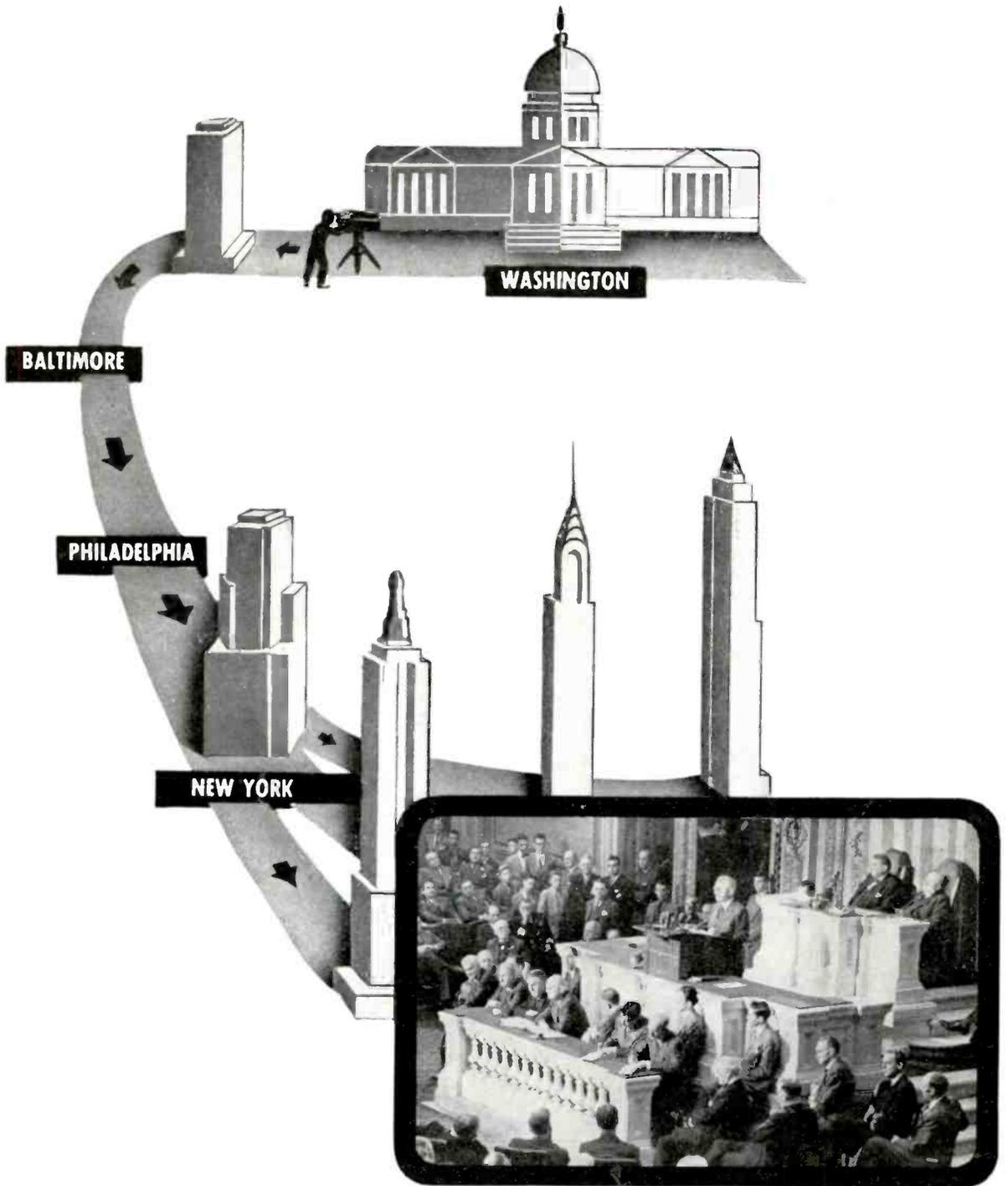


CITY OF PHILADELPHIA
2nd FLOOR

DEC 28 '45

Television

THE BUSINESS MAGAZINE OF THE INDUSTRY



35¢ December 1945

BUY MORE VICTORY BONDS



ELECTRONIC TELEVISION IS AN RCA DEVELOPMENT

This is the seventh in a series of advertisements showing that RCA engineers developed the basic essentials of the electronic television system—including tubes and circuits.

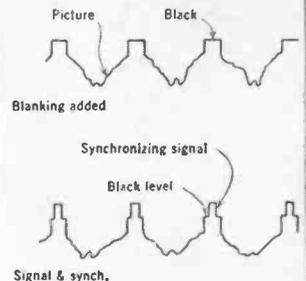
RCA built the first all-electronic television transmitters and receivers—the first commercial television station—established the first television relay system—presented the first electronic theatre television—was the first to televise a baseball game and a Broadway play; and was first to televise from an airplane.

RCA is, and will continue to be, the leader in practical, successful commercial television. You may expect the best of all kinds of television transmitting and receiving equipment from RCA.

7. THE REMOTE PICK-UP EQUIPMENT

THE signal generated by the field-camera pick-up tube must be greatly amplified (and synchronizing and blanking must be added) before it can be sent on to the studio or main transmitter. Thus, considerable equipment, other than the field camera itself, is required at the point of pick-up. RCA built the first complete equipment for field pick-ups, and the first such equipment (shown here) using the Orthicon camera. In this equipment, the signal, pre-amplified in the camera, is amplified further

to monitoring level and fed into the line or relay transmitter for transmission to the main studio. Synchronizing pulses are added to lock together the scanning beams in the camera and receiver tubes. The equipment that accomplishes these functions is completely contained in several suitcase-size units. This is the equipment that NBC has used so successfully in broadcasting from Madison Square Garden, the Yankee Stadium, and other points in New York City.



The Fountainhead of Modern Tube Development is RCA



RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION • CAMDEN, N. J.

In Canada, RCA VICTOR COMPANY LIMITED, Montreal

Television

VOLUME II, NUMBER 10

DECEMBER, 1945

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COVER: Diagram of path of images between Washington and New York over the A. T. & T. coaxial network. Television pickup is carried over special television lines to the long distance terminal in Washington; from there by the coaxial cable system (which includes 50 amplifiers) to Baltimore, Philadelphia and the long distance terminal in New York. Special television lines, provided locally, carry the program to New York's three operating stations—WNBT (NBC), WCBW (CBS) and WABD (DuMont).

Frederick A. Kugel, *Editor and Publisher*
 Mary Gannon, *Managing Editor*; Dorothy Holloway, *Washington*
 T. R. Kennedy, Jr., *Technical Editor*; Gilbert Winfield, *News*
 Jack Kilpatrick, *Patents*
 Lawrence Sweeney, *Business Manager*; Evelyn Hellem, *Circulation Manager*

Just talking . . .

We have had some very favorable comments on our News Letters. Most comments have asked for more frequent issues. We would like to do this. However, there isn't that much happening these days to warrant it.

We will continue to send out News Bulletins only when the industry development is of particular significance to our readers, like the one we recently issued on the FCC final allocations. In this bulletin we gave the industry more than a two-week advance notice on allocations before the FCC announcement.

Frederick A. Kugel, Publisher



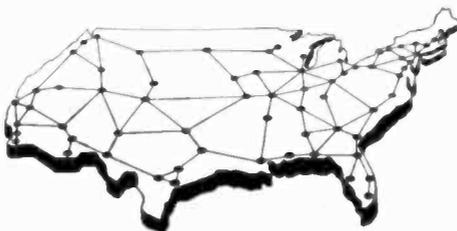
MICRO-TEL RELAY

Television's first MICROWAVE link

GENERAL ELECTRIC'S Micro-Tel relay—first 2000-megacycleradio relay in history—heralds a new era in network operation that will bring television and FM to more people at less cost.

• This simple relay, which eliminates connecting wire lines and costly right-of-ways, consists of a low-power microwave FM transmitter, a microwave FM receiver, and a highly directional transmitting and receiving antenna system which gives each watt of transmitter power the effectiveness of approximately one million watts. The system is simple, economical and provides unattended operation.

• Today, General Electric is testing a Micro-Tel link between the studio and transmitter of its great television station WRGB in Schenectady—a distance of 12½ airline miles.



Soon, the world's first television microwave relay—equipped by G. E. and operated by the International Business Machines Corp.—will be added. This relay will extend to New York, Philadelphia, Baltimore, and Washington. Additional links will follow... for television programs, full fidelity channels for network broadcasting, facsimile channels, and multiple business machine channels—simultaneously in both directions.

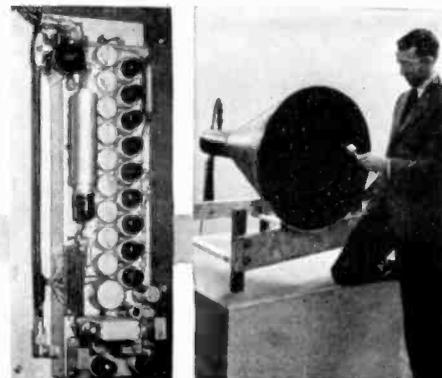
• Further expansion of this network and the establishment of

others will bring television, broadcasting, and business machine services to smaller communities.

• Whether your requirements are for Micro-Tel relays, complete television broadcast stations, or Intra-Tel systems, look to General Electric for your equipment. Plan now to visit Schenectady to study G-E broadcast facilities. Wednesdays and Fridays are "open house" days. Write for the folder "How to Get To Schenectady," or ask your G-E broadcast equipment representative to help you plan your visit. Electronics Dept., General Electric Company, Schenectady 5, N. Y.

Authentic Guide to Television Programming

Write for the new book "Television Show Business," by Judy Dupuy, Published by General Electric. \$2.50 per copy. Address: Electronics Department, General Electric Company, Schenectady 5, N. Y.

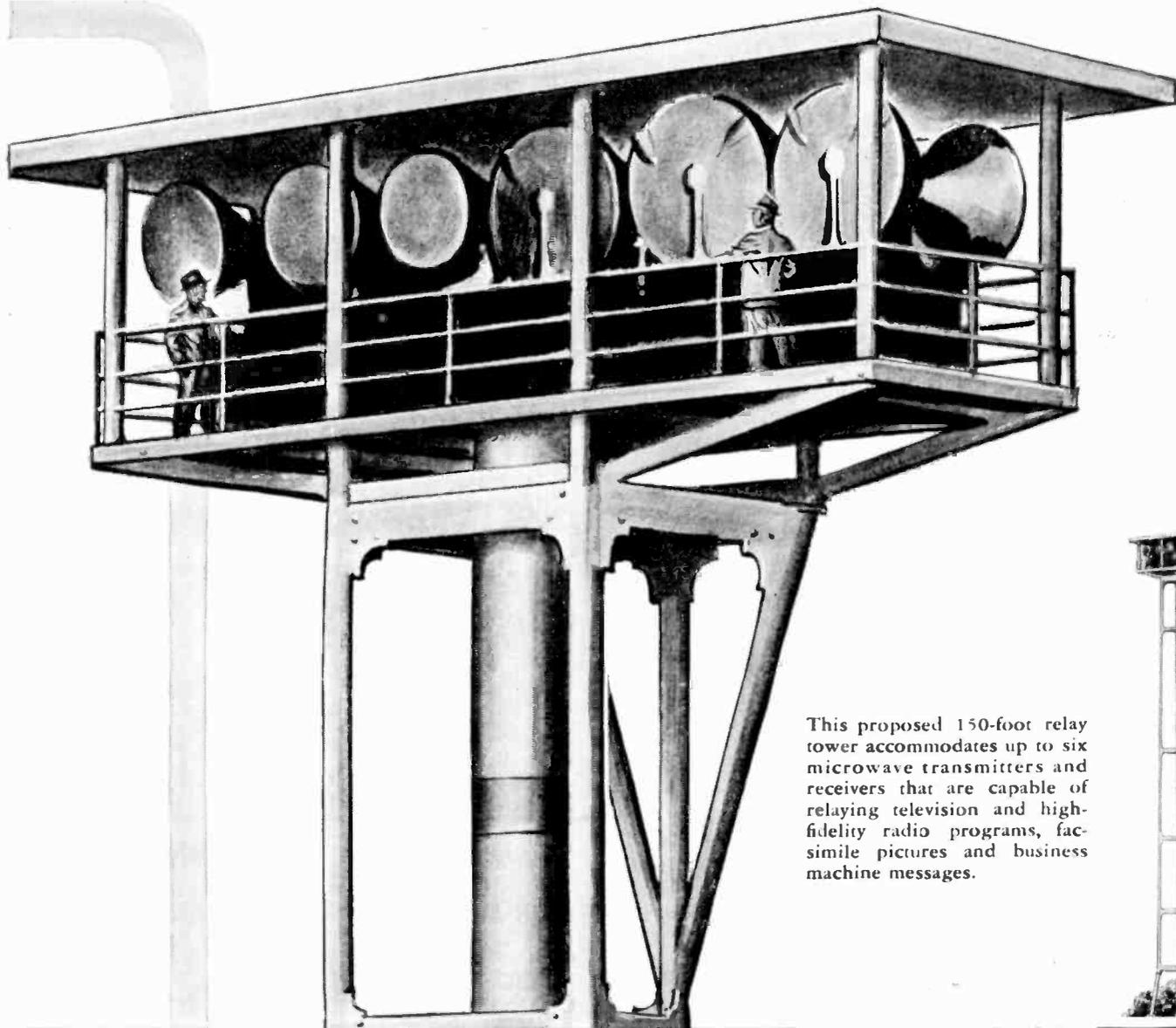


Receiving antenna and receiver for General Electric's experimental Micro-Tel link in Schenectady. Note extreme simplicity of installation. The horn type antenna is only 2 feet in diameter.

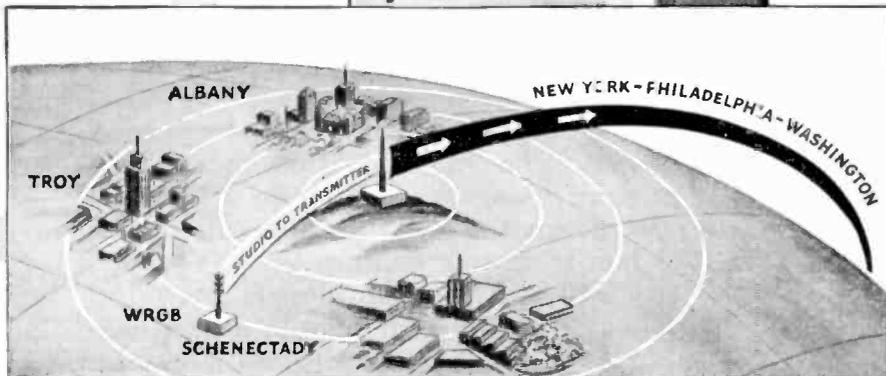
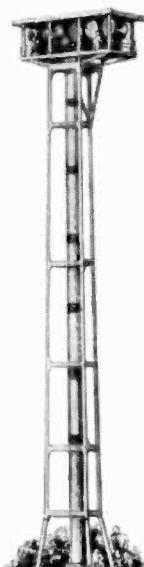
For earliest possible delivery of your broadcast equipment, place your order now.

STUDIO AND STATION EQUIPMENT • TRANSMITTERS

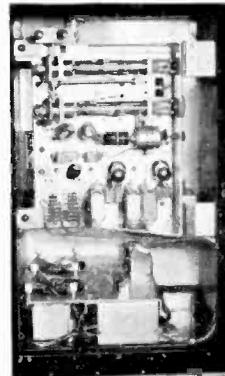
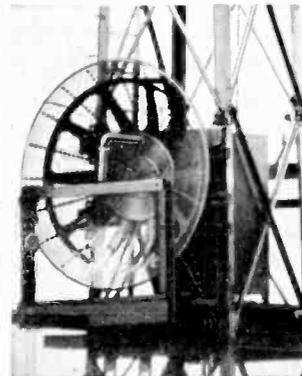
GENERAL ELECTRIC



This proposed 150-foot relay tower accommodates up to six microwave transmitters and receivers that are capable of relaying television and high-fidelity radio programs, facsimile pictures and business machine messages.



The G-E microwave television link. With the Micro-Tel relay, G.E. contributes another major development in television and broadcasting.



Micro-Tel link transmitter and antenna with highly directional reflector atop mast at WRGB. This system gives each transmitted watt of output the effectiveness of approximately 1,000 watts.

G-E Lighthouse tubes make television microwave relaying possible. For maximum station dependability and performance, use G-E electronic tubes.

ANTENNAS • ELECTRONIC TUBES • HOME RECEIVERS

AM • TELEVISION • FM

See G.E. for all three!

A NEW AND DIFFERENT SWEEP GENERATOR

Needed in
TELEVISION, FM, RADAR, HIGH FREQUENCIES



\$395.00 APPROXIMATE PRICE

For your work in television, FM, radar, high frequencies, etc., you will need one of these newly developed electronic frequency modulated signal generators covering a continuous range between 500 Kc and 110 Mc. Designed primarily for use for field, laboratory, or production alignment of wide band r.f., i.f., or video amplifiers used in radar, direction finders, television, or other wide-band systems.

Sweep range is adjustable from 10 Mc. down to 5,000 cycles at any frequency within the above range for alignment of narrow-band receivers or amplifiers. Self-contained power supply. Input 110 V., 50-60 cycles. A.C. 60 watts. Two internal "markers" are provided, one at intervals of 10 Mc., the other at intervals of 1 Mc. for band-width measurement. The amplitude of these markers is adjustable from the



.1 Volt, Max., 500 Kc to 110 Mcs;
100 Ohms, 10 Mc. Sweep Width

SAVES TIME

— In Production and in Testing

LIGHT

— Only 16 lbs.

SMALL

— 14½" x 8" x 8"

*Also Available Immediately
In Sample Quantities*

HIGH VOLTAGE RF POWER SUPPLIES
(10 KV, 24 KV, or 30 KV) for 7, 10, 12, or 14 inch
direct-viewing Kinescopes and for projection sets

ICONOSCOPE YOKES

CATHODE RAY RECEIVING TUBE YOKES

DEFLECTION TRANSFORMERS

Write for preliminary technical data. A limited number of orders placed now for the Sweep Generator can be filled immediately.

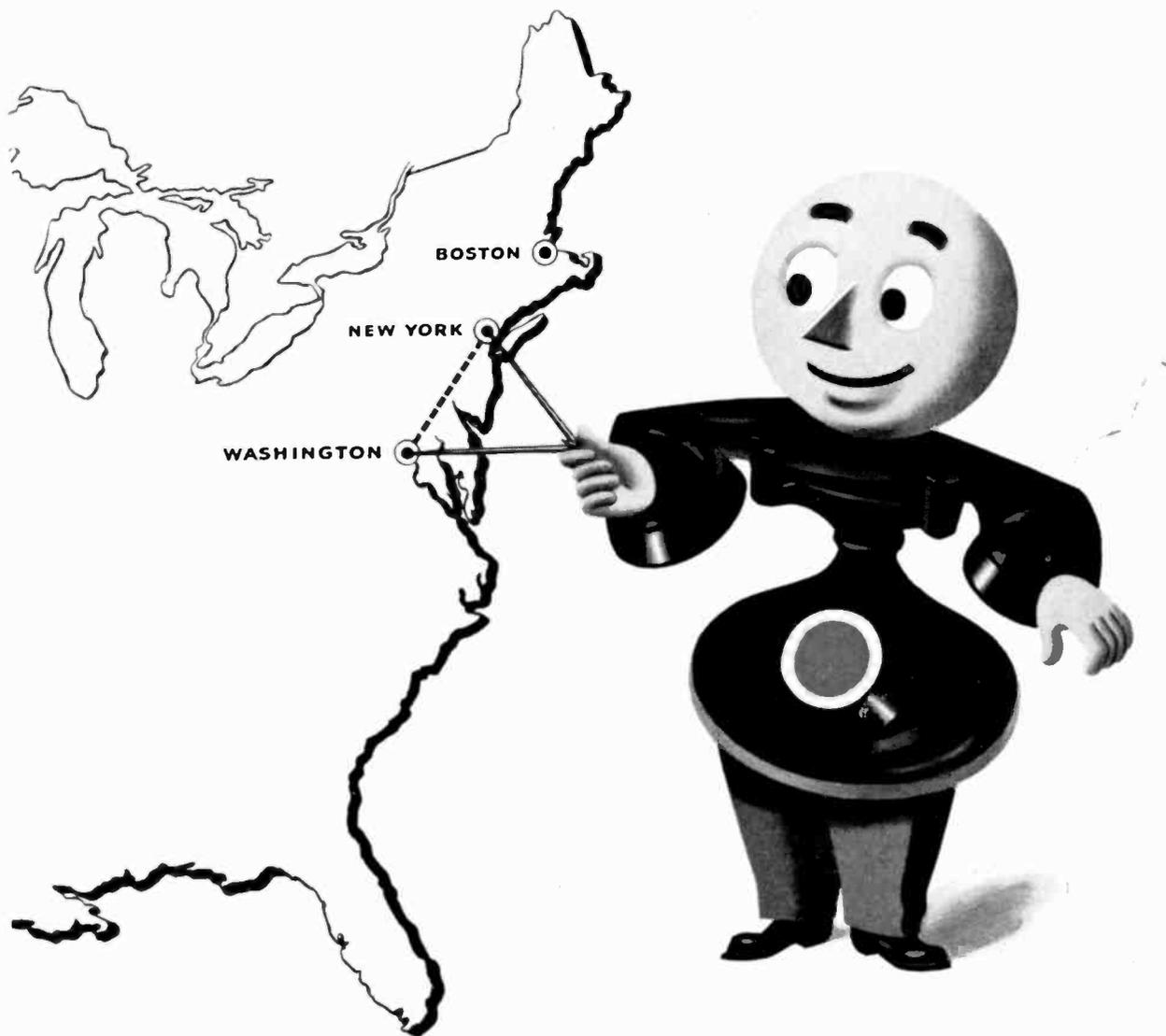
panel. The main dial is marked in megacycles/sec. and when set at any frequency the sweep is plus and minus 5 Mc. from this setting.

An attenuator is provided which reduces the output signal of .1 V. to about 30 microvolts, which is well below the gain control region of most receiver or amplifier systems.

UNITED STATES TELEVISION MFG. CORP.

106 Seventh Avenue · New York 11, N. Y. · CHelsea 2-1154

RADIO · TELEVISION · ELECTRONIC PRODUCTS



NETWORK FOR TELEVISION

Coaxial Cable Link in Initial Tests

Bell System coaxial cable carried television of the Army-Navy football game from Philadelphia to New York on December 1. This was an experimental preview of long distance television by cable.

Beginning in January, coaxial cable between Washington and New York will be regularly scheduled for experimental television use.

Each coaxial tube, with present amplifying and terminal equipment, can transmit

a television signal, or 480 simultaneous telephone messages. For several years the Bell System has been using coaxial cable to carry telephone conversations over certain intercity routes. Within the next few years upwards of 7000 miles of coaxial cable will be constructed.

The Bell System is installing a network of facilities suitable for television which will ultimately span the country from coast to coast and from north to south.

BELL TELEPHONE SYSTEM



Union Picture In

Unions are starting to move. Here's a summary of this important phase of television and a list of most of the unions who will have some jurisdiction in the video field. 1946 will see increasing activity.

By MARY GANNON

IN any true evaluation of the forthcoming union picture in television there must be a realization of its composite nature. For while television has come to be regarded as a new medium, requiring special techniques, nevertheless certain of the elements of stage, screen and radio are incorporated in its basic structure.

In each of these older, established fields, unions are strongly entrenched. And the promise that television would provide a new and extremely large source for postwar employment is borne out when you see it as a single industry which combines practically every job in the three main entertainment sources, along with many new ones of its own.

With this combination comes an inevitable overlapping of union jurisdiction and a fear that jurisdictional disputes are liable to cloud the early years of television, until such time as unions settle this problem among themselves.

Job classifications are almost endless, but here are the high spots. On the talent side alone, there are actors, actresses, announcers, singers, dancers, musicians. On the studio floor, there are stage employees, studio sound technicians, costumers, set electricians, grips, property craftsmen, studio laborers and utility workers, studio mechanics, make-up artists, cameramen, motion picture machine operators.

In the control room, there are the video and audio technicians. Then you have the scenic artists, arrangers of music, orchestra librarians, copyists, conductors; film editors, librarians; cartoonists and animators; directors, producers, script writers; motion picture cameramen, projectionists and photographers.

Big question mark facing the industry is how separate union jurisdiction in radio, film and stage will merge into the composite of television. Will these older unions jockey for position in the new field? Will new unions be set up for television? How many unions will management have to bargain with in one station?

These are but a few of the problems which will undoubtedly come to the fore and press for a solution as existing stations start programming on expanded schedules and as new ones begin operating on a commercial basis.

Union Attitude

On the whole, unions have been keeping a watchful eye on television, with many committees set up to study the problems. So far, most unions and their members have been willing to play along and not hamper television's growth with burdensome restrictions. It is hard



Television Field

to be specific at this point in the labor-management situation, for few definite policies have been formulated. But here is the trend of thinking of some of the more important unions, as the industry stands on the threshold of a tremendous expansion.

Associated Actors and Artistes of America (AFL)

— This is the parent body of which American Federation of Radio Artists, Actors' Equity and Screen Actors' Guild are members. Several years ago a committee was set up to examine television but with the advent of war and the resultant stoppage in tele activity, the committee was dropped.

Right now, AFRA is marking time, permitting their members (announcers, actors, singers), to work on television programs without any set regulations as to wages and hours. The same is true of Equity. While both unions will undoubtedly feel that they have equal rights to television, any dispute which may arise will very likely be settled within the 4As and not dragged into a jurisdictional fight.

American Communications Association — Broadcast Division (CIO), are the bargaining agents in about fifty radio stations along the east coast. Their jurisdiction covers radio technicians, engineers, announcers, and in many cases, they represent the sales and office staffs. Although they are mainly interested in the technical side of television, their plans embody the complete organization of an entire television station, covering everyone but the actors and the musicians. Right now they are arranging a series of technical lectures on television in order to acquaint their members with the medium, as they feel FCC regulations might require a different operator's license for television.

First television contract has already been signed with WABF in New York, (Metropolitan Television). Contract, which will be in effect until September, 1946, covers engineers, technicians, announcers, script writers and technical supervisors. Starting salaries for new employees are as follows: Engineers and technicians start at \$42.50 per week with an increase of \$2.50 every six months. Announcers and script writers start at \$37.50, with an increase of \$2.50 every six months. Technical supervisors are to get a minimum of \$5.00 per week more than the highest paid member on the technical staff. Work week is the usual 40-hour schedule.

American Federation of Musicians (AFL) membership includes instrument performers, copyists, arrangers of music, orchestra librarians, grand opera, symphony and band conductors in every medium. The Petrillo strangle-hold has reached out to television, with an arbitrary announcement barring musicians from appearing. Consequently, on stations with union affiliations, recordings are used for musical sequences — with the customary royalties paid to the AFM.

American Society of Composers, Authors and Publishers (ASCAP) acts on behalf of copyright owners in securing their performing rights from commercial users of music. Having obtained the television rights from their membership, the society has held a number of meetings to discuss regulations for television but no definite policy has been formed as yet. Under the



present working agreement, ASCAP has given tele stations free experimental rights, cancellable within thirty days.

International Alliance of Theatrical Stage Employees (IATSE) includes stage employees, moving picture machine operators, cameramen, laboratory technicians, studio sound technicians, studio projectionist, costumers, set electricians, grips, property craftsmen, studio laborers and utility workers, studio mechanics, and make-up artists for both stage and screen. However in television, IATSE has already made the first major move in extending their coverage. In a contract signed with DuMont, Station WABD, New York, the job classifications, besides the regular stage employee coverage, included the following: Supervising engineer; production assistant; studio manager; transmitter engineer; sound boom operator; camera operator; equipment and maintenance technician; projectionist; M. P. video control operator; audio operator; master audio operator; video control operator; master video control operator and studio assistant.

DuMont, being a new television station and not an appendage to an operating radio network, had no previous union affiliations covering their technicians. However in the case of NABET representation at WNBT (NBC) and IBEW at WCBW (CBS), IATSE control there is limited to the stage hands, carpenters, prop men, etc.

International Brotherhood of Electrical Workers (IBEW — AFL) covers inside and outside electrical workers, with particular emphasis, so far as their radio activity is concerned, on voice, sound, vision, transmission and transference electrical workers. At WCBW their jurisdiction extends to panel operators, cameraman, boom mike and technical maintenance men.

Motion Picture Film Editors (Local 771 — IATSE) includes film editors, assistant film editors, film librarians and assistants, and specialists who work on sound effects, music and foreign language dialogue. In a statement prepared especially for TELEVISION, Jack Bush, vice-president of the local, stated:

“Just as radio producers now maintain a library of sound on discs, it is apparent that television companies will keep a library of film stock shots. The accepted work-week is the five-day, forty-hour week. The average wage paid ranges between \$105 and \$140 for film editors. Assistants under existing contracts start at \$52.50. The film librarian's rate of pay ranges between \$65 and \$80. Where assistants are employed, their salaries begin at \$40 per week. It is a foregone conclusion that the level of skill required of the telefilm editor will be expected to be at least the same if not more than that of the motion picture film editor cutting a theatrical or commercial picture. Television, in order to equal theatrical standards, must attract the skilled technician by offering him conditions and wages not lower than what is now accepted in the motion picture industry.”

Screen Cartoonists (AFL) have not drawn up any contracts in television yet but do claim jurisdiction over all persons using the medium of animation or drawing in television. Future plans call for setting up comparable rates to those received in the animation industry, with provision for higher rates where people are subject to call.

United Scenic Artists of America, while recognizing tele as a new industry, believe it is part of stage and screen and that stations will want trained men, with a knowledge of proper lighting and color, combined with a sense of what makes settings photogenic. Union members are willing to go along with the stations in this experimental stage and although networks are paying union scales as a general rule, certain working conditions have been waived. Regular contract generally sets certain starting and stopping times — a 7-hour day starting not later than 9 o'clock. However, in television they are allowed to start any time of day they wish and may work 8 hours before double time starts. While not connected with IA officially, there is a strong working tie between the two unions and the members won't work with non-union stage hands.

(Continued on page 22)

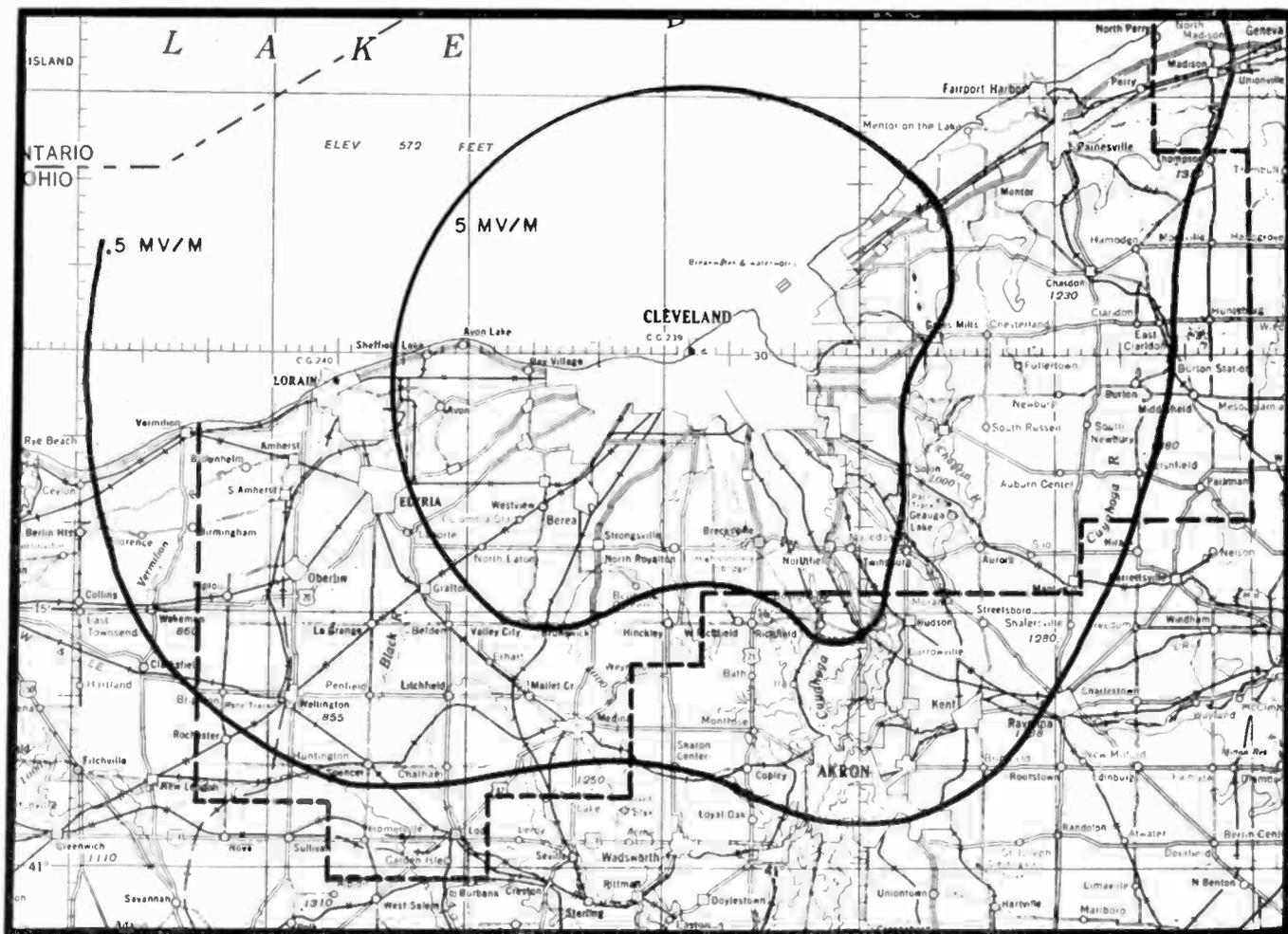


Here's just a part of the group needed to put on a television show. Photo was taken at WNBT.

Television Outlook in Cleveland

By GILBERT WINFIELD

Sixth in a series of articles matching the number of applicants for stations against the number of channels available.



Wavy lines indicate the coverage in the Cleveland area which can be given by a 25 kw station, with an antenna height of 650 feet, using two Bay Cross folded dipole antenna. Dotted lines indicate the trading area. (Contour map, courtesy of Allen B. DuMont Labs).

TELEVISION station applicants in Cleveland are breathing a bit easier since the FCC released their new allocation plan. Former FCC proposal would have left three applicants on the doorstep pounding away and trying to get in. As is, the score is six applicants for the five channels assigned to Cleveland and the pruning process will be much less painful.

An analysis of applications usually shows out of a group of applicants one or two who probably will not go through with their television plans. That's true in a great number of cities throughout the United States. But it will be hard to pick out a scratched applicant from the list of powerful interests who have filed intention of building a station in Cleveland.

Every applicant is an operator of either a large AM station or network or, as in the case of DuMont, an operator of a television station.

The number of applications in Cleveland, Akron, Columbus and Cincinnati will give Ohio one of the best television coverages of any state in the Union. And no wonder — it's one of the richest marketing areas in the country.

Cleveland is the center of the vast rubber and steel manufacturing which during the war boomed to astronomical population proportions, and even after the war shows no signs of dwindling away. Cleveland is close enough to Akron to have an overlapping retail trading area. Most of its retail trade comes from Cuyahoga County and parts of adjoining counties — perhaps a million and a half persons.

The National Broadcasting Company, operator of station WTAM, the WGAR Broadcasting Company, owner-operator of that station and a CBS affiliate; United Broadcasting Company, owner-operator of WHK, a Mu-

tual affiliate, WJW, Inc., owner-operators, and an American Broadcasting Company station are all well established in the Cleveland area.

The two other commercial applicants, are Scripps-Howard Radio, Inc., and DuMont.

Television Productions, the Paramount subsidiary, has evinced no intention of operating a commercial station in Cleveland but have been conducting experiments with a mobile-relay unit in the Cleveland Area.

Allan B. DuMont Laboratories, Inc.

Address—515 Madison Ave., New York City
Officers—Allen DuMont, President; Paul Raibourn,

Treasurer; Leonard Cramer, Vice-President

Ownership—Allen DuMont Laboratories, Inc.

Total Equipment Costs—\$280,000

Operation Costs per month—\$20,000

Cost estimate by—DuMont

Channel #2

Kilocycles—54-60

ESR—7084

Hrs. per wk. of operation—28

Antenna

Height, sea level—1969

Height, ground level—769

Transmitter location—Walling Corners, Cleveland

Power, aural and visual—aur-12.5 kw — vis-25 kw

Population—2,251,000

Size of area—0.5 m/v 6,889 — 5 m/v 1512

Location of Studio—Not determined

Engineering Consultant—Staff

Lawyers—Roberts McInnis

National Broadcasting Company

Address—60 Broad Street, New York, N. Y.

Channel—#4

Kilocycles—66-72 mcs

ESR—8120

Transmitter location—815 Superior Avenue, Cleveland, Ohio

Power, aural and visual-aural—3kw

Location of Studio—815 Superior Avenue, Cleveland, Ohio

Engineering Consultant—NBC Engineering Department

Lawyers—NBC Legal Department

Scripps-Howard Radio, Inc.

Address—1121 Union Central Building, Cleveland, Ohio

Officers—Roy W. Howard, President; W. W. Watkins,

Chairman of Board; John G. Meilink, Vice-President;

Jack R. Howard, Vice-President

Ownership—(Scripps-Howard Newspapers) Trustees of Scripps estate own largest block of stock — 38.7%

Total Costs—\$175,000

Operation Costs per month—\$20,000

Financing—Existing Capital

Cost estimate by—Ring and Clark, consulting engineers

Channel #2

Kilocycles—60,000-66,000 kcs.

ESR—1720

Hrs. per wk. of operation—4

Transmitter location — 1½ mile out of Warrensville

Heights on Richard Road, Warrensville, Ohio

Power, aural and visual—au-3kw, vis-4kw

Location of Studio—Cleveland

Engineering Consultant—A. D. Ring

Lawyers—Segal, Smith and Hennessey

Miscel.:—Controlling stock-holder in Memphis Publishing Company, licensee of WMC, Memphis — in Memphis Broadcasting, licensee of WMPB Memphis; also operated WNOX, Knoxville, and WCPO, Cincinnati.

United Broadcasting Company

Address—418 Plain Dealer Building, Cleveland

Officers—Sterling E. Graham, President; H. K. Carpenter, Executive Vice President; Paul Bellamy, K. K. Hackathorn and C. M. Everson, Vice Presidents; C. C. McConkie, Secretary; G. S. Holden, Treasurer; Edna B. Moreland and Otha Fisher, Assistant Treasurers.

Costs

1. Vis. transmitter	\$150,000
2. Aural transmitter plus tubes (included above)	
3. Antenna System	16,000
4. Studio Equipment	40,600
5. Studio Lighting	15,000
6. F & M Monitors	2,700
7. Land	
8. Building	
9. Other item, motion picture equipment	48,000

Total Costs \$272,700

Operation Costs per month \$10,000

Cost estimate by G-E

Channel #2

Kilocycles—60,600-66,000

ESR—9600

Hrs. per wk. of operation—6

Antenna

Height, sea level—1401 ft.

Height, ground level—744 ft.

Location—52 story office building

Transmitter location—Terminal Tower Building, Cleveland

Power, aural and visual—aur-20kw, vis-40kw

Location of Studio—1311 Terminal Tower, Cleveland

Engineering Consultants—R. H. DeLaney, H. K. Carpenter, United Broadcasting

Lawyers—Baker, Hostetler & Patterson, Cleveland; Loucks & Scharfeld, Washington, D. C.

Miscel.:—United operates WHD, WHKC and WHKK and has conducted experimental work in FM on W8XNT and experimental facsimile transmission on both W8XNT and WHK — also applicants for tele station at Columbus, Ohio, and FM station at Akron.

WGAR Broadcasting Company

Address—12th Street and Euclid Avenue (Hotel Statler)

Officers—President, G. A. Richards; Vice-President, Leo Fitzpatrick; Secretary-Treasurer, P. M. Thomas; Second Vice-President, John F. Patt; Directors.

Ownership—9 stockholders, including officers

Total Equipment Costs—\$250,000

Operation Costs for month—\$25,000

Financing—Existing Capital

Cost estimate by—Based on information from existing tele licenses

Channel #3

Kilocycles—66,000 to 72,000

Hrs. per wk. of operation—5

Transmitter location—Broadview and Akin Roads, Broadview Heights Village, Ohio

Location of Studio—12th Street and Euclid Avenue, Hotel

(Continued on page 47)



Color is as much a part of football as the plays themselves. Here WNBT's mobile cameras pick up the West Point cadets as they file into the stands after pre-game ceremonies at Army-Navy classic.

STATION OPERATION: Setting Up A Special Events Department

Continuing our series on "Station Operations", this article is presented as a guide for the preliminary steps which can and should be taken now before operations get underway. The author is manager of the film department, New England district, Paramount Pictures.

By **JAMES L. CADDIGAN**

THE concentration of production experimentation in a few key centers has led to the belief that little could be accomplished in the way of preparation in smaller cities until the technical tools were available for actual, on-the-air operation. The fact that the local television station, of the immediate future, will be on its own for some time to come places the responsibility of preparing the vast amount of non-technical ground work and information, necessary to successful operation, squarely upon the shoulders of each local staff. Program-

ming, without the assistance of future network shows, becomes definitely a local problem, and it is generally acknowledged that the economic restrictions of individual station operation will not permit the production of live shows in any great numbers on the grand scale. This economic control indicates the programming of many less expensive "Special Events" local productions. Radio and pre-war newsreels, familiar with this type of local coverage, realize the great amount of preparation and information that is necessary to insure successful production of this type of show. Television, the three-cornered wedding of radio, the theatre, and motion pictures, will require pre-broadcast preparation and research far beyond that required to achieve successful production in any of the allied mediums in the past.

In many situations competition between television stations will be keen, and the "scoop" angle in a produc-



Baseball is televised from the Polo Grounds to WNBC's viewers.

tion will run high in importance. Many of the so-called special event productions give little warning of their coming, and should a television production staff wait until an incident or story is looming over the production horizon, before moving toward preparation, the story will be either poorly produced or lost entirely. Preparation for the unexpected seems like a large order to fill, yet, that is exactly the job that must be handled if the special event or news incident is to be produced with the "immediacy" that television promises. The television audience of the future is being educated at the present time to expect sight of an incident "as it happens." In view of the vast job of preparation that lies ahead, the present is none too soon to borrow a page from the book of the military and start the compilation of a Television Intelligence File.

Notification Contacts

Field notification contacts, providing notification of an incident to station executives with the minimum loss of time, should receive first consideration in the organization of a television intelligence set-up. A television special events staff cannot wait until an incident has progressed to the point where the wire services have transmitted a story to their subscribers. Notification contacts in the field must be of a type that will provide reliable notification on a twenty-four hour basis. Multiple telephone contacts between the field and station executives should be provided and listed in order that two way contact may be maintained if the original lines called are out-of-order or traffic jammed. In many communities the Police and Fire Department headquarters staff will cooperate in this matter of notification and such contact will provide an authority capable of keeping an alert finger on the local pulse twenty-four hours a day.

Radio and television dealers' organizations present another source of contact possibilities, capable of providing responsible individuals in each community familiar with

the local terrain, conditions and services that might be needed in the local production of a television special events production. A working contact should be established with the local headquarters of the Army, Navy and Coast Guard. Station personnel operating in the field should exert every effort to develop and maintain these important contacts in an active status. Contacts of this type spread out through the field will provide the station maintaining such a set-up with many "scoops" and "exclusive" productions.

Topographic Data

The swift and positive arrival of station personnel and equipment at the scene of an incident will demand more knowledge of an area than can be retained in any individual's mind. Complete and up-to-date maps of the area should be an important part of the television intelligence file. These maps should show all roads and should indicate alternate routes to be used if the usual and most direct route is closed or traffic jammed. Continuous contact should be maintained with the office of the State Department of Public Works in order that intelligence regarding road conditions, detours, bridges, etc. may be on hand at the time of an incident as insurance against loss of story due to delay on route. This information should be entered on the maps in a manner that will permit corrections to be made as they are received. A master set of maps should be retained in the file and a working set of maps should be available, in suitable containers, for the use of the crew in the field. The maps should be scaled so that the production staff planning broadcast periods can approximate the amount of time that will be consumed in travel. A complete set of topographic maps of the entire area should prove invaluable to the production staff. A topographic survey would quickly indicate the feasibility of using relay transmitters and would provide the film coverage crew with the locations of possible elevation positions should the

immediate area of an incident be in a condition that prevented intimate coverage.

Corrected railroad and bus schedules should be included in the file, as well as the schedules of airlines. At the time of a major incident it may be possible to arrange transportation into an area through the use of such utilities when regular highway travel has been disrupted or restricted. A telephone contact, other than the public information number listed, should be arranged with all major transportation systems in a station's zone of operation. In locations along the seacoast and on lake fronts, a listing should be maintained indicating twenty-four hour contact with boat liveries should the use of water craft become necessary.

Weather Reports

Weather conditions will present a controlling factor to be considered when producing remote television pick-ups, and because of this a working contact should be established with the nearest United States or recognized Weather Bureau. The complexion and locale of a story can change many times in a short period of time because of changes in weather or storm conditions. During the New England hurricane five changes in the storm's direction and intensity occurred in an hour's time, making it necessary to re-route personnel from originally assigned locations to the newly developed center of the story.

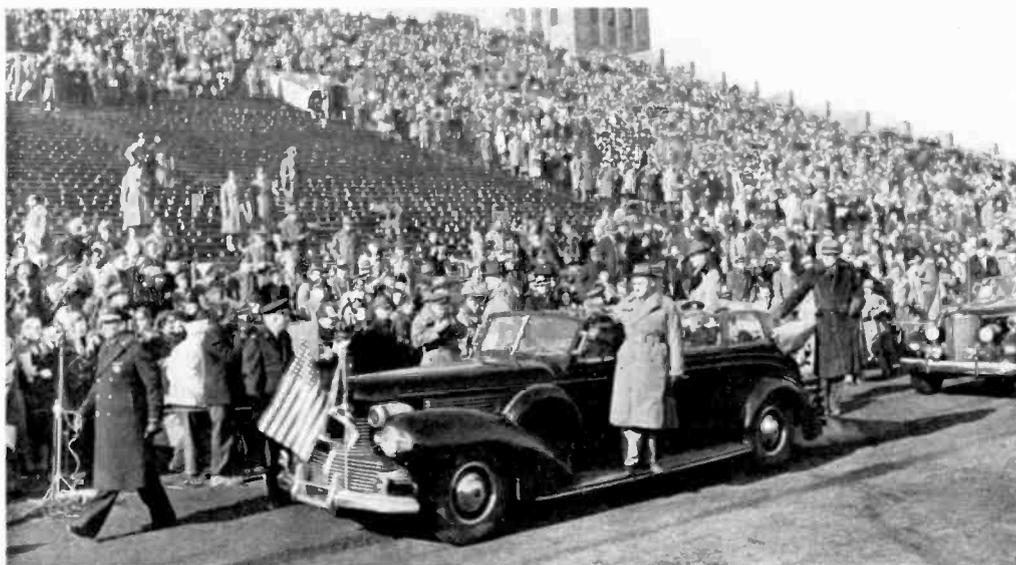
Natural light conditions will present another important consideration in the planning of outdoor, remote television pick-ups, and advance knowledge of the possibility of failing light due to predicted weather changes will provide the production staff with the time necessary for the preparation of an alternate "protection" show should the original outdoor production be washed out. At the time of a major incident, communication traffic with an agency such as the weather bureau can be very heavy, and it is advisable to establish prior contact and attempt to secure an alternate telephone contact that can be used when the normal channel is in use.

Correct Credentials

The lack of proper identification credentials in the hands of field personnel has been responsible for the loss of more than one story in the past, and because of this the television intelligence file should include a list of authorities issuing such credentials and passes, and the channels that may be used to reach such individuals. All members of the staff should be provided with whatever identification passes are available in the file so that part time employees might use them in an emergency. Legal emergency vehicle identification plates should also be arranged for and kept ready for use as needed.

Temporary wiring and portable construction will be necessary on many remote television productions. In many municipalities special permits are required for the installation of such wiring, and the erection of such portable construction. Many municipal governments insist on the inspection of such installations before they are used. The file should list twenty-four hour contacts with the authorities issuing such permits and with the inspectors clearing their use. When possible, blank applications for such permits should be available in the intelligence file, and if a licensed electrician is a part of the field crew an attempt should be made to obtain a blanket permit for such installations. A copy of all building and electrical regulations in effect in the area should also be included in this section of the file.

At the time of an incident, intelligence from the field will be most important to the production staff working on the script at the station, as the incident progresses. All sources of information and channels of communication that might be used in an emergency should be listed. These various channels, capable of providing reliable information, are many and would include such units as police radio and teletype networks, commercial teletype channels, telephone lines from field contacts, news wire services, etc. When possible, advance contact should be made with these sources of intelligence and a technique of pick-up should be arranged that will not interfere



WNBT tele-viewers get a look at the presidential party arriving at the Army-Navy game.

with the operations of the agency providing the desired information. A complete set of telephone and teletype directories, covering the area involved, should also be a part of this intelligence file.

Compilation of a television intelligence file will be a never ending job as each new production will provide added information that can be used to advantage on some future show. It is suggested that a special intelligence report be submitted on each remote pick-up produced, and that the information entered in the report be set up in the file for future reference. Repeat broadcasts from the same location can be handled with greater speed and surety by merely referring to the information obtained on the original production.

The items of intelligence mentioned above are but a few of the many informative facts that should be included in such an information center. The file should include complete information on all sources of personnel and material procurement, local laws and regulations pertaining to all phases of station operation, and all the answers to the many production problems that will occur as television progresses through its growing-up era. State and municipal officials that might be needed for program arrangement should be listed with the contact information indicating the channels used to reach them.

In the opinion of the writer, serious consideration of the magnitude of the job to be done in preparation for actual television production will amplify the prior statement: "The present is none too soon to start the compilation of a Television Intelligence File."

Camera Shooting

Television news stories that are to be shot on motion picture film should be made with a silent motion picture camera. The sound can be added in the studio at the

Esquire's All American baseball game was filmed by ABC and edited into a half-hour show over WRGB and WABD.



time of broadcast by using sound effects, music and the commentary of a live announcer. If desired, a sound disc or transcription can be made and synchronized to the film story after it has been cut and edited. This technique does not apply to the interview type of story that must be shot with live sound. However this type of news story will probably be shot with a television camera direct. The use of the silent motion picture camera will permit much more flexibility of operation and scope of coverage than if the sound motion picture camera, with its associated recorder, amplifier and power supplies, was used.

As a time saving technique, it is suggested that all television and film-television camera crews be equipped with a still camera whose film, shutter and lens speed is calibrated to match that of the motion picture camera and raw stock being used or the sensitivity of the television pick-up element or mosaic. This camera would be used to take a "lighting check" shot of the scene or area to be photographed or televised. A small, daylight loading developing tank could be carried as part of the equipment, and in the matter of a minute or two, a negative would be ready for a "reading." This would permit the cameraman to know exactly what the light conditions, on all parts of the scene or area, presented. Such a technique would prevent the loss of a story or pick-up because of inadequate lighting that might appear sufficient to the cameraman's eye.

Another suggestion is that all television cameramen carry a "log," made up in loose leaf form and arranged alphabetically, which would contain all lighting and set-up data on each pick-up made away from the main studio's location. This log would eliminate delays and failures when repeating a broadcast from a location that had been used before. All the information necessary to a successful repeat broadcast would be available in the log, and any unusual situation or condition, peculiar to the location, would be known before the crew left the station to cover the pick-up.

Apart from lighting information, the log should contain the location of the power supply, camera location, or the necessity to build a camera location if such was the case, voltage and amperage at the power mains, and any important line losses or voltage fluctuations common to the location, location of audio broadcast land lines, location of relay transmitter and antenna, location of feeder circuits to the relay transmitter and its associated equipment, the names and location of officials and technicians associated with the property that will be contacted to make arrangements, the location of doors and entrances available for the moving of equipment, and any other information necessary to the set-up and presentation of a successful television broadcast at the location listed. As soon as a new location is entered in any camera crew's log, typed copies of the complete individual report could be made available for inclusion in the logs of all other camera crews that might be assigned the location.

To repeat, the public is being given the promise now of "seeing things as they happen." It is their most enthusiastic expectation of the immediacy of television that will present a challenge to every station to present the "scoop" news in as speedy and complete manner as possible. It's only by laying a firm foundation now, that this service can be given.

Telecasting a Football Game

Here are some high spots which will interest every programmer who has his eye on the sports picture.

By **BOB STANTON**

NBC sports announcer, who has pioneered in developing television sports techniques over WNBT and WPTZ, and who has just completed his second year as telecaster for the Penn games over WPTZ, (Philco).

IN telecasting a football game you share a scene with the viewers. In broadcasting you paint a dramatic word picture so that your listeners can easily imagine what's taking place in the stadium. But you not only have *listeners* over television—you have *viewers*. They're looking at what's happening the same as you—and the main trick is to talk about what they're seeing, *as they're seeing it*. So for a television announcer, the two cardinal rules are:

Never let a scene go by without commenting on it. Never give your viewers time to wonder, "What is that?"

Remember they're right there with you and your best approach toward telecasting a football game, or any other sport, is to talk as you would to the fellow next to you. This change in technique is two-fold. First, reflect it in the tone of your voice. Keep it conversational until the going gets hot, then raise and lower it with the normal excitement that grips any viewer of a football game. For that's the natural reaction—and just the thing you would do, if you *were* talking to the fellow next to you.

But the second change comes in the actual patter and a lot of good radio tricks have to be unlearned for they make bad television. Avoid such obvious statements as "They're coming out on the field", "Now they're in a huddle". Use a commentating technique here, toned down to the friendly intimacy that characterizes television as a medium. But don't go overboard and make the mistake of thinking that the home viewers understand everything they see. There are a lot of people who don't know the technicalities of the game and here's your chance to acquaint the public with the rules. When the telephoto lens moves in and picks up the toss of the coin at the beginning of the game, that's my cue to tell the viewers what the ref's signals mean, translated into which team won the toss and what they elect to do. And this pattern can be followed all through the game, with comments on the signals, on the penalties, an explanation of a safety, etc. Through television, football enthusiasts can see many



things they may miss at a stadium. It's part of the tele technique to point out these features so that they may recognize the fine points of the game.

When we first started telecasting the games, we weren't sure whether people wanted a play-by-play description or just an occasional commentary. Best way to find out was by asking them, and the resultant poll showed 95% wanted the play-by-play description. So you see there has to be a careful integration of the commentator and announcer techniques, omitting the obvious, stressing the essentials and above all—and this bears repeating—talking about what they're seeing as they're seeing it!

It's this coordination of sight with sound that makes telecasting a lot harder than broadcasting. A three-eyed man would be in his prime as you have to keep one eye on the field, one on the monitor and the third on the player chart. Much more has to be committed to memory—such as the name and number of the players, dope on the teams, etc. (Trying to cultivate a third eye is bad enough—but a fourth to read a script would be too much!)

Usual Set-up

Now for something of the set-up. In the Penn games, televised over WPTZ, Philadelphia, three cameras are used. One is equipped with telephoto lens for the close-up shots, such as the start of the ball in motion. Another camera is ready for a wide angle shot when the play gets underway, so as to pick up the whole 22 men in action; with the third standing by to catch a distance shot, such as a player going back to punt or a shot at the clock.

During the first season I wore headphones during the games, thus hearing the directions of the producer-director, the cameramen, etc. But at critical points of the game, it was too confusing—to put it mildly, to be hearing one thing, and trying to talk about something else. From the trial and error system, we've devised two new methods this year.

First, I anticipate for the benefit of the cameramen and producer-director what will probably happen during the play and they follow my lead, instead of me following their lead.

Second, a spotter now sits next to me with headphones on and relays any messages from the control room. It's a give and take proposition, as they trade information back and forth, particularly on the human interest features which may break out on the field or in the stands before the game, during time out, at the half, etc. Another spotter takes care of the player chart, spots the substitutes, etc. As for the 3 of us, we've developed a sign language all our own for exchanging signals during the telecast.

The next important phase in co-ordinating a sports telecast is a viewing monitor for the announcer.

Mine is built in the desk and shielded from any light glare. I see exactly the same as the viewer. It's a constant check between the field and the monitor, as your words must be in step with the picture your viewers are seeing. But it's just as important that you watch the field so you know what's going to happen next; can anticipate it and be ready for it as the cameras pick it up.

Preparation of Material

Every man to his own system, but for quick, easy reference I prepare a chart on each team to cover all the vital information on three complete squads. At the beginning of the season, I write to the Athletic Associations of each college whose games are on the schedule and get complete information on the players. Then the week before, all this information is boiled down — a matter of 2 or 3 hours work. Into a block about 1"x1½",

Second quarter of the Army-Navy game, with Bob at the mike giving WNBT tele-viewers a play-by-play description.



goes the player's full name, number, age, height, weight, all in symbols that are easy to catch at a glance. What with those three eyes you have to have, there's no time to erase or write in, so a thumb-tack is stuck in over the man in action. It's a simple matter for any changes in the line up just to move a thumb-tack. From the college press releases, background material on the colleges, coaches, records, statistics, etc., is obtained and boiled down for penciling in on the bottom of the chart. Thus all the material is simplified and in one place, eliminating the need for bulky scripts.

Human Interest

Human interest is a major part of a football game and the television cameras can rove around and pick it all up, transmitting the contagious excitement of the stadium goes to the comfortable and cozy home viewers. There are the crowds in the stadium, the bands, the antics of the cheer leaders, the teams coming out on the field, the warm-up, the excitement on the players' bench, the mascot who won't behave, the parades at the half. No need for a television announcer to run to statistics to fill in the gap. You have the best kind of human interest material right there before you. And it's a sure bet, that you'll have a star performer in the inebriated alumnus who's staging a free show; in the grandstand quarterbacks who eventually get to the point where they're willing to trade punches as well as advice. Ten to one, a dog will run out on the field and some big burly full-back, who's knocked his way through solid walls of humanity without one trace of brotherly love, will bend down and gently pat him!

Specifically, there are certain human interest shots to point for. Crowd sympathy is usually with a player as he comes out of the game. Have the camera follow him from the time he starts his trek off the field, usually dead tired and sometimes discouraged. Get the coach coming out to meet him, the other players throwing a jacket around him, the back slapping, the attempts to cheer him up.

Avoid dull spots. During the huddles, there's not much interest in just watching the group. Swing the camera to the clock, for just a moment, to show the time left. After a touchdown, pick up the crowd reaction from the wildly cheering side, backing the winners to the losing side, who are often pretty glum.

Summing It Up

Telecasting a football game has one thing in common with other forms of video. The technique is learned through trial and error, and experience. But once you get the trick it's much more interesting than doing it by radio — for it seems more informal, more interesting, and you get the added kick of being seen as well as heard by your audience. The Penn games over WPTZ opens with camera on me saying "Hello". It comes back between halves for a few minutes, returning again after the game for the re-cap and "Good-bye".

So summing it up, from my own trials and errors, experience and practice, I'd say — adopt a friendly "I'm talking to the fellow next to me" technique; punctuate it with a play-by-play description as the game gets underway.

Don't let the viewers miss any part of the game; select the best shots from the stadium scene.

Give them a football telecast which combines game excitement with human interest.



Long Shots and Close Ups

A Regular Feature on Films by H. G. CHRISTENSEN

Advertising Agencies and Motion Picture Departments

AS a news commentator would say — “And now for a brief summary of last month’s article.

We tried to point out what the determining factors should be as to whether or not an agency should start a motion picture department; the type of personnel needed and their qualifications; what service can be rendered to the client and the producer; and some of the problems common to motion pictures, not encountered in other media.

Probably the question uppermost in the agency man’s mind is “CAN AN AGENCY MAKE A PROFIT SERVICING MOTION PICTURE ACCOUNTS AT 15%?”

Considering the well established fact that advertising agencies are not in business for their health, which goes for any business, including movie producers — Brother, that’s not the \$64.00 question, it’s the jackpot question. So, here we go for the jackpot.

A quick answer would be — Yes, *IF* pictures were sold like full pages in Collier’s or any other magazine — 15% commission on space, and another 15% on production. But there’s no space in the picture. It’s all production. Can you handle a picture, do the job right and come out with a profit for 15% of the selling price of said picture? My answer is emphatically, **NO DICE!**

But now there seems to be quite a bit of talk around from a number of agencies eyeing the television band wagon. They are thinking about starting film departments and near-film departments, and again here goes the well known neck way out. I believe the fact that television is knocking on the door is what has awakened some lagging agencies with the realization that motion pictures are something they’d better learn a little

about, if they want to “keep up with the Jones.” However, because of the cost of film, with the exception of one-minute shorts, there probably will be very little done in the way of making one reelers and features exclusively for television. The economic basis is just not in the cards. Of course though, commercial films will now have a new outlet in television, and as eventually it will probably be a major outlet, almost all production will have to be made with television very much in mind.

What seems to be happening is this. Agencies will be setting up film departments of one sort or another and television will be a by-product until there are enough receivers out to create an advertising market large enough to warrant production costs. And because a film department won’t be able to depend upon television for receivers for a few years it is still faced with the problem of how it will make money out of commercial film.

Right here and now it should be understood that I don’t lay any claim to knowing the agency business — only the motion picture business. A producer couldn’t make all the necessary contracts required to sell a picture, write an outline, a script, or both, get all necessary approvals, as-

sign a man to supervise production and what have you — for 15% of the selling prices of the picture. And if he can’t, how can the agency?

On the other hand, if the agency only gathers in ideas, outlines and bids from producers, places the contract and then quits until the picture is ready for final approval and delivery (that broker again) Mister, you’ll not only make money at 15% — you’re liable to lose clients.

Here’s A Comparison

To make an attempt toward getting “down to brass tacks”, let’s take a hypothetical job — two jobs in fact. These will not only throw some light on the reason why a great number of agencies have shied away from motion pictures in the past, but will also turn the spotlight on the profit and non-profit possibilities of an agency motion picture department working on a straight 15% commission.

To do this, let’s take the business of getting up a double-page spread in color for insertion in the *Satevepost* at a space cost of \$24,000.00. That’s one job; the next, a sales training motion picture for the same price. How much work is involved in each job and where do we get off financially? Stick around, this is

THIS is the wind-up article on agency handling of film departments. H. G. Christensen, has pulled no punches in his discussion of the problems involved and the obligations of an agency if they undertake such a venture.

TELEVISION invites you to pull no punches if you disagree with him. Send in your questions, or your criticisms, for Mr. Christensen to answer.

going to be interesting.

The work or production on a double-page spread; copy and lay-out, approval, finished art, typography and plates may take anywhere from three days to a week or two, *for one ad*. You agency men know better'n I do, how long it takes. I'm just guessing. Now let's look at the dollar side of this picture. No need for guessing here. The cost of the Satevepost space being \$24,000.00 means \$3,600.00 in your till. Next comes something you *could never get* on a picture — 15% commission on production costs of the ad. Assuming production costs on this ad run about 15% of space cost, being in color — we toss another \$540.00 into the till, bringing the total take-in commissions to \$4,140.00. **THAT'S FOR ONE AD, RUN IN ONE MAGAZINE, ONE ISSUE!** But we don't stop here.

Seldom is a double-page spread run in only ONE magazine. The agency orders its insertion also in *Colliers* at \$20,000.00 and *Life* at the tidy sum of \$28,600.00 less 3%. And for that tremendous effort runs that \$4,140.00 commission into a "not to be sneezed at" \$11,300.00. Not bad, if my figures are correct or almost correct.

Now, what are the chances for Little Orphan Annie; the movie department? Well, to begin with — if you're handling a \$24,000.00 sales training picture on a 15% basis, you collect \$3,600.00 in commission for your work — *and no more!* No commission on production costs — *as pictures are all production.*

Commission On Films

You can collect that commission in one of two ways. ONE: have the producer figure it as part of his production costs, but payable to you — thereby giving the client a \$20,400.00 picture for \$24,000.00. TWO: give your client a \$24,000.00 picture, with you, the agency, adding the \$3,600.00 to your billing, for a total cost to said client of \$27,600.00. This is a lot different than placing space in national magazines, space that the client *cannot buy direct* from the publisher and save that discount or commission.

If you'll check to the first article on this subject, you can't help but realize how much more time and work is involved to create, sell, write and follow through on the production of any picture to its final approval,

than is required to create and produce a double-page spread. And as to the dollar return, let's look again at the financial statement.

itemized a little way back. It's a one word answer, so we'll capitalize it, and you can capitalize *on it*, later — it's **DISTRIBUTION!**

MOTION PICTURE VS. DOUBLE-PAGE SPREAD

	Cost	Commission	Time
One two reel picture	\$24,000.00	\$3,600.00	6 to 8 weeks
One double-page spread (Approx. production)	3,600.00	540.00	1 to 2 weeks
Satevepost insertion	24,000.00	3,600.00	1 to 2 weeks
Colliers insertion	20,000.00	3,000.00	1 to 2 weeks
Life insertion	27,742.00	4,161.30	1 to 2 weeks
	<u>\$75,342.00</u>	<u>\$11,301.30</u>	



Commercial shorts need as much preparation and realistic settings as feature productions in many cases, as evidenced by this interior shot from "This Way Please," produced for Remington. Much attention has been given to the details.

Looks like little Orphan Annie is in a spot — and I don't think 15% will get her out. There's got to be another way. What's the answer? Give up the idea of a motion picture department? My answer would be *No!*

Don't overlook the proven fact that the right kind of pictures, well conceived, written and produced, intelligently used and integrated with the clients' *entire advertising, sales promotion and merchandising campaign*, can contribute greatly to its *overall success in results*. And Brother, that not only keeps the client happy with his choice of agencies, but can also result in bigger and better budgets.

The answer to getting Little Orphan Annie "out of the spot" lies in the dollars and sense department

Now, if we spent the \$24,000.00 for *six top-notch minute movies*, instead of for a *sales training picture*; and bought theatrical distribution to the tune of \$71,742.00, (same as the space costs in the magazines) which is commissionable to the agency also at 15% — you can begin to see where your motion picture department will no longer be an orphan.

Distribution Channels

But, minute-movies *are not* the only type of pictures that can be distributed to consumer audiences. There are dozens of different channels of distribution available for pictures of interest to various consumer groups.

One reel pictures on various subjects have been run in many theatres

throughout the country, sponsored by such companies as Ford, General Motors, Metropolitan Life, U. S. Steel, Chevrolet, and others. If memory serves me correctly, it was well over twenty years ago that The Ford Weekly was a featured short in many theatres. In addition to domestic distribution, there is the ever widening field of foreign distribution, which quite a number of "on-the-ball" advertisers are already using to good advantage.

Then there is non-theatrical distribution, which is today being handled

tomers and the like? There's many of those produced and they are the ones the agency can't make an even break on at 15% — unless, as I've said before; they're out-and-out brokers. Well, what about 'em, should you pass 'em up?

Well, nobody's in business for their health, even physical culture instructors. An agency with a *real* motion picture department, that really gives the client that "plus" service which results in a better picture, should be paid on a basis which will allow a fair profit. To ac-

Tell the client something like this: The only fair way for the agency to work on motion pictures on which there is *no distribution* to be handled, is to keep an accurate record of the actual time put in on the job by department personnel; bill it to the client at *cost* — plus five per-cent for profit, to which the agency is entitled. After all, you can't go broke taking profits — unless you're not entitled to 'em. And in suggesting this, I'm assuming that the service you *give* for *what* you *get*, is *worth it* and the client is aware of the fact.

Agency Attitude

Earlier in this article you probably noticed I said we'd throw some light on the reason as to why a great number of agencies have shied away from pictures in the past. There are still some agencies who consider motion pictures a second or third-rate medium — and some who won't consider them at all. That's simply because as already pointed out — printed words and art work does much better by "our Nell" financially speaking. So does radio. I may be wrong on this, that's Democracy for you. On the other hand, other agencies have been running successful departments for some time and I think their hardest job was to get real recognition from their own agency.

Now that television is emerging from its swaddling clothes, *motion pictures are going to be part of its growing pains*. FCC has ruled that television broadcasters must dish out *twenty eight hours a week, minimum programming, per station*. This makes television a mighty lusty infant — one who needs the guidance of adults, and adults trained in motion picture technique will be of great help. So, if you're going to hire any of 'em to help raise this kid, again I repeat, get somebody who knows more than the kid does.

Next on the agenda is — where and how can an agency get competent personnel to man a motion picture department?

We all know the type of guy who says, "How long does it take to become an artist?" We also know that "time" is the least of it. Some people struggle *with it and at it* all their lives and never become artists. That is "good artists." Writing and directing pictures — well, it's the same there. But there's enough good

(Continued on page 47)



Special attention must be given to lighting, even when shooting outdoor sequences. Note the two lamps used for greater illumination in this scene from the National Carbon Co. short, made by the West Coast Sound Studios, Inc.

by a number of companies and organizations on a national scale. You specify your audiences, as to type, size or number, location geographically, turn over the required number of prints of your picture and they'll take it from there, at so much per screening, or so much per person.

All of this distribution service is commissionable to the agency the same as though they were buying space. But you've got to have the right type of pictures for this kind of distribution; just any old reel won't do.

Now, what about the type of pictures that aren't made for consumers and can't be distributed, *except by the client himself*, to his own personnel, distributors, dealers, salesmen, servicemen, certain classes of cus-

tomers, possibly some changes in the methods of *charging for this service* should, or could, be made. And let me say again, I'm not presuming to tell you how to run the agency business. These are only suggestions which come free with TELEVISION Magazine.

Pictures being what they are, (and honestly they can't help it) such as; *no two alike*, therefore, no two costs alike; *each one* presenting new and entirely different problems; trying to estimate in advance the time your personnel is going to have to put in on each picture; and whether or not 15% will cover it, would require a new kind of C. P. A. — Clairvoyant. Prophet, Astrologer, rolled into one — and he couldn't do it.

So, what's wrong with this idea?



One Man's Reflections

By RAYMOND WILMOTTE

THERE has been a tremendous number of words expended during the last few months on what to do about the allocation of television in the overcrowded spectrum. Should we operate it now at its present stage of development or should we wait for future developments and, if so, what frequencies should we set aside for this super-television? The industry has been split into roughly two camps — one, the “act-now-school” and the other, the “act-later-school,” each with a well defined plan of procedure.

Dr. Goldsmith, who has been writing this column with an unequalled background of knowledge and in-born gift of common sense, has suggested recently a new solution which might be considered a compromise solution but which I think is a new creative solution which does not basically attack the position of either of the main schools of thought on this subject. Dr. Goldsmith's suggestion has been to do what we can on the present frequency band but segregate a band somewhere between 5,000 and 10,000 megacycles in which experimental work would be carried out for the eventual commercial development of a really first-class television service. That, of course, is a long-time view for we are a long way from having commercial equipment which would operate at those frequencies. However, as Dr. Goldsmith pointed out, there are a number of possible important advantages in the use of these frequencies.

I feel self-conscious in adding my voice to the many other voices on this subject. However, since TELEVISION Magazine has requested me to write an article during Dr. Goldsmith's present sickness, I am going to take this opportunity to express my personal views and use the facilities of our national prerogative, the freedom of the press.

Too Much Knowledge

It is apparent that these discussions

on the frequency allocation of television are created by too much knowledge. In regular broadcasting, when it first appeared in the commercial picture, there was no real problem at the time because our knowledge was meager and there was only one method of transmission. Consider what would have happened if at that time there had been a glimmer of the potentialities of frequency modulation or of pulse time modulation. There would then have occurred innumerable discussions as to whether the regular broadcast band should be opened up for sound broadcasting or whether we should wait until better methods had been properly developed. Actually what happened was that the regular broadcast band was commercially developed to its full potentialities. Then frequency modulation came along and its potentialities were recognized. The situation is that frequency modulation is going to be put in competition with the regular broadcast AM band. Which system will win?

It is very difficult to say at the present time the degree of acceptance of one system over the other, or the time that it will take for the relative acceptance of the two systems to achieve a stable level. If we believe in our system of free enterprise controlled by economic need and demand, then is not the normal method of finding a solution to let the systems compete, eliminating as far as possible any governmental action which would handicap one system in favor of the other? What other method or procedure is available?

If one system of modulation is really superior in its performance to the other, but not inherently more expensive to the user, who is to tell whether the public will prefer to pay the extra cost for the improved system or whether it will prefer to save its pennies for some other use? Is any one person or small group competent to decide? Apparently the only

method in our economic system of finding out is to try it out and let the economic system be the judge rather than governmental agencies and engineers.

On the basis of this analogy with sound broadcasting it would seem that the television allocation should be established by competition between the different frequency bands. This competition will combine both economics and engineering. It is true that it seems a shame to establish a system which may later have to be scrapped in favor of a better system, for doing so may be a burden on the general public as well as on the operators and it is a risk that is the very core of much of our technical progress. If a manufacturer develops a better piece of machinery than another, persons buying that machinery may find themselves in an advantageous position over those who have the old type of machinery and the manufacturer of the old type of machinery may be in a bad competitive position. It may be that is not the way that technical progress should find its place in the community but it is the way it has been used under the American economic system. Until we discard this system, I see no reason why it should not be applied to broadcasting in the same way as it is in any other industry. The mere fact that broadcasting has to be governmentally controlled because of the scarcity of frequencies, seems to be entirely beside the point that control should adopt the economics in existence as closely as it possibly can. I have no doubt but that this is the avowed feeling of the individual members of the Federal Communications Commission.

Policy Conflict

However, in many instances the Commission does not follow this principle. It is subject to a conflict of policy between the desire to let our

(Continued on page 29)

TELEVISION Magazine's First Audience Panel Survey

Here is the compilation of the first survey conducted by TELEVISION among the 100 key families comprising its audience panel. Irregularity in quality of programming, condition of receivers, and other highly variable facts might easily lead to misleading information. The results of this survey are not offered as conclusive evidence for any part of television. It is presented only as interesting material which might possibly shed some light on commercial and programming techniques and the habits of the viewing audience.

By **FREDERICK A. KUGEL**

BALLOTS were sent out to 100 key families for the night of November 2nd. Programs on that night were:

	WCBW	WNBT
8:00 to 8:15	News and analysis by Tom O'Connor	"The Television Quarterback" with Lou Little
8:15 to 8:30	"Choreotones"	"The World In Your Home".
8:30 to 8:45	Film	Cavalcade of Sports — Boxing.
8:45 to 9:00	"Photocrime"	
9:15 on		Boxing
Number of ballots sent out100	
Percentage returned 64%	
Based on number returned		
Sets on all or part of evening 66%	
Not home 14%	
Television sets out of order 9%	
No answer 5%	
Home, but not listening to set 3%	
Ballots returned too late for tabulation 3%	
Total100%	

However, the comments accompanying the votes seemed to open up the old controversy on the Lucky Strike "the green has gone to war" technique. Here again, in Gillette we have a commercial technique which irritated a good many viewers, but at the same time indelibly stamped the name Gillette in their minds.

Comments were, "Gillette talks too much about their product" . . . "we see and hear Gillette blades till they come out of our ears"; if you have any influence, please ask them to change the picture once in a while" . . . "U. S. Rubber is good, dignified advertising, Gillette Razor advertising is annoying, ridiculous, and at too frequent intervals."

On the other hand, one answer to the question, "What did you learn from the advertising message?", resulted in an advertising testimonial to top all testimonials, "My husband switched to Gillette blades and found them to be all that you advertised".

The high rating that Waltham Watch received, considering that their commercials consisted only of two time breaks, is perhaps the best indication of the potential power in television advertising. Obviously television will prove to be one of the most effective mediums for the advertising of time pieces.

Audience opinion on U. S. Rubber's Keds commercial was that it was good advertising. Comments were along the lines of these, "Liked U. S. Rubber advertising, not overdone" . . . "Satisfactory enough to interest but not boring". Many mentioned the free sports booklet offered on the program.

Interesting in programming was the high pull of WCBW's Photocrime against the highly popular regular feature, the boxing bouts on WNBT. The Photocrime was on from 8:45 to 9 o'clock, and one-third of the sets were tuned to this program, two-thirds to the fights, which had started at 8:30. As Photocrime is not a regular feature and as Madison Square Garden fights are not only a regular Friday night feature, but are about the only television fare than can be classified as truly professional, this is further indication that any ratings at this stage of television that sports are the most popular type of programming can be misleading.

Particularly significant were the reactions to the Gillette commercial technique, effectiveness of Waltham time signals, and high poll of WCBW's film program Photocrime.

To the question "Which advertiser made the most vivid impression?" there were 27 votes for Gillette; 6 for U. S. Rubber; 2 for Waltham; and 1 for RCA.

On a 15 second memory test naming advertisers, there were 35 votes for Gillette; 21 for U. S. Rubber; 19 for Waltham and 17 for RCA.

Gillette by far had the greatest number of commercials, as slides were used during each round of the boxing

BREAKDOWN

8:00-8:15 P.M. Seventy-one percent of the sets were on during this period. One-third of these sets were tuned to WCBW which viewed the News and two-thirds were tuned to

News—Excellent
Lou Little—Good

WNBT's Friday Night Quarterback. Among the viewers were 77 males, 53 females and 21 children, making a total of 151 listeners or 4.9 listeners per set.

The News was well received. Viewers liked the maps and pictures of news events.

The Football Quarterback program was definitely well liked. However, Lou Little's voice and personality for use in television was challenged by many of the viewers. Typical of the comments was "Like Lou Little, but not his voice."

8:15-8:30 P.M. Seventy-six percent of the sets were on from 8:15 to 8:30 P.M. There were 76 male, 49 female and 16 children viewers making a total of 141 or 4.6 viewers per television set.

Choreotones—
Either liked very
much or disliked
intensely.

RCA Victor
Program—Fair

while the other three-fourths were viewing the RCA Victor film, "The World We Live In."

Half of the viewers of the Modern Dance enjoyed it very much even though one person complained that he could not always see the performer's feet. The other half didn't enjoy the program because they did not like interpretive dancing or ballet.

The consensus of opinion on the RCA Victor film was that it was fair. Comments were neither pro nor con.

8:30-8:45 P.M. Eighty-three percent of the sets were on at this time. There were 127 men, 49 women and 15 children viewing making a total of 202 viewers or 5.9 viewers per set.

Film—Fair
Fights—Excellent

A little more than one-third of the sets were tuned to WCBW's film presentation, while the remainder of sets were tuned to the boxing bouts sponsored by Gillette. The film was just fairly received but the boxing came out with top honors.

8:45-9:00 P.M. Seventy-one percent of the sets were on from 8:45 to 9:00 P.M. 136 men, 61 women and 9 children making a total of 206 viewers or 7.1 persons per set.

Photocrime—
Excellent
Fights—Excellent

One-third of the sets were tuned to Photocrime on WCBW, two thirds to the fights on WNBT.

Photocrime was very well received. Comments specifically mentioned excellent acting.

9:00 on Seventy-one percent of the sets were now watching the fights on WNBT. 136 men, 59 women and 10 children, making a total of 205 or 7.0 per set.

Fights—Excellent

Other activities
engaged in

In 20 percent of the homes replying, television sets were not on during the entire evening.

The "competition" was business, the radio, the papers, just talking, playing cards, visiting, and the movies.

Union Picture In Television Field (Continued from page 8)

National Association of Broadcast Engineer Technicians (NABET) is another established union which represents radio technicians and which intends to increase their membership to cover comparable jobs in television. Being the bargaining agent at NBC, NABET covers the technical workers at WNBT.

Affiliated Committee for Television (ACT), comprising Hollywood Guilds and unions, was formed to study the effect of television on the motion picture industry.

Among the more important groups represented in ACT are the Screen Writers Guild; Screen Directors' Guild; Screen Cartoonists; Radio Writers' Guild; Motion Picture Film Editors; Screen Actors' Guild; International Photographers; Screen Set Designers, Illustrators and Decorators; American Society of Cinematographers, and American Federation of Radio Artists. Activities of the committee include a research program, study of legal and economic problems, courses of instruction and a workshop television program in order to keep abreast of all developments and to lay the ground work for successful transitions from one art to another. Meetings and lectures, a circulating library and the publication of a bulletin serve to disseminate the information gathered.

SUMMING IT UP . . .

Drawing any conclusions now as to the ultimate labor-management picture in television would be premature. However, both IATSE and ACA seem to have definite plans for fairly complete organization of station personnel. With the IATSE contract at DuMont, and ACA in at Metropolitan and with both unions trying to organize WPTZ, Philco, in Philadelphia, tip-off would seem to be that these unions will concentrate for complete coverage primarily on the independent television stations. Radio stations have existing union contracts and undoubtedly these unions will extend their coverage to the affiliated television stations, as was done at NBC by NABET and at CBS by IBEW.

Only one thing is clear: The coming year will see an acceleration of the study now being given to television by all labor unions and a corresponding increase of organizing activity to match its growth.

But the main question, which is furrowing many brows, is still unanswered.

Will jurisdictional disputes, inter-union struggles and union demands hamstring the industry?

Or will the unions straighten the situation out among themselves and leave the stations out of the fight — as management fervently hopes?



Television Studio Control Equipment

One in a series of articles on station equipment . . . Smooth production can only emanate from the control room, according to Mr. Taylor, who advances some of DuMont's equipment ideas.

By **HERBERT E. TAYLOR, Jr.**

A previous TELEVISION Magazine article (June, 1945) pointed out that many of the faults found in current studio floor equipment (most of which is well over five years old) will be eliminated when "postwar" equipment becomes available. Coordination of those employed on the studio floor will be acquired with greater ease. Angle and dramatic shots, essential to good production, will be possible through the greater flexibility of the studio camera and associated equipment.

While adequate studio floor tools are essential to a smooth broadcast operation, these tools can not guarantee it. Smooth production can only emanate from a small, glass-enclosed room, marked "Private—Keep Out": the studio control room. It is from this room that directions, cues, and timing are effected, blending of pictures is accomplished, and continuity is perfected. In this room we find the heart of each "live talent" performance. It is in this room also that most difficulties arise.

Television engineers, concerned with the problem of designing "postwar" studio control equipment, found themselves involved in many controversies over its operational design. These controversies did not involve the technical design of the equipment or the types of circuits to be employed. They did evolve from the varying needs of the program directors who would fully utilize the operational qualities of the equipment.

Experience at Du Mont television station WABD has shown that few of the present directors use the same tech-

nique, demand the same facilities, or use the same production methods. A few want to stand in the background, script in hand, and call instructions to a production assistant who relays directions to the floor personnel or accomplishes a fade, camera switch, or whatever may be called for. Others demand to direct the efforts of studio floor personnel themselves. A few desire to effect their own switching and fading at the control equipment. Some request facilities for a silent operation of the control equipment through a series of lights tied in with keys located on a director's console. The only spoken word would then be the directions to the floor personnel. These are but a few of many needs of those employing the equipment today. As television increases in scope, as more directors are employed, it is reasonable to presume that many more viewpoints will come into being—more demands will be forthcoming. It is this potential the design engineer must take into account when designing equipment. It is this potential that must be considered carefully before setting designs for the Studio Control Equipment.

What Studio Control Units Comprise

It would be well to further understand the units comprising the Studio Control Equipment prior to describing the functional layout. Each single camera control chain contains:

1. A camera control unit, which regulates beam current of the pick-up tube, regulates vertical and horizontal

sweeps, vertical centering, keystoneing, pedestal and the brightness of rim lights.

2. A shading generator which compensates for secondary emission from the mosaic plate of the pick-up tube, unevenness of mosaic response and studio lighting defects. This unit also contains a monitoring cathode ray oscillograph which is used to observe horizontal and vertical picture information.

3. Monitor for the purpose of viewing the actual picture as picked up by the studio camera.

4. Power supply units as required to operate the control and viewing equipment.

To complete the control equipment, whether it is a single or multiple camera chain, the following equipment is added:

1. Synchronizing Generator.

2. Line Amplifier, camera switching unit, monitor cathode ray oscillograph. This unit will be of individual design suitable for either a two, three, four or more camera chain. It should be noted that a single camera chain does not require this particular unit, since switching of cameras is not necessary.

3. Viewing monitor for the line amplifier which indicates the picture as it is fed to the transmitter.

4. Power supplies as required to operate the control and viewing equipment.

In this component and unit function description of the studio control equipment, we have the basic units found in present day equipment and to be found, with modifications, in newly designed equipment.

Functionally, these components are presently arranged in a console as follows:

Top row. Monitoring Cathode Ray Oscillograph

Camera Monitor No. 1—Camera Monitor No. 2—and Line Monitor

Lower row. Camera Control Unit No. 1—Shading Generator No. 1

Camera Control Unit No. 2—Shading Generator No. 2

Line Amplifier and Switching Unit and Distribution Panel

Power supplies are all concealed in the base of the console. The Synchronizing Generator and other distribution equipment currently used at WABD are contained in a rack located directly to the rear of the control console. Sound control equipment and turntables are located to the right of the video control console, while the director's table mounted on a small platform is located directly to the rear of the sound control equipment. This arrangement makes it possible for the director to sit at his designated position, observe the images as they appear on the monitors, and look directly out on the entire studio floor. The "postwar" equipment will follow the basic layout of present equipment with the exception that modifications will be made with respect to the requirements of efficient operation.

Television stations, at first, will probably make their start with a modest equipment investment. For this reason, the studio control console will be comprised of interlocking units, each unit capable of operating independently, containing the Camera Monitor, Camera Control Unit and Shading Generator. This makes it possible for a station to start with a single or dual camera chain, and

at a later date expand to three or more camera chains necessitating only a change in the line amplifier and switching unit.

What Some of the New Changes Are

The height of the DuMont control desk has been reduced from the present 58 inches to 42 inches, making it possible for the control operator, as well as the director, to observe the studio action. This lowered design also eliminates the need for the director to sit to the rear of the equipment at a desk mounted on a raised platform. Sitting at the control desk, the director can maintain his control, observe the viewing units with greater ease, and still observe the entire action on the studio floor. If it is desirable that he do so, he may also manipulate his own switching controls and personally direct the efforts of the floor personnel. The viewing monitor units, which incorporate the DuMont 12-inch cathode ray tube, are mounted at a slight angle permitting the technicians and the director to observe both the screen picture and the studio action merely by raising or lowering the eyes. Mounted directly below the monitoring units are two 5-inch cathode ray tubes which are used by the control technician to observe the horizontal and vertical signal information. The provision of two oscillograph tubes instead of the single tube found in present-day equipment makes it possible for the technician to observe the horizontal and vertical information simultaneously. All control dials and buttons are mounted remotely from the actual control equipment at an angle providing ease in control and comfortable operation.

The control desk also comes equipped with a standard clock, a special clock with a one-hour dial, another with a one-minute dial, two supersensitive microphones on the intercommunication system for the direction of floor personnel, one speaker on the intercommunication system to receive necessary information from the master control room, and two lamps over the desk slides for easy reading of scripts and cue sheets.

A series of lights may also be included to aid in the cueing of film and to assist the control operator in advising the director when a scene is ready to be flashed on the air. These lights, when tied into a separate director's control desk, may also be used by the director to cue the production assistant in the selection of camera pickup shots, thereby eliminating some of the voice confusion of the control room.

The important point of the "postwar" studio control equipment is the extreme design flexibility which enables it to fit any type of operation, any program need. It makes it possible for the director employing its flexibility to sit at the desk, stand behind it, sit at a table mounted above and to the rear of it, or to exercise his prerogative of pacing up and down. It is possible for the director to direct the entire operation, cue the floor personnel, switch, fade or blend pictures himself or direct others to do it.

Whether it is a community, metropolitan, or major network originating station, the "postwar" efficiently designed studio control equipment will meet the varying needs of those employing it. The right tools in the control room, used in conjunction with the flexible tools on the studio floor, will make it possible to produce the smooth programs expected by a radio and motion picture trained audience.

So You Think You Know the Medium!

Too many self-styled experts are doing television a lot of harm by expounding their personal theories as facts, according to

BEN FEINER, JR.

Assistant Director of
Television Programming—WCBW

Of all popular activities in modern times none has been subjected to such a barrage of tripe as Television. I'll except the engineering boys from this castigation because of my innate respect for scientists and because I rarely understand what they're writing about anyhow.

Actually, there probably is a handful of people in the country whose experience does entitle them to be considered authorities in the field. Most certainly I am not one of these. But just as certainly neither are scores of self-constituted mouth-pieces whose effluvia is mopped up by the press, the magazines and the book publishers of the nation in their eagerness to pass something along to a video hungry public.

Sooner or later this same public is going to gag on a lot of what it's being fed and the resultant process of regurgitation will be most unpleasant for all concerned.

At the moment, however, it's paying its dollars to go to "schools", unequipped and run by people who have been exposed to Television for about as long as a graflex shot of a swan diver. It's paying its nickels, dimes and quarters to read articles written by dancers who haven't been under the lights long enough to work up a good perspiration; and it's paying attention to lecturers who don't know the difference between the dolly-man and the sisters of the same name.

There are nine Television broadcasting centers currently in operation. Each of these has its own policies, its own objectives and its own limitations. Equipment and personnel vary all along the line. Obviously then, it's physically impossible for most of us to be familiar with the techniques and practices employed in most other studios; and without such knowledge, general conclusions haven't much value.

Sure, a person can come to conclusions about pictures, or radio or the theatre — because in these fields, working conditions — whether it a Fox lot or a Warner lot; an NBC studio or a CBS studio; the stage of the Alvin or the stage of the Shubert — are almost identical.

And certainly the objectives in these fields are fixed. Fixed in simple terms of lines: lines in front of theatres or lines on sales charts.

No Set Standards

But in our business there are, as yet, nothing like such standards. At the moment R.K.O.'s Television objectives may be as different from NBC's as Balaban and Katz's studio is from CBS's.

Now personally I haven't had the opportunities for intimate discussions with responsible representatives of other organizations concerning their objectives. And even if I had I would be neither hurt nor surprised if they indicated a certain disinclination to bare their souls to me. As a matter of fact I haven't even seen most of the other studios. (Note to my superiors: A situation that I hope you'll see fit to correct) Consequently I'm a little goggle-eyed when I go to a luncheon, hear a long peroration on what's wrong with Television (with a big "T") — and how things should be done — and when I say to the speaker: "I don't think I've seen you over at our place," he says, "No, I've been meaning to but I just haven't been able to get around to it."

Now I don't mean to imply that WCBW bears the exclusive burden of television broadcasting in the metropolitan area, but I think that it does do enough to warrant a casual visit from a lad with all the answers.

Another time I was introduced to someone who had written an impressive critique on the art of the Television camera and I asked: "Are you in television or movies?" he replied, "Neither, I'm a portrait photographer, but my wife's Uncle has a receiver and I've seen enough programs to know what should be done".

Oversold Public

I think the story that really upset me most was the one (complete with plans and drawings) purporting to describe the equipment and methods required to operate a television station. The results ensuing from this little gem would have been chaotic — to put it mildly — since there was absolutely no mention of, nor provision for, any operations department.

And so it goes. The public already oversold as the result of irresponsible publicity, envisages nightly television productions resembling a cross fertilization of the works of Cecil B. DeMille with those of Billy Rose.

Better informed individuals sensing the unlikeliness of such spectacles, in the near future, and anxious for honest information, are beset by phalanxes of self-appointed authorities who carry about as much genuine weight as a Kentucky Colonel would at SHAEF.

In the meanwhile a few score of men and women sweat it out at the various studios and agencies. They're too busy to do much writing or talking and certainly too aware of how much is yet to be learned to consider themselves authorities.

They resent the self-exploiters who are trying to ride the crest of the television tidal wave without getting wet. They resent these people just the way charlatans are resented by honest laboratory workers in all fields . . . not just for themselves but for the public and for the future as well.

All of which reminds me of a very succinct remark once directed toward television by Mr. James Lawrence Fly. He said: "Cut out the gab and get back to the lab".

Roger, Mr. F.

ADVERTISING

"Stand-by for 1946" is agency attitude, with increasing interest in television experimentation, shown by more of their clients.

There's a very real feeling that the long awaited "tomorrow" of television is here — that now is the time to get going with the medium, despite its limitations.

Agencies are almost unanimous in reporting increased interest among their clients and many presentations are being prepared to show how television can be slanted to a particular advertiser's purpose. Admittedly television is an expensive medium right now. It can offer little in the way of increased product sales, with its limited audience. But there is an increasing awareness that the immediate return is not the important thing. That television has tremendous potentialities may sound banal to repeat here, but it is the acceptance of this statement which is prompting the increased interest in the medium. The "it's still a long way off" philosophy is giving way to "we better be ready for it".

And the experimentation that has

been done so far in commercial and programming techniques has only emphasized the need for continued experimentation and the same type of analytical study which is accorded to advertising copy and radio commercials.

Then too stations haven't exactly put out the red carpet for advertisers. First, studio and facilities limitations have hampered all three of New York's operating stations—NBC, CBS and DuMont. And NBC and CBS, particularly, have been more interested in learning themselves, in trying out their own theories and conducting various experiments, than in commercial activity (see page 21, October TELEVISION for statements on their policy). Networks have also instituted a policy of okaying both programming and commercial content, which has not tended to make agencies too happy. DuMont has had a more liberal policy, which may be why agencies like Ruthrauff & Ryan, William Esty, Young & Rubicam, to mention a few, are waiting for DuMont to go back on the air in order to resume their tele activities.

However the FCC stipulation of 28 hours of programming per week is going to require considerable expansion of facilities and personnel — and may easily result in more of an open door policy.

Network Package Shows Have Had No Takers

Paradoxically enough, though, despite this high interest two package shows, prepared especially for sponsorship, have had no takers yet. NBC's "Teletruth" program uses a quiz kid format and is now in its third month. The ABC package, "King's Record Shop", combining both audience and viewer participa-

tion, is now in its second month, with weekly presentation over WRGB. Although stations report much interest in both programs, the dotted line stage has not been reached. ABC's "Wife-Saver", which recently started a weekly schedule on WRGB, is also being offered for sponsorship. Some CBS programs, such as "The Missus Goes A-Shoppin'" are also offered for sale.

Perhaps the answer as to why package shows are not being snapped up right now lies in the old repeated statement — the only reason for going into television now is for a chance to experiment. And agency reasoning seems to be that package shows do not offer that chance.

COMMERCIAL TECHNIQUES

One of the unanswerables in television is the handling of commercial techniques and the length of time necessary to make a visual impression on the viewer. There are innumerable discussions on the advantages of film over live, on the indirect approach over the direct approach, on the integrated commercial over the separate one. Current experiments on time and weather spots show how advertisers are now trying to find the answers to these problems.

What can be done in 20 to 60 seconds? Not much time to play around with, but agencies have used a variety of techniques; have utilized film, animation, live and poster display, have introduced love interest, comedy, pantomime; have combined visual and aural appeal or used visual appeal alone. Production costs range from the simple poster displays to the more expensive mediums of film and live. Each has a different format. Some of them are described here to show how seconds can be made to count.

Time Signals

Ben-Rus time signals over WCBW tie in the Christmas gift theme. Format is extremely simple, with a Christmas wreath used as the setting



LEFT: Elgin Watch commercial over WBKB uses a model, who discusses the watch she is wearing. Camera is moving in for close-up of the watch.

for a Ben-Rus watch mounted on a poster in the center. Camera comes in for a close-up of the watch, which gives the right time. Off screen narration gives the commercial. Agency is Young & Rubicam.

Bulova time signals over WNBT utilize posters and live, with changes made from time to time. One version emphasizes the "seeing" powers of television, and with the exception of background music, no oral announcement is made. This particular signal consists of a large, watch-shaped poster, with the Bulova name on it. Hands on the poster are set at the correct time, with a second hand sweeping around for sixty seconds. Agency is Biow Co.

Elgin — At WBKB, live models are used in the one minute commercial. Scene opens with a shot of a model who comments on Elgin watches in general and then calls attention to the one she is wearing. Off-scene narration continues the commercial, with the model being picked up again to give the correct time. Precision instruments, such as the marine chronometer, the elapsed time clock and the sweep-second timer, have also been used during the televised time spots.

At WNBT, 20 second film commercials are used (as previously reported.) Film shows stars twinkling in the heavens — tying in with the ad theme that Elgin time is timed to the stars. Both Lady and Lord Elgin watches come in to full screen proportions, then fade out. A montage effect, showing a clock, painted black with white sweep hands, is superimposed over the film to give the correct time. Off-screen narration gives the commercial.

General Electric — Theme of the recently inaugurated one-minute time spots on WRGB ties in the action of human hands, performing daily tasks, with the hands of a clock. Time spot opens with a shot of a G-E electric alarm clock, as an off-stage narrator identifies himself as the voice of the clock. Opening line, "By my hand other hands, human hands, act in split second coordination" gives the cue for a fade-in of a televised "handy", showing a close-up of human hands performing some task.

Typical of the action pantomimed to show the importance of time in a newspaper office, were a reporter's hands flashing across a typewriter keyboard in a race against the approaching deadline. Next shot showed



ABOVE: Shot from the 20-second Waltham Watch film, showing the happy bride with her Waltham gift. BELOW: General Electric ties in the action of human hands with the hands of the clock. Handies are pantomimed while an off-screen "voice of the G-E alarm clock" describes the importance of time.

hands rapidly checking galley sheets in an effort to hurry the story through. The importance of seconds in photography was also dramatized with a hand adjusting exposure on front of a candid camera; with hands holding a strip of developed negative, followed by a hand snapping down the cover of a small dryer, thus carrying the process through to the printing of the negative.

Everyday household tasks were also pantomimed, with hands pouring medicine, baking cakes, etc. Spot ends with the announcement, "Yes, I am a G-E alarm clock and whenever time counts, you can count on me." The exact time is then given.

Waltham uses two films for their twenty-second time announcements, given four times weekly over WNBT. First is based on a birthday party, with the young girl blowing out the candles on her cake and expressing her happiness over the gift of a Waltham watch. Second shows a bride and groom getting into a car after the ceremony, with the girl happy over her Waltham watch. Off-screen dialogue outlines the theme, with a dissolve to a stylized watch showing the right time. Waltham time signals are also televised over WPTZ. Two new films are now being prepared, according to the agency, N. W. Ayer.

Weather Reports

Botany's weather report over



WNBT uses animated cartoons with their woolly lamb as the main character. For the snow prediction, the woolly lamb builds a snow man. Commercial is worked in by having the snow man refuse a hat and a cane but accepting the tie when he sees the Botany label. This is followed by a slide which gives the weather report.

WRGB weather report is a series of one minute comedy skits, presented three times a week. Kept technically simple to avoid interference with the evening's main program operation, only one camera is used and properties and settings are kept to a minimum. A slide announcement, "WRGB Weather Report", introduces the one-minute spot and a slide bearing the forecast ends it amid fanfare music.

Many different angles are used to give a comedy twist. Typical are the old-fashioned methods of prediction, with an old man huddled before the fire and using his aching bones to make the forecast. How girl lost boy because she didn't dress for the weather, provided another theme. A tramp swatting flies in the park breaks his inactivity long enough to remark what the weather was apt to be when flies acted that way. Sports angle was utilized with a fisherman searching the heavens with a telescope. His verdict as to what kind of fishing weather it was going to be gave the weather report. And then, to give the forecast aural appeal, the weather news has also been set to music and sung by a couple of the staff members.

COMMERCIAL SHOWS

Curtis Publishing Company stepped into television this season with sponsorship of the Army-Notre Dame and the Army-Navy football games. Before game commercial plugged the Saturday Evening Post by showing the cover, while the announcer gave the commercial, stressing the football story which would appear in the next issue. A slide carrying the title of the story was also shown. After the game, the same technique was used, but covers of the other Curtis Publications, the Ladies Home Journal and Holiday were also shown. MacFarland, Avenyard is the agency.

Lever Brothers — Aunt Jenny, an adaptation of the daytime radio program, was the second in the series

of four experimental programs which Lever Brothers, through Ruthrauff and Ryan, conducted over WCBW.

Opening shot was a display of Spry, which slid apart to show the title. Given the Tuesday before Thanksgiving, time element was utilized with Aunt Jenny, extolling the virtues of Spry in her Thanksgiving menu cooking, showing how to brush the turkey with melted Spry and commenting on the cookies, pies, cakes, etc., which were also made with the product. Further emphasis was given by having a jar of Spry prominently in the scene.

Opening was purely commercial, the dramatic part being introduced by Aunt Jenny's companion, who started to recount a scene he witnessed in a lunchroom. Camera then dissolved to a lunchwagon, picking up a disgruntled customer and a disgusted waitress who debunk Thanksgiving, while a serviceman listened. A third customer entered, helped in the debunking, and the cynicism got pretty thick until the serviceman joined in. His thankfulness, for so pitifully little, pointed a moral to the other three.

Action was gotten through the movements of the waitress back and forth and occasional flashes to get the reaction of the serviceman silently listening. Cameras then faded back to Aunt Jenny's kitchen for a brief discussion of the story. Commercial note was introduced again through an ad in McCall's magazine, illustrating a Spry pie. Same pie was shown on the set with another discussion of the product.

In evaluating this program, it must be remembered that it was done as an experiment with television soap

opera. Integrated commercial was used and the demonstration technique of actually showing how to prepare the turkey would probably interest housewives on the look-out for new ways of cooking.

Pan American uses a travelogue to show the viewer what vistas a Pan American flight can unfold. Opening with the slide, "Pan American Presents Wings of Democracy", scene fades into animated maps showing Pan American airline routes, while off-screen narration invites the viewers to join in a television flight. Film shots show passengers boarding the clipper and the take-off, dissolving then into the travelogue of the land being visited. Commercial narration stresses the differences in time between air and other methods of travel and gives information on passports, lifting of priorities, etc. Finish also reverts to clipper in flight, to the tune of another verbal commercial. Agency is J. Walter Thompson.

CURRENT SPONSORS

WBKB (B. & K.), Chicago:

Acrobat Shoe Co., "Amazing Adventures of Tumblin Tim", through Ruthrauff & Ryan; American Gear professional basketball team, experimental educational program in cooperation with the Chicago Board of Education; Commonwealth Edison Co., "Telequizzicals," "Welcome to the Walkers" and "Cooking by the Dial", direct; The Fair Department Store, Shopping Program, direct; Marshall Field & Co., "Wednesday Matinee," variety program, direct.

(Continued on page 33)



A jar of Spry is prominently displayed in scene at left, as "Aunt Jenny" gives a lesson in brushing turkey with melted Spry. At end of program, which was produced by Ruthrauff & Ryan for Lever Brothers, a close-up of a Spry ad in McCall's magazine was shown viewers.

economics have free play and the desire to ensure that as far as possible none has an economic advantage over his competitors. It often seems to forget that if technical progress is to be fostered, then an economic inducement should be provided and that may act counter to achieve economic equality. This ideology of economic equality leads the Commission to be over-specific in its standards of good engineering practice. As far as possible it should establish minimum required performance rather than the means of obtaining that performance. From a broadcast station it should require that it provide a certain minimum quality of service and a certain area of service. It should also require that the interference produced should not exceed a certain maximum but how this performance is to be achieved should be left to the operator and his engineer's ingenuity.

If a particular operator's service can be increased without increased interference, why should not this worthy operator be permitted to improve that service. Should not he be given every possible inducement to produce this improvement? The system according to which he has to spend much time and money at hearings is a handicap to his going ahead. If he is successful, should he not be given the economic advantage of his foresight and ingenuity? Certainly it seems to me that he should not have to try to prove that his competitors would not be at a disadvantage toward him. If such is the case under our economic system, he ought to be proud of it.

This last point might seem to be a side issue to the problem of television allocation. It seems to me, however, that it is quite important because it indicates possible danger that sudden philosophy of government control may be operated to hamper technical development and if there is a field of broadcasting where technical development is needed it is certainly television. If better operation could be obtained in relatively short time at frequencies where receivers could be made reasonable economically, then certainly would be built, in the matter of a few years, a tremendous industry.

Split Frequency Band

The simple principle of letting our economics system have free play in the broadcasting industry is unfortunately not a cure-all. There still remains the Commission's problem of allocating frequencies and seeing that they are used effectively. The Commission feels that it has done its best under the circumstances in the present frequency allocation which, unfortunately, splits the television band into two parts. As a consulting engineer, I can not help but realize the inertia that there is on the part of potential operators to use the lower part of the band because of the fear that the high part will not have an adequate audience for some time to come. In addition, one school of thought feels that going to the high frequencies will permit the evolution of much better quality television. The solution of this problem that the Commission has adopted is to allocate a substantial frequency band to experimental television to allow the development of super-television with the expectation of eventually this band coming into commercial operation. The discussion that now arises is, what band to select for this super-television. The higher the frequency, the longer it will take for this band to develop into commercial use.

The suggestion of Dr. Goldsmith's was a band between 5,000 and 10,000 megacycles instead of the present band which is below 1,000 megacycles. My idea on the subject is that the frequency selection should be based principally on propagation characteristics because I feel confident that equipment will be developed if the potentialities of the service are good and if, of course, there is a reasonable expectation of an adequate return for the work. Fortunately the experimental work to discover the propagation characteristics is much simpler than the experimental work required to develop a complete television system. By using the technique of pulses, well developed in radar operation, it is possible to analyze the reflections that might cause ghosts and analyze the degree of attenuation obtained for different terrains. We can also make a better reasonable guess of the relative merits of antennas at different frequencies.

Propagation Characteristics

It is unfortunate that we have no more data available at this time on propagation characteristics. We do have some information but that is largely direct site or under sea. We know that in the hilly terrain the lower the frequency the better the reception, but on the other hand, in built-up areas such as a large city, high frequencies give better service because they are capable of traversing the openings in the steel structures. Unfortunately, again the information available is not much more than qualitative. It is well known also that very high frequencies are reflected more easily by non-conductive materials such as concrete and brick than some other frequencies. It is to be expected, therefore, that there is an optimum frequency band which will provide service in built-up areas, but what that frequency band is, is yet to be found out. We might find for instance that the frequency band between 5,000 and 10,000 megacycles might give very poor service in spite of other advantages when the equipment for that band has been developed, and that its use might be limited. On the other hand, the difference between this band and the band below 1,000 megacycles may be sufficiently unimportant to make the other advantages for the higher frequency band dominate the selection.

I have the feeling that one thing that the United States is not likely to be short of is engineering ingenuity. I think we can gamble on that ingenuity and depend on its solving the problems we present to it, but we can not gamble on changing the shape of our hills and cities to meet the requirements of a particular selection of frequency. The frequency band selected must be capable of giving good signals over substantial areas in all kinds of terrain. We should, therefore, select the frequency band on experimental research on propagation characteristics. I hope that the Federal Communications Commission and the industry will tackle this problem and eventually have enough factual evidence for a reasonable decision to be reached on what section of the spectrum should the engineer direct his televising attention.

EQUIPMENT

By T. R. KENNEDY Jr. and JACK KILPATRICK

PRODUCTION OUTLOOK

Original plans of RCA, Philco and DuMont were to have sets out by April. OPA action or inaction has held up production, the same as it has for standard radio receivers. June should now see receivers coming into the market, although there's a chance that some of the new companies in the field might jump the gun before then.

With the exception of a few station replacements not more than a handful of transmitters can be expected by the end of 1946. It won't be until 1947 before any appreciable transmitter production is underway.

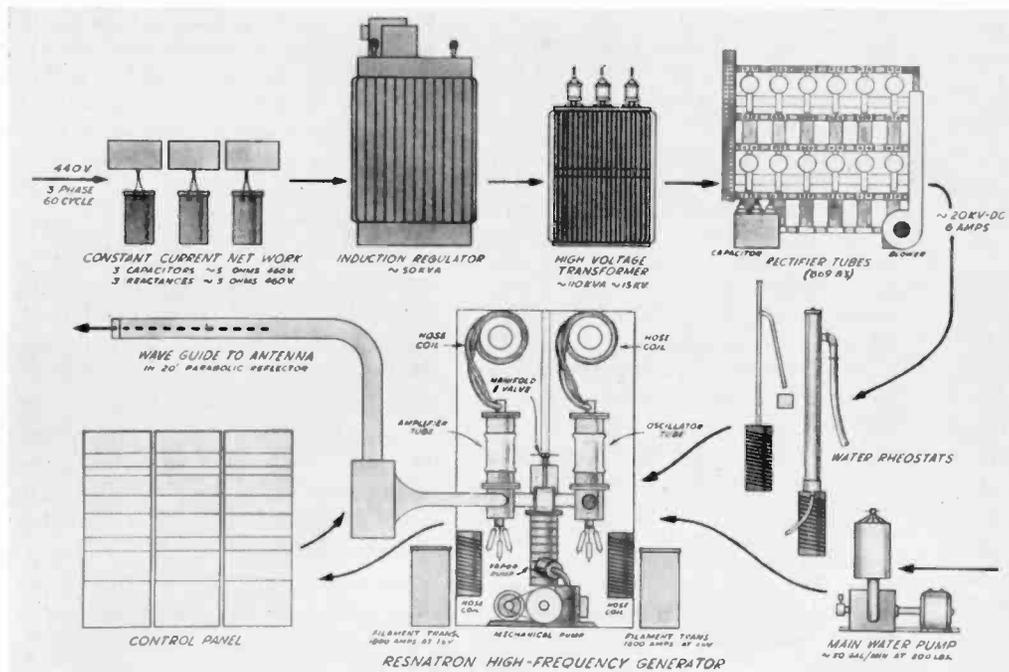
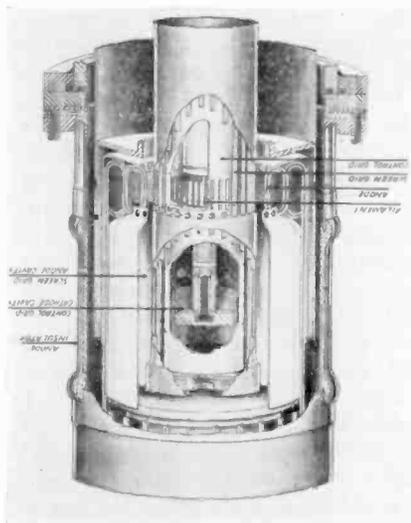
THE RESNATRON

The "resnatron", a 300-pound very-high-frequency vacuum tube that helped blitz Axis radars, an electronic giant that can produce thousands of watts of power on channels in the hundreds-of-megacycles, is now through with war and is being adapted to the peacetime job of creating video-sound signals to serve American homes.

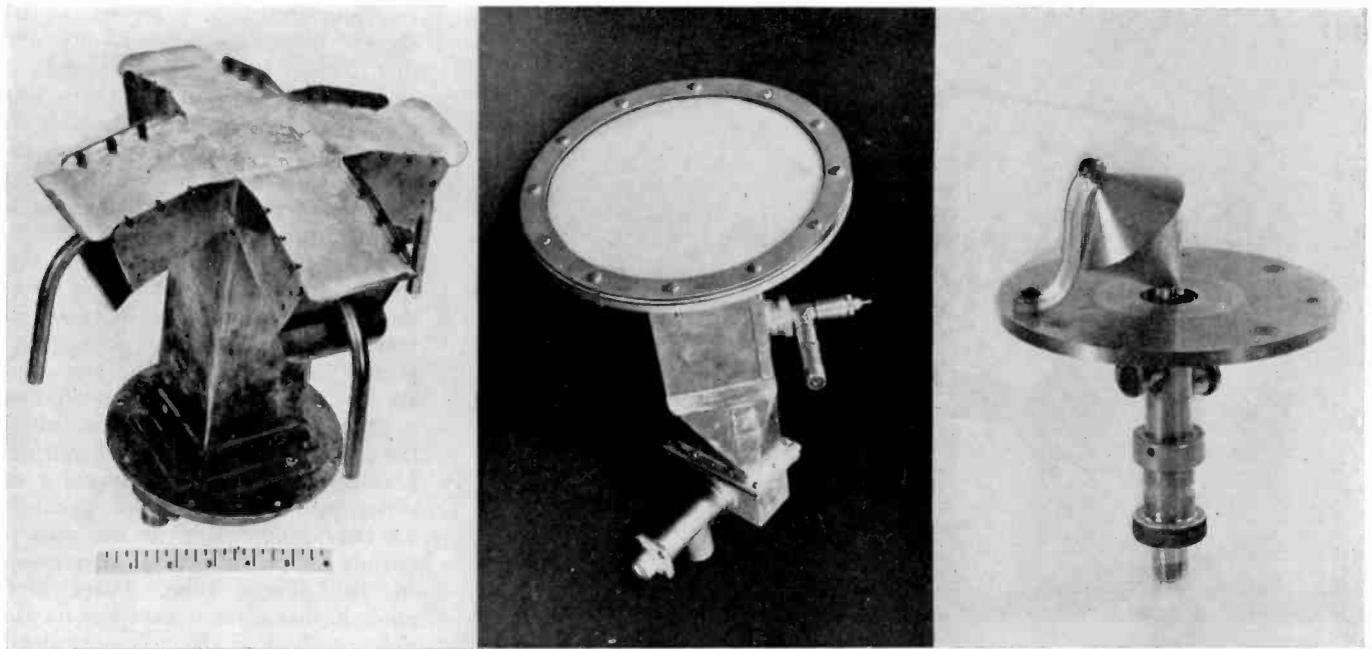
The story of the resnatron reads

like a page from a novel of Jules Verne. In Europe it confounded Axis night fliers over Germany and jammed air and ground radars so our fliers could fly safely home to English air fields after bombing German cities. In the war it generated between 30,000 and 50,000 watts of radio power on waves from 350 and 625 magacycles. The whole resnatron apparatus for one blitzer Army trucks. A 30-foot parabolic reflector directed the waves over the English Channel and Germany. In this beam our airmen returned safely. The equipment affectionately was called the "tuba" because a huge barn-like reflector was often used to direct the beams.

The resnatron is an electronic giant described as combining advantages of the ordinary multi-element vacuum tube and the cavity-resonance principles of the "kylstron" and "mag-



UPPER LEFT: Cut-away sketch of the Sloan-Marshall Resnatron, showing the construction. This special tetrode, the heart of the high-power jammer "Tuba", develops 30 kilowatts at frequencies from 500 to 600 megacycles. Before the war, 10 watts was the maximum available at these frequencies. LEFT: Block diagram of the various units making up the high-power jammer "Tuba". This was developed at the Radio Research Laboratory at Harvard University, in order to protect Allied Bombers in Europe by blinding German night-fighter radars.



LEFT: Known as a "fishhook", this antenna enabled U. S. jammers to radiate the special "circularly polarized" jamming signal needed to counter enemy gun-laying radars equipped with "spinning dipole" antennas. **CENTER:** Circularly polarized search and jamming antenna covers the frequency range 2,000 to 4,000 megacycles and transmits and receives with equal effect on any polarization of radio

waves. It is about 8" in diameter. **RIGHT:** The cone antenna is effective over the frequency range 1000 to 3000 megacycles and points the way to postwar broadband antennas for FM and Television. It served during the war as the antenna for search receivers for locating and identifying enemy radars. These were developed by Harvard University Research Laboratory at Cambridge.

netron." The physical size of the device and its ability to dissipate the heat of operation are said to be the only practical limiting factors.

Unlike radar, in which large amounts of "pulse" power are achieved, the resnatron generates an alternating current power output, hence can be modulated similarly to any other continuous-wave electronic generator.*

It is made chiefly of copper, is three feet high and a foot in diameter. Inside its envelope is some 50 feet of copper tubing in which water is pumped at high pressure for cooling purposes.

Ordinary vacuum tubes cannot be made to amplify or generate waves above certain frequencies due to various losses, as well as the fact that electrons from the cathode are too slow in transit between the elements to support the very high frequencies. This happens when the time of passage of the electrons from one element to another become an appreciable part of the time in which one radio-frequency cycle takes place.

The men who designed the resnatron overcame this by separating the tube's input and output elements

more than the conventional amount and applying an electron accelerating voltage. Two resonant chambers also were arranged — one between or around the cathode and the control grid; the other at the screen grid-plate anode end of the resnatron.

The power thus developed is transferred from the plate through a coaxial conductor, thence through an expanding area wave-guide which projects the waves against a parabolic surface, which beams them over the countryside. Obviously, for television or FM broadcasting, an appropriate video-sound radiating surface would be substituted for the parabolic surface. Many of the resnatrons auxiliary operating circuits are inside the glass-copper envelope which is expected to simplify its operation.

Known technically as the Sloan-Marshall resnatron, after its inventors, Dr. D. H. Sloan and Dr. L. C. Marshall, the huge device is said to be more capable and efficient as a radio-frequency power generator at tremendous frequencies than any other system. This power is something more than 1,000 times as great as any other tube currently operated on channels as high as 300 to 700

megacycles, where most engineers believe television stations will be exclusively channelled.

The basic idea came from Dr. Sloan, who was then at the University of California. In 1941 he was invited to join the Westinghouse Electric Company research laboratory at East Pittsburgh and perfect the resnatron, and in 1942 the Office of Research and Development arranged with that company to build the tube for anti-radar purposes. It was applied to military uses by the technical experts at the Harvard Radio Research Laboratory at Cambridge.

Other Resonators— Micro-Wave Antennas

Many other antiradar devices were developed by American engineers, largely the 800 experts concentrated at the Harvard Radio Research Laboratories in Cambridge. Following are some exclusive pictures of resonators, and a variety of novel ultra-high-frequency transmitting and receiving antennas which helped make the Allied radar blitz so successful that the Axis gave up radar lest it betray secret information and the

*This is an approximation of how it operates, based on available information at this time.



Farnsworth antenna, above, can be rotated clockwise and counterclockwise and has members which are extensible, allowing for proper orientation and tuning.

position and wavelengths of hidden radar-gun-pointing equipment.

The very-high-frequency antenna devices resemble something out of a metal worker's nightmare, but they worked in the anti-radar blitz against the Axis and will work in the peacetime capacity of intercepting waves over very broad channels, without adjustment, or tuning. In general, such devices are said to be of efficiencies much higher than conventional doublets now used for television reception.

The captions under each picture denote the wartime use of the devices and indicate the general frequency of operation.

ANTENNA

The problem of television reception has been approached in a novel way by engineers of the Farnsworth Television and Radio Corporation of Fort Wayne, Ind., who have developed an antenna or doublet of the conventional type which, by means of built-in motors and controls, the video fan rotates and extends or retracts from push-button controls on the receiver. The device rotates the doublet so that it electrically points toward the most favorable angle of reception, thus partially, at least, eliminating ghost images. The doublet arms are coaxial or telescoping in construction, this permitting the arms to be moved in or out to tune to the wave of the desired station. A trial

recently held in a mid-town New York hotel is said to have demonstrated the efficiency of the device. Such an antenna was mounted on the roof and operated from a receiver in the building below. The antenna covers the television waves from $46\frac{1}{2}$ to 117 megacycles. The frequency range, it was said, can be extended to 167 megacycle operation by the addition of more telescoping sections in the arms.

PATENTS

An improved cabinet design for combination radio-television receivers, several developments in the field of color television, and another attempt at providing three-dimensional effects are among patents recently granted by the United States Patent Office to inventors of the industry.

Cabinet Design

George Patterson, Jr., of Philadelphia, won No. 2,388,761 on November 13 on a cabinet aimed at helping that almost forgotten man—the fellow who *listens* to a television program as well as looks at it (application for patent March 30, 1944; six claims allowed, assigned to Philco Radio & Television Corporation, Philadelphia).

He comments a little caustically in his patent that the general practice within the industry has been to separate the sound source, or loud speak-

er, from the picture screen, on the theory prevailing among designers that "sound is secondary to sight in such an apparatus." Speakers thus have been put into any available location after the image screen has been taken care of, with little regard to close association of the sound source with the image.

To improve the impression that sound actually is emanating from the images on the screen, this patented design features a compact assembly of picture tube and loud speaker, with the speaker positioned a little to one side and just behind the tube. This self-contained unit can be assembled easily, the inventor asserts, with a hinged door provided on the speaker side of the unit to permit simple insertion or removal of the image tube. Surprisingly enough, this arrangement has no significant effect on the necessary depth of the cabinet as a whole. The casing of the unit forms an acoustic horn to make the sound appear to come directly out of the television image.

Color

Research scientists working on the color problem have been having a field day at the Patent Office recently. Here are the three most recent patents in this field:

(1) Alfred N. Goldsmith, of New York City, received No. 2,389,039 on an improvement in a color television transmitting system (application for patent Dec. 30, 1943, 11 claims allowed, not assigned). In this set-up, means are provided whereby the intensity of television image signals representative of the different color components may be independently altered in order to produce a desired color balance in the television receiver.

The inventor points out that if television image signals were at all times developed in their proper relative intensities for each of the color components, no correction of the relative signal strength would be necessary. Trouble is, that they're not. Due to the lack of linearity in light transmitting efficiency of the optical system of the entire color range, and due to the lack of uniform color response in the pick-up tube, signal intensity varies considerably and an unbalanced color image results at the receiver.

To modify and control these intensities, this patent offers a control potential which is applied to the control electrodes of the video amplifier

tubes in the form of an automatic gain control potential. In combination with this is a light responsive element synchronized to the color disc or drum, in which a photocathode receives light of the same color as that being projected on the pick-up tube. Thus a single video amplifier channel is used in the transmitter to amplify the color component signals, and the gain of the video amplifier may be sequentially altered according to the greater or lesser percentage of the various color components. The system is workable on familiar television equipment in which a rotating color filter disc is synchronized and phased with respect to the deflection of the cathode ray beam in the television pick-up tube.

(2) George E. Sleeper, Jr., of Berkeley, Calif., received No. 2,389,645 on November 27 on an improved electronic scanning device for color systems (application for patent Feb. 5, 1943; four claims allowed, not assigned). In this apparatus, a single electron beam is provided for scanning a photoelectric screen. Between the scanning device and the screen, an optical system is interposed with means for producing two or three images of the object, depending upon whether two color filters or three are used. These color images then are cast upon separate areas of the photoelectric screen, where the signals are picked up and transmitted.

(3) George W. Huffnagle, Fryeburg, Maine, won No. 2,389,979 on November 27 on a television system for transmitting images in their natural colors (application for patent April 14, 1942; nine claims allowed, assigned to Farnsworth Television & Radio Corporation). In this system, a photoemissive surface is provided with means for forming an optical image on its face. The electron emission from the surface is scanned, and the images are picked up after they have passed through a color filter interposed between the surface and the ray beam. The image-forming means comprise identical groups of linear filter elements, each element in a group being adapted to pass light of a different primary color.

Thus, during any frame period, the electron emission from each line of the photoemissive surface is representative of the red, blue, or yellow color in the corresponding line of the optical image. The emission is

converted into trains of electrical signals—each train representing a primary color in a line of the image—and the filter is caused to oscillate through such an amplitude that filter elements are displaced sufficiently to analyze each line as to the colors in the groups of filter elements.

Viewing Device

George Zindel, Jr., of Elkins Park, Pa., won No. 2,388,203 on October 30 on a novel viewing device or light mask aimed at eliminating the hood type receiver design (patent applied for Sept. 10, 1942; two claims allowed, assigned to Philco Radio & Television Corporation). Objections to the old-style viewing hoods are familiar in the industry; in an effort to keep light out, they very often kept the customer out, since only spectators directly in front of a receiver could see the screen.

This patent covers a louver structure formed of sheets of laminated cellulose acetate plastic .060 inch thick. These sheets exclude extrane-

ous light by preventing its passage through the opaque leaves of the louvers, thus permitting easy viewing from almost any angle.

Three-Dimensional

No. 2,388,170 was awarded to the late Henry J. De N. McCollum, of Chicago, through his executrix, Mrs. Thelma McCollum, on a stereoscopic vision apparatus (application for patent April 15, 1943; four claims allowed, not assigned). In this system, two television cameras are used in televising a scene; objects are viewed alternately by each camera, and a switching device feeds these images alternately to a transmitter. At the receiver, the separate image signals are passed through a flexible cable leading to two small cathode ray tubes (about one inch in diameter) which are supported in a spectacle frame with conventional earpieces and nosepiece. A pair of convex magnifying lenses enlarge the image in the viewer's eyes, and permits comfortable enjoyment of three-dimensional television.

Advertising (continued from page 28)

WPTZ (Philco), Philadelphia:

Atlantic Refining Company, weekly football games, and Waltham Watch Co., Time Signals, through N. W. Ayer & Son, Inc., New York.

WNBT (NBC), New York:

Bulova Watch Co., N. Y., time signals through the Biow Co., N. Y.; Curtis Publishing Co., football games, through MacFarland Aveyard; Elgin Watch Co., time signals through J. Walter Thompson Co., N. Y.; Firestone Tire & Rubber Co., Akron, "Voice of Firestone-Televues"; travel films through Sweeney & James Co., Cleveland; Gillette Safety Razor Co., Boston; "The Cavalcade of Sports", remote boxing matches through Maxon, Inc., Detroit; Pan American Airways System, N. Y., "Wings of Democracy", live talent and travel films through J. Walter Thompson

Co., N. Y.; RCA Victor Division of RCA, N. Y., "The World in Your Home", film program through J. Walter Thompson Co., N. Y.; U. S. Rubber Co., Keds, live and film "Friday Night Quarterback" through Campbell-Ewald Co., New York; Waltham Watch Co., Waltham, Mass., film and time through N. W. Ayer & Son, Inc., N. Y.

WCBW (CBS), New York:

Benrus Watch Co., N. Y., time signals through Young & Rubicam, N. Y.; Lever Brothers, "Aunt Jenny" through Ruthrauff & Ryan.

W6XYZ (Television Productions), Hollywood:

Shell Oil Co., "Comfort and Luxury" program, through J. Walter Thompson Agency; J. W. Robinson Company, Christmas toys; Desmond's, gifts for men.

PROGRAMMING

Here's A Way to Sustain Interest

Problem common to both radio and television has been that of sustaining audience interest from one program to another. Klaus Landsberg, station director at W6XYZ, is doing interesting experimental work in letting each program build audience interest in the program imme-

diately following. Many ways have been found to obtain continuity between two programs of a totally different type. Typical example was the technique used in tying a recent "Fashion Guide" program into the "Hits and Bits" variety show which followed. (Picture story on opposite page.)

Program opens with Dick and Barbara entering a night club, the setting for the "Hits and Bits" show. Things went along smoothly until Dick asked her to dance and her hat did unpleasant things to his face. Ensuing conversation sent them in search of a more suitable hat—which led right into the "Fashion Guide" program. They sat and watched the fashion show and finally Edith Head,

designer and fencée of the fashion parade, came up with the right hat for Barbara—and one which suited Dick. Couple then went back to the club and acted as emcees for the variety show.

Thus by centering audience attention on the comic-romantic problem of Dick and Barbara, the two shows were given a connecting link and interest was sustained by making

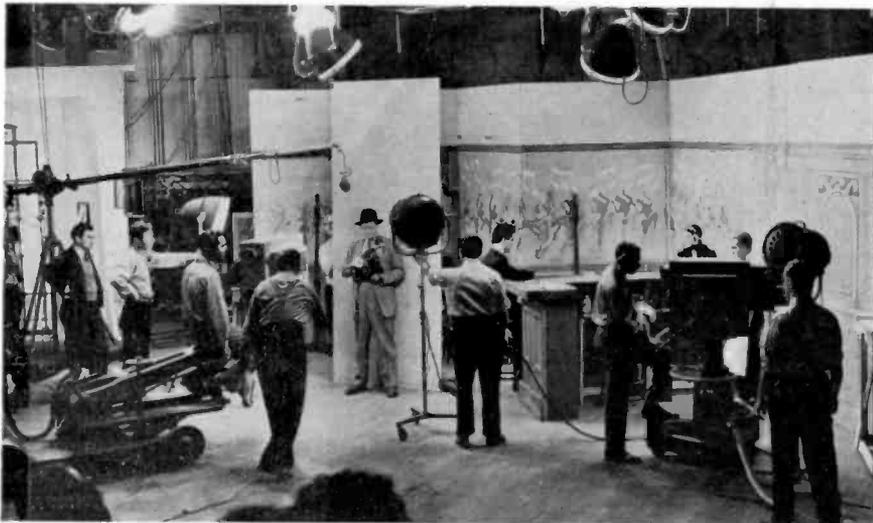
the acts was furnished by the girl who kept Shakespeare informed as to what was going on before the cameras, who the performers were and what their duties were. Most of Shakespeare's dialogue was taken from his works.

Stage Adaptations Must Consider Video Limitations

WNBT, continuing their experiments with full length plays, presented George S. Kaufman's "You Can't Take It With You," which was a riotous hit on Broadway and the screen. As television fare it missed the boat, due primarily to the camera limitations of video in its present form.

The entire play was set in the living room, which sounds simple enough, but much of the slap happy mood of the comedy depended on details, like seeing Grandpa's pet snakes in the corner, Ed's printing press, etc. And the tele translation just wasn't clear enough in picking up these details. Stage setting presented a problem for so much had to be included as a necessary part of the play and, in addition, three entrances had to be provided. However these were well handled, permitting exits and entrances without blocking.

The play had a cast of 16 and its theme centered around a family who did as it wanted to, without any thought of convention. With Penny writing plays and later switching back to painting, with Essie pirouetting around in her constant ballet practicing, with the Russian ballet teacher condemning everything—and doing it with gestures; with Pop and his helper making fireworks and miniature explosions going off every few minutes; and with Grandpa sitting back for 35 years (because he got tired of working) and spending his time going to zoos and commencements, comedy called for quick action and an overall view of the whole set. For only by getting a composite effect of the whole family doing something different at the same



Close-up shot of Flash-gun Casey, hero of "Crime Photographer", opens up the who-dunit program over WCBW. Show is adapted from radio serial.

them the focal characters in two entirely dissimilar formats.

WRGB celebrated their sixth anniversary with a special 45-minute variety show. Program employed two sets — one a small living room, and the other a cut-out of a birthday cake with six candles. Continuity scenes took place in the studio audience section, centering around William Shakespeare who crashed the studio gate and seated himself next to a talkative but ungrammatical girl and her escort. Show was really a revue with all acts original and performed by the staff. Program included song parodies, take-offs of station activities, and caricatures of personnel whom the home audience would recognize. Connecting link between



To sustain interest from one program to another, Dick and his escort furnish the connecting link between W6XYZ's "Fashion Guide" and "Hits and Bits" variety show. At left, they are shown in a night club, the setting for "Hits and Bits". They are getting along fine until they start to dance and milady's hat pushes Dick's face out of shape a bit, which is not to his liking.



After some discussion, they leave the club in search of a more suitable hat for dancing. This leads right into the "Fashion Guide" program and they are interested spectators as Edith Head and her bevy of Paramount starlets stage their fashion parade. The right hat is finally decided upon and the two return to the club for the "Hits and Bits" number. Their comments on the various acts make them the emcees of the program.



time, could the most be gotten out of the comedy.

One of the most hilarious moments of the play was completely muffed in the video version. Penny, complete in her art costume before an easel, while her "model", dressed in appropriate costume posed as a discus player; Essie doing her endless ballet dance with the Russian executing a few of his own steps; Ed at the printing press; an inebriated actress asleep on the sofa. All this—with the folks, who were to be impressed on the following night, arriving a day too soon for dinner. To do justice to this, a full shot of the whole scene should have been taken so that the audience could have gotten the effect which must have hit the unexpected guests full in the face. Camera limitations prevented this and only the shocked expressions of the socialites were picked up. Most of the comedy was lost as a result.

Another thing that television producers must take into consideration in the selection of a script is that national humor changes. Ten years ago it was smart to poke fun at Russia. Right now, whatever personal feeling is toward Russia, it isn't one of ridicule and this part of the comedy hit a false note. The expression "confidentially it stinks"

also ran the cycle of popular usage.

In Stadium or Studio Sport Fans React the Same

WNBT's pick-up of the Army-Navy game packed 150 into a studio at Radio City for the first Philadelphia-New York relay—and all they needed to complete the stadium football atmosphere were hot-dog vendors in the aisles and some chill wind effects blowing around the room. Particularly significant to the future of television was audience reaction. The studio crowd was as vocal as the stadium crowd. Interesting to note were the eloquent sighs emitted when the transmission failed for a few minutes in the second quarter. Although the announcer was giving a play-by-play description, exactly similar to radio technique, audience felt as if they were missing something. This despite the fact that for years they had been satisfied to listen to football games. Now that they could see it too, a few minutes break-down seemed a major tragedy.

Among the other television firsts chalked up in the coverage were the use of three cameras, including the new Image Orthicon, mounted with a 19½" lens to give tele-photo coverage. In addition, a 40" focal length lens was mounted on a regular

orthicon camera to bring closeup pictures to the viewers.

Pick-up which started at 12:00 showed the pre-game ceremonies before the football classic got underway. Camera action was excellent, except for T-formation plays which sometimes stayed in the backfield instead of following the ball. Explanation for this, according to Burke Crotty, director of NBC television's field pick-ups, was the 150 lb. weight of the 40" lens. This made it difficult to move the close-up camera quickly enough to follow the play.

W6XYZ's switch from amateur to professional boxing bouts and wrestling matches on alternate Fridays has increased the already high appeal of these programs. A rather large studio audience, admitted for these athletic events, is allowed to go "wild" and by so doing furnishes proper ringside atmosphere. In the station's opinion, the staging of special events, with the proper lighting, mobility of cameras and other studio facilities, shows many advantages over outside pick-up.

Mobile Pick-Ups Due for Expansion

With the opening of basketball and hockey, the winter sports attractions at Madison Square Garden, both

"The Television Christmas Shopper" identifies herself via a television screen to WNBT's viewers. For handy household gifts, scene is set in kitchen, with cameras coming in for a close-up of the item in use.



WNBT and WCBW have made arrangements to pick them up. WNBT's mobile sports coverage has been well established, but this is WCBW's first entry into the field. Outside pick-up equipment, which was delivered to CBS at the start of the war, never had a chance to be used and was dismantled for experimental work. Equipment has now been put in shape again and with the return of Bob Edge from the Coast Guard, WCBW plans active mobile work. However the networks are trying to tie up their sports program and are busy presenting their package to potential sponsors.

WBKB is also stepping into the sports and special events field. Five year contract was recently signed with the Chicago Coliseum for exclusive tele coverage. Events scheduled include basketball tourneys, ice shows, prize fights, wrestling matches and roller skating derbies.

Public Service Feature Has Commercial Format

WNBT's "Television Christmas Shopper", while debuting as a public service program, is a natural commercial show. Designed to give viewers tips on gift items, program, shown the four Sunday nights preceding Christmas, employed an experienced shopper to make the selections.

Show opened with a close-up of Santa Claus wearily wondering what to give people, then shot to a tele screen, where the Television Christmas Shopper introduced herself. Camera next picked up a dining room setting, while the shopper, now off-screen, identified the various items, gave the name of the store and the approximate price. Close-ups of the items were shown. Demonstration technique was used in the kitchen setting to show various household gadgets. Boudoir setting was background for milady's gift selections, with the young girl pantomiming the use of various items. Program concluded with a pick-up of Santa Claus beaming happily and the return of the Television Shopper to announce next week's selections.

Unusual choice of gifts kept the audience interested. Exact prices were not given—"under \$10, about \$20", or "very reasonable" were the quotations used instead, on the theory that people do not remember exact prices. However, merchandisers will probably debate this point.



Family of three provide the comedy situations in the "Wife Saver", ABC's weekly presentation over WRGB. Here Alan Prescott is saving the situation by showing short cuts in cake baking, as the harassed husband gives up the whole idea.

Newspaper ads use exact prices and people remember them when they go to buy.

Programming Experiments Run Gamut of Techniques

WCBW continued their series of visual designs as rhythmic accompaniment to music with the presentation of "Inferno". Modern Russian musical excerpts from Prokofieff's cantata "Alexander Nevsky", Mosoloff's "Soviet Steel Foundry", and parts of Shostakovich's symphonies were synchronized with black and white designs by CBS television artist. Background narration was Poe's, "The Pit and the Pendulum." Paul Belanger, originator and arranger of the program, was director.

ABC's new weekly series over WRGB is an adaptation of Alan Prescott's radio show, "The Wife Saver". Format includes a family of three with the handy emcee stepping in at the right time to show the easiest way out of domestic problems. Although the household hints are presented in an amusing and entertaining fashion, all of them center around genuine short cuts to house-keeping efficiency. Most of the demonstration is done in pantomime with narrative by Allan Prescott integrated into situations.

WCBW is continuing the serial experiment, "Three Houses" which they started in October. Originally presented three times in one week,

the program has now been put on a weekly basis. Action revolves around incidents in the daily lives of three families in neighboring houses. Suspense element will be injected at the end of each episode to sustain interest.

Christmas Attractions

ABC is planning a special 2-hour Christmas program over WRGB on Christmas Eve. Format will be a party for under-privileged kids, complete with Santa Claus and gifts. While details have not been completely worked out, kids will probably provide their own entertainment, with the most talented encouraged to get up and perform. Most promising kid will be chosen to act as emcee. Also in the Yuletide parade is Irene Wicker with her version of Dicken's "Christmas Carol". "King's Record Shop" will play several familiar Christmas carols and the Christmas note will be injected into the Allan Prescott "Wife Saver" program.

WNBT started their Christmas programming early in December with Christmas carols and appropriate slides prefacing the start of their shows. Special Christmas films and Christmas plays are in the works, climaxing on Christmas Eve with a seasonal operatic production by Dr. Herbert Graf.

WCBW will hold a party for kids on Christmas night, under the auspices of the Police Athletic League.

Props and Paints

WITH the sense of realness and actuality that the public associates with television broadcasts, also comes the demand for that same realistic touch to be carried out in television settings. Because of these audience reaction factors combined with the close-up technique necessary in television, Robert J. Wade, NBC television scenic designer, foresees the development of entirely different methods of decorating television backgrounds, rather than an adaptation of the scene painting techniques used in theatrical settings.

On the stage, details are broadly handled in order to carry from a distance and some areas are purposely roughened in texture or in color treatment to create atmospheric effect. Mouldings and architectural trim are handled with broad paint strokes and, in general, every effort is made to avoid a photographic effect.

In television, perspective painting is not very effective unless a hazy, out-of-focus background is deliberately sought. Even then, a soft, photographic technique in painting gets better results. Moreover, in shots where utter realism is necessary, the conventional drop is bound to look artificial. As on the stage, interiors are easier to handle than exteriors because the actual quality of frescoed, tinted or paper walls, panels, doors, etc. can be more easily achieved.

In deciding the background treatment and the most effective designing techniques, the type of program and the wanted televised effect must be carefully considered. Mr. Wade's experience shows that some programs lend themselves very well to suggestive settings, while others require a more realistic treatment.

Suggestive Settings

Variety, operas, ballets and musical acts, where a background is admittedly non-realistic, lend themselves well to abstract decorative painting. Avoiding both subtle tones and black shadows, the artist may paint suggestive backgrounds in full values.

A Russian dancer, for example, might appear before a 10' x 14' drop painted in stylistic treatment (distorted domes, a village fair, or whatever

seemed appropriate, amusing or indicative). The width allows sufficient room for panning with the dancer. A similar backing, treated with a pseudo-mystic design, would make a good setting for a magician.

Building this type set does not mean special carpentry, and carrying it out requires only painting materials and the artist's time. But abstract backings, even in light and shadow treatments, are probably effective only for short numbers, for atmospheric prologues or for acts of vaudeville length.

The Amusing Touch

Comedy acts, children's shows and other similar programs tie in well with cartoon sets but too frequent use may cause it to lose piquancy and its air of informality. For a short juggling act, fanciful balls, Indian clubs, etc. tossing around in mid-air, might be an amusing set. Familiar scenes of rustic yodelling and "hay-seed" fun would make a good backing for a hill-billy number.

Technically, a cartoon backing consists of a hastily drawn subject, inked in with black lines on a light toned drop. After a design is once established, a minimum of shop time in execution is required as compared with the time needed to complete a set in full values. A cartoon drop, measuring about 12' x 15', reduces effectively on the kinescope — often losing some of its original contrast with surprisingly good results.

Limitations

Decorative and cartoon painting may take the place of the cutout placed before a dark cyclorama — a device long used on the stage but impractical for video production. While the maximum amount of effect was obtained with a minimum of expense and effort, the black void surrounding say a cutout of profile columns, houses or foliage, would be difficult, if not impossible, to light in television.

However the painted backdrop, as expressed in the abstract drawing and cartoon sets, is two-dimensional and as such is limited to specialized programs.

Realistic Backgrounds

Dramatic sketches, televised plays

and operas, in which realism is indicated, call for realistic backgrounds — and mouldings, panels, and doors and architectural trim must be three dimensional to seem real and solid. In a television dramatic sketch the whole set, unless it is a very small one, is never seen in its entirety at one time, and usually the parts shown are revealed in some detail. This close-up, let's say, is in direct contrast to theatre staging. There, distance from the stage aids illusion, and the spectator sees the entire scene at one time, diffused in colored light which psychologically or optically dulls his vision.

In Mr. Wade's opinion, stage sets, as such, will never be right or adequate because television scenery requires a heightening in light and shadow that is difficult to achieve on a painted plane surface.

Time And Money Savers

Rushing to get sets finished is common in all theatrical work, but the tempo must be even faster in television. Realizing that flat-coat painting may be done fairly quickly but that construction moves much more slowly, N. Ray Kelly, Manager of Production Facilities at NBC, has devised scenic elements to replace the standard "wing" of the theatre. It is easy to understand the time and labor saved when the wall units of a rough-plastered tavern may be changed in character by the addition of a coat of paint, of real or simulated wallpaper, or of fabric panels to become parts of other settings. And there is real economy in stocking various types of architectural units that are adapted mechanically to such frequently used wall elements as doors, windows, fireplaces, steps and stairs, French doors, bookcases and so on—especially if these units are interchangeable and interlocking.

The NBC elements (walls) differ from their stage prototypes in several ways — the familiar canvas covering has been replaced by a heavier sheathing designed to permit substantial superficial decoration and surface construction without the addition of extra battens and braces required by the conventional, fabric-covered wing.

Hundreds of possible interior arrangements may be designed with interlocking units and elements. With ingenuity and added construction,

many street and partial exteriors, as well as many purely abstract backgrounds for fashion shows and musical numbers, may also be put together.

Personality Touches

But making a room out of a series of scenic units and giving it personality — whether it be the informal character of a middle-class living room for a video serial or the air of formality needed for a drawing room in a historical sketch — requires a lot more skill than merely pushing interlocking units into place. Much of this depends upon the floor plan and the decorative scheme. Each room must be suitably and appropriately furnished, with the right draperies, wall brackets, accessories, etc., in order to provide the necessary color and atmosphere to give life to the script. To arrange all these various elements into an attractive, expressive and workable setting in two, three or four days requires a most closely integrated and efficient operating system.

Comparative Costs

Are building and heavy construction always necessary? No — for realistic sets may be painted, especially when all treatments and designs are used that would, in actual use, be done in paint, stencil, wall-paper or fresco.

At the outset, it is more expensive to make up a set dressed with architectural trim, specially cut mouldings and panels, than to devise a painted theatrical wing (even when solidly constructed elements are used as the base).

However, in the long run, this initial cost may be equalized for the solid elements may be used over and over, recovered with mouldings, papier mache ornaments and so on and may be handled and stored in a manner that would be impractical for fabric "flats."

As To The Future . . .

"During the present," concludes Mr. Wade, "for reasons of expediency, television sets may borrow much from contemporary stagecraft, but the results of experiments and the creation of new and larger studios may cause production artists to eschew many of the techniques of the past."



The above photograph shows the scale model which was constructed for the presentation of the opera "La Boheme." This was produced over WNBT.



Period of the late nineteenth century is used in this authentic set of Stephen Foster's "Swanee River." Interlocking construction unit is used for scene.



Same interlocking construction units are used for this modern living room interior, which was the background for the last episode of "The Black Angel."

WASHINGTON

Rules Governing Television Broadcast Stations

With final FCC allocations for television channels out of the way, the first industry hearings in cities where there are more applicants than channels will be held in Washington from Jan. 21st to Feb. 1st. Minimum operating schedule has been set at 28 hours a week, with chain broadcasting regulations made applicable to television. Following is the complete text of the FCC rules.

Classification of Television Stations and Allocations of Frequencies

§ 3.601 *Numerical designation of television channels*—The channels or frequency bands set forth below are available for television broadcast stations.

Channel No.	Megacycles	Channel No.	Megacycles
1	44-50	7	174-180
2	54-60	8	180-186
3	60-66	9	186-192
4	66-72	10	192-198
5	76-82	11	198-204
6	82-88	12	204-210
		13	210-216

§ 3.602 *Sharing of Television Channels*.—Channels 1 through 5 and 7 through 13 are available for assignment to radio services other than television upon a showing that no mutual interference will result.

§ 3.603. *Community stations*.—(a) A Community station is designed primarily for rendering service to the smaller metropolitan districts or principal cities. Television channel No. 1 is assigned exclusively for Community stations. Channels 2 to 13, inclusive, can also be used for Community stations provided such use complies with Section 3.606.

(b) The power of a Community station may not exceed an effective radiated peak power of 1 kilowatt. The maximum antenna height for such stations shall be 500 feet above the average terrain as determined by methods prescribed in the Standards of Good Engineering Practice concerning Television Broadcast Stations.

(c) The main studio of a Community station shall be located in the city or town served and the transmitter shall be located as near the center of the city as practicable.

§ 3.604 *Metropolitan stations*.—Metropolitan stations may be assigned to television channels 2 through 13, both inclusive. They are designed primarily to render service to a single metropolitan district or a principal city and to the rural area surrounding such metropolitan district or principal city.

(b) Metropolitan stations are limited to a maximum of 50 kilowatts effective radiated peak power with antenna having a height of 500 feet above the average terrain, as determined by the methods prescribed in Standards of Good Engineering Practice concerning Television Broadcast Stations. Whether higher antenna heights are available, they should be used but in such cases the Commission may authorize less than 50 kilowatts effective radiated peak power so that the coverage (within 500 uv/m contour) shall be substantially similar to that which would be provided by 50 kilowatts effective radiated peak power and a 500 foot antenna.

Where it is shown that an antenna height of 500 feet is not available, the Commission may authorize the use of a lower height antenna but will not permit an increase in radiated power in excess of 50 kilowatts. The service area of Metropolitan stations will not be protected beyond the 5000 uv/m contour and such stations will be located in such a manner as to insure, insofar as possible, a maximum of television service to all listeners, whether urban or rural.

(c) The main studio for Metropolitan stations shall be located in the city or metropolitan district with which the station is associated and the transmitter should be located so as to provide the maximum service to the city or metropolitan district served.

§ 3.605 *Rural stations*.—(a) Licensees of Metropolitan stations or applicants who desire to qualify as licensees of Rural stations must make a special showing to the Commission that they propose to serve an area more extensive than that served by a Metropolitan station and that the additional area proposed to be served is predominantly rural in character. In addition, a showing must be made that such use of the channel will not cause objectionable interference to other television stations or prevent the assignment of other television stations where there is reasonable evidence of the probability of such station being located in the future.

(b) Channels 2 through 13 are available for assignment to Rural stations. The service area of Rural stations will be determined by the Commission.

(c) The main studio of Rural stations shall be located within the 500 uv/m contour.

§ 3.606 *Table Showing Allocation of Television Channels to Metropolitan Districts in the United States*.—(a) The table below sets forth the channels which are available for the areas indicated. The table below will be revised from time to time depending upon the demand for television stations which may exist in the various cities. Where it is desired to use a different channel in any such area, or to use one of the channels in another area conflicting therewith, it must be shown that public interest, convenience, or necessity will be better served thereby than by the allocation set forth in the table.

(b) Only the first 140 metropolitan districts are listed in the table below. Stations in other metropolitan or city areas not listed in the table will not be assigned closer than 150 miles on the same channel or 75 miles on adjacent channels, except upon an adequate showing that public interest, convenience, or necessity would be better served thereby or that by using lower power or by other means equivalent protection is provided.

(c) Persons desiring to enter into a voluntary sharing arrangement of a television channel may file application therefor with the Commission pursuant to the provisions of Section 3.661(c).

Table Showing Allocation of Television Channels To Metropolitan Districts in The United States

Metropolitan District (U.S. Census 1940)			Total Stations		Metropolitan District (U.S. Census 1940)			Total Stations	
Sales Rank	Population	Channel Nos. Metropolitan	Metropolitan	Community	Sales Rank	Population	Channel Nos. Metropolitan	Metropolitan	Community
Akron	35	349,705	11	1	Macon	137	74,830	4,7,10	3
{ Albany					Madison	101	78,349	9	1
{ Schenectady	23	431,575	2,4,7,9,11	5	Manchester	118	81,932		1
{ Troy					Memphis	37	332,477	2,4,5,7,9	5
{ Allentown					Miami	38	250,537	2,4,5,7	4
{ Bethlehem	43	325,142		8	Milwaukee	15	790,336	3,6,8,10	4
{ Easton				1	{ Minneapolis	11	911,077	2,4,5,7,9	5
Altoona	111	114,094	9	1	{ St. Paul				
Amarillo	136	53,463	2,4,5,7	4	Mobile	119	144,906	3,5,9,11	4
Asheville	132	76,324	5,7,12	3	Montgomery	126	93,697	6,10	2
Atlanta	25	442,294	2,5,8,11	4	Nashville	56	241,769	4,5,7,9	4
Atlantic City	83	100,096		8	New Haven	39	308,228		6
Augusta, Ga.	135	87,809	6,12	2	New Orleans	31	510,030	2,4,6,7,10	5
Austin	106	106,193	8,10,12	3	{ New York				
Baltimore	13	1,046,692	2,11,13	3	{ Northeastern	1	11,690,520	2,4,5,7,9,11,13	7
{ Beaumont	90	138,608	3,6,8,10	4	{ New Jersey				
{ Port Arthur					{ Norfolk				
Binghamton	75	145,156	12	1	{ Portsmouth	47	330,396	4,7,11,13	4
Birmingham	42	407,851	4,9,13	3	{ Newport News				
Boston	5	2,350,514	2,4,7,9,13	5	Oklahoma City	52	221,229	2,4,5,9	4
Bridgeport, Conn.	53	216,621		1	{ Omaha	40	287,269	3,6,7	3
{ Buffalo	14	857,719	4,7,9,13	4	{ Council Bluffs				
{ Niagara				1	Peoria	69	162,566	3,6,12	3
Canton, Ohio	63	200,352		1	Philadelphia	4	2,898,644	3,6,10,12	4
Cedar Rapids	115	73,219	7,11	2	Phoenix	84	121,828	2,4,5,7	4
Charleston, S. C.	127	98,711	7,10,13	3	Pittsburgh	8	1,994,060	3,6,8,10	4
Charleston, W. Va.	88	136,332	7,11,13	3	Portland, Maine	89	106,566	3,8	2
Charlotte	99	112,986	3,9,11	3	Portland, Oreg.	22	406,406	3,6,8,10,12	5
Chattanooga	76	193,215	3,6,10,12	4	Providence, R. I.	18	711,500	11	1
Chicago	2	4,499,126	2,4,5,7,9,11,13	7	Pueblo	140	62,039	3,6,8,10	4
Cincinnati	16	789,309	2,4,7,11	4	{ Racine	97	135,075		1
Cleveland	9	1,214,913	2,4,5,7,9	5	{ Kenosha				
Columbia	117	89,555	2,4,8	3	Reading	73	175,355		5
Columbus, Ga.	133	92,478	3,12	2	Richmond	48	245,674	3,6,8,10	4
Columbus, Ohio	29	365,796	3,6,8,10	4	Roanoke	104	110,593	5,9,12	3
Corpus Christi	121	70,677	3,6,8,10	4	Rochester	28	411,970	2,6,11	3
Dallas	27	376,518	4,8,12	3	Rockford	102	105,259	12	1
{ Davenport					Sacramento	54	158,999	3,6,10	3
{ Rock Island	67	174,995	2,4,5,9	4	{ Saginaw	77	153,388	3,8,13	3
{ Moline					{ Bay City				
Dayton	44	271,513	5,13	2	St. Joseph	129	86,991	13	1
Decatur	122	65,764	2	1	St. Louis	10	1,367,977	4,5,7,9,13	5
Denver	26	384,372	2,4,5,7,9	5	Salt Lake City	58	204,488	2,4,5,7,9	5
Des Moines	59	183,973	2,4,5,9	4	San Antonio	50	319,010	2,4,5,7,9	5
Detroit	6	2,295,867	2,4,5,7,9	5	San Diego	49	256,268	3,6,8,10	4
{ Duluth	72	157,098	3,6,8,10	4	{ San Francisco	7	1,428,525	2,4,5,7,9,11	6
{ Superior					{ Oakland				
Durham	139	69,683	4,7	2	San Jose	78	129,367	13	1
El Paso	105	115,801	2,4,5,7	4	Savannah	114	117,970	3,5,9,11	4
Erie	95	134,039	12	1	{ Scranton	30	629,581	11	1
Evansville, Ind.	93	141,614	2,11	2	{ Wilkes-Barre				
{ Fall River	55	272,648		1	Seattle	19	452,639	2,5,7,11	4
{ New Bedford				1	Shreveport	96	112,225	2,4,6,8	4
Flint	64	188,554	11	1	Sioux City	107	87,791	4,9,11,13	4
Fort Wayne	81	134,385	2,4,7,9	4	South Bend	80	147,022		1
Fort Worth	51	207,677	2,5,10	3	Spokane	71	141,370	2,4,5,7,9	5
{ Hartford	20	502,193	2,4,5,7	4	Springfield, Ill.	103	89,484	8,10	2
{ New Britain			9,11,13	3	{ Springfield, Mass.	32	394,623	3	1
Fresno	79	97,504	7,9	2	{ Holyoke				
Galveston	131	71,677	2,10	2	Springfield, Mo.	134	70,514	2,4,5,9	4
Grand Rapids	57	209,873	9	1	Springfield, Ohio	125	77,406		1
Greensboro	130	73,055		2	Stockton	108	79,337	8	1
{ Hamilton	110	112,686	8	1	Syracuse	46	258,352	5,8,10	3
{ Middletown			8,10	2	Tacoma	74	156,018	4,9,13	3
Harrisburg	70	173,367		1	{ Tampa	61	209,693	2,4,5,7	4
Houston	21	510,397	2,4,5,7	4	{ St. Petersburg				
{ Huntington, W. Va.	92	170,979	5	1	Terre Haute	116	83,370	4	1
{ Ashland, Ky.				1	Toledo	34	341,663	13	1
Indianapolis	21	455,357	3,6,8,10,12	5	Topeka	123	77,749	7,11	2
Jackson	128	88,003	2,4,5,7	4	Trenton	60	200,128		1
Jacksonville	66	195,619	2,4,6,8	4	Tulsa	65	188,562	3,6,8,10	4
Johnstown, Pa.	100	151,781	13	1	{ Utica	68	197,128	3,13	2
Kalamazoo	112	77,213	3	1	{ Rome				
{ Kansas City, Mo.	17	634,093	2,4,5,9	4	Waco	138	71,114	3,6,9,11	4
{ Kansas City, Kans.				4	Washington	12	907,816	4,5,7,9	4
Knoxville	87	151,829	2,4,8,11	4	Waterbury	85	144,822	12	1
Lancaster	91	132,027		4	Waterloo	120	67,050	3,6,13	3
Lansing	94	110,356	6	1	Wheeling	82	196,340	12	1
Lincoln	109	88,191	10,12	2	Wichita	86	127,308	2,4,5,9	4
Little Rock	98	126,754	3,6,8,10	4	Wilmington	62	188,974		7
Los Angeles	3	2,904,596	2,4,5,7,9,11,13	7	Winston-Salem	124	109,833	6,8	2
Louisville	33	434,408	5,9	2	Worcester	41	306,194	5	1
{ Lowell					York	113	92,627		1
{ Lawrence	45	334,969	6	1	Youngstown	36	372,428	13	1
{ Haverhill				1					

Rules Governing Administrative Procedure

§ 3.611 *Application for television stations.*—Each applicant for a construction permit for a new television broadcast station, change in facilities of any existing television broadcast station, or television station license or modification of license shall file with the Commission in Washington, D. C., three copies of applications on the appropriate form designated by the Commission and a like number of exhibits and other papers incorporated therein and made a part thereof. Only the original copy need be sworn to. If the application is for a construction permit for a new television station, Form FCC No. 330 should be filed; for a television station license Form FCC No. 331 should be filed; and for modification of a television station license or for change in facilities of an existing television station, Form FCC No. 333 should be filed.

§ 3.612 *Full disclosures.*—Each application shall contain full and complete disclosures with regard to the real party or parties in interest, and their legal, technical, financial, and other qualifications, and as to all matters and things required to be disclosed by the application forms.

§ 3.613 *Installation or removal of apparatus.*—Applications for construction permit or modification thereof, involving removal of existing transmitting apparatus and/or installation of new transmitting apparatus, shall be filed at least 60 days prior to the contemplated removal and/or installation.

§ 3.614 *Period of construction.*—Each construction permit will specify a maximum of 60 days from the date of granting thereof as the time within which construction of the station shall begin, and a maximum of six months thereafter as the time within which construction shall be completed and the station ready for operation, unless otherwise determined by the Commission upon proper showing in any particular case.

§ 3.615 *Forfeiture of construction permits: extension of time.*—(a) A construction permit shall be automatically forfeited if the station is not ready for operation within the same specified therein or within such further time as the Commission may have allowed for completion, and a notation of the forfeiture of any construction permit under this provision will be placed in the records of the Commission as of the expiration date.

(b) An application (Form FCC No. 701) for extension of time within which to construct a station shall be filed at least thirty days prior to the expiration date of such permit if the facts supporting such application for extension are known to the applicant in time to permit such filing. In other cases such applications will be accepted upon a showing satisfactory to the Commission of sufficient reasons for filing within less than thirty days prior to the expiration date. Such applications will be granted upon a specific and detailed showing that the failure to complete was due to causes not under the control of the grantee, or upon a specific and detailed showing of other matters sufficient to justify the extension.

§ 3.616 *Equipment tests and proof of performance.*—(a) Upon completion of construction of a television station in exact accordance with the terms of the construction permit, the technical provisions of the application therefor and the rules and regulations and standards of good engineering practice governing television stations and prior to filing of application for license, the permittee is authorized to test the equipment for a period not to exceed 90 days: *Provided*, that the inspector in charge of the district in which the station is located and the Commission are notified 2 days in advance of the beginning of tests.

(b) The Commission may notify the permittee to conduct no tests or may cancel, suspend, or change the date of beginning for the period of such tests as and when such action may appear to be in the public interest, convenience, and necessity.

(c) Within the 90-day period prescribed by this section for equipment tests, field intensity measurements in accordance with the methods prescribed in the Standards of Good Engineering Practice Concerning Television Broadcast Stations shall be submitted to the Commission. The Commission may grant extensions of time upon showing of reasonable need therefor.

§ 3.617 *Program tests.*—(a) When construction and equipment tests are completed in exact accordance with the terms of the construction permit, the technical provisions of the application therefor, and the rules and regulations and standards of good

engineering practice governing television stations, and after an application for station license has been filed with the Commission showing the equipment to be in satisfactory operating condition, the permittee is authorized to conduct program tests in exact accordance with the terms of the construction permit for a period not to exceed 30 days: *Provided*, That the inspector in charge of the district in which the station is located and the Commission are notified 2 days in advance of the beginning of such tests.

(b) The Commission reserves the right to cancel such tests or suspend, or change the date of beginning for the period of such tests as and when such action may appear to be in the public interest, convenience, and necessity by notifying the permittee.

(c) The authorization for tests embodied in this section or Section 3.616 shall not be construed as constituting a license to operate but as a necessary part of the construction.

§ 3.618 *Normal license period.*—All television broadcast station licenses will be issued so as to expire at the hour of 3 a.m. E.S.T. and will be issued for a normal license period of 1 year.

§ 3.619 *License, simultaneous modification and renewal.*—When an application is granted by the Commission necessitating the issuance of a modified license less than 60 days prior to the expiration date of the license sought to be modified, and an application for renewal of said license is granted subsequent or prior thereto (but within 30 days of expiration of the present license) the modified license as well as the renewal license shall be issued to conform to the combined action of the Commission.

§ 3.620 *Renewal of license.*—(a) Unless otherwise directed by the Commission, each application for renewal of a television station license shall be filed at least 60 days prior to the expiration date of the license sought to be renewed (Form FCC No. 311). No application for renewal of license of a television broadcast station will be considered unless there is on file with the Commission, the information currently required by Sections 1.301-1.304, reference to which by date and file number shall be included in the application.

(b) Whenever the Commission regards an application for a renewal of a television station license as essential to the proper conduct of a hearing or investigation, and specifically directs that it be filed by a date certain, such application shall be filed within the time thus specified. If the licensee fails to file such application within the prescribed time, the hearing or investigation shall proceed as if such renewal application had been received.

§ 3.621 *Temporary extension of station licenses.*—Where there is pending before the Commission any application, investigation, or proceeding which, after hearing, might lead to or make necessary the modification of, revocation of, or the refusal to renew an existing television license, the Commission may, in its discretion, grant a temporary extension of such license: *Provided, however*, That no such temporary extension shall be construed as a finding by the Commission that the operation of any radio station thereunder will serve public interest, convenience, and necessity beyond the express terms of such temporary extension of license: *And provided further*, That such temporary extension of license will in no wise affect or limit the action of the Commission with respect to any pending application or proceeding.

§ 3.622 *Repetitious applications.*—(a) Where an applicant has been afforded an opportunity to be heard with respect to a particular application for a new television broadcast station, or for change of existing service or facilities, and the Commission has, after hearing or default, denied the application or dismissed it with prejudice, the Commission will not consider another application for a station of the same class to serve in whole or in part the same area, by the same applicant or by his successor or assignee, or on behalf of or for the benefit of the original parties in interest, until after the lapse of 12 months from the effective date of the Commission's order.

(b) Where an appeal has been taken from the action of the Commission in denying a particular application, another application for the same class of broadcast station and for the same area, in whole or in part, filed by the same applicant or by his successor or assignee, or on behalf of or for the benefit of the original parties in interest, will not be considered until the final disposition of such appeal.

§ 3.623 *Assignment or transfer of control.*—(a) *Voluntary:* Application for consent to voluntary assignment of a television station construction permit or license or for consent to voluntary transfer of control of a corporation holding a television station construction permit or license shall be filed with the Commission on Form FCC No. 314 (assignment of license) or Form FCC No. 315 (transfer of control) at least 60 days prior to the contemplated effective date of assignment or transfer of control.

(b) *Involuntary:* In the event of the death or legal disability of a permittee or licensee, or a member of a partnership, or a person directly or indirectly in control of a corporation, which is

a permittee or licensee:

(1) the Commission shall be notified in writing promptly of the occurrence of such death or legal disability, and

(2) within thirty days after the occurrence of such death or legal disability, application on Form FCC No. 314 or 315 shall be filed for consent to involuntary assignment of such television station permit or license or for involuntary transfer of control of such corporation to a person or entity legally qualified to succeed to the foregoing interests under the laws of the place having jurisdiction over the estate involved.

Rules Relating To Licensing Policies

§ 3.631 *Exclusive affiliation of Station.*—No license shall be granted to a television broadcast station having any contract, arrangement, or understanding, express or implied with a network organization¹ under which the station is prevented or hindered from, or penalized for, broadcasting the programs of any other network organization.

§ 3.632 *Territorial exclusivity.*—No license shall be granted to a television broadcast station having any contract, arrangement, or understanding, express or implied, with a network organization which prevents or hinders another broadcast station serving substantially the same area from broadcasting the network's programs not taken by the former station, or which prevents or hinders another broadcast station serving a substantially different area from broadcasting any program of the network organization. This regulation shall not be construed to prohibit any contract, arrangement, or understanding between a station and a network organization pursuant to which the station is granted the first call in its primary service area upon the programs of the network organization.

§ 3.633 *Term of affiliation.*—No license shall be granted to a television broadcast station having any contract, arrangement, or understanding, express or implied, with a network organization which provides, by original terms, provisions for renewal, or otherwise for the affiliation of the station with the network organization for a period longer than two years: *Provided*, that a contract, arrangement, or understanding for a period up to two years, may be entered into within six months prior to the commencement of such period.

§ 3.634 *Option time.*—No license shall be granted to a television broadcast station which options² for network programs any time subject to call on less than 56 days' notice, or more time than a total of three hours³ within each of four segments of the broadcast day, as herein described. The broadcast day is divided into 4 segments, as follows: 8:00 a.m. to 1:00 p.m.; 1:00 p.m. to 6:00 p.m.; 6:00 p.m. to 11 p.m.; 11:00 p.m. to 8:00 a.m.⁴ Such options may not be exclusive as against other network organizations and may not prevent or hinder the station from optioning or selling any or all of the time covered by the option, or other time, to other network organizations.

§ 3.635 *Right to reject programs.*—No license shall be granted to a television broadcast station having any contract, arrangement, or understanding, express or implied, with a network organization which (a), with respect to programs offered pursuant to an affiliation contract, prevents or hinders the station from rejecting or refusing network programs which the station reasonably believes to be unsatisfactory or unsuitable; or which (b), with respect to network programs so offered or already contracted for, prevents the station from rejecting or refusing any program which, in its opinion, is contrary to the public interest, or from substituting a program of outstanding local or national importance.

§ 3.636 *Network ownership of stations.*—No license shall be granted to a network organization, or to any person directly or indirectly controlled by or under common control⁵ of a network organization, for a television broadcast station in any locality where the existing television broadcast stations are so few or of such unequal desirability (in terms of coverage, power, frequency, or other related matters) that competition would be substantially restrained by such licensing.

§ 3.637 *Dual network operation.*—No license shall be issued to a television broadcast station affiliated with a network organiza-

tion which maintains more than one network of television broadcast stations: *Provided*, that this regulation shall not be applicable if such networks are not operated simultaneously, or if there is no substantial overlap in the territory served by the group of stations comprising each such network.

§ 3.638 *Control by networks of station rates.*—No license shall be granted to a television broadcast station having any contract, arrangement, or understanding, express or implied with a network organization under which the station is prevented or hindered from, or penalized for, fixing or altering its rates for the sale of broadcast time for other than the network's programs.

§ 3.639 *Use of common antenna site.*—No television license or renewal of a television license will be granted to any person who owns, leases, or controls a particular site which is peculiarly suitable for television broadcasting in a particular area and (1) which is not available for use by other television licensees; and (2) no other comparable site is available in the area; and (3) where the exclusive use of such site by the applicant or licensee would unduly limit the number of television stations that can be authorized in a particular area, or would unduly restrict competition among television stations.

§ 3.640 *Multiple ownership.*—(a) No person (including all persons under common control)⁶ shall, directly or indirectly, own, operate, or control more than one television broadcast station that would serve substantially the same service area as another television broadcast station owned, operated, or controlled by such person.

(b) No person (including all persons under common control) shall, directly or indirectly, own, operate, or control more than one television broadcast station, except upon a showing (1) that such ownership, operation, or control would foster competition among television broadcast stations or provide a television broadcasting service distinct and separate from existing services, and (2) that such ownership, operation, or control would not result in the concentration of control of television broadcasting facilities in a manner inconsistent with public interest, convenience, or necessity; provided, however, that the Commission will consider the ownership, operation, or control of more than five television broadcast stations to constitute the concentration of control of television broadcasting facilities in a manner inconsistent with public interest, convenience, or necessity.

¹ The term "network organization" as used herein includes national and regional network organizations. See Chapter VII, J, of Report on Chain Broadcasting.

² As used in this section, an option is any contract, arrangement, or understanding, expressed or implied, between a station and a network organization which prevents or hinders the station from scheduling programs before the network agrees to utilize the time during which such programs are scheduled, or which requires the station to clear time already scheduled when the network organization seeks to utilize the time.

³ All time options permitted under this section must be specified clock hours, expressed in terms of any system set forth in the contract agreed upon by the station and network organization. Shifts from daylight saving to standard time or vice versa may or may not shift the specified hours correspondingly as agreed by the station and network organization.

⁴ These segments are to be determined for each station in terms of local time at the location of the station but may remain constant throughout the year regardless of shifts from standard to daylight saving time or vice versa.

⁵ The word "control" as used herein, is not limited to full control but includes such a measure of control as would substantially affect the availability of the station to other networks.

⁶ The word "control" as used herein is not limited to majority stock ownership, but includes actual working control in whatever manner exercised.

Rules Relating To Equipment

§ 3.651 *Transmitter power.*—The rated power and operating power range of transmitters shall be in accordance with the Standards of Good Engineering Practice concerning Television Broadcast Stations.

§ 3.652 *Frequency monitors.*—The licensee of each television broadcast station shall have in operation at the transmitters frequency monitors independent of the frequency control of the transmitters.

§ 3.653 *Modulation monitors.*—The licensee of each television broadcast station shall have in operation at the transmitter a modulation monitor for the aural transmitter. There shall also be sufficient monitoring equipment for the visual signal to determine that the signal complies with the Standards of Good Engineering Practice concerning Television Broadcast Stations.

§ 3.654 *Required transmitter performance.*—The construction, installation, operation, and performance of the television broadcast transmitter system shall be in accordance with the Standards of Good Engineering Practice concerning Television Broadcast Stations.

§ 3.655 *Auxiliary transmitter.*—Upon showing that a need exists for the use of auxiliary transmitters in addition to the regular transmitters of a television station, a license therefor may be issued provided that:

(a) Auxiliary transmitters may be installed either at the same location as the main transmitters or at another location.

(b) A licensed operator shall be in control whenever auxiliary transmitters are placed in operation.

(c) The auxiliary transmitters shall be maintained so that they may be put into immediate operation at any time for the following purposes:

(1) The transmission of the regular programs upon the failure of the main transmitters.

(2) The transmission of regular programs during maintenance or modification⁷ work on the main transmitters, necessitating discontinuance of its operation for a period not to exceed five days.

(3) Upon request by a duly authorized representative of the Commission.

(d) The auxiliary transmitter shall be tested at least once each week to determine that it is in proper operating condition and that it is adjusted to the proper frequency, except that in case of operation in accordance with paragraph (c) of this section during any week, the test in that week may be omitted provided the operation under paragraph (c) is satisfactory. A record shall be kept of the time and result of each test operating under paragraph (c).

(e) The auxiliary transmitters shall be equipped with satisfactory control equipment which will enable the maintenance

of the frequency emitted by the station within the limits prescribed by these regulations.

(f) The operating power of an auxiliary transmitter may be less than the authorized power of the main transmitters, but in no event shall it be greater than such power.

§ 3.656 *Alternate main transmitters.*—The licensee of a television broadcast station may be licensed for alternate main transmitters provided that a technical need for such alternate transmitters is shown and that the following conditions are met:

(a) Both transmitters are located at the same place.

(b) Both transmitters shall have the same power rating.

(c) Both transmitters shall meet the construction, installation, operation, and performance requirements of the Standards of Good Engineering Practice concerning Television Broadcast Stations.

§ 3.657 *Changes in equipment and antenna system.*—Licensees of television broadcast stations shall observe the following provisions with regard to changes in equipment and antenna system:

(a) No changes in equipment shall be made:

(1) That would result in the emission of signals outside of the authorized channel.

(2) That would result in the external performance of the transmitter being in disagreement with that prescribed in the Standards of Good Engineering Practice concerning Television Broadcast Stations.

(b) Specific authority, upon filing formal application (Form FCC No. 333) therefor, is required for a change in service area or for any of the following changes:

(1) Changes involving an increase or decrease in the power rating of the transmitters.

(2) A replacement of the transmitters as a whole.

(3) Change in the location of the transmitting antenna.

(4) Change in antenna system, including transmission line.

(5) Change in location of main studio, if it is proposed to move the main studio to a different city from that specified in the license.

(6) Change in the power delivered to the antenna.

(7) Change in frequency control and/or modulation system.

(c) Specific authority, upon filing *informal* request therefor, is required for a change in the indicating instruments installed to measure transmitter power output, except by instruments of the same maximum scale reading and accuracy.

(d) Other changes, except as above provided for in this section or in Standards of Good Engineering Practice concerning Television Broadcast Stations prescribed by the Commission may be made at any time without the authority of the Commission, provided that the Commission shall be promptly notified thereof and such changes shall be shown in the next application for renewal of license.

Rules Relating To Technical Operation

§ 3.661 *Time of operation.*—(a) All television broadcast stations will be licensed for unlimited time operation. Each licensed television station shall maintain a regular program operating schedule of not less than 2 hours in any given broadcast day, and it shall render not less than 28 hours program service per week. In an emergency, however, when due to causes beyond the control of a licensee, it becomes impossible to continue operation, the station may cease operation for a period not to exceed 10 days, provided that the Commission and the Inspector in Charge of the radio district in which the station is located shall be notified in writing immediately after the emergency develops.

(b) The aural transmitter of a television broadcast station shall not be operated separately from the visual transmitter except for experimental or test purposes, and for purposes incidental to or connected with the operation of the visual transmitter.

(c) Persons desiring to enter into a voluntary sharing arrangement of a television channel may file application therefor with the Commission. Copies of the time-sharing agreement should be filed with the application.

§ 3.662 *Experimental operation.*—Television broadcast stations may conduct technical experimentation directed to the improvement of technical phases of operation and for such purposes may utilize a signal other than the standard television signal subject to the following conditions:

(a) That the licensee complies with the provisions of section 3.661 with regard to the minimum number of hours of transmission with a standard television signal.

(b) That no transmissions are radiated outside of the authorized channel and subject to the condition that no interference is caused to the transmissions of a standard television signal by other television broadcast stations.

(c) No charges either direct or indirect shall be made by the licensee of a television broadcast station for the production or transmission of programs when conducting technical experimentation.

§ 3.663 *Station inspection.*—The licensee of any television broadcast station shall make the station available for inspection by representatives of the Commission at any reasonable hour.

⁷ This includes the equipment changes which may be made without authority as set forth elsewhere in the Rules and Regulations and the Standards of Good Engineering Practice or as authorized by the Commission by letter or by construction permit. Where such operation is required for periods in excess of 5 days, request therefor shall be in accordance with section 1.365.

§ 3.664 *Station license, posting of.*—The original of each station license shall be posted in the transmitter room.

§ 3.665 *Operator requirements.*—One or more licensed radio-telephone first class operators shall be on duty at the place where the transmitting apparatus of each station is located and in actual charge thereof whenever it is being operated. The original license (Form FCC No. 759) of each station operator shall be posted at the place where he is on duty. The licensed operator on duty and in charge of a television broadcast transmitter may, at the discretion of the licensee, be employed for other duties or for the operation of another station or stations in accordance with the class of operator's license which he holds and by the rules and regulations governing such stations. However, such duties shall in no wise interfere with the operation of the broadcast transmitter.

§ 3.666 *Operating power: how determined.*—The operating power, and the requirements for maintenance thereof, of each television broadcast station shall be determined by the methods prescribed in the Standards of Good Engineering Practice concerning Television Broadcast Stations.

§ 3.667 *Modulation.*—The percentage of modulation of the aural transmissions shall be maintained as high as possible consistent with good quality of transmission and good broadcast practice and in no case less than 85 per cent nor more than 100 per cent

on peaks of frequent recurrence during any selection which normally is transmitted at the highest level of the program under consideration.

§ 3.668 *Frequency toleration.*—The operating frequencies of the aural and visual transmitters of a television broadcast station shall be maintained within .002% of the assigned frequencies.

§ 3.669 *Inspection of tower lights and associated control equipment.*—The licensee of any television station which has an antenna or antenna supporting structure(s) required to be illuminated pursuant to the provisions of section 303(q) of the Communications Act of 1934, as amended:

(a) Shall make a visual observation of the tower lights at least once each 24 hours to insure that all such lights are functioning properly as required.

(b) Shall report immediately by telephone or telegraph to the nearest Airways Communication Station or office of the Civil Aeronautics Administration any observed failure of the tower lights, not corrected within 30 minutes, regardless of the cause of such failure. Further notification by telephone or telegraph shall be given immediately upon resumption of the required illumination.

(c) Shall inspect at intervals of at least one each 3 months all flashing or rotating beacons and automatic lighting control as required.

devices to insure that such apparatus is functioning properly

Other Rules Relating To Operation

§ 3.681 *Logs.*—The licensee of each television station shall maintain program and operating logs and shall require entries to be made as follows:

(a) In the program log:

(1) An entry of the time each station identification announcement (call letters and location) is made.

(2) An entry briefly describing each program broadcast, such as "music," "drama," "speech," etc., together with the name or title thereof and the sponsor's name, with the time of the beginning and ending of the complete program. If a mechanical reproduction, either video or audio, is used, the entry shall show the exact nature thereof, and the time it is announced as a mechanical reproduction. If a speech is made by a political candidate, the name and political affiliations of such speaker shall be entered.

(3) An entry showing that each sponsored program broadcast has been announced as sponsored, paid for, or furnished by the sponsor.

(4) An entry showing, for each program of network origin, the name of the network originating the program.

(b) In the operating log:

(1) An entry of the time the station begins to supply power to the antenna, and the time it stops.

(2) An entry of the time the program begins and ends.

(3) An entry of each interruption to the carrier wave, its cause, and duration.

(4) An entry of the following each 30 minutes:

(i) Operating constants of last radio stage of the aural transmitter (total plate current and plate voltage).

(ii) Transmission line current or voltage of both transmitters.

(iii) Frequency monitor reading.

(5) Log of experimental operation during experimental period (if regular operation is maintained during this period, the above logs shall be kept).

(i) A log must be kept of all operation during the experimental period. If the entries required above are not applicable thereto, then the entries shall be made so as to fully describe the operation.

(c) Where an antenna or antenna supporting structure(s) is required to be illuminated, the licensee shall make entries in the radio station log appropriate to the requirements of section 3.669 as follows:

(1) The time the tower lights are turned on and off if manually controlled.

(2) The time the daily visual observation of the tower lights was made.

(3) In the event of any observed failure of a tower light.

(i) Nature of such failure.

(ii) Time the failure was observed.

(iii) Time and nature of the adjustments, repairs or replacements made.

(iv) Airways Communication Station (C.A.A.) notified of the failure of any tower light not corrected within thirty minutes and the time such notice was given.

(v) Time notice was given to the Airways Communication Station (C.A.A.) that the required illumination was resumed.

(4) Upon completion of the periodic inspection required at least once each three months.

(i) The date of the inspection and the condition of all tower lights and associated tower lighting control devices.

(ii) Any adjustments, replacements or repairs made to insure compliance with the lighting requirements.

§ 3.682 *Logs, retention of.*—Logs of television broadcast stations shall be retained by the licensee for a period of 2 years. However, logs incident to or involved in any claim or complaint of which the licensee has notice shall be retained by the licensee until such claim or complaint has been fully satisfied or until the same has been barred by statute limiting the time for the filing of suits upon such claims.

§ 3.683 *Logs, by whom kept.*—Each log shall be kept by the person or persons competent to do so, having actual knowledge of the facts required, who shall sign the log when starting duty and again when going off duty. The logs shall be made available upon request by an authorized representative of the Commission.

§ 3.684 *Log form.*—The log shall be kept in an orderly manner, in suitable form, and in such detail that the data required for the particular class of station concerned are readily available. Key letters or abbreviations may be used if proper meaning or explanation is contained elsewhere in the log.

§ 3.685 *Correction of logs.*—No log or portion thereof shall be erased, obliterated, or willfully destroyed within the period of retention provided by the rules. Any necessary correction may be made only by the person originating the entry who shall strike out the erroneous portion, initial the correction made, and indicate the date of correction.

§ 3.686 *Rough logs.*—Rough logs may be transcribed into condensed form, but in such case the original log or memoranda and all portions thereof shall be preserved and made a part of the complete log.

§ 3.687 *Station identification.*—(a) A licensee of a television broadcast station shall make station identification announcement

(call letters and location), at the beginning and ending of each time of operation and during operation on the hour. The announcement at the beginning and ending of each time of operation shall be by both aural and video means. Other announcements may be by either aural or video means.

(b) Identification announcement during operation need not be made when to make such announcement would interrupt a single consecutive speech, play, religious service, symphony concert, or any type of production. In such cases the identification announcement shall be made at the first interruption of the entertainment continuity and at the conclusion thereof.

§ 3.688 *Mechanical reproductions.*—(a) Each program which consists in whole or in part of one or more mechanical reproductions, either video or audio, shall be accompanied by an appropriate announcement to that effect either at the beginning or end of such reproduction or at the beginning or end of the program in which such reproduction is used. No such announcement shall be required where a mechanical reproduction is used for background music, sound effects, station identification, program identification (theme music of short duration) or identification of sponsorship of the program proper.

(b) The exact form of identifying announcement is not prescribed, but the language shall be clear and in terms commonly used and understood. The licensee shall not attempt affirmatively to create the impression that any program being broadcast by mechanical reproduction consists of live talent.

§ 3.689 *Sponsored programs, announcement of.*—(a) In the case of each program for the broadcasting of which money, services, or other valuable consideration is either directly or indirectly paid or promised to, or charged or received by, any radio broadcast station, the station broadcasting such program shall make, or cause to be made, an appropriate announcement that the program is sponsored, paid for, or furnished either in whole or in part.

(b) In the case of any political program or any program involving the discussion of public controversial issues for which any films, records, transcriptions, talent, scripts, or other material or services of any kind are furnished either directly or indirectly, to a station as an inducement to the broadcasting of such program, an announcement shall be made both at the beginning and conclusion of such program on which such material or services are used that such films, records, transcriptions, talent, scripts, or other material or services have been furnished to such station in connection with the broadcasting of such program: *provided, however,* that only one such announcement need be made in the case of any such program of five minutes' duration or less, which announcement may be made either at the beginning or conclusion of the program.

(c) The announcement required by this section shall fully and fairly disclose the true identity of the person or persons by whom or in whose behalf such payment is made or promised, or from whom or in whose behalf such services or other valuable consideration is received, or by whom the material or services referred to in subsection (b) hereof are furnished. Where an agent or other person contracts or otherwise makes arrangements with a station on behalf of another, and such fact is known to the station, the announcement shall disclose the identity of the person or persons in whose behalf such agent is acting instead of the name of such agent.

(d) In the case of any program, other than a program advertising commercial products or services, which is sponsored, paid for or furnished, either in whole or in part, or for which material or services referred to in subsection (b) hereof are furnished, by a corporation, committee, association or other unincorporated group, the announcement required by this section shall disclose the name of such corporation, committee, association or other unincorporated group. In each such case the station shall require that a list of the chief executive officers or members of the executive committee or of the board of directors of the corporation, committee, association or other unincorporated group shall be made available for public inspection at one of the television broadcast stations carrying the program.

(e) In the case of programs advertising commercial products or services, an announcement stating the sponsor's corporate or trade name or the name of the sponsor's product, shall be deemed

sufficient for the purposes of this section and only one such announcement need be made at any time during the course of the program.

§ 3.690 *Broadcasts by candidates for public office.*—(a) *Legally qualified candidate.*—A "legally qualified candidate" means any person who has publicly announced that he is a candidate for nomination by a convention of a political party or for nomination or election in a primary, special, or general election, municipal, county, state or national, and who meets the qualifications prescribed by the applicable laws to hold the office for which he is a candidate, so that he may be voted for by the electorate directly or by means of delegates or electors, and who

(1) has qualified for a place on the ballot or

(2) is eligible under the applicable law to be voted for by sticker, by writing in his name on the ballot, or other method, and (i) has been duly nominated by a political party which is commonly known and regarded as such, or (ii) makes a substantial showing that he is a *bona fide* candidate for nomination or office, as the case may be.

(b) *General requirements.*—No station licensee is required to permit the use of its facilities by any legally qualified candidate for public office, but if any licensee shall permit any such candidate to use its facilities, it shall afford equal opportunities to all other such candidates for that office to use such facilities, *Provided,* That such licensee shall have no power of censorship over the material broadcast by any such candidate.

(c) *Rates and practices.*—The rates, if any, charged all such candidates for the same office shall be uniform and shall not be rebated by any means, directly or indirectly; no licensee shall make any discrimination in charges, practices, regulations, facilities, or services for or in connection with the service rendered pursuant to these rules, or make or give any preference to any candidate for public office or subject any such candidate to any prejudice or disadvantage; nor shall any licensee make any contract or other agreement which shall have the effect of permitting any legally qualified candidate for any public office to broadcast to the exclusion of other legally qualified candidates for the same public office.

(d) *Inspection of records.*—Every licensee shall keep and permit public inspection of a complete record of all requests for broadcast time made by or on behalf of candidates for public office, together with an appropriate notation showing the disposition made by the licensee of such requests, and the charges made, if any, if request is granted.

§ 3.691 *Rebroadcast.*—(a) The term "rebroadcast" means reception by radio of the program⁸ of a radio station, and the simultaneous or subsequent retransmission of such program by a broadcast station. The broadcasting of a program relayed by a relay broadcast station or studio transmitter link is not considered a rebroadcast.

(b) The licensee of a television broadcast station may, without further authority of the Commission, rebroadcast the program of a United States television broadcast station, provided the Commission is notified of the call letters of each station rebroadcast and the licensee certifies that express authority has been received from the licensee of the station originating the program.⁹

(c) No licensee of a television broadcast station shall rebroadcast the program of any United States radio station not designated in (b) above without written authority having first been obtained from the Commission upon application (informal) accompanied by written consent or certification of consent of the licensee of the station originating the program.¹⁰

⁸ As used in this section, program includes any complete program or part thereof.

⁹ The notice and certification of consent shall be given within three (3) days of any single rebroadcast, but in case of the regular practice of rebroadcasting certain programs of a television broadcast station several times during a license period, notice and certification of consent shall be given for the ensuing license period with the application for renewal of license, or at the beginning of such rebroadcast practice if begun during a license period.

¹⁰ By Order No. 82, dated and effective June 24, 1941, until further order of the Commission, section 3.691(d) is suspended only insofar as it requires prior written authority of the Commission for the rebroadcasting of programs originated for that express purpose by United States Government radio stations.

Television Outlook in Cleveland

(Continued from page 10)

Statler, Cleveland

Lawyers — Kirkland, Fleming, Green, Martin & Eliss, Washington

Miscel.:—Richards, President and Director, WJR. Detroit; President, Director and principal stock-holder KMPC, Beverly Hills, California. Fitzpatric, Vice-President, Director, WJR; Vice-President KMPC. Patt, Vice-President, Director, WJR. Other officers connected with both stations. Applicant now debating whether to go into high frequencies or not.

W J W, Inc.

Address—1375 Euclid Avenue, Cleveland, Ohio.

Officers—W. M. O'Neil, President; C. F. Burke, Vice-President and Treasurer; W. Theodore Pierson, Secretary

Ownership—W. M. O'Neil

Costs

1. Vis. transmitter	\$86,000
2. Aural transmitter plus tubes	64,000
3. Antenna System	10,000
4. Studio Equipment	89,000
5. Studio Lighting	6,000
6. F & M Monitors	3,500
7. Land	6,000
8. Building	10,000
9. Other item, installation, test equipment, etc.	12,000
Total Costs	\$286,500

Operation Costs per month \$7,000
 Cost estimate by—GE quotations and George C. Davis, consulting engineer

Channel #4

Kilocycles—78-84 mcs.

ESR—4330

Hrs. per wk. of operation—15

Breakdown — Monthly

outside pickup—16

studio production—20

motion picture film—24

Antenna

Height, sea level—116 ft.

Height, ground level—421 ft.

Location—Structural steel tower

Transmitter location—Sprague Road between State and Broadview Roads, Parma, Ohio

Power, aural and visual—au-20kw, vis.-40kw

Population—1,973,215

Size of area—Primary 1700 — Secondary 5550

Location of Studio—1375 Euclid Avenue, Cleveland, Ohio

Engineering Consultant—George C. Davis

Lawyers—W. Theodore Pierson & Harrison T. Slaughter

Miscel.:—Operates WJW, AM station, in Cleveland

The television picture in Cleveland, after observation of the scenes in New York, Philadelphia and several other large cities where there are sometimes two applicants for each FCC allocated channel, is comparatively as calm and peaceful as a Christmas card poem.

Long Shots and Close-Ups

(Continued from page 19)

ones around, and you'll usually find them working. That gives you an idea where to look.

Anyone who has spent enough time in the motion picture business and is a successful writer or director has a great deal in common with an agency. In addition to knowing pictures, *he has had to learn considerable* about selling, advertising, sales promotion, sales training, merchandising.

Otherwise, he just couldn't get it across to an audience, visually, or in dialogue. Therefore, it seems only logical, that it would be far easier and more productive to take a man of those qualifications and educate him to your agency's methods and handling of accounts, than to attempt to teach a dyed-in-the-wool agency man the motion picture business. It would take much less time (don't

forget he's been contacting clients direct for years) and you'd have a far more competent man.

In closing, let me again remind you that motion picture producers like nothing better than to work with an agency who are *out to*, and *can do* a real job of coordination, cooperation and intelligent supervision on film programs. If that's your objective — more power to you.

Directors of TBA Reelect Officers

ALL officers of the Television Broadcasters Association, Inc., were reelected at the annual meeting of the Board of Directors following the annual meeting of members of the Association.

J. R. Poppele, secretary and chief engineer of Station WOR, was reelected president of the Association. F. J. Bingley of Philco Radio & Television Corp., was reelected vice president and Will Baltin, secretary-treasurer of the Association was reelected to his office. O. B. Hanson, vice president in charge of engineering at the National Broadcasting Co., was reelected assistant secretary-treasurer.

EDITORIAL

Color

Recent demonstration of RCA and CBS color systems should do much to clarify this large question mark which has confronted the industry for some time. Both companies have shown color based on mechanical systems. Both systems produced a very acceptable picture. Both companies are still sticking to their respective claims: CBS that color is here now, and RCA that it is here in the laboratory only. Time alone will prove or disprove their claims.

The one point that is important though is that black and white is here now, with no if's, and's or but's. After viewing the Army-Navy Game in New York over television and seeing the excellent picture on the new RCA direct viewing receiver, it is inconceivable to think that the public will not be completely satisfied with black and white television.

Naturally color adds a definite plus to black and white and when it does come, and it will come some day, the public will in turn buy color receivers. It is our considered opinion that they will buy black and white readily in face of the possibility of this obsolescence. However, the situation among prospective television station operators is a bit different.

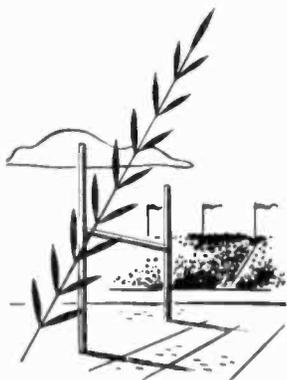
Obsolescence or Progress?

Undoubtedly the threat of a possible short obsolescence will keep some from going ahead with their television plans. Still others will hold back, not willing to incur the loss for the first years of operation. Every new industry and every established industry is faced with obsolescence and capital risk. The fact remains that there are more than 140 applications for television stations.

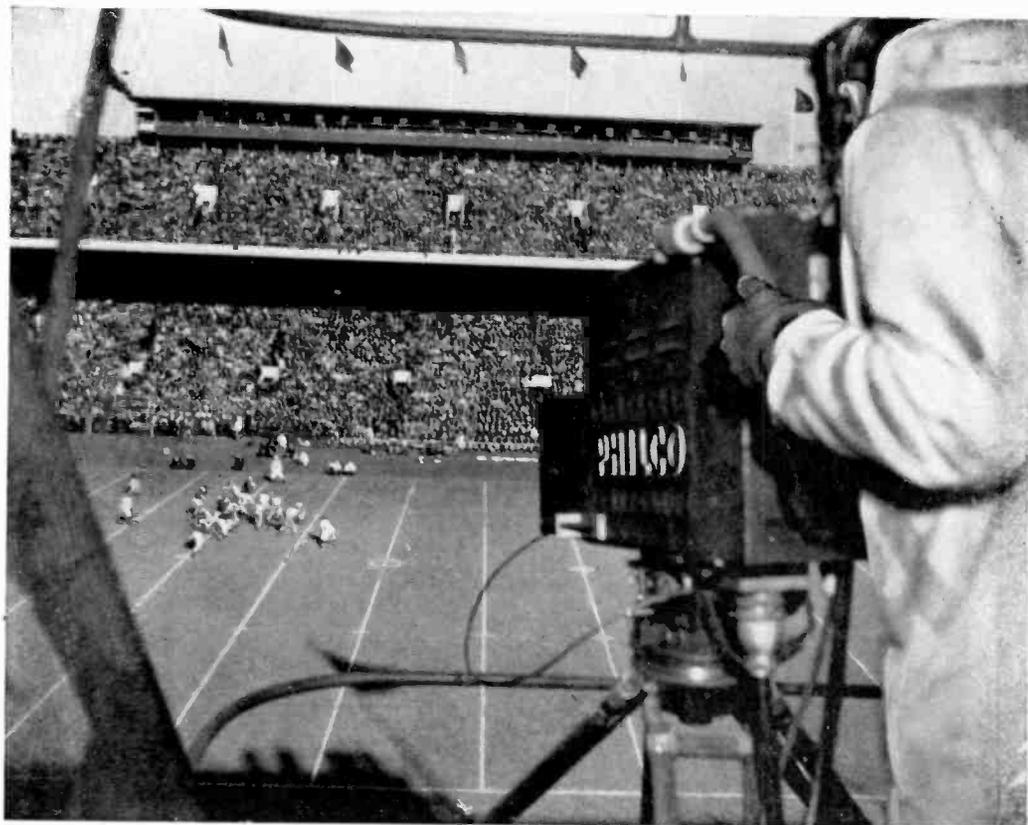
As some drop out others with stouter hearts and fatter purses will come in. For every broadcaster not going into television there's a film company, department store, publisher, theatre operator or some new group ready to take his place. This is nothing unusual. In fact it closely parallels the histories of most new industries.

The momentum of almost every new industry is furnished by its pioneers, those, who convinced of the potential, plunge ahead regardless of obstacles. Many, who are not prepared to take the chance now, probably won't have the chance later on.

The television industry is now underway. Allocations are set. The Federal Communications Commission has done as good a job as possible under prevailing conditions. The low frequency group has fared well. There can be no complaints by the high frequency color advocates for they too have the green light to proceed with their experimentations.



One of the three television cameras placed high above the 50-yard line, on specially-built platforms near the top of the South Stands. One camera has a wide angle lens; the others are equipped with telephoto lens for close-up pictures.



For the Sixth Straight Year

PHILCO TELEVISED PENN FOOTBALL GAMES



A special monitoring screen on the announcer's table enables him to coordinate his narration with the picture that is received by the television audience.



Master control room of Station WPTZ in action during football contest.

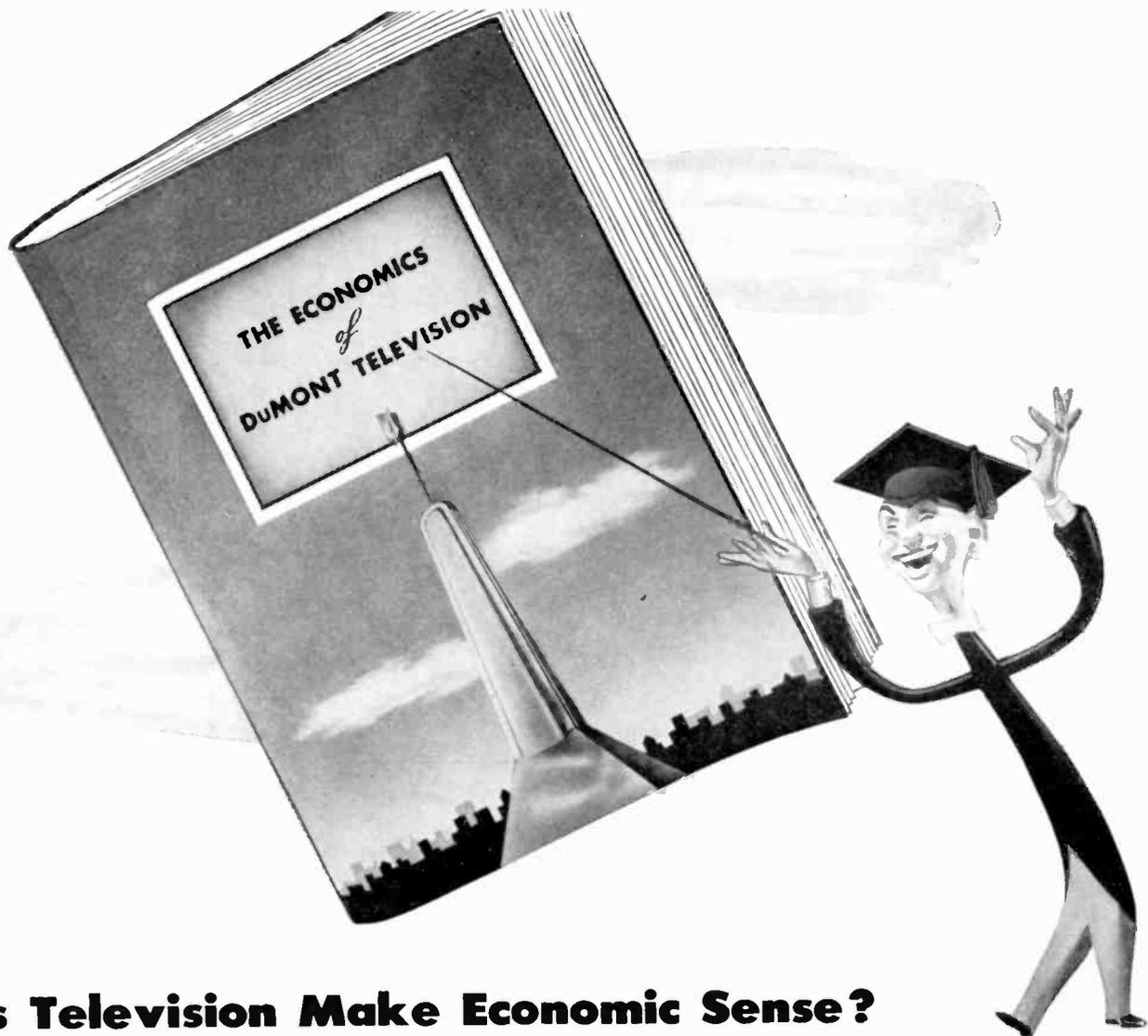
FOR the 6th consecutive year Philco Television Station, WPTZ, in cooperation with the Atlantic Refining Company, has televised all University of Pennsylvania football games played at Franklin Field in Philadelphia.

Six years ago Philco was the first to put on the air a complete schedule of football games by television. Since then Philco has continued this activity as part of its television research program and as a practical demonstration of the service which television can offer the public.

These telecasts, through which the Philadelphia audience enjoys an entire season of football by television, are still unique in the industry.

PHILCO

Famous for Quality the World Over



Does Television Make Economic Sense?

What capital investment is required for a full-service television station? What will be its annual operating cost? What is the revenue expectancy from time sales? What is a fair tele-time rate? Shall rehearsal time be charged for? How will a network affiliation affect profits?

These hard-headed questions are boldly and frankly answered with exciting facts and figures in DuMont's new booklet: "The Economics of Television"—just off the press!

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extensive experience in developing television broadcasting equipment, in building more tele-stations than any other company, in designing and constructing DuMont's new John Wanamaker Studios, in operating its own tele-station since 1941, and by continuous laboratory, market and audience research.

Television experts generally are agreed that DuMont has the "tele-know-how" needed to set a pattern for profitable station management. This new booklet makes such a pattern available. Please request it on your firm letterhead.

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