when the materials situation will be improved to the extent that WPB can relax these restrictions.

It is my own feeling that we are fortunate in having time to lay the basis for a sound post-war television industry before materials and manpower again become available. At the same time, we are impressed with the urgency of arriving at equitable standards *before* manufacturers are ready to convert their assembly lines to the production of home television receivers. We are working to the end that the Commission may move ahead with the industry in exploiting television on a sound basis.

As to possible time-sharing by television licensees, sharing of equipment, and the reassignment of television channels, I feel that these are problems which may not be resolved until we know more about the shape of things to come—specifically, what channels will be available to television after the war.

May I take this opportunity of wishing you success in your new venture. A publication such as you propose can perform a real service in expanding the available information about, and understanding of, the problems confronting this promising new industry.

TBA

(*Continued from page 9*)

the Crosley Corporation of Cincinnati, the Milwaukee Journal, and others.

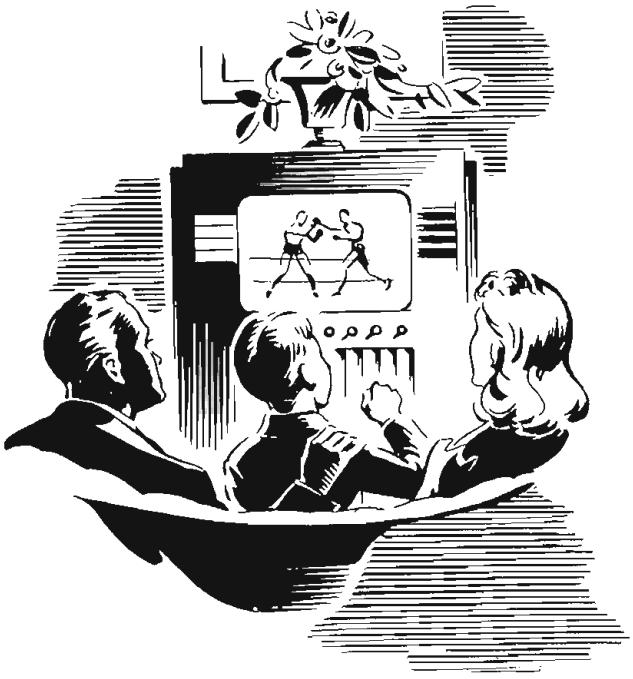
Manufacturers and groups now engaged in television activities, or soon to be engaged and listed as affiliate members include: RCA-Victor, Time Inc., North American Philips Company, Emerson, Raytheon, Capitol Radio Engineering Institute of Washington, D. C., William Morris Agency, and Midland Broadcasting Company of Kansas City.

A prime objective of TBA is to avoid any repetition of the errors that marked radio's beginnings in the roaring '20's. As stated in the Association's Certificate of Incorporation, the objectives point up these policies:

> "To foster and promote the development of the art of television broadcasting; to protect its members in every lawful and proper manner; to foster, encourage and promote laws, regulations, customs and practices which will be in the best interest of the public; to protect the interests of the members by opposing the enactment or adoption of any laws, rules, regulations, customs or practices which will discriminate against or in any way injure the members."

On January 29, 1944, Allen B. Du Mont was elected President and Lewis Allen Weiss of Don Lee was elected Vice-president of the Association at a meeting of the directors. Jack R. Poppele, of the Bamberger Broadcasting Service, was appointed Assistant Secretary-Treasurer at this meeting and a short time later Will Baltin was named by the directors as the Secretary-Treasurer. Offices of the Association were established at 500 Fifth Avenue, New York City.

PHILCO, *the leader,* *and* TELEVISION



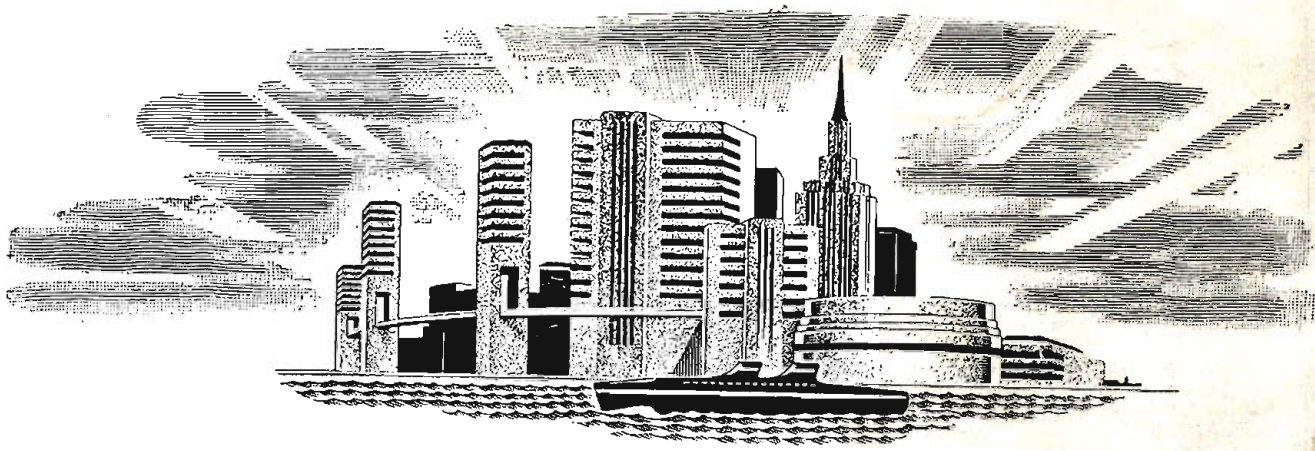
WHERE will Philco, the radio industry leader, stand when Television is here for the public to enjoy?

Since 1928, more than sixteen years, Philco engineers have devoted millions of dollars to television research. More than any other group, they have focussed on improving the clarity, sharpness and detail of the television picture, fostering the standards which are now generally accepted in the industry. Philco Television Station WPTZ has been a rich laboratory of experience in television transmission and relay technique.

In this and many other directions, Philco is in the forefront of the developments that make television a bright hope for the future as a source of home entertainment.

PHILCO CORPORATION, PHILADELPHIA, PA.

TELEVISION 1954 A.D.



Back in 1944, you few men of vision in broadcasting management clearly foresaw that the addition of sight to sound would open up vast new business possibilities.

You took a tip from experimental commercials during the war years which showed the spectacular effectiveness of mass persuasion by television. Shortly after victory, television time *did* leap into great demand . . . just as you thought.

DuMont anticipated, just as you did, that there would be a peacetime scramble to be "first with television." So they completed their designs for telecast equipment that set new highs in signal transmitting efficiency and new lows in maintenance and operating costs.

Then the DuMont Equipment Reservation Plan was formulated so that you prospective television station owners could *have* that equipment in operation at the earliest possible postwar moment. This plan placed DuMont's extensive experience in television station building and management at your command. In addition, this plan gave you "postwar priority" in the equipment you needed.

That, you thought, was one sample of television talk that sounded down to earth . . . it would cut down your trial-and-error losses, and put your telecasting business on a sound and practical footing at the earliest possible moment.

So you dropped a line to DuMont and got on the Television bandwagon—on time . . . back in 1944.

We know it's 1944! So you're invited to learn about the DuMont Plan now. Send for our new booklet "Planning Your Television Station." Do it today!

DUMONT *Precision Electronics and Television*

ALLEN B. DuMONT LABORATORIES, INC., GENERAL OFFICES AND PLANT, 2 MAIN AVENUE, PASSAIC, N. J.
TELEVISION STUDIOS AND STATION W2XWV, 515 MADISON AVENUE, NEW YORK 22, NEW YORK