

OPTIMISM KEYNOTES CHICAGO

By NAT GREEN, Staff Correspondent, RADIO DAILY

TELEVISION activity in Chicago will be greatly accelerated during 1947, it is indicated in plans that are being worked out by local station and network officials and members of the Electrical Association's organization to promote Chicago television. Chicago began 1947 with at least two "ifs" clouding the television situation. If the black-and-white vs. color were settled, and if equipment could be obtained, it appeared that several stations would be in operation before the end of the year, joining Captain Bill Eddy's WBKB which for the first few months was assured of holding its place as Chicago's only operating station.

WBKB, the Balaban & Katz station, has taken its place as one of the country's leading video stations and during 1946 it surpassed all others in the country in number of hours on the air. Its total time on the air has been increased to 28 hours a week, and during the year it provided some outstanding programs, particularly in sports. In an effort to find out what kinds of programs are best suited to video and what finds widest acceptance among patrons, the station has telecast hockey games, style shows, ice shows, music, variety shows and many special events. Out of the difficulties encountered they are learning what to do and what not to do, and are constantly accelerating their activities.

Captain Bill Eddy is enthusiastic over the future of television in the Chicago area. "We are constantly extending our activities," he told RADIO DAILY, "and believe that television audiences are due for a tremendous growth this year. At present there are about a thousand sets in use in this area. By the end of the year there will be nearer 50,000. We refuse to concede first place in television to New York and are out to challenge them."

As this is written it appears as if WGNA, the tele-sister of WGN, will become the second Chicago television station, coming on the air in June or July if transmitters and other equipment are received. WGNA's activities up to February 1 were confined to non-air demonstrations of two cameras and half a dozen receivers. Construction of WGNA is under

supervision of Carl J. Meyers, director of WGN engineering. The WGNA transmitter is to be located on the 29th floor of Tribune Tower, with the antenna atop the building. The construction permit from the FCC assigns WGNA to channel 9-186-192 megacycles. Effective radiated video power will be 18.4 kilowatts and audio power 11 kilowatts.

Frank P. Schreiber, WGN general manager, told RADIO DAILY: "WGN has been a pioneer in AM broadcasting for 25 years; one of the pioneers in FM broadcasting, which we began in October, 1941 (WGNB), and a pioneer in facsimile broadcasting, which was resumed in July after experimental work in 1939. Now we enter the television field, and as in all previous radio operations, we will be a leader in television."

ABC, which has had a working agreement with WBKB for some time, plans eventually to have its own station here, according to Jim Stirton, television sales head; and Manager Chick Showerman of NBC says that network will have a tele station just as soon as possible. The main thing holding up these stations is a scarcity of materials.

With the expected increase in the installation of television receivers in the Chicago area, dealers have set up a plan for training their representatives in the technique of set installation. Once a week for ten weeks there will be classes supervised by Capt. Bill Eddy of WBKB to teach television fundamentals. Later the manufacturing companies will give advanced instruction.

The outlook for commercial video programs is bright. Prospective sponsors who have been watching the results of sponsored programs on WBKB believe that video will be a powerful sales medium. Just how rates will be worked out remains to be seen. It is generally agreed that present rates will have to be periodically revised as the number of sets increases. Local dealers report that sales of receivers are growing rapidly, and that every indication points to huge television audiences in the very near future.

HOLLYWOOD TELE A REALITY

By RALPH WILK, West Coast Representative, RADIO DAILY

INDICATIONS are that all seven of the prospective Los Angeles - Hollywood television stations will be on the air early in 1948. Despite some estimates that all seven could be operating commercially by the holiday period of this year, local engineers will be satisfied if their respective stations are doing business early next year.

KTLA, which was formerly W6XYZ and which is owned and operated by Television Productions, Inc., a subsidiary of Paramount Pictures, took to the air commercially on Jan. 22, 1947.

Putman Motors of Los Angeles bought the privilege of being the first to sponsor a video show in the Southland in the interest of its distribution of Mercurys and Lincolns. Klaus Landsberg, who is in charge of West Coast operations of Television Productions, produced the hour show, and was given assistance by Leon Benson of the J. Walter Thompson agency. Several representatives of Eastern advertising agencies came West to attend the initial show.

Landsberg used six cameras to pick up the premiere for relay to his company's Mt. Wilson transmitter 18 miles away from where it was rebroadcast to an area between Santa Barbara and San Diego and as far inland as San Bernardino, Riverside and Redlands.

KTLA's signal carries 150 miles with a clear, undistorted picture at the reception points. Four iconoscope cameras and two candle light or image orthicon cameras were used in connection with the initial commercial program.

Harry R. Lubcke, who is still in charge of television for Don Lee, organized the Thomas S. Lee television system in November, 1930. The first televised image on W6XAO, transmitted through equipment Lubcke built and in many instances invented and manufactured himself, was a short motion picture film, the subject a wagon rolling across western plains.

The initial full hour program presented on the station was on Dec. 23, 1931 and the first regular program services was begun March 10, 1933. An important chapter in television history was the purchase of a Hollywood mountain, right in the heart of the city, and the construction

there of the first built-for-television studios in the world.

KFI has been granted Channel 9, with five kilowatts, visual, and two and a half kilowatts, audio. It has already made some important outlays of money to improve its three-quarter acre transmitter site atop Mt. Wilson.

KLAC has been granted Channel 13, five kilowatt, visual, and three kilowatt, audio. KLAC's sister station, KYA, San Francisco, has also a tele permit.

ABC will use Channel 7, 4.5 kilowatt, visual, 2.7 kilowatt, audio. It has a half acre site on Mt. Wilson, and is negotiating for a site for its proposed Hollywood tele station.

NBC has also been granted a permit, and plans erection of a tele studio at its present site in the heart of Hollywood. It also has a transmitter site on Mt. Wilson, and Hal Bock, veteran publicity director of NBC's Western Division, will be in charge of its video plans here.

The Times-Mirror Company, which publishes the Los Angeles "Times," will operate KPTV and has Channel 11, 19.45 kilowatt, visual, 19.15 kilowatt, audio. It has ordered a transmitter from RCA and is hopeful of delivery in October.

One month after television was authorized on the West Coast, Patrick Michael Cunning Television Productions had four shows in preparation.

Cunning is also associated with Edgar Bergen in Bergen-Cunning Television Prods., which will concentrate on the making of 16 and 35 mm. films for television.

Telefilms, of which Don McNamara, former program director of KFI, is in charge of tele activities, is making a strong bid for national video film business. It filmed the Los Angeles open golf tournament in January for the United States Rubber Company and rushed the films East for televising over WABD, New York; WTTG, Washington, and WPTZ, Philadelphia. Telefilms is also planning to televise a fashion show for the California Apparel Creators, which would be shown in department stores as well as over tele stations, and has other important video plans.

THE TELE RECEIVER MARKET

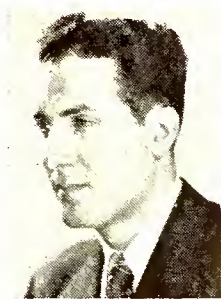
By JIM OWENS, Staff Writer, RADIO DAILY

FEW industries have appeared on the American scene adorned with as much enthusiasm and prediction as to its economic and cultural capabilities, as did commercial television in the early months of 1946. And few industries were plagued in their early beginning with the economic ironies of a nation still in the process of a sluggish return to peacetime production, as was television. Further,—few large scale industries had a “ready” market potential of millions of dollars per year as had video manufacturers who were equipping plants during the early months of last year, albeit with the scant amount of necessary materials available and the attendant high costs of labor.

Although there were only seven to 10,000 sets in existence at the end of '45, several surveys indicated that anywhere from three to 10 million persons were waiting, money in hand, to buy receivers within the next couple of years, if not immediately. Television was growing city by city, and Charles R. Denny, Chairman of the FCC, predicted 100 stations on the air by the end of 1947.

However, the spread of the teleset market, according to industry executives, depended greatly on the spread of television networks. Only via networks, the listening audience, i.e., the buying public, would television begin to reap the tremendous profits predicted for it. Quality programs were necessary for video to attract a steady audience; and quality programs were of prohibitive expense without the aid of the advertisers' dollars.

By the end of 1946, only one phase of this two-cornered problem had begun to show signs of solution. By the end of the year, according to an official report of the Radio Manufacturers Association, 6,476 telesets had been produced and marketed. The unofficial figure, however, ac-



Jim Owens

According to a check of those companies actually producing sets during 1946, shows that over 10,000 receivers were turned out—the bulk of which were made available during the last six months.

The production outlook for this year, while greater beyond comparison in unit total, does not begin to approach settlement of the market problem—although it should be noted here that present distribution techniques render physical limitations somewhat less confining.

At the Television Broadcasters Association Convention in New York last Fall, manufacturers made an ambitious prediction of a million sets by the end of 1947. However, due to the continued uncertainty of economic conditions, the best estimates for production this year indicate that something over 500,000 receivers will be turned out. Companies who will combine to produce this figure, (some of which were in production last year) include: RCA, Philco, General Electric, Du Mont, Federal Telephone & Radio Corp., Westinghouse, Garod, Viewtone Television Corp., Sparks-Withington, Bendix, Stewart-Warner, Crosley, Farnsworth and Stromberg-Carlson. About half of this amount or 250,000, are expected to be produced by RCA alone.

While the demand was high last year, and is expected to continue so for an undetermined period, price of sets will be the most important factor in maintaining it, according to manufacturers. The range will probably be from \$200 to \$500 in the “popular” category, and extend to \$2500 in the “deluxe” class.

Significant is the prediction by RMA chief R. C. Cosgrove who feels that “until we turn out a good set for \$150, we won't get profitable volume.” Costs of materials and labor, however, based on last year's performance, offer little to indicate the achievement of this level during 1947.

The distribution angle is of equal importance to the actual unit output, industry experts feel, since the manner in which it is handled will greatly facilitate the early establishment of video networks. Market-wise manufacturers are apportioning sets to cities presently served, or about to be served, by television stations, rather than concentrating on areas with huge buying potentialities.

VIDEO IN BRITAIN 1946-47

By E. C. THOMSON, *British Broadcasting Corp.*

BRITISH television opened up again last June after the screens had been dead for nearly seven years. Since then the staff have made gallant and successful efforts to make up for lost leeway, and it can be truly said this Christmas that the service lags little, if at all, behind the standards of September 1939, when the BBC high definition television service had completed three years as the first of its kind in the world.

First renewal of activity began in November 1945, after the Government's acceptance of the recommendations of Lord Hankey's Television Committee that the service should be resumed where it left off. The station occupies a modernized corner of Alexandra Palace, an old amusement center in North London, 300 ft. above sea level. Among the first arrivals was the new Head of the Service, Maurice Gorham, lately in charge of the Light Program and before that Director of the A.E.F. Program. Around him gathered the new program staff—new only in the sense that they were taking up television afresh: Denis Johnston as Program Director after a long spell as radio war reporter; Cecil Madden as Program Organizer after directing the Overseas Entertainment Unit; George More O'Ferrall as Senior Play Producer after years of army service in the Far East and work with the A.E.F. Program.

And while the program staff laid their plans, the technicians, led by the Superintendent Engineer, Douglas Birkinshaw, submitted the entire transmission plant to the most thorough overhaul it had had since the pioneer days of 1936. As a result of this overall spring-clean, the apparatus, by the time the service opened, was producing better pictures, with improved detail, finer gradation and less "streaking," than in 1939.

All this time the two disused studios were being put in working order, stored equipment was being brought out again, and studio staffs were recapturing the old skill. One of the two mobile units was being overhauled piece by piece.

Zero hour was 3 p.m. on June 7th. Up to that date, activity at the television station, though never leisurely, was delib-

erate and comparatively unhurried, but everyone knew that once the plunge was taken, there could be no pause. Television, perhaps the most absorbing, is also one of the most exacting forms of entertainment; to keep the screens "alive" for at least three hours a day—and this was what the new schedule demanded—requires concentrated teamwork. Actual screentime produced in a day's "shooting" by the average film studio is less than three minutes.

At the scheduled hour the plunge was taken. Miss Jasmine Bligh, one of the original television announcers walked towards an emitron camera on the terrace in Alexandra Park and to the strains of a Television March specially composed by Eric Coates, smiled into the lens and made the first announcement. At the inaugural ceremony a few moments later in Studio A, the Postmaster-General, the Earl of Listowel, formally declared the service open, stressing that television was intended as a recreation for the many, not a luxury for the few, and expressing the hope that the service would be extended to Birmingham in the not far distant future.

Viewers then saw their first studio program, but in less than twenty hours the service was put to a supreme test. The result was a triumph. Television cameras mounted on a stand in the Mall opposite the Royal saluting base defied cloud and shower to present an open-window view of the complete Victory Parade—the arrival of Their Majesties, the long procession itself and even some of the aircraft in the Fly-past.

People who had cherished their television sets for this moment through all the miseries of air-raids and black-out were not disappointed. Some confirmed that pictures were better than in 1939; all awaited with eagerness the promise of those ever-popular features, plays, variety, "Picture-Page," demonstrations, children's features, cartoon films and the panorama of "O.B.'s" from sports grounds, theaters and dance-halls.

The promise has been kept, despite various austerity handicaps in the world of entertainment.

Outside Broadcasts continue to yield the most spectacular successes. From the Mall the mobile unit proceeded a week later to Wimbledon for the final matches for the Wightman Cup. Wimbledon is far outside the circle of co-axial cable which rings the West-End and gives direct connection between the mobile unit and Alexandra Palace.

Since then the television audience has been taken to other theaters for dress circle views of such shows as "Follow the Girls" at His Majesty's and "Sweetheart Mine" at the Victoria Palace. From time to time the old Bedford Music Hall, Camden Town, was "taken over" by the B.B.C. for an evening of televised "Variety on View," in the presence of a specially invited audience. In July the mobile unit drew up at the Open Air Theater, Regent's Park for a complete performance of "A Midsummer Night's Dream." Public ceremonies give full scope to television's unique quality of "actuality" or "immediacy," demonstrated in a most spectacular manner by the Lord Mayor's Show and most impressively by the Service of Remembrance at the Cenotaph.

Television cameras also roamed the ballroom floor at the Royal Albert Hall and

the Palais de Danse, Hammersmith. In the open air they ranged from Barnet—in the north—for amateur football, to Ascot—in the south—for the new King George VI Stakes. Ascot, twenty-nine miles from Alexandra Palace, is the most distant point from which the mobile units have operated.

The Zoo was toured and another Regent's Park fixture was the Jubilee Motor Parade. In November the second mobile unit was restored to the service.

Among studio programs, plays have come first in popularity. Casting a wide net, the producers brought in dramas, comedies, thrillers — Shakespeare and Shaw, Oscar Wilde and Edgar Wallace. Besides Shaw's "St. Joan," Ian Hay's "The Middle Watch," Eugene O'Neill's "Anna Christie" and many other established successes, demanding the utmost resource in studio accommodation, scenery and costumes, viewers saw numbers of plays specially written or arranged for television, among them J. B. Priestley's new play "The Rose and Crown," and the well-known stage and film story, "Thunder Rock."

New television personalities have emerged. Mr. Philip Harben, suave and deft, early established himself as a master of televised cookery; in the Television Garden, Mr. F. Streeker has enlivened horticulture with an engaging sense of humor. The three announcers—familiar guests in every television household—are Miss Winifred Shotter, of stage, screen and E.N.S.A. fame; Miss Gillian Webb, R.A.D.A. prizewinner, who was appointed in July on the resignation of Miss Bligh; and Mr. McDonald Hobley, former actor and S.E.A.C. radio announcer.

Cartoon and interest films were shown in abundance, but permission has not yet been obtained for televising newsreel. The B.B.C.'s own Film Unit has not, however, been inactive and among its scoops was an exclusive interview with Mr. George Bernard Shaw on his 90th birthday. The *Queen Elizabeth* trials off the west of Scotland were filmed and shown to viewers on the day the liner set off on her maiden peacetime voyage to New York. As part of a regular exchange arrangement with the National Broadcasting Company of America, films taken on board during the voyage were flown back from New York and televised a week later.



BOB EMERY

Manager, Program Dept.
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W A B D

Producer, "Rainbow House"
WOR - Mutual

BELL SYSTEM COAXIAL CABLES

By L. G. WOODWARD, General Manager, Long Lines, A. T. & T. Co.



L. G. Woodward

FOR many years, in the interests of economy and better service, the Bell System has devoted a large amount of research work to carrier systems of transmission, by means of which a number of communication channels can be provided over a given physical facility by the modulation of suitable carrier frequencies.

An early fruit of this work appeared in the form of a relatively narrow band carrier system for use on open wire lines, which made it possible to superpose three voice channels on the basic channel provided by one pair of open wires. Later a broader band system was developed which provided an additional complement of twelve voice channels on an open wire pair. A similar system supplied a total of twelve channels on two cable pairs. Still later came the very broad band coaxial cable system, by means of which several hundred voice channels are provided over a pair of coaxial tubes about the size of a lead pencil. This system can be arranged to transmit television signals.

Ten years ago the first inter-city coaxial cable was installed by the Bell System, between New York and Philadelphia. This cable contained but two coaxial tubes, the repeaters were spaced 10.5 miles apart, and the system was capable of transmitting a frequency band one megacycle in width. These early repeaters have since been replaced with repeaters of a later design, the spacing cut in half and the band width increased to about three megacycles. All coaxial cables now in service transmit this band of frequencies, but an increase in the diameter of tubes from about one-quarter inch to three-eighths of an inch has made it possible to lengthen out the repeater spacing from five to eight miles.

In 1940, two more short coaxial cables were installed, one between Stevens Point,

Wisconsin, and Minneapolis, and the other between Baltimore and Washington. The war then substantially halted construction and until last year only two additional cables were placed—Atlanta to Macon and Philadelphia to Baltimore—both of which were installed in 1942 but were not activated for broad band service until about a year ago.

By the end of 1945 there was a total of some 1100 miles of coaxial cable in the plant. At present there are nearly 3000 miles. Next year alone, barring material shortages, we expect to install an additional 3000 miles. By 1950 we hope to have some 12,000 route miles of coaxial cable in service. The mileage of single cable will be even greater than this figure, since on some routes there will be more than one cable. Most of this cable will contain eight tubes.

The map accompanying this article shows the cables now in place or being installed and those projected for the next few years. The southern trans-continental route to Los Angeles is expected to be completed by the end of 1947, as well as an extension to Miami. We hope also to reach Pittsburgh, Cleveland, Detroit, Chicago, St. Louis and other cities in this general area by the end of 1948 or shortly thereafter. Not shown on the map is the radio relay system now being installed between New York and Boston which at present is planned to be put into service on an experimental basis in the spring of 1947.

As has been indicated the development of broad band transmission systems, including the coaxial cable, was undertaken primarily to provide facilities for the regular communication services of the Bell System. The program ahead is controlled chiefly by the need for additional telephone circuits. From the viewpoint of network television service, it is of special interest that these telephone circuit needs are so great as to require the very large program of coaxial cable construction here outlined. By the addition of special equipment, including the necessary transmitting and receiving terminals, and by

making adjustments of greater precision than are required in the operation of coaxial systems for telephone service, coaxials can be adapted to the transmission of television programs. These measures take some time, however, so that television service is not expected to be available until a little later than the dates indicated in the preceding paragraph.

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Thus far, two one-way television circuits operating in opposite directions between New York and Washington have been made available to television broadcasters on an experimental basis since February, 1946. We plan to add two additional one-way circuits between these points by the end of next year, and next spring it is expected that an extension of television facilities from New York to Boston will be available by means of the radio relay system mentioned previously.

Owing to the heavy demands for telephone service, it is probable that for the next two or three years there will not be enough coaxials available for television service on most of the major routes to permit exclusive use of the facilities to be assigned to individual networks. While this will require sharing of facilities, as

has been done in the case of the New York-Washington cable, such part-time use may prove to be sufficient to care for the needs of the broadcasters in the early stages of network service.

Looking to the future, the Bell System has under development a new type of repeater which, as now projected, will make it possible to transmit a band of frequencies about seven megacycles in width over coaxial systems. This entire band could be used for television or a part of the band could be assigned to television and the remainder to telephone, thus enabling the coaxial tubes to be used simultaneously for the two services. In addition to the increase in television channels obtained by this means, our present plans call for additional cables on some of the heavier routes.

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Further, the results of the New York-Boston radio relay trial may indicate the application of this type of transmission system to other routes. In view of all these factors, we can be confident that sharing of use of facilities for television network service will not long be necessary, assuming that the needs of the individual broadcasters are such as to require exclusive use.

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AP

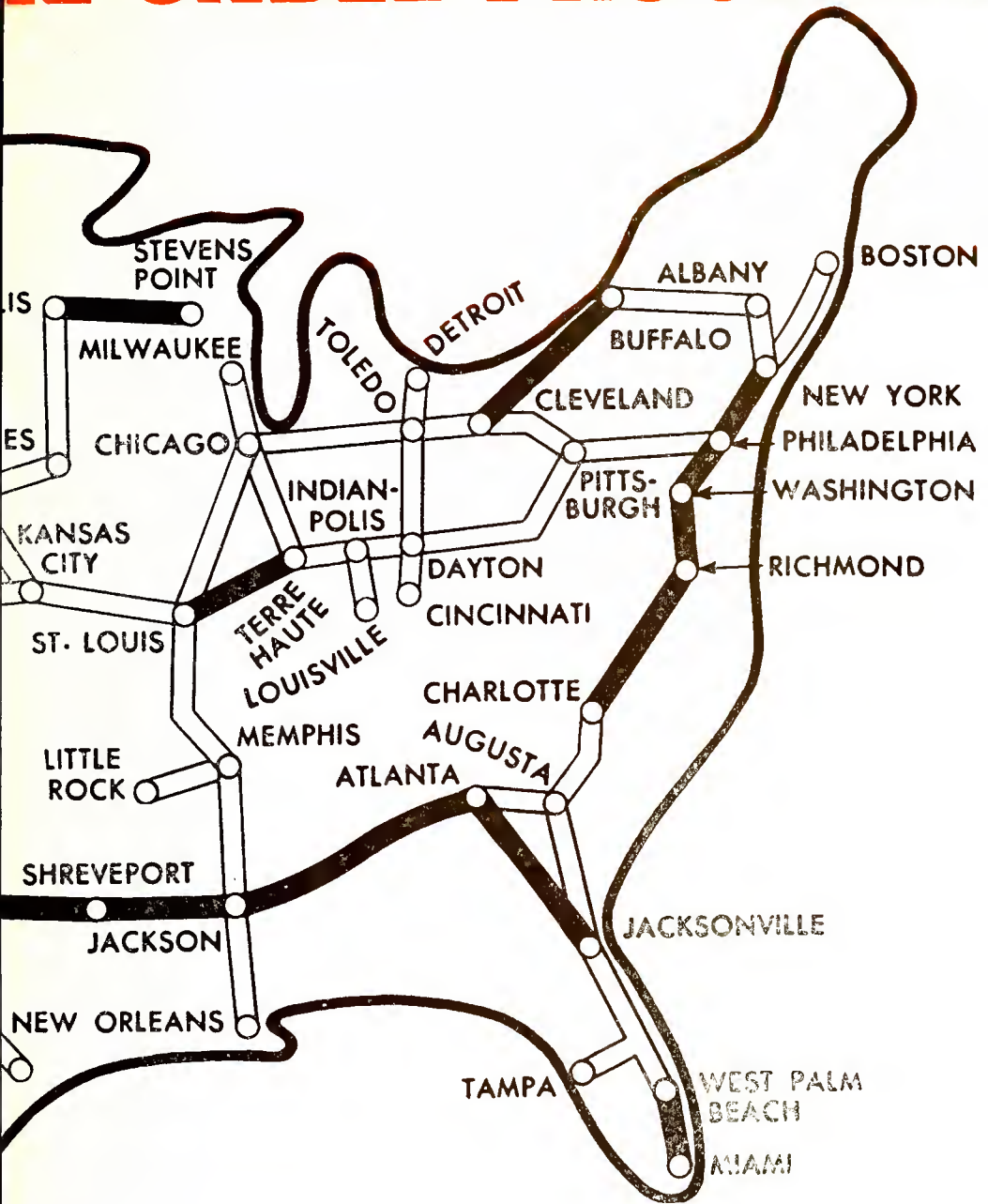
BELL SYSTEM COAX



- COAXIAL CABLE NOW UNDER CONSTRUCTION OR INSTALLED**
- COAXIAL CABLE PLANNED FOR NEXT FEW YEARS**

NOTE: These coaxials are being installed and equipped primarily for telephone circuits. With special additional equipment, coaxial cables can carry television programs. Such service is now in experimental operation between Washington and New York

AL CABLE PROGRAM



BELL SYSTEM COAXIAL CABLE PROGRAM



NOTE: These coaxials are being installed and equipped primarily for telephone circuits. With special additional equipment, coaxial cables can carry television programs. Such service is now in experimental operation between Washington and New York

TELEVISION TALK

A MODERN GLOSSARY

(Courtesy Caldwell-Clements, Inc.)

A

AMPLITUDE—The magnitude of any quantity, particularly voltage or current.

AMPLITUDE MODULATION—The periodic variation of the voltage or current in a circuit in accordance with some signal being transmitted.

ANTENNA—An electrical circuit for radiating or receiving electromagnetic waves (radio).

ASPECT RATIO—The ratio of picture width to picture height. Now 4:3.

AUDIO—(I hear.) A term applied to any part of a radio or electrical system handling frequencies in the audible range.

B

BAND-PASS FILTER—An electric circuit which will transmit frequencies between two limits and reject others outside those limits.

BANDWIDTH—The number of cycles per second required to convey the information being transmitted either visual or aural.

BLACKER-THAN-BLACK—A portion of the television signal devoted to synchronizing. These synchronizing signals are transmitted at a higher power than the blackest part of the picture, so that they will not appear on the screen.

BLANKING—The process of cutting off the cathode ray during the time it is not forming a part of the picture. This occurs when the spot returns from the far right to begin the next line and from top to bottom to the top of the picture.

BLOCKING OSCILLATOR—A type of oscillator which generates intermittent signals used for scanning in cathode ray tube.

BLOOM—The condition of overall bright illumination of the picture tube obscuring any picture detail.

BOOSTER ANODE—A conductive coating placed inside a cathode-ray tube near the screen and because of a high positive voltage applied to it, causes a brighter picture.

BRIGHTNESS CONTROL—A control on the receiver for regulating the overall brightness of the picture.

C

CAMERA TUBE—The electron tube used to translate a scene into electrical impulses.

CARRIER—The term applied to the high frequency radio wave which is modulated by the audio and video signals.

CATHODE—The electrode in a tube from which electrons are obtained, usually by heating or by photoelectric effects.

CATHODE RAY TUBE—An electron tube in which streams of electrons from a cathode are formed into a pencil-like beam and directed by means of electric or magnetic fields over a target, usually a fluorescent screen which glows wherever the beam strikes.

CHARACTERISTIC IMPEDANCE—The input impedance of a transmission line infinitely long or a short line terminated in its characteristic impedance. The impedance is independent of length and depends on size of conductor and spacing.

CLIPPER—A circuit used to separate signals of different amplitudes. In television these circuits are used to separate the synchronizing pulses to the video and signal.

COAXIAL CABLE—A particular type of cable capable of passing a wide range of frequencies without the usual prohibitive losses. Such a cable in its simplest form consists of a hollow metallic conductor with a single wire accurately confined along the center of the hollow conductor.

CONTRAST—This refers to the ratio of black to white portions of a picture. Pictures having high contrast have very deep blacks and brilliant whites, while a picture with low contrast has an overall gray appearance.

CONTRAST CONTROL—A control on the receiver which regulates the video signal strength. This has the effect of changing the ratio of the black and white portions of the picture. It corresponds to the volume control in an aural receiver. is performed.

CONTROL ROOM—Studio facilities from which television cameras, lighting, shading and mixing is performed.

CYCLE—One complete set of values in any series of phenomena which repeats periodically. In radio this usually refers to one complete range of values for either voltage or current.

D

DAMPING CIRCUITS—These circuits are used to prevent high voltages from being induced in the deflection coils when the current changes suddenly.

DC RESTORER—This circuit regulates the average brightness of the television picture tube to correspond with the average brightness of the scene being transmitted.

DC TRANSMISSION—This term applies to circuits which will pass zero frequency.

DEFLECTION—The movement of the cathode ray beam by electric or magnetic fields.

DEFLECTION YOKE—The combination of coils used to direct the cathode ray up-and-down and right-and-left to form the image.

DELAY SCREEN—A fluorescent screen used in cathode ray tubes, which has the property of phosphorescence. The light intensity of any particular spot dies out gradually after the ray moves to a new position when this material is used.

DIFFERENTIATING CIRCUITS—These circuits respond to the rate of change of a pulse and are used in synchronizing the receiver scanning.

DIODE—A vacuum tube having two elements, one of which emits electrons (the cathode) and the other the anode. It is used for rectification (detection), that is the conversion of alternating currents into direct currents.

DIPOLE ANTENNA—An antenna consisting of two conductors, usually of equal length extending in the same straight line, with a pair of lead or feeder wires connected at or near the inner ends, is known as a doublet. For short waves the physical dimensions are such that self-supporting metal rods or tubes can be used.

DIRECTOR—A section of an antenna used to increase the pick-up from the side on which the director is placed.

DISSECTOR TUBE—The special type of television tube used in the pick-up camera in the Farnsworth system.

DISTORTION—Any change in the original frequency, amplitude or phase of a radio signal.

DIVERGENCE—The spreading of a cathode ray stream due primarily to the mutual repulsion between the electrons that compose it. The function of the focusing arrangement in the tube is to counteract this effect.

DOLLY—The movable stand upon which the television camera is mounted.

DOUBLE SIDE BAND—When a carrier is modulated by a plurality of signal frequencies, two distinct bands of frequencies appear, due to the modulation process, one on each side of the carrier frequency.

E

ELECTRODE—A metallic conductor introduced into a vacuum tube for a specific purpose. It must be electrically connected to the external circuit. In general each electrode is referred to by its specific use, such a cathode, grid, anode, etc.

ELECTROMAGNETIC FOCUSING—A system in which magnetic fields parallel to the motion of the electrons are used to confine them to a narrow beam.

ELECTRON GUN—That part of a cathode ray tube in which the electrons are emitted, formed into a beam and deflected.

ELECTRON LENS—A systematic arrangement of electromagnetic or electrostatic fields, having symmetry about the axis of a cathode ray tube, as to their radial components, established for the purpose of controlling the divergence and convergence of the electron ray.

ELECTRON MULTIPLIER—An evacuated amplified tube in which one or more anodes have photoelectric surfaces which are exceedingly active as to secondary emission. The original electron emission is cascaded by the secondary effects.

ELECTRON TUBE—A device employing a cathode, an anode and possibly additional electrodes for controlling the volume and direction of flow of electrons which constitute electric current.

ELECTROSTATIC FOCUSING—A system in which electric fields are employed to confine the electrons into a thin stream.

EMISSION—The continuous liberation of electrically charged particles, either ions or electrons, into space (usually evacuated) from a surface. The most important case practically is where these particles are negatively charged, i.e., electrons.

EQUALIZING PULSES—These are signals transmitted after each vertical synchronizing pulse to insure correct start of horizontal sweep circuit.

F

FACSIMILE TRANSMISSION—The electrical transmission over wires or radio circuits of printed records and pictures. While this term originally referred to black-and-white reproductions only, it is now considered to include processes producing half-tone and shaded effects as well.

FADE-OUT—A camera technique in which a scene is gradually dimmed from view.

FIDELITY—The faithfulness with which a system reproduces audio or video signals.

FIELD—This term refers to one set of scanning lines making up a part of the final picture. In present standards, pictures are transmitted in two fields of 262½ lines which are interlaced to form 30 complete frames per second.

FLUORESCENT SCREEN—A chemical coating on the inside of a cathode ray tube which emits light at the point where a cathode ray beam strikes.

FLYBACK—In scanning, the spot is moved across the screen at a definite rate in one direction for each scanning line, thereupon, it is necessary to restore it to start of the next line in a very short interval of time, say three or four millionths of a second. This return time is termed flyback.

FOCUS—In a cathode ray tube this refers to the size of spot of light on the screen. The tube is said to be focused when the spot is smallest. This term also refers to the optical focusing of the camera lenses.

FRAME—One of a series of complete pictures that are successively viewed so as to simulate moving scenes.

FRAME FREQUENCY—The rate at which frames are sent each second in the various moving picture and television applications.

FRAMING CONTROL—This control on a receiver adjusts the picture repeat rate to that of the transmitter. It is also called the vertical hold control.

FREQUENCY—A term applied to the rate of repetition of voltage or current or other periodic functions.

FREQUENCY MODULATION—A process by which the carrier frequency is modulated in accordance with the information to be transmitted.

FUNDAMENTAL—The basic frequency of a wave or sound. It is sometimes referred to as the "first" harmonic.

G

GAS-FILLED TRIODE—A type of vacuum tube in which the elements operate in an atmosphere of gas, such as mercury, argon, helium, etc.

GHOST—A secondary picture formed on a television receiver because the signal from the transmitter reaches the antenna by more than one path. Ghosts are usually caused by the radio signal being reflected from objects within approximately one mile of the receiver antenna.

H

HALATION—The ring of illumination which surrounds the point at which the electron beam strikes the fluorescent screen.

HALFTONE—A method whereby photographs having various degrees of lights and shadows can be reproduced in ordinary printing, using a system of dots which are substantially undistinguishable to the unaided eye. However, the dots are graded as to size or density so as to produce the highlights and shadows of the pictures.

HARMONICS—In electrical and radio circuits the fundamental current waves are usually accompanied by others whose frequencies are equal to some whole number multiple of that fundamental. These multiples are also called harmonics.

HEAVISIDE LAYER—The ionosphere. A region of ionized air some fifty miles above the surface of the earth. Its lower boundary acts as a reflective surface or "mirror" for radio waves. Rapid changes in the height of this lower boundary and its contour causes much of the radio interference and fading.

HETERODYNING—The process of changing frequency by combining the received signals with the output of an oscillator tube in the receiver.

HORIZONTAL CENTERING—The position of the picture with respect to the axis of the cathode ray tube. This is accomplished by a control on the receiver.

HORIZONTAL HOLD CONTROL—A control on the receiver for adjusting the number of lines per second to correspond with that of the transmitter.

I

ICONOSCOPE—A designation used by RCA for a particular type of cathode ray tube developed for the purpose of picking up the scenes to be televised. It is the essential part of a studio camera.

IMAGE DISSECTOR—A television camera tube developed by P. T. Farnsworth in which the photoelectrons are moved past pickup aperture by deflection circuits.

INTEGRATING CIRCUITS—Circuits used to add up the energy of a number of repeated pulses. These circuits are used in the receiver for synchronization.

INTERFERENCE—Random electrical signals which cause noise in the audio system and disrupt the picture in television. This includes automobile-ignition impulses, some diathermy apparatus, neon signs, etc.

INTERLACING—A system whereby the odd numbered lines and the even numbered lines of a picture are sent as two separate fields and superimposed to create one frame or complete picture.

ION SPOT—A discoloration on the center of the screen of a cathode ray tube caused by heavy negative ions striking it.

K

KERR CELL—A chemical solution which changes its light transmission characteristics when electric fields are applied to the solution. An early form of a television reproducer system no longer used.

KEYSTONE EFFECT—A distorted field or background noticed in some cases with television pictures, where the opposite edges are not parallel.

KINESCOPE—A name applied to the cathode ray tubes used in the television receivers built by RCA.

L

LENS—A radial field (electrostatic or magnetic) applied concentric with a cathode ray to concentrate the diverging electrons into a single slender beam, is called a lens.

LINE—The path covered by the moving electron spot. The intensity of the spot along this path is altered to create that portion of the picture. In present system 525 lines make up the complete picture.

LINEARITY—A term used to refer to the straightness of a characteristic curve, or a portion of that curve, that shows the relation between two quantities or circuit factors. The uniformity of distribution of a regular pattern on a picture tube.

LINE FREQUENCY—The number of lines scanned each second. In any system it is equal to the number of scanning lines per frame, multiplied by the framing frequency.

LINE OF SIGHT—A straight, unobstructed path between two points.

LIVE TALENT—"On-the-spot" televising of events and people in contrast to transmission of film material.

LUMEN—A lumen is a unit of light flux. A foot-candle is equal to the illumination that falls on a screen that is placed one foot away from a standard candlepower. One foot-candle is equal to the lumen per square foot of surface.

M

MEGACYCLE—A total of one million cycles.

MICROPHONE BOOM—The arm which carries the microphone above the area being televised.

MICROWAVE—This term generally refers to radio waves having a wavelength of less than one meter, that is, one having a frequency greater than 300 megacycles.

MODULATION—A process of altering the amplitude, phase or frequency of a radio carrier in accordance with the information to be transmitted.

MODULATION GRID—An electrode interposed between the cathode and focusing electrodes in a cathode ray tube, to control the amount of emission and thereby the brilliance of the spot. This controlling effect is produced by altering the voltage of this grid with respect to the cathode.

MONITORING—The technique of controlling, at the transmitter, the picture shading, and other factors involved in the transmission of both the scene and the accompanying sound.

MONOSCOPE—A television camera tube which contains a simple picture or pattern used for test purposes.

MOSAIC—The screen used in an Iconoscope so called due to its similarity to that form of art wherein a great many bits of colored tile are combined so as to form a picture.

MULTIGRAPH TRANSMISSION—The condition in which the radio signal from the transmitter travels by more than one route to a receiver antenna usually because of reflections from obstacles. This condition usually results in ghost pictures.

N

NEGATIVE GHOSTS—Ghost pictures in which the black and white areas are opposite to those of the real picture.

NEGATIVE TRANSMISSION—This has to do with the polarity of transmission of a television signal, or the direction of modulation to produce the light and dark parts of the picture. In negative transmission a white area corresponds to a decrease in the carrier amplitude.

O

ORTHICONOSCOPE—A television camera tube combining some of the features of the image dissector and Iconoscope.

P

PANNING—(From panorama). A camera technique in which a large arc of the scene is shown by swinging the camera around a central point.

PEAKING—A technique of increasing the response of amplifiers at some particular range of frequencies.

PEDESTAL—A portion of the television video signal used to blank out the cathode ray beam as it flies back from the right edge of the picture to the left.

PHASE—A term used to designate the time relation between the maximum points of two recurrent electrical quantities such as voltage, current, etc. It is expressed in degrees of a circle, one complete revolution of which represents one cycle of one of the waves.

PHASE SHIFT—Any change in the phase relations of current or voltage.

PHOTOELECTRIC EMISSION—The phenomena of electrons being emitted from certain materials when they are exposed to light.

PHOTOELECTRIC TUBE—A tube in which electrons can flow to a charged anode when light falls on the tube causing emission.

PICTURE ELEMENT—A small section of a given scene as reproduced by the cathode ray spot at any instant.

PICTURE NOISE—Interference signals causing spots of light and other irregular patterns on the received picture.

POLARIZATION—A term usually applied to the position of the transmitting antenna, that is horizontal or vertical. The receiver antenna should correspond in most instances to that of the transmitter. At the present time horizontal polarization is standard.

POSITIVE TRANSMISSION—A television system in which maximum radiated power from the transmitter corresponds to maximum white area in the picture. Not used in this country.

R

RADIO CHANNEL—The "space" in the frequency spectrum allotted to each station. In present television standards the channel is 6 megacycles.

RASTER—A term applied to the group of lines appearing on the cathode ray tube in the absence of an incoming video signal.

REFLECTOR—A part of an antenna system used to prevent pick-up of signals in one direction and increase it in the opposite direction.

RELAXATION OSCILLATOR—A type of circuit which oscillates periodically. Used to generate scanning voltages.

RETURN TRACE—The lines on the cathode ray screen formed as the cathode ray beam moves back to its starting position.

S

SAW-TOOTH—A voltage or current whose variation with time follows a saw-tooth outline.

SCANNING—The process of forming a picture by a spot of light of changing intensity moving at high speed from left to right and in a sequence of rows or lines from top to bottom.

SCANNING LINE—One line from left to right of a picture being transmitted.

SENSITIVITY—A measure of the ability of a receiver or other device to produce a given output for a given input.

SHADING—The process of correcting the light distribution of the image produced by the television camera. This is a part of the station monitoring job.

SIDE BANDS—The groups of frequencies higher and lower than the carrier which contain the information being transmitted and produced by the process of modulation.

SIGNAL—The electrical impulses which represent the sound or picture elements being transmitted.

SPECTRUM—A band or range of frequencies.

SPOT—The light produced by the slender beam of electrons on the fluorescent screen.

SWEEP—The uniform motion of the electron beam across the face of the cathode ray tube.

SYNCHRONIZATION—The process of keeping the moving beam of electrons at the picture tube in the exact relative position with the scanning process at the transmitter.

T

TELEVISION—Literally, seeing at a distance. A system of transmitting a scene by dividing it, by a scanning process, into a great number of elemental areas and representing each area by an electrical signal. The electrical signals are received and used to control the intensity of a spot of light to correspond to the light and shade of each original picture area as the spot is moved over a screen, in synchronism with the scanning at the transmitter.

TELEVISION CAMERA TUBE—A cathode ray tube used to convert light and shade portions of a scene into electrical signals.

TELEVISION PICTURE TUBE—A cathode ray tube in which a picture being transmitted is recreated by a moving beam of electrons.

TEST PATTERN—A drawing containing a group of lines and circles, etc. transmitted for receiver and transmitter test purposes.

TRAP—A circuit used to reject unwanted signals.

TRIMMER—A device which permits a resonant circuit to be tuned over a limited frequency range.

V

VESTIGIAL SIDE BAND TRANSMISSION—A method of suppressing part of one side band to limit bandwidth requirements.

VERTICAL CENTERING—The control which regulates the position of the picture vertically on the screen.

VERTICAL HOLD—A control on the receiver to adjust the field rate of the scanning to that of the transmitter.

VIDEO—(I see.) The portion of the television signal which contains the picture information.

VIEWING MIRROR—A mirror used to reflect the image formed on the picture tube at a convenient viewing angle.

Y

YOKE—A set of coils used around the neck of a cathode ray tube to produce horizontal and vertical deflection of the electron beam.

TELEVISION HIGHLIGHTS — 1946

(From the Files of RADIO DAILY)

JANUARY

- 2—The Pacific Telephone & Telegraph Company and subsidiaries announced that \$400,000,000 will be expended in the construction of a coaxial cable from the Colorado River to Los Angeles. Project is included in the major items of a five-year construction program by PT&T and its subsidiaries.
- 4—Leonard F. Cramer, Executive Vice-President of Allen B. Du Mont Laboratories, Inc. predicted that six out of every ten consumers will buy tele receivers in the next two years.
- 9—At a meeting of the American Television Society, M. L. Levy, chief engineer of Emerson Radio & Phonograph Co. revealed that tele manufacturers are planning to display a variety of styles of receivers to the public before the end of 1946.
- 11—Defendants in the Government's television anti-trust suit asked and were granted a 60-day extension for the filing of answers to charges of monopoly in the manufacturing and sale of television equipment. Defendants are: General Precision Equipment Corp., Paramount Pictures, Television Productions, Inc., Scophony Corp. of America, Scophony, Ltd., Earle G. Hines, Arthur Levy and Paul Raibourn.
- 14—At membership meeting of the American Television Society, Edward L. Stasheff, television director of the N. Y. City Board of Education said that television will play a major role in the field of education, and its specific value will greatly overshadow the advantages ever offered by radio.
- 14—WCBW, CBS tele outlet in N. Y., this week doubled its air time by broadcasting five nights, Monday through Friday, for a total of 12 hours.
- 21—The District Board of Zoning Adjustment approved the request of Bamberger Broadcasting Service, Inc., for erection of a 300-foot television tower, in the New York area.
- 21—Hearings on applications for the four television channels in the nation's Capital commenced before the FCC. Applicants are: The Bamberger Broadcasting Service; Allen B. Du Mont Laboratories; The National Broadcasting Company; The Capitol Broadcasting Co., owner of WWDC; The Evening Star Broadcasting Co., owner of WMAL and the Philco Corp.
- 23—A prediction of 100,000 television sets in Washington alone, by the end of 1948 was made by Joseph Katz, president of Capitol Broadcasting Co. at hearing before the FCC for four tele channels in Washington.
- 25—Dr. Peter C. Goldmark, chief engineer of CBS and Dr. Ralph V. L. Hartley of Bell Laboratories received the two top honors of the Institute of Radio Engineers at the organization's 34th annual banquet at the Hotel Astor.
- 29—Two-hundred television leaders, advertising agency executives and members of the press gathered at the Hotel Statler, Washington, D. C. for a one-day television institute.
- 30—Application for an experimental, high-frequency color tele station was filed with the FCC by the Cowles Broadcasting Co., operators of WOL. The firm believes it will be the first color video outlet slated for the capital.
- 31—Demonstration for the press of CBS high-definition television in full color, broadcast in the ultra-high frequencies got under way at the network's special studios in its home office building. Public showing, originally scheduled for last month was postponed.
- 31—FCC Chairman, Paul Porter, in determining who gets Washington's four tele channels would not recommend sharing of channels by any of the applicants.

FEBRUARY

- 1—In a talk before 300 members of the American Marketing Association at the Hotel Commodore in N. Y., J. R. Poppele, president of the Television Broadcasters Association and vice-president of the Bamberger Broadcasting Service, Inc. said that television does not threaten the existence of current advertising media, but will

operate in a realm of its own, "providing a unique form of entertainment to millions of people, and will help create new wealth for the nation."

- 1—Tele plans for coverage of the Louis-Conn fight in June were tentatively set. Plans call for airing by NBC over WNBT and for transmission via coaxial cable to Philadelphia, Washington and Schenectady. NBC's video chief, John F. Royal met with Mike Jacobs, promoter of the championship bout, presumably to set final arrangements.
- 4—The Columbia Broadcasting System staged a series of color-tele demonstrations under the direction of Dr. Peter C. Goldmark, director of engineering research and development, and Worthington Miner, manager of the web's tele department. Experts forecast the production of receivers and transmitters during the late fall of 1946 or early in 1947.
- 5—The FCC named applicants involved in video requests for 11 cities, including New York, Los Angeles and Philadelphia and reported that dates for hearings would be set later.
- 5—The British Broadcasting Corp. resumed television operations at 11 a.m. (GMT), Feb. 1, after a black-out for the last 6 years. A black cross on a white background was "flashed" from Alexandra Palace, former exhibition center. Experimental broadcasts will continue daily for two and one-half hour periods as the industry works on developing new sets.
- 6—Inauguration of the coaxial cable linking television with Washington, Philadelphia, New York and Schenectady is scheduled for Feb. 12, with a special Lincoln's Birthday program from the nation's capital. The telecast will be pooled with NBC, CBS, DuMont, Philco and General Electric participating in the broadcast.
- 14—NBC, CBS and DuMont staged a television program pickup in Washington as a sequel to the Lincoln Day demonstration of the Washington to New York coaxial cable link scheduled for Feb. 12th.
- 14—Experiments in television relay equipment installed in a blimp were conducted by General Electric and will be resumed by engineers soon.
- 15—Army-Navy announcement that plans to telecast the atom bomb test are being studied brought a cool response from FCC experts who claimed that it would "not be feasible."
- 15—Owners of DuMont tele receivers in the N. Y. area will be provided with service to convert over to the new channel frequencies recently assigned the Manhattan area.
- 15—The first RCA Victor television receivers are expected to be made available to the American public this year, with a "sight-and-sound" table model retailing for about \$200, according to an announcement made by Joseph B. Elliott, vice-president in charge of RCA Victor's Home instrument activities.
- 18—WBKB, Chicago went off the air for about two weeks in order to switch to its newly assigned channel 4 from channel 3. Plans called for return to regular schedule Mar. 18. Shutdown was the first in five-year history of the Balaban & Katz tele outlet.
- 19—CBS and Zenith Radio Corp. announced plans for two color tele stations in Chicago, to be in operation by late spring or early summer.
- 20—Expansion of its radio and television activities was indicated in the report of completion of a deal by CBS involving acquisition of some five or six apartment buildings on East 53rd Street, New York City, estimated at a total value of over \$250,000.
- 21—Raymond E. Nelson, vice-president in charge of radio and television for the Charles M. Storm Agency, Inc., opened a 15-week course in "Television Advertising and Merchandising" at the City College of New York.
- 21—The FCC granted a waiver until July 1 of Rule 3.661, to all existing commercial tele stations, which requires each television station to render not less than two hours in any given broadcast day and a minimum of 28 hours program service per week.
- 25—According to a survey conducted by the New York Herald Tribune the majority of tele equipment manufacturers are planning to concentrate production on monochrome "in the belief that color video is still too far away to be commercially practical."
- 27—The Gillette Safety Razor Company was reported to have acquired the radio and tele rights for broadcast of the Louis-Conn fight in June for the sum of \$125,000.
- 28—Acting FCC Chairman, Charles Denny stated flatly that the "public will get its money's worth from the present television band, even though video's future lies upstairs."
- 28—Three-way bids for television rights to the Louis-Conn fight involved NBC, CBS and DuMont.

MARCH

- 1—The District Commissioners approved a 350-foot tele transmitter for NBC on the grounds of the Wardman Park Hotel.

- 1—Acting FCC Chairman Charles Denny said that New York City would have to wait until other cities receive television service before hearings are held to fill its remaining channels.
- 4—All television stations throughout the U. S., with the exception of General Electric's WRGB, Schenectady, went off the air at midnight (March 1) for short periods to reconvert transmitters in accordance with new frequency allocations set down by the FCC last fall.
- 4—Frank Stanton, president of CBS revealed the findings of a "scientific study which tested the reactions of present television set owners, chosen at random from the N. Y. area after witnessing a color television broadcast." According to the study a "clear mandate" for color television was indicated.
- 5—One of the first demonstrations of television as a vehicle for presenting a sales and merchandising program to company officials was held last week by the RCA tube department, utilizing NBC's video facilities to present to top management executives of RCA Victor its plans for production, merchandising and advertising.
- 7—NBC issued a brochure outlining production procedure and establishing charges for the use of its television facilities in a direct invitation to advertising agencies and clients to actively participate in commercial video broadcasting.
- 7—First licenses to embody CBS ultra-high frequency color inventions in television receivers and studio apparatus were granted to the Westinghouse Electric Corp. Arrangements are on a patent royalty basis, extend for five years and provide for renewal.
- 7—Television's educational value was cited when the N. Y. Fire Dept. requested permission to use CBS' tele newsreel of a recent two-alarm \$100,000 fire that occurred on lower Broadway. Hailed as the "best film of actual firefighting" it will be used in training of rookies.
- 8—NBC, Bamberger and the Evening Star Broadcasting Co. were granted the Washington, D. C. television channels by the FCC.
- 11—WPTZ, Philadelphia, the Philco television station returned to the air on new Channel 3 (60-66 mc.)
- 12—NBC will return to daytime television on regularly scheduled basis with a three-times weekly program when WNBT resumes normal operations next month.
- 13—The British Broadcasting Corp. revealed its video plans at the closing session of the annual Radio Conference of the University of Oklahoma. Television was the paramount topic of the final session.
- 15—DuMont's television studio in the John Wanamaker Dept. Store in N. Y. will be officially opened on the evening of April 15, it was announced by Leonard F. Cramer, executive vice-president of Allen B. DuMont Laboratories, Inc.
- 20—George L. Moscovics, commercial manager of CBS television station WCBW, N. Y. declared at luncheon meeting of the Advertising Club that color television can be brought to the public within a year, "if the industry as a whole will get behind high-frequency color."
- 20—Television plans for coverage of the atomic bomb test in the Bikini Islands in May were announced by six major television companies; ABC; CBS (WCBW); NBC (WNBT); Balaban & Katz, Chicago (WBKB); Allen B. DuMont Laboratories (WABD) and Philco (WPTZ) Philadelphia.
- 22—Revolutionary television news coverage over long and short distances, from land, sea and air, is foreseen as one of many possibilities opened by two systems of airborne tele revealed for the first time in a joint Navy-RCA demonstration at the Naval Air Station at Anacosta, D. C. Classified by the Navy as "Block" and "Ring," the systems were developed during the war.
- 22—In the opinion of C. E. Nobles of the Westinghouse Electric Corp., Baltimore, Md., the time required for the "build-up" of cross country television network service can be reduced appreciably by acceptance of Stratovision, the proposed plan of broadcasting television programs from high flying planes.
- 22—Stating that he was "deeply shocked" by the FCC's decision in the Washington television grants, John Ballantyne, president of Philco Products requested that the company's application be withdrawn.
- 25—NBC sent out invitations to the special television broadcast of the opening of the UN session at Hunter College in New York City. Proceedings were picked up direct from the conference room and transmitted to receivers installed in Studio 8G in the RCA Building. Ben Grauer, NBC announcer handled the program from Hunter College.
- 26—Gimbel Bros., Philadelphia signed for a series of tele programs. It was the first department store in that city to sign and recently staged an intra-store tele demonstration with RCA.

26—The historic opening session of the United Nations Security Council in New York City's Hunter College was broadcast live on NBC television and filmed by ABC and CBS for airing on special programs.

29—First tele films of the UN Security Council opening at Hunter College in Philadelphia on WPTZ, the Philco video station, under the supervision of Paul Mowrey, manager of ABC's television department.

29—Television broadcasters mulled over the CPA's freeze on construction throughout the country. If the order is maintained it would mean that construction of some 1000 FM, AM and tele stations would be halted indefinitely.

APRIL

1—Members of the FCC were invited to attend a demonstration of color television at the N. Y. studios. Commission was shown color film and slides as contrasted to black-and-white video and learned first hand from Dr. Peter Goldmark strides made in the color field.

1—The FC accepted the request of Philco to withdraw from the Washington television field and at the same time issued a final order granting to fourth Washington tele channel to Allen B. DuMont Laboratories.

2—Eighteen members of the FCC, including acting-chairman Charles Denny, made a television inspection trip to Princeton, N. J. and N. Y. for the purpose of viewing developments in black-and-white and color television conducted by RCA and CBS.

3—Over a hundred "top executives of major advertisers and advertising agencies" have gone on record in favor of CBS color tele as opposed to black-and-white, Frank Stanton, CBS prexy, told members of the FCC at a color demonstration in N. Y.

3—A new idea in tuning mechanism for tele receivers was demonstrated by the Allen B. DuMont Laboratories at a joint meeting of the IRE and the Radio Club of America at the Engineers Club in N. Y., which will be standard equipment in all new DuMont tele sets.

4—There is "insufficient information" available to give an "okay" to color television, the FCC said in its annual report submitted to Congress.

5—NBC expects to have its Los Angeles television station in operation in the fall of 1947. A site has been acquired on Occidental Peak which is northwest of Mt. Wilson with an altitude of more than 5,800 feet.

9—A survey conducted by RADIO DAILY revealed that the television receiver outlook is brighter than at any time since the end of the war, with the first sets, mostly low-cost black-and-white models, scheduled to be on the market within a few months.

10—Possibility of utilizing a single antenna array for radiation of television video and sound as well as an FM broadcast carrier will be investigated by RCA under special authority granted by the FCC. Under the temporary grant, RCA will operate experimental tele station W3XEP simultaneously with a frequency modulation transmitter of the corporation.

11—Advertising agencies are very much aware of the possibilities of television as a new and powerful medium and are watching very closely its development into a major industry, Thomas D'A. Brophy, president of Kenyon & Eckhardt, Inc. said as the annual AAAA meeting got underway at the Waldorf-Astoria Hotel in N. Y.

11—Ira A. Hirschmann has acquired ownership of Metropolitan Television, Inc., including FM station WABF and experimental television station W2XMT. Hirschmann explained that the transaction is subject to approval of the FCC.

15—Opening of the DuMont television studios in the John Wanamaker New York store marked the establishment of the nation's first permanent commercial tele network. The network will link the DuMont stations in N. Y. and Washington, D. C.

17—Approval of the KDKA tele transmitter site near the University of Pittsburgh stadium by the city zoning board was announced.

19—Declaring that the United Nations is "not an employer" and that the question of the use of television cameras to take motion pictures for televising is purely one of American nature, involving labor union jurisdiction, Frank M. Begley, Security Officer for the UN informed CBS by letter that until the matter is decided in Washington, such cameras will not be used at the UN sessions at Hunter College, N. Y.

22—DuMont completed its first week of operations in the new Wanamaker studios over

the weekend, as hundreds of department store customers and visitors were provided their first experience of watching television in rehearsal and on the air.

- 22—General Electric announced that G.E. tele receivers in the N. Y. area may be converted to the newly-assigned frequencies for \$15 per set.
- 22—Tele history was made in Chicago when the opening game between the Chicago Cubs and the St. Louis Cardinals was televised by WBKB, the Balaban & Katz station, via a specially designed remote mobile unit pick-up.
- 23—NBC started work on a new television-FM antenna atop the Empire State Building in New York City. The new tower will be 61 feet in height, replacing the old structure, which was 35 feet. Erection of the tower will take from 10 days to 2 weeks.
- 25—Purchase of Navy Department's modern electron and television tube manufacturing plant at Lancaster, Pa. by the RCA Victor division of the Radio Corp. of America, was announced by Frank M. Folsom, RCA executive vice-president in charge of the division. The purchase price was \$4,362,500.
- 29—WCAU, CBS affiliate, Philadelphia has petitioned FCC for authority to withdraw its application for monochrome video station in favor of a new application for color. WCAU plans to demonstrate CBS color video in Philadelphia, using the coaxial cable to pipe telecasts from N. Y.
- 30—ABC received approval from the U. S. Forest Service for its new television-FM station site on the summit of Mt. Wilson, Calif.

MAY

- 1—The Second Annual Radio and Business Conference sponsored by the City College School of Business got under way at the Hotel McAlpin. Discussions on television assumed an important spot on the agenda.
- 1—Television broadcast rights to the Louis-Conn fight at the Yankee Stadium, N. Y. and a deal whereby National Broadcasting Co. will also have exclusive tele rights to all Twentieth Century Sporting Club fight promotions for the year ending June 1, 1947 was announced jointly by John Royal, NBC vice-president in charge of television and Mike Jacobs, president of the Twentieth Century Sporting Club.
- 2—CBS completed plans for filming of the Kentucky Derby for airing on television over

WCBW. Bristol-Myers Co., in its debut in commercial video, will sponsor the films for Vitalis. Occasion will also mark the first time the historic turf classic will be filmed, especially for television.

- 2—NBC television resumed operation with a one hour show titled "Radio City Matinee," aired on the new channel 4 from 1 to 2 p.m.
- 7—Du Mont staged a dealer-showing of its first line of post-war teletests prior to a two-day public display at the company's television studio offices in New York City. Seven new video models were shown, six complete with FM, AM and phonograph and one smaller model which includes only AM radio.
- 8—At the 27th annual meeting of the board of directors of RCA David Sarnoff, president, outlined the company's policy on television, its prospects, as well as those other warborn patents and equipment RCA will handle in the future.
- 8—Allen B. DuMont Laboratories, Inc., gave a press and trade showing in N. Y. of their new line of "teletests." Models displayed ranged in price from \$600 to \$2,400 with four models priced at \$1,500 each.
- 9—First department store experimentation with regular television programming for the merchandising of their stocks came with Wanamaker's N. Y., using WABD, Du Mont station, for a half-hour program built around a sales pitch on pianos. Program was termed as "purely experimental."
- 15—The American-built Moscow Television Center, closed during the war, has resumed its operation.
- 15—FCC Commissioner E. K. Jett submitted informally a "startling" proposal for new color television standards to an industry committee studying the subject.
- 20—Nine video outlets from the Atlantic to Pacific were approved by the FCC without hearing. Seventy-nine applications are still on file.
- 20—Gracie Fields, British comedienne, will concentrate on television upon her return to work.
- 21—The FCC "denied" the petition of Allen B. DuMont Lab. that its connection with Paramount Pictures be dropped as an issue from the Los Angeles television hearing.
- 22—The CAA favors construction of tele towers in cities rather than in the open country, a sub-committee of the House District Committee was told by a CAA official.

23—Dr. Donald Horton, manager of the CBS Television Audience Research Institute, addressing an AMA convention in Boston said the advent of color will bring to the existing television picture "additional life and meaning" and will "make it possible to create an economically significant audience."

24—The American Broadcasting Co. authorized the expenditure of \$1,500,000 for the acquisition of a site for the building of a television station in Los Angeles.

24—WNBT and WCBW telecast crowds at the Pennsylvania and Grand Central Stations tied up by the nation-wide railroad strike.

JUNE

4—Strong competition got underway for the four remaining television channels in the New York City area as hearing opened before the FCC.

4—Paul Mowrey, head of tele operations for ABC, announced the appointment of LeRoy G. Phelps, veteran cameraman, as the television pool motion picture cinematographer to film the atomic bomb test off Bikini Atoll in July.

4—Sale of the new DuMont television receiving sets are expected to exceed \$7,000,000 by the end of 1946, and more than \$2,000,000 are on order by authorized dealers in the New York Area, following the first public showing, S. Levaur, sales manager, announced.

5—ABC President, Mark Woods, told FCC that his net planned to "plough" more than \$10,000,000 into the development of tele within the next three years.

5—NBC having exclusive television rights to the Louis-Conn fight, granted permission to the DuMont station in Washington and the Philco outlet in Philadelphia to carry this event. In New York, fight was televised over WNBT, NBC station.

10—A viewing audience of 300,000 was estimated by BBC for the re-opening of television transmissions following a war-caused shutdown since September 1939. Estimate showed that 15,000 receivers in Greater London picked up the program, compared to the pre-war figure of 23,000.

11—The National Labor Relations Board rejected an appeal made by the IATSE to have tele directors, assistant directors, assistant casting directors, floor managers,

vializers, animators, film cutters and supervisors of operations and studio attendants included in a single bargaining unit. The NLRB directed that television directors and assistant directors be combined into a separate collective bargaining election at the CBS tele studios.

12—A new micro-wave television relay transmitter, which generates less radio power than that required to operate a pencil flashlight, has been developed for field pickups and is now being used successfully by NBC. The new transmitter will be used at the Louis-Conn championship fight.

12—Public interest in television, normally referred to by set manufacturers and broadcasters as "tremendous" since the end of the war, has sharply soared to its highest peak because of the Louis-Conn fight.

12—CBS announced it had issued licenses to Bendix Radio Division, Bendix Aviation Corp., to manufacture color tele receivers for home use as well as transmitter equipment based on CBS' ultra high frequency color television invention.

12—The FCC granted a construction permit to the Allen B. DuMont Laboratories, Inc., for a 5 kw. television station in Washington, D. C. Request will be made for use of call letters WTTG.

27—Electronic manufacturers predicted that enough television transmitters will be available to broadcast customers by the end of this year to provide for their immediate demands at least.

JULY

1—The FCC cancelled the San Francisco television hearing. With only six applicants left, the Commission indicated grants for the city's six channels would be made without a hearing.

1—Rivalry sprung up between newsreel and television interests for the first showings of "Operation Crossroads." A Navy directive stated that films would be flown to the Anacostia Naval station for processing and distribution to both newsreel and television interests the same date and hour.

15—Cooperation between CBS and ABC resulted in a television seminar for returning veterans which provides an eight-week course covering all phases of the new art by both lectures and field work. Seminar is

under the direction of Worthington Miner, director of CBS Television.

19—Edgar Bergen and Patrick Cuning launched their joint television production enterprise in Los Angeles. Cuning is directing the production in which Bergen appears with new television characters. A new tele-miniature technique is being used and also a new type of television camera.

30—Gimble Brothers' first six video programs over WPTZ, Philco tele station Philadelphia has returned in an average sales return for the department store of about 2 per cent a week, it was announced by Ernest B. Loveman, television broadcasting head of Philco Corp.

31—A group of N. Y. television technicians have formed a company to manufacture a kit television set which is expected to sell for around \$100.

AUGUST

1—Announcers on the NBC television station, WNBT, have put emphasis on "first time on any screen" in announcing television motion pictures of the second Bikini atom bomb blast and the Peace Conference films. This is the first open indication of rivalry between television and newsreels for credits on special coverage.

2—John R. Davis, Ford Company vice-president in charge of sales and advertising announced Ford's sponsorship of television events at Madison Square Garden in N. Y. over WCBW, CBS television station.

2—RCA will bring a demonstration of television to the Iowa State Fair, August 23-30. Station KRNT is building complete studio and control facilities to house the RCA equipment in the tent headquarters of International Harvester, Des Moines, Iowa.

13—Gillette's "Cavalcade of Sports." is interested in televising the coming World Series and will bring the matter before baseball's commissioner, A. B. "Happy" Chandler. Both CBS and NBC are set to go with video operations for the series.

13—General Electric's television station, WRGB will begin regular relay experimental tele-casting on Aug. 19, picking up NBC programs from N. Y. 5 days a week.

21—The Goodyear Tire & Rubber Co. will make its debut as a television client this fall with the sponsorship of the Army football games, starting Sept. 21.

26—Barney Balaban, president of Paramount Pictures, Inc. stated that "Canada can have television as soon as the U. S. if CBC gives us the green light."

30—The television exhibit at the Iowa State Fair, sponsored jointly by RCA-Victor, KRNT and ABC is credited with being the greatest box office attraction in the history of the Fair. The Fair hit an all-time attendance for any single day when 85,000 people attended. It was reported that 80 per cent of all questions were "where's the television show?"

SEPTEMBER

3—First signs of a conflict involving telecasters and sports magnates were bared when it was learned that WCBW, CBS television station, had moved into Yankee Stadium for operation and that WNBT, NBC video outlet, apparently had moved out.

9—Plans for a Chicago Television Exposition next Spring are being formulated by the newly organized television broadcasters organization in Chicago. Capt. William Eddy, USNR, director of the B & K tele station, WBKB, was elected chairman of the new group at a meeting at the Union League Club. W. E. Guy, Graybar Electric district manager, presided.

11—Ford Motor Co. signed a contract with WABD, DuMont television outlet in N. Y. to telecast all home games of the Yankee professional football club of N. Y. at the Yankee Stadium. Complete 1946-47 schedules of the game will be televised. DuMont will use three new image orthicon cameras at the first Yankee game and thereafter will be equipped with five such fast pickup outfits.

17—The Don Lee Television System, granted a license last week by the FCC to do research in color video, has inaugurated a special three-year research project, it was announced in Hollywood by Harry R. Lubcke, Don Lee tele chief.

17—Television Productions, Inc., Paramount video subsidiary, withdrew its applications for 16 high frequency relay stations which had been planned.

20—Use of a movie trailer to herald a forthcoming production was seen for the first time on tele in N. Y. when WNBT presented a musical-pictorial sendoff for Columbia Pictures new Al Jolson production titled, "The Jolson Story."

30—In a petition filed with the FCC in Washington, CBS asked the Commission to adopt

standards for and to authorize commercial operation of color tele stations in the ultra high frequencies. The petition asks for a hearing at which CBS officials and others may testify on the proposals.

OCTOBER

- 8—In cooperation with the N. Y. City Board of Education, CBS television station WCBW, announced plans for a new video educational series.
- 8—International video coverage by the use of films was given further impetus with the announcement that NBC had concluded a deal with BBC for an exchange of newsreels. First film exchange is expected to be coverage of the Queen Elizabeth's inaugural voyage from Southampton to N. Y. on Oct. 16.
- 8—First use of the coaxial cable which serves as a television link between N. Y. and Washington will be made by Baltimore on next Saturday when NBC television picks up the Navy-Duke football game from the Baltimore Municipal Stadium. The Baltimore pickup will be another step in the development of an east coast tele network.
- 9—Advance reservations for the TBA conference which opens tomorrow at the Waldorf-Astoria Hotel in N. Y. passed the 600 mark and indications are that it will probably attract more than 1500 broadcasters, agency executives, producers and advertisers.
- 10—The Columbia network's drive to put color television on a commercial basis was stepped up when the FCC ordered a hearing before the full Commission beginning Dec. 9. The network has petitioned the Commission to authorize operation of commercial video stations in the band 480 to 920 megacycles.
- 10—The opening of the AF of L convention in Chicago was filmed especially for television. Films were presented over WBKB, Balaban-Katz television station in Chicago. The event marked the first time proceedings of the AF of L were televised.
- 10—In the twelve weeks period ending August 2, 31,919 day guests toured the Du Mont John Wanamaker Studios. No count was made of evening guests.
- 11—Poul Roibourn, v.p. of Paramount Pictures, Inc. and chairman of the TBA awards committee presented the 1946 TBA Awards of Merit.
- 14—Entire October production of 1000 View-tone television receivers will go to dealers who have proved they can properly install video sets. Production of Viewtone tele sets has been increased by concentrating on one model.

15—NBC Television Dept. took motion pictures of President Truman when he made his meat and stabilization speech in Washington and flew the films to N. Y. Pictures were televised the following evening over WNBT.

- 15—First permanent use of television by major hotels in New York City will get under way this winter with the announcement by the Hotel New Yorker that six of its larger rooms will be equipped for service about Nov. 1.
- 18—RCA is busily installing 20 receiving sets in various points of vantage in the Palmer House, Chicago, to take care of the overflow from the convention hall at the forthcoming NAB Convention.
- 22—Detroit had what is believed to be its first actual television broadcast this week as one of the highlights of the 10-day Post-War Products Exhibition, which opened at Convention Hall. Television program was organized by WWJ and the Allen B. DuMont Laboratories.
- 24—President Truman, in his welcome address to the United Nations yesterday was televised by NBC's station WNBT with a battery of cameras spotted through the General Assembly hall and other points.
- 31—An all electronic-color television system was demonstrated publicly for the first time in history at the RCA Laboratories in Princeton, N. J. before a group of 70 newspaper and technical men. Demonstration was for the purpose of proving that the new development in radio science was flickerless and practical without the use of rotating disks or any other moving parts.

NOVEMBER

- 7—Nearly one and one-quarter million dollars—estimated figure—worth of RCA Victor television receivers have been sold to consumers in New York City alone since the sets went on sale in five cities Nov. 4.
- 8—The Brooklyn Dodgers and CBS have concluded an agreement giving CBS the first exclusive, long term television rights to a major league team schedule.
- 11—A new coin-operated television receiver, which will be made available to the public at no cost for use in the home, was demonstrated last week for the first time by Trado, Inc., of Asbury Park, N. J.
- 15—ABC stepped up its television air time to nine and one-half hours this week, the heaviest video schedule in the company's history, Paul Mowrey, web tele director announced.

- 18—The first issuance of a rate card by WCBS-TV last Friday, revealed the variance in rates among New York's three television stations and pointed up the increasing competition among telecasters to lure sponsors into the new medium. All N. Y. telecasters, as well as the industry in general, have entirely separate rate policies and there is little basis for comparison.
- 19—Florida residents will get their first large-scale glimpse of television during the week of Nov. 25 with the opening of Miami's 50th Anniversary Exposition. Mammoth celebration, expected to attract a half million visitors will highlight a television exhibit under the joint auspices of WGBS and DuMont, N. Y.
- 26—United States listeners own a total of about 7000 television sets, according to figures compiled by the FCC.

DECEMBER

- 2—The J. L. Baird Co., London, will demonstrate not only color television, but three-dimensional color television in January, it was confirmed over the week-end. The Baird Co. is installing large-screen television in houses of the Capitol and Provincial New Theaters, Ltd., next year. Circuit comprises 14 theaters, six of which are newsreel houses.
- 5—Du Mont has been granted exclusive rights to televise the home games of the N. Y. Yankees Baseball Club in addition to the home games of the Football Yankees, it was announced jointly yesterday by Larry MacPhail, president of the baseball club; Daniel R. Topping, president of the Football Yankees, and Leonard F. Cramer, executive vice-president of Du Mont.
- 5—Bendix Radio Div. of Bendix Aviation Corp., displaying their first commercial model of color television receiver, got off to a bad start in a demonstration staged at their executive offices.
- 6—The use of Government motion pictures for television programs is seen as a definite possibility. Government agencies have been contacted by representatives of N. Y. television stations for the purpose of determining if Federal-made motion pictures can be used on their video programs. Also being studied is the feasibility of producing Government films with possible television use in mind.
- 6—The new charter for the British Broadcasting Corp. empowers it to produce motion pictures, but with the provision that such BBC-made films shall only be used for television.
- 9—Cuban citizens got their first look at television during a 13 day demonstration which opened last week under the auspices of the Compania Importadora de Lubricantes, which is installing a video station in Havana equipped by Dumont. Station is expected to be in operation within six months.
- 9—With color television versus black-and-white as the issue, leaders of the electronic industry gathered before the FCC in Washington today for a showdown verbal battle on whether or not video should proceed on the present black-and-white standards or give way to the immediate commercial development of color.
- 13—Television cameramen gave an example of spot news coverage yesterday when ABC and CBS technicians visited the scene of the tenement house explosion in New York City, made action shots and prepared them for showing last night. The television cover of the explosion was sponsored, on ABC tele, by U. S. Rubber Co.
- 16—RCA expects to produce a total of 160,000 black-and-white television receivers retailing at approximately \$65,000,000 next year, the FCC was told.
- 17—Twenty-five staff members of the FCC headed by Commissioners Paul A. Walker, Clifford J. Durr, Ewell K. Jett and Rosel H. Hyde journeyed from Washington to New York yesterday for a tour of television as a sequel to last week's hearing on CBS' application for a commercial color license.
- 23—The opening session of Congress will be televised for the first time in history on January 3rd in a co-operative broadcast by NBC, CBS and DuMont, it was announced over the weekend.
- 23—The FCC on Friday announced the granting of six commercials television applications for Los Angeles, with decision on the Don Lee network's application for the seventh channel in the area reserved.
- 24—The FCC announced yesterday that it has ordered a resumption of its color television hearing for the week beginning Jan. 27.
- 30—Plans for a new radio and television center in Boston, Mass. are included in a year-end report by Westinghouse Radio Stations, Inc., made public by Station Manager J. B. Conley.
- 31—Television covered the arrival of the New Year and the gaiety attached thereto in New York, Washington and Philadelphia as video stations aired programs in these cities up to and including the hours of midnight

Commercial Television Programs—1946

Following is a list of commercial television programs on leading stations during the year ending Dec. 31, 1946. Listing is alphabetically by program title, and giving the sponsor, product, type of program, station and advertising agency handling the account. Abbreviations: L, Live Talent; F, Film.

| TITLE | SPONSOR-PRODUCT | TYPE | STATION | ADVERTISING AGENCY |
|---|--|---------------------------|--------------|-------------------------|
| All Eyes on Gimbels | Gimbel Brothers Dept. Store Mdse. | | WPTZ | Direct |
| American Legion Film Army Football Games | American Legion Goodyear Tire & Rubber Co. | Film Sports (L) | WABD WNBT | ABC N. W. Ayer & Son |
| Army-Navy Football Game | Gillette Safety Razor Co. Razor Blades | Sports (L) | WNBT | Maxon, Inc. |
| Basketball, University of Pennsylvania | Atlantic Refining Co. | Sports (L) | WPTZ | N. W. Ayer & Son |
| Bathing Time For Baby Boxing from Madison Square Garden & St. Nicholas Arena | Johnson & Johnson Gillette Safety Razor Co. Razor Blades | Cartoon (F) Sports (L) | WBKB WNBT | Direct Maxon, Inc. |
| Carving Beauty into Plastics | Rohm & Haas Plexiglass | | WABD | Wanamakers |
| Cavalcade of Sports | Goodall Fabrics Fabrics | Sports (L) | WPTZ | Maxon, Inc. |
| Chime Time | Gillette Safety Razor Co. Razor Blades | | WABD | Donovan & Thomas |
| Christmas Eve At Grace Church | A. E. Rittenhouse Co., Inc. Chimes Tires | Religious (L) | WABD | Campbell-Ewald Co. |

| TITLE | SPONSOR-PRODUCT | TYPE | STATION | ADVERTISING AGENCY |
|--|---|--------------------------------|--------------|-----------------------|
| Doll House, The | Wanamaker Doll Dept. | | WABD | Wanamakers |
| Don McNeill's Dinner Club | Dolls Marshall Field & Co. Dept. Store Mdse | Variety (L) | WBKB | Foote, Cone & Belding |
| DuMont Telesets | DuMont Labs. Television Sets | | WABD | Buchanan |
| Easter Parade | Esmond Mills, Inc. Bunny Blankets | Film | WABD | ABC |
| Educational Films | Ford Motor Co. Automobiles | Educational (F) | WNBT | J. Walter Thompson |
| Elks Parade | B.P.O.E. | Film | WABD | ABC |
| Esso Reporter | Standard Oil Co. of N. J. Esso | News (F) | WNBT | Young & Rubicam |
| Esso Television Reporter | Standard Oil Co. of N. J. | News (F) | WPTZ | Marschalk & Pratt |
| Evening of Music | Columbia Records Records | Musical (L) | WABD | Wanamakers |
| Face To Face | Standard Brands Chase & Sanborn | Quiz (L) | WNBT | J. Walter Thompson |
| Fair & Warner | Westinghouse Electric Comforter | Commercial Skit (L) | WABD | McCann-Erickson |
| Famous Jury Trials Fit For A King | Chevrolet Cars | Dramatic (L) Commercial (L) | WABD WABD | ABC Campbell-Ewald |
| Fitzgeralds, The | Alexander's Dept. Store Dept. Store Mdse. | Interview (L) | WABD | ABC |
| Football Games, Washington | Goodyear Tires | Sports (L) | WABD | N. W. Ayer |
| Football Games, Yankee Stadium | Ford Motor Co. Cars | Sports (L) | WABD | J. Walter Thompson |
| Football, Sports at Madison Square Garden (except boxing) | Ford Motor Co. Automobiles | Sports (L) | WCBS-TV | J. Walter Thompson |
| Football, University of Pennsylvania | Atlantic Refining Co. | Sports (L) | WPTZ | N. W. Ayer & Son |

| TITLE | SPONSOR-PRODUCT | TYPE | STATION | ADVERTISING AGENCY |
|------------------|---|----------------------------|---------|--------------------|
| Ladies Be Seated | B. T. Babbitt, Inc. Babbitt's Cleanser | Audience Participation (L) | WA3D | Duane Jones |
| Let's Celebrate | Borden Co. | Audience Participation (L) | WN8T | Young & Rubicam |
| Let's Dance | Chevrolet | Dancing Instruction (L) | WABD | Campbell-Ewald |
| Let's Have Fun | Mueller Prod. | | WABD | Duane Jones |
| Let's Have Fun | Goldblatt Brothers | | WBKB | Direct |
| "Live" Time Spot | Elgin Watch Co. Watches | Time Signal (L) | W3K3 | J. Walter Thompson |

M

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|-----------------------------------|--|---|--------------|------------------------|
| Macy's Thanksgiving Day Parade | R. H. Macy & Co. Institutional | Special Event (L) | WNBT | Direct |
| Make Way For Music | Columbia Records Records | Musical (L) | WABD | Wanamakers |
| Magic Carpet, The | Alexander-Smith Carpet Co. Carpets | Children's Travelogue (L & F) | WABD | Anderson-Davis, Platte |
| Marriage ala Mode | Interchemical Corp. Hoover Vacuum, Renuzit | Commercial Skit | WABD | Wanamakers |
| Master Hands | Chevrolet Cars | | WABD | ABC |
| Matinee For Youth | Sears, Roebuck & Co. Mail Order Mdse. | Variety (F) | WPTZ | Benjamin Eshelman |
| McCalls Fashions | McCall Corp. | Fashion Show (L) | WABD | Wanamakers |
| McCracken Comes Through | Ecko Products | | WABD | Wanamakers |
| Minneapolis Aquatennial Mrs. Fitt | U. S. Rubber Co. Corning Glass Co. Wearaver Aluminum, Pyrex Glass | Film Commercial Demonstration (L) | WABD WABD | ABC Wanamakers |
| Mummers Parade, The | Sears, Roebuck & Co. Mail Order Mdse. | Special Event (L) | WPTZ | Benjamin Eshelman |
| Music For Christmas Night | | Musical (L) | WABD | Wanamakers |
| Musical Map | | | WABD | Wanamakers |

N

National Air Races
 New Year's Eve at the
 Stork Club
 Northwestern Football
 Games
 U. S. Rubber Co.
 Tires
 Ford Motor Co.
 Automobiles

Film
 Remote (L)
 Sports (L)

WABD
 WABD
 WBKB

ABC
 Campbell-Ewald Co.
 J. Walter Thompson

P

Piano & Organ Musicale
 J. W. Paid Music Dept.,
 Barrett Textile Co.
 Play the Game
 Alexander's Dept. Store
 Dept. Store Mdse.
 Pulitzer Show
 Ben Pulitzer Creations
 Ties

Musical (L)
 Charades, Audience
 Participation (L)
 Variety (L)

WABD
 WABD
 WABD

Wanamakers
 ABC
 Loewi-Gamble

R

Road to Romance
 Chevrolet
 Cars

WABD
 Campbell-Ewald Co.

S

Science Looks Forward
 U. S. Rubber Co.
 Tires
 Scientific Film
 U. S. Rubber Co.
 Tires
 Serving Thru Science
 U. S. Rubber Co.
 Tires
 Sidewalk Tele Talks
 Cuiiter Cravats
 Ties
 Slip Cover Magic
 Woman's Home Companion,
 Cort China Alexander Dolls,
 Socony Tavern Dinner Candles,
 Asello Candles
 Stump The Authors
 Television Associates
 Institutional

Science, Educational (L)
 Science, Educational (L)
 Science, Educational (L)
 Educational (F)
 Slipcover Making (L)
 Educational (L)

WABD
 WABD
 WABD
 WBKB
 WABD
 WBKB

Campbell-Ewald Co.
 Campbell-Ewald Co.
 Campbell-Ewald Co.
 Direct
 Wanamakers
 Direct

| TITLE | SPONSOR-PRODUCT | TYPE | STATION | ADVERTISING AGENCY |
|-------------------------------|--------------------------------------|---------------------|---------|--------------------|
| Tam O'Shanter Golf Tournament | U. S. Rubber Co. | Film | WABD | ABC |
| Tele Chats | The Fair Store Dept. Store Mdse. | Educational (F) | WBKB | Direct |
| Telequizcalls | Commonwealth Edison Institutional | Quiz (L) | WBKB | Direct |
| Tele-Varieties | Bristol-Myers Trushay, Vitails | Variety (L) | WPTZ | Young & Rubicam |
| Tele-Varieties | Bristol-Myers Trushay, Minit-Rub | Variety (L) | WNBT | Young & Rubicam |
| Television News | Gulf Oil Co. Gasoline | News (L) | WCBS-TV | Young & Rubicam |
| Television Quarterback | U. S. Rubber Co. Institutional | Sports (L) | WNBT | Campbell-Ewald |
| Tenement House Fire | U. S. Rubber Co. | Spot News | WABD | ABC |
| Textron Telequiz | Textron, Inc. | Spot News | WABD | Wanamakers |
| This Will Put You To Sleep | North Star Blankets Blankets | Commercial Skit (L) | WABD | Wanamakers |
| Time Signals | Gruen Watch Co. Watches | Time Signal (L) | WCBS-TV | McCann-Erickson |
| Time Signals | Bulova Watch Co. Watches | Time Signal (L) | WCBS-TV | Biow Co. |
| Time Signals | Elgin Watch Co. Watches | Time Signal (L) | WCBS-TV | J. Walter Thompson |
| Time Signals | Waltham Watch Co. Watches | Time Signal (L) | WNBT | N. W. Ayer & Son |
| Time Signals | Elgin National Watch Watches | Time Signal (L) | WNBT | J. Walter Thompson |
| Time Signals | Bulova Watch Co. Watches | Time Signal (L) | WNBT | Biow Co. |
| Time Signals | Benrus Watch Co. Watches | Time Signal (L) | WCBS-TV | Young & Rubicam |
| Time Signals | Waltham Watch Co. Watches | Time Signals (L) | WABD | N. W. Ayer |
| Time Signals | Elgin Watch Co. Watches | Time Signals (L) | WABD | J. Walter Thompson |

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|--------------|--|------------------|------|------------------------|
| Time Signals | Longine-Wittnauer Watch Co. Watches | Time Signals (L) | WABD | Arthur Rosenberg |
| Time Signals | Teletrades, Inc. | Time Signals (L) | WABD | William Von Zehl & Co. |

V

| | | | | |
|--------------------------------|--|----------|------|-------------------|
| Visi-Quiz | Sears, Roebuck & Co. Mail Order Mdse. | Quiz (L) | WPTZ | Benjamin Eshelman |
| Visi-Quiz | Sears, Roebuck & Co. Mail Order Mdse. | Quiz (L) | WNBT | Benjamin Eshelman |
| Voice of Firestone Televeus | Firestone Tire & Rubber Co. Institutional | | WPTZ | Sweeney & James |
| Voice of Firestone Televeus | Firestone Tire & Rubber Co. Institutional | | WNBT | Sweeney & James |

W

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|--|--|--------------------|---------|-------------------------------|
| Weather Reports | Botany Worsted Mills Textiles | Weather Report (L) | WABD | Silberstein-Goldsmith |
| Weather Reports | Botany Worsted Mills Textiles | Weather Report (L) | WNBT | Silberstein-Goldsmith |
| Weather Reports | Borden Co. Reid's Ice Cream | Weather Report (L) | WCBS-TV | Doherty, Clifford & Shenfield |
| Weed No More | Sherwin-Williams Co., (Assoc. of Bulb Growers of Holland) Tulips | | WABD | Wanamakers |
| Wrestling Matches from Rainbo Arena | ABC Institutional | Sports (L) | WBKB | None |
| Write Me a Love Scene | Manhattan Soap Co. Sweetheart Soap | Drama (L) | WABD | Duane-Jones |
| World In Your Home | RCA Victor | Educational (F) | WNBT | None |

Y

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|-------------------|---|-----------------------|------|--------------------|
| Yes, Mr. Bingle | Admiral Corp. Flint Cutlery Ecko Products | Commercial Skit (L) | WABD | Earle Ludgin & Co. |
| You Are An Artist | Gulf Refining Co. Gasoline | Art-Participation (L) | WNBT | Young & Rubicam |

TELEVISION BROADCASTING STATIONS

As of January 1, 1947

The term "television broadcast station" means a station licensed for the transmission of transient visual images of moving or fixed objects for simultaneous reception and reproduction by the general public.

Commercial Television Broadcast Stations Licensed By The Federal Communications Commission

| Location | Licensee | Call Letters | Channel No. Old* New** | Power Vis. Aural |
|---------------------|------------------------------------|--------------|---------------------------|---------------------|
| ILLINOIS | | | | |
| Chicago | Balaban & Katz Corp. | WBKB | 2 3 or 4 | 4KW 2KW |
| NEW YORK | | | | |
| New York | Columbia Broadcasting System, Inc. | WCBS-TV | 2 | 3KW 2.5KW |
| New York | Allen B. Dumont | WABD | 4 | 4KW 1KW |
| New York | National Broadcasting Co., Inc. | WNBT | 1 4 | 5.2KW 2.2KW |
| Schenectady | General Electric Co. | WRGB | 3 | 40KW 20KW |
| PENNSYLVANIA | | | | |
| Philadelphia | Philco Radio and Television Corp. | WPTZ | 3 | 3KW 3KW |

Construction Permits Granted for Commercial Tele Stations

| | | | | |
|-----------------------------|--------------------------------------|--|---|--|
| CALIFORNIA | | | | |
| San Francisco | The Chronicle Pub. Co. | | Channel #11, 198-204 mc; Vis. 18.24 kw; Aur. 19.2 kw. | |
| DISTRICT OF COLUMBIA | | | | |
| Washington | N. B. C. | | Channel #4, 66-72 mc; Vis. 13.3 kw; Aur. 10 kw. | |
| | The Evening Star | | Channel #7, 174-180 mc; Vis. 14.25 kw; Aur. 15.2 kw. | |
| | Bamberger Broadcasting Service, Inc. | | Channel #9, 186-192 mc; Vis. 30.25 kw; Aur. 24.5 kw. | |
| | Allen B. Dumont Labs., Inc. | | Channel #5, 76-82 mc; Vis. 6.25 kw; Aur. 2.5 kw. | |
| ILLINOIS | | | | |
| Chicago | A. B. C., Inc. | | Channel #7, 174-180 mc; Vis. 30 kw; Aur. 15 kw; 613 ft. | |
| | N. B. C. | | Channel #5, 76-82 mc; Vis. and Aur. power 21.8 kw. | |
| | Zenith Radio Corp. | | Channel #2, 54-60 mc; Vis. and Aur. 4.5 kw. | |

● **OUTSTANDING CP'S FOR COMMERCIAL TV** ●

| <i>Location</i> | <i>Licensee</i> | <i>Channel</i> | <i>Power Vis. Aural</i> |
|-----------------|-------------------------------------|--------------------------|---------------------------------|
| MARYLAND | | | |
| Baltimore | The A. S. Abell Co. | Channel #2, 54-60 mc; | Vis. and Aur. power 17.1 kw. |
| | Hearst Radio, Inc. | Channel #11, 198-204 mc; | Vis. 14.4 kw; Aur. 7.3 kw. |
| | Radio-Television of Balto., Inc. | Channel #13, 210-216 mc; | Vis. 31.65 kw; Aur. 20 kw. |

MASSACHUSETTS

| | | | |
|---------|-------------------|-----------------------|-----------------------------------|
| Waltham | Raytheon Mfg. Co. | Channel #2, 54-60 mc; | Vis. 146.08 kw; Aur. 30.70 kw. |
|---------|-------------------|-----------------------|-----------------------------------|

MICHIGAN

| | | | |
|---------|------------------------|-----------------------|----------------------------|
| Detroit | King Trendle B/cg Co. | Channel #5, 76-82 mc; | Vis. 16 kw; Aur. 14 kw. |
| | The Evening News Assn. | Channel #4, 66-72 mc; | Vis. 17.1; Aur. 7.7 kw. |

MISSOURI

| | | | |
|-----------|-----------------------|-----------------------|----------------|
| St. Louis | The Pulitzer Pub. Co. | Channel #4, 76-82 mc; | Vis. 18.15 kw. |
|-----------|-----------------------|-----------------------|----------------|

MINNESOTA

| | | | |
|----------|------------|-----------------------|---------------------------------|
| St. Paul | KSTP, Inc. | Channel #5, 76-82 mc; | Vis. 13.68 kw; Aur. 6.48 kw. |
|----------|------------|-----------------------|---------------------------------|

NEW MEXICO

| | | | |
|-------------|----------------------|-----------------------|---------------------------|
| Albuquerque | Albuquerque B/cg Co. | Channel #2, 54.60 mc; | Vis. 15 kw; Aur. 8 kw. |
|-------------|----------------------|-----------------------|---------------------------|

NEW YORK

| | | | |
|---------|------------|-----------------------|---------------------------------------|
| Buffalo | WBEN, Inc. | Channel #4, 66-72 mc; | Vis. 14.4 kw; Aur. 7.2 kw; 378 ft. |
|---------|------------|-----------------------|---------------------------------------|

OHIO

| | | | |
|-----------|----------------------------|-----------------------|------------------------------|
| Cleveland | N. B. C. | Channel #4, 66-72 mc; | Vis. 19 kw; Aur. 19.5 kw. |
| | Scripps-Howard Radio, Inc. | Channel #5, 76-82 mc; | Vis. 40 kw; Aur. 37.4 kw. |

OREGON

| | | | |
|----------|--------------------|-----------------------|------------------------------|
| Portland | Oregonian Pub. Co. | Channel #6, 78-84 mc; | Vis. 10 kw; Aur. 11.2 kw. |
|----------|--------------------|-----------------------|------------------------------|

PENNSYLVANIA

| | | | |
|--------------|---|--------------------------|-----------------------------------|
| Johnstown | WJAC, Inc. | Channel #13, 210-216 mc; | Vis. 9 kw; Aur. 6.8; 971 feet. |
| Philadelphia | The Phila. Inquirer, a Divi- sion of Triangle Pubs., Inc. | Channel #6, 82-86 mc; | Vis. 18.1 kw; Aur. 9.3 kw. |

● **OUTSTANDING CP'S FOR COMMERCIAL TV** ●

| <i>Location</i> | <i>Licensee</i> | <i>Channel</i> | <i>Power Vis. Aural</i> |
|---------------------|--------------------------|--------------------------|--|
| RHODE ISLAND | | | |
| Providence | The Outlet Co. | Channel #11, 198-204 mc; | Vis. and Aur. 50 kw. |
| TEXAS | | | |
| Dallas | KRLD Radio Corp. | Channel #4, 66-72 mc; | Vis. 46 kw; Aur. to be determined; 519 ft. |
| Fort Worth | Carter Pubs., Inc. | Channel #5, 76-82 mc; | Vis. and Aur. 30.4 kw. |
| UTAH | | | |
| Salt Lake City | Intermountain B/cg Corp. | Channel #2, 54-60 mc; | Vis. 13.2 kw; Aur. 7 kw. |
| VIRGINIA | | | |
| Richmond | Havens & Martin, Inc. | Channel #3, 60-66 mc; | Vis. 12.16 kw; Aur. 6.4 kw. |

* Old Channel means one of the 18 channels assigned to commercial television stations prior to the Commission's allocation report of June 27, 1945.
 **New Channel means one of the 13 channels finally assigned to commercial television stations by the Commission's allocation report of June 27, 1945.

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 of
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 IN N. Y.-LOS ANGELES-CHICAGO-
 WASHINGTON PLEASE TURN TO
 PAGES 100-107

COMMERCIAL TELEVISION STATIONS

PERSONNEL • FACILITIES

W B K B—W 9 X B K

CHICAGO
CHANNEL 2

Frequency.....67.25 mc.: 71.75 mc.
Power 4 Kw.
Effective Signal Radiated.....796
Owned-Operated By.....Balaban & Katz Corp.
Business Address.....190 N. State St.
Phone Number.....Franklin 6446
Transmitter & Antenna Location.190 N. State St.
Time on the Air.....1-3 p.m.: 7:15-10 p.m.
News ServiceAP
Transcription Service.....World Broadcasting
MembershipTBA Active

Personnel

Director of Television.....William C. Eddy
Promotion Manager.....Reginald Werrenrath
Purchasing Agent.....George W. Thomas
Program Manager.....A. Warren Jones
Publicity Director.....Helen Bolstad
Program Director.....A. Warren Jones
Production Manager.....Lewis D. Gomavitz
Chief Announcer.....Jack Gibney
Musical Director.....Jeanette Levin
Chief Engineer.....A. H. Brolly

FACILITIES

One studio, three camera chains (two for live talent and one for film), one mobile unit for out-door pickups (not being used for the duration).

W 9 X Z V—(W T Z R)

W 9 X Z C

CHICAGO
CHANNEL 1
(Experimental)

Frequency: W9XZV, 54-60 mc.; W9XZC, 512-528 mc. Power: Sight and Sound, 1000 Watts
Effective Radiated Signal.....1270
Owned-Operated By.....Zenith Radio Corp.
Business-Studio Address....6001 Dickens Ave.
Phone Number.....Berkshire 7500
Transmitter & Antenna Location..6001 Dickens Ave.
Time on the Air.....Unlimited license

Personnel

President-General Mgr. E. F. McDonald, Jr.
Station Manager.....J. E. Brown

W 6 X A O—(K T S L)

LOS ANGELES (HOLLYWOOD)—
EST. 1931
CHANNEL 2

Frequency54-60 mc.: Power: 4 kw.
Effective Signal Radiated5600
Owned-Operated By.....Don Lee Broadcasting System
Business Address5515 Melrose Ave.
Phone NumberHollywood 8255
Transmitter & Antenna Location....3800 Mount Lee Drive
Time on the Air.....Mondays: 6:30 p.m. to 10:00 p.m.; Tuesdays and Thursdays: 2:30 p.m. to 3:30 p.m.
News Service.....AP, NS, UP
Transcription ServiceWorld
RepresentativeJohn Blair
MembershipNAB, TBA

Personnel

PresidentThomas S. Lee
Executive Vice-President and General ManagerLewis Allen Weiss
Executive Vice-President and Assistant General ManagerWillet H. Brown
Director of Television.....Harry R. Lubcke
Program DirectorJack Stewart
Production ManagerEd Kemble
Publicity Relations Director.....Mark Finley
Chief AnnouncerHerb Twiss
Stage Director.....Ted Driscoll
Chief EngineerHarold Jury
Record MC.....John Courcier
Film Director.....Marjorie Campbell

FACILITIES

SYSTEM IN USE: 525 line 30-60 frame F.C.C., Standard, all electronic cathode-ray. Horizontal Polarization. Three Studio Cameras and film equipment. Two cameras of Orthicon type. Complete 100 ft. square two story television building housing one 100 ft. x 60 ft. x 30 ft.

television stage, one 46 ft. x 26 ft. x 16 ft., stage, monitor, film, transmitter, makeup, and lounge rooms, offices, shop, transformer vaults, etc. Three hundred foot tower, antenna elevation 2000 ft.

The Pasadena Community Playhouse and other organizations have presented plays such as Ibsen's "Master Builder," "Alice in Wonderland" and others.

K T L A

HOLLYWOOD

EST. 1942

(Paramount Studio Lot)
CHANNEL 5

Frequency.....76-82 mc.; Power: Visual
4 Kw; Oral 1 Kw.
Owned-Operated By...Television Productions,
Inc..
Business Address.....5451 Marathon St.,
Hollywood 38
Phone Number.....Hollywood 6363
Transmitter and Antenna Location..Mount Alca
Time on the Air.....Unlimited
News Service.....UP
Transcription Service.....World

Personnel

President.....Paul Raibourn
West Coast Dir.-Station Mgr...Klaus Landsberg
Sales Mgr.-Chief Announcer..Keith Hetherington
Musical Dir.....Rex Kepple
Engr. Supervisor.....Raymond M. Moore

FACILITIES

Equipment includes complete apparatus for studio as well as field operation. Cameras and transmitters were built by Allen B. DuMont Laboratories, Inc. and many additional units, including electronic special-effect equipment, were designed and built by Television Productions, Inc.

W A B D

NEW YORK CITY

EST. 1943

CHANNEL 5

Frequency.....76-82 mc.
Power.....Sight, 4 kw.; Sound, 1¼ kw.
Owned-Operated By.....Allen B. Du Mont
Laboratories, Inc.
Business-Studio Address...515 Madison Ave.
Studios...John Wanamaker, 9th St. & E'way
Phone Number.....PLaza 3-9800
Transmitter and Antenna Location.....515
Madison Ave.
Time on the Air.....3 to 5 p.m.; 8 to 9:30
p.m. Monday thru Friday.
News Service.....INS

Personnel

President.....Dr. Allen B. Du Mont
General Manager of Television
Division.....Ernest A. Mark
Station Manager.....Samuel H. Cuff
Transmitting Equipment Sales
Mgr.H. E. Taylor, Jr.
Director of Commercial
Operations.....Louis A. Sposa
Manager of Station Program
Dept.Robert Emery
Publicity Director.....John McKay
Chief Announcer.....Dennis James
Chief Engineer.....Dr. T. T. Goldsmith, Jr.

FACILITIES

The 160-foot tower of WABD atop a 42-story building raises the antenna to 650 feet above sea level. Covering a service range of 35 to 50 miles, the station has regular viewers as distant as 100 miles. It is completely equipped by Du Mont Laboratories. WABD has two studios for live talent shows as well as film-projection facilities. It operates on a commercial license.

W C B S* — T V

NEW YORK CITY

CHANNEL 2

Frequency.....54-60 mc.; Sight, 4 kw;
Sound, 3.5 kw.
Owned-Operated By...Columbia Broadcasting
System
Business Address.....15 Vanderbilt Ave.
Phone Number.....Murray Hill 6-5340
Studio Address.....15 Vanderbilt Ave.
Transmitter & Antenna Location.....Chrysler
Tower
Time on the Air.....Life studio shows: Thurs-
days; Saturdays and Sundays. Remote and
mobile pickups: On all 7 days according to
availabilities.
News Service.....AP
Transcription Service.....Associated
Membership.....NAB

Personnel

V.P. in Charge of
Television.....Lawrence W. Lowman
Director of Television..Worthington C. Miner
Director of Plans Division.....Leonard Hole
Commercial Manager...George L. Moskovics
Actg. Dir. of Tele. Programs..Benj. F. Feiner, Jr.
Director of Operations...Merritt H. Coleman
Manager of Technical Operations..Paul Wittlig
Manager of Production.....Charles Holden
Manager of Press Information..James J. Kane
Art Director.....James McNaughton
Dir. of News — Special Events..Robert Bendick
Director of Sports.....Robert R. Edge
* Formerly WCBW

W M J T

MILWAUKEE
CHANNEL 3
(C. P. Only)

Owned-Operated By.....The Journal Co.
Business Address.....333 W. State St.
Studio Address.....720 East Capitol Drive
Phone Number.....Marquette 6000
Transmitter & Antenna Location.....720 East
Capitol Drive
Newspaper Affiliation.....The Journal Co.

W N B T
NEW YORK CITY
EST. 1941
CHANNEL 4

Frequency.....66-72 mc.
Power Sight, 5000 Watts; Sound, 3000 Watts
Effective Signal Radiated.....1800
Owned-Operated By.....National Broadcast-
ing Co.
Business Address.....30 Rockefeller Plaza
Phone Number.....Circle 7-8300
Studio Address.....30 Rockefeller Plaza
Transmitter & Antenna Location.....Empire
State Bldg. Tower
Time on the Air Approx. 20-34 hours per week

Personnel

NBC President.....Neil Trammell
NBC Vice-President, in
Charge of Television.....John F. Royal
NBC V.-P. & Chief Engineer....O. B. Hanson
Manager of Television Dept...Noran E. Kersta
Mgr. NBC Tele Promotion...Charlotte F. Stern
Executive Producer.....Warren Wade
Mgr. NBC Press Dept.....Sydney H. Eiges
Television Press Editor.....Allan H. Kalmus
Eastern Sales Manager.....Reynold R. Kraft

W P T Z

PHILADELPHIA
CHANNEL 3

Frequency.....60-66 mc.;
Sight, 4 Kw.; Sound, 4 Kw.
Effective Signal Radiated...Approximately 335
Owned-Operated By.....Philco
Television Broadcasting Corp.
Business Address.....1800 Architects
Bldg., 17th and Sansom Sts.
Phone Number.....Locust 7-7136
Transmitter & Antenna Location.....1300 E.
Mermaid Ave., Wyndmoor, Philadelphia, Pa.
Transcription Service.....Lang-Worth

Personnel

Vice President & Gen. Mgr.....E. B. Loveman
Business Manager.....Rolland V. Tooke
Program Director.....Ernest Walling
Chief Engineer.....Raymond J. Bowley

W R G B

SCHENECTADY, N. Y.
CHANNEL 4

Frequency.....66-72 mc.; Power: Visual,
40,000 Watts, Oral, 20,000 Watts
Owned-Operated By.....General Electric Co.
Effective Signal Radiated.....3100
Business Address.....60 Washington Ave.
Phone Number.....4-2211, Ext. 4926
Transmitter & Antenna Location....New Scot-
land, N. Y.
Time on the Air.....Average Seven Hours
Weekly locally; relay average 10 hours
weekly from N. Y.
News Service.....AP, UP
Transcription Service...Thesaurus, Lang-Worth
Membership.....NAB

Personnel

Vice President & Manager of
Broadcasting.....R. S. Peare
Asst. Manager of Broadcasting...B. J. Rowan
Station Manager.....G. E. Markham
Assistant to the Station
Manager.....R. W. Welpott
Supervisor, Station Sales &
Promotion.....A. G. McDonald
Supervisor of Production....Helen T. Rhodes
Supervisor of Scripts.....T. B. Beebe
Supervisor of News.....W. T. Meenam
Supervisor of Music.....A. O. Coggeshall
Engineer.....W. J. Purcell

FACILITIES

Technical facilities of Station WRGB include a direct pickup studio for live talent productions, located at 60 Washington Ave., Schenectady. It is fitted with five camera channels. A film scanning room has two cameras and three motion picture projectors—two for 35 mm. and one for 16 mm. films. Film slide, lantern slide and projectors of small opaque pictures and objects are also available.

Signals from the WRGB transmitter, located in the Helderberg mountains, New Scotland, N. Y., near Schenectady, are received over a service area with a radius of approximately 50 miles, which includes the Troy-Albany-Schenectady area.

WRGB claims the first television relay station, picking up programs from NBC in New York City, 129 miles away, and relaying them to the Capitol district.

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FREQUENCY MODULATION



FM—Future Standard System

•

FM Association—Personnel

•

The FCC's Favorable FM Policy

•

1947—The Year Of FM

•

FM Stations In Operation

•

Authorized CP's For FM Stations

•

FM News Highlights Of 1946

For the *greatest*
in news reliability . .

AP

W

Fidelity

Media Broadcasting Corp.

O

JERSEY CITY'S

Only **FM** *Station*

106.3 Mc.-Channel 292

26 Journal Square

Jersey City

New Jersey

FM—FUTURE STANDARD SYSTEM

By ROY HOFHEINZ, *President, FM Association*



Roy Hofheinz

WITHIN a short period of time FM will become the standard system of broadcasting in the United States.

I say that without reservation. The American people demand the best. When an improvement is made in a commodity of daily use, the people not only accept, but demand the improved product.

Frequency modulation is an improved method of broadcasting. To assist the American public to learn of this improvement over AM the FMA will sponsor a nationwide promotion campaign.

Our objectives, as set forth in our constitution, are these:

1. To encourage the development of Frequency Modulation broadcasting.

2. To publicize the superior qualities of FM as an improved broadcasting service to the public.

3. To disseminate information among the members of this Association regarding the general problems incident to FM operation.

4. To cooperate with receiver and transmitter manufacturers, and other suppliers of FM equipment and services with the objective of establishing the widespread operation of FM stations as rapidly as possible.

5. To act as liaison between its members, the Federal Communications Commission and other agencies and organizations on the continuing overall problems affecting FM broadcasting.

To accomplish these objectives the FMA has established national headquarters in Washington. We have employed as paid executive director J. N. (Bill) Bailey, who is charged with carrying out the policies of FMA as formulated by an Executive Committee under our constitution.

Our overall immediate objective is three-fold:

1. To acquaint the public with the advantages and qualities of FM reception in contrast to previous methods of broadcasting.

2. To advise FM broadcasters of various methods of promotion that may be utilized in acquainting local audiences, dealers and advertisers with the potentialities of FM broadcasting.

3. To work in close liaison with the FCC in the consideration of FM broadcasting problems.

We accept, with pleasure, the invitation of FCC Chairman Charles R. Denny to meet at regular intervals with the Commission to discuss mutual problems on an informal basis, that we might better understand each other. To accomplish that purpose the FMA has created a liaison committee composed of Wayne Coy of WINX-FM, Everett L. Dillard of KOZY and WASH, Gordon Gray of WMIT, C. M. Jansky Jr. of Jansky & Bailey, and Leonard H. Marks, FMA general counsel. I will serve with the committee.

We plan a monthly release containing various ideas on successful promotion as gathered from all members of the FMA. We anticipate setting up an exchange whereby methods of trade practices which have proved successful in some markets will be passed on to new stations. Audience promotion is another phase.

We will maintain up-to-the-minute information from set manufacturers on production and expected production for the immediate future.

A flood of sets is just beginning to roll from the production lines. By mid-year FM receivers in all price ranges will be available for hundreds of thousands of homes.

We are urging our members on interim operation to make it clear to their listeners that they are operating at reduced power. We strongly urge our members to increase power to the full authorized effective radiated power at the earliest possible moment.

Some broadcasters have stated publicly that FM as a commercial medium "has not arrived." That is not true. At the beginning of 1947 at least six members of FMA were operating FM stations out of the red or at a profit.

FM Association

DENRIKE BUILDING, 1010 VERMONT AVE., WASHINGTON, D. C.
Telephone: National 1612

J. N. Bailey.....*Executive Director* Leonard H. Marks...*General Counsel*

OFFICERS

Roy Hofheinz.....*President* Frank Gunther.....*Secretary*
Everett L. Dillard.....*Vice-President* Arthur Freed.....*Treasurer*

BOARD OF DIRECTORS

Terms Ending December 31, 1947

Wayne Coy Ira Hirschmann
Gordon Gray E. J. Hodel

Terms Ending December 31, 1948

Leonard L. Asch Raymond F. Kohn
Frank Gunther Stanley M. Ray, Jr.

Terms Ending December 31, 1949

W. R. David Roy Hofheinz
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Leonard L. Asch W. R. David
Wayne Coy Everett L. Dillard

FCC LIAISON COMMITTEE

Roy Hofheinz, *Ex-Officio Chairman*

Wayne Coy Gordon Gray
Everett L. Dillard C. M. Jansky, Jr.

Leonard H. Marks

THE FCC'S FAVORABLE FM POLICY

By MANNING CLAGETT, *Washington Bureau, RADIO DAILY*

IN WORDS and deeds, the FCC is actively and persistently pushing FM Broadcasting. Make no mistake about that. The Commission right down the line is convinced that FM will shove AM Broadcasting back into history. As Charles R. Denny put it: "FM is not coming, it's here." And here to stay. From Commission economist to engineer you'll get the same answer to the general FM question: will FM supplant AM?

Split the question into "when's" and "how's" and the answers diverge within the Commission, though not so widely as among broadcasters. Standard broadcasting is still the oldest broadcasting baby and will fight in varying degrees the inroads of its FM cousin. The Commission during the year splurged with FM grants—total of more than 100 FM stations putting out programs in some form or another at the year's end and a total of more than 1,000 FM applicants. But while this FM activity was going on, AM stations climbed above 1,000 for the first time. More and more CP's for new AM stations were being granted in areas where an FM station would have given better coverage. Large AM licenses and even networks were paying whopping prices for other established standard stations—prices far and above what an FM station would cost.

All this was being done when AM was supposed to be fighting for its life. Criticism—some of it from within the Commission itself—was leveled at the FCC's apparent practice of spending more time on AM applicants than on FM. For a while the Commission was concerned over the large number of AM licenses who were climbing aboard the FM bandwagon. This in a field where the "little" broadcaster, the veteran, the independent were to be given their big broadcasting chance. FM broadcasting was not to be such a select, tight circle. A ceiling was put on the number of hours for FM duplication of AM programs for a joint operation. Finally, the Commission majority threw

off all restrictions and called on all AM licensees to join the FM party and duplicate programs to their heart's content. All of which wraps FM up a little tighter for the AM customer. Whether this is good or bad only a few more years of history will tell. It's Commission policy and it will fatten the number of FM licenses and speed the demise of AM.

Another question plaguing the Commission for a while—and still does—was the dearth of FM receivers. Commission comments ranged from charges of outright sabotage by manufacturers to "suggestions" that radio manufacturers step up their production of FM receivers. It was the well-known vicious circle of economics. The manufacturers claimed there was no market for FM sets because there were few FM stations. Prospective FM broadcasters said an FM station wouldn't pay because there were few sets to receive the programs and make the investment pay. So more and more applicants first got an AM grant, then obtained an FM grant and made enough money, they said, so they duplicate programs and not worry for the moment about the handful of FM sets. With the year's end, though, FM production began climbing, although still not keeping pace with the number of stations. As was expected, what FM sets there are produced are in combination with AM. These FM-AM combination sets still are high in price but, as shown by the history of AM sets, after early days of fabulous prices came days of prices better designed to fit average pocket-books.

So, maybe you can blame it all on growing pains. Whenever or however AM is knocked out—FM is the broadcasting baby that can do it.

So it is that Denny can get full backing in speaking for the FCC when he said:

"The Commission has expressly authorized me to say to you again that it is our opinion that FM is the finest aural broadcasting system attainable in the present state of the radio art."

1947—THIS IS THE FM YEAR

By IRA HIRSCHMANN, *President, WABF*

WITH the predictions of manufacturers that there will be three to five million FM Sets manufactured and distributed through the 1947 year, it looks as if finally, FM, the new superior form of broadcasting, will come into its own.

There should be no fear or concern on the part of present broadcasters from the addition of this new means of transmission, and we all fervently hope that the days of timidity are past. The American people have always welcomed improved services of any kind, and business has been able not only to absorb them, but to thrive from the invigoration of new competition.

New blood is desirable in all industry. Radio especially can use it. It has grown fast, somewhat like Topsy. With its great contribution it has also been subject to some abuses and excesses. This is natural.

Newspaper and magazine advertising went through a rough evolution before they settled down to standards of accepted practices. Look through your advertising of several decades ago, and you will find "medicine-man" advertising and tactics, the use of highly colored and exaggerated statements to sell products. Gradually advertisers learned that the American people did not need to be screamed at, fooled, kidded or lied to; that the best way to sell was to tell the truth simply, interestingly and informatively. Also advertisers learned that the best typography, superior art and the employment of the finest Art Directors paid in the long run; that the purchase of space was merely automatic; that what went into the space, the message and the technique in the presentation was what counted.

The same development must occur in radio advertising. That radio advertising has in many ways put its worst foot forward in its beginning period is unfortunate but not incurable. That people do want to be shouted at in their living rooms, bedrooms or bathrooms is obvious. Yet it goes on every minute of the day. Announcers use stentorian voices. Even if the audiences were in a market place or in a public square, this variation of

radio demagoguery would be unconvincing. Considering the fact that most of it reaches right into the intimacy of people's homes, no wonder that there is too much clicking off of radios and resentment against advertising bilge.

There are signs of awakening. Recently advertisers, agencies and radio stations have heard the murmur of resentment among their listeners. They have begun to realize how quickly it can grow into a chorus. They have become aware of the fact that the average person does not necessarily have average taste; that radio is not a medium for talking down to people; that it is not necessary to distract them to inspire them to purchase something out of an emotional urge. Programs are showing some improvement. This will increase.

FM offers that new opportunity for a better type of program in the public interest; not necessarily austere or "high-brow" (to employ a much abused word), but a service aimed not below the belt of the customer or hitting at the least common denominator. With a more faithful means of transmission, a truer, more faithful program service will be a direct answer to the people's long-felt desires.

Nor is this said in derogation of radio's prodigious contribution and public service in the last quarter of a century. Where it has been used and not abused, it has provided a new dimension in the life of our people. The opening up of endless reservoirs of experience from great music, has made this a nation more alive to the possibilities of fulfillment from this world of culture which heretofore was available to the few instead of the many.

During the war radio was the clarion call to people, and the medium of information which kept us aware of each move of the war's progress and of our duty. In the field of entertainment the nation has been vastly distracted, if not always entertained.

Some major improvements are called for in the need for the full truth in public information and in programs which might loosely be called "educational."

FM Broadcast Stations In Operation As of Jan. 15, 1947

ACCORDING to the FCC nearly all FM stations are employing interim equipment pending completion of full construction, and in some instances operation may be interrupted due to equipment changes and construction. Nearly fifty of the stations listed were licensed before the war, and some of these stations are continuing to operate equipment in the old FM band on a temporary basis.

Temporary frequency assignments are noted by asterisks.

| Call Letters | Licensee — Location | Old FM Band | New FM Band |
|-----------------------------|--|-------------|-------------|
| ALABAMA | | | |
| WAFM | Voice of Birmingham Birmingham | | 94.3 Mc |
| CALIFORNIA | | | |
| KRFM | J. E. Rodman Fresno | | 102.3 Mc |
| KHJ-FM | Don Lee Broadcasting System Los Angeles | | 99.7 Mc |
| KRCC | Contra Costa Broadcasting Co. Richmond | | 104.7 Mc |
| KPOR | The Broadcasting Corp. of America Riverside | | 102.1 Mc |
| KANY | McClatchy Broadcasting Co. Sacramento | | 102.5 Mc |
| KFMB-FM | The Jack Gross Broadcasting Co. San Diego | | 100.5 Mc |
| KRON | The Chronicle Publishing Co. San Francisco | | 96.1 Mc |
| KJBS-FM | K J B S Broadcasters San Francisco | | 98.5 Mc |
| KGDM-FM | E. F. Peffer Stockton | | 101.3 Mc |
| CONNECTICUT | | | |
| WTIC-FM | The Travelers Broadcasting Service Corp. Hartford | 45.3 Mc | 106.7 Mc* |
| WDRC-FM | W D R C, Incorporated Hartford | 46.5 Mc | 106.3 Mc* |
| DISTRICT OF COLUMBIA | | | |
| WASH | Commercial Radio Equipment Co. | | 98.9 Mc |
| WINX-FM | W I N X Broadcasting Co. | 43.2 Mc | 92.9 Mc |

• • • **FM STATIONS IN OPERATION** • • •

| <i>Call Letters</i> | <i>Licensee — Location</i> | <i>Old FM Band</i> | <i>New FM Band</i> |
|---------------------|--|--------------------|--------------------|
| FLORIDA | | | |
| WQAM-FM | Miami Broadcasting Co. Miami | | 95.5 Mc |
| WIOD-FM | Isle of Dreams Broadcasting Corp. Miami | | 97.5 Mc |
| WKAT-FM | A. Frank Katzentine Miami Beach | | 96.7 Mc |
| WWPG-FM | Palm Beach Broadcasting Corp. Palm Beach | | 97.9 Mc |
| WCOA-FM | Pensacola Broadcasting Co. Pensacola | | 92.9 Mc |
| GEORGIA | | | |
| WRBL-FM | Columbus Broadcasting Co. Columbus | | 96.7 Mc |
| WGBA | Georgia-Alabama Broadcasting Corp. Columbus | | 96.3 Mc |
| WBML-FM | Middle Georgia Broadcasting Co. Macon | | 102.3 Mc |
| WMAZ-FM | Southeastern Broadcasting Co. Macon | | 101.9 Mc |
| WSAV-FM | W S A V, Inc. Savannah | | 98.9 Mc |
| WTOC-FM | Savannah Broadcasting Co. Savannah | | 98.5 Mc |
| IDAHO | | | |
| KIDO-FM | K I D O, Inc. Boise | | 102.1 Mc |
| ILLINOIS | | | |
| WBBM-FM | Columbia Broadcasting System, Inc. Chicago | | 99.3 Mc |
| WDLM | Moody Bible Institute of Chicago Chicago | | 99.7 Mc |
| WGNB | W G N, Inc. Chicago | 45.9 Mc | 98.9 Mc |
| WEFM | Zenith Radio Corp. Chicago | 45.1 Mc | 98.5 Mc |
| WSOX-FM | Commodore Broadcasting, Inc. Decatur | | 98.7 Mc |
| WFJS | Freeport Journal-Standard Publishing Co. Freeport | | 102.1 Mc |
| WMIX | Mt. Vernon Radio & Television Co. Mt. Vernon | | 103.7 Mc |
| INDIANA | | | |
| WMLL | Evansville on the Air, Inc. Evansville | | 94.7 Mc |
| WOWO-FM | Westinghouse Radio Stations, Inc. Ft. Wayne | 44.9 Mc | 95.9 Mc |
| WABW | Associated Broadcasters, Inc. Indianapolis | 47.3 Mc | |
| WSBF | South Bend Tribune South Bend | | 101.3 Mc |

. . . FM STATIONS IN OPERATION . . .

| <i>Call Letters</i> | <i>Licensee — Location</i> | <i>Old FM Band</i> | <i>New FM Band</i> |
|----------------------|--|--------------------|--------------------|
| IOWA | | | |
| KBUR-FM | Burlington Broadcasting Company Burlington | | 99.3 Mc |
| KANSAS | | | |
| KTJS | The Topeka State Journal, Inc. Topeka | | 102.9 Mc |
| WIBW-FM | Topeka Broadcasting Assn., Inc. Topeka | | 102.5 Mc |
| KENTUCKY | | | |
| WPAD-FM | Paducah Broadcasting Company Paducah | | 96.9 Mc |
| LOUISIANA | | | |
| KPDR-FM | Central Louisiana Broadcasting Corp. Alexandria | | 100.5 Mc |
| WBRL | Baton Rouge Broadcasting Co., Inc. Baton Rouge | | 96.1 Mc |
| WRCM | Supreme Broadcasting System, Inc. New Orleans | | 95.3 Mc |
| WTPS | Times Picayune Publishing Co. New Orleans | | 94.5 Mc |
| WWLH | Loyola University New Orleans | | 94.9 Mc |
| MARYLAND | | | |
| WITH-FM | Maryland Broadcasting Company Baltimore | | 102.5 Mc |
| MASSACHUSETTS | | | |
| WBZ-FM | Westinghouse Radio Stations, Inc. Boston | 46.7 Mc | 100.7 Mc |
| WMNE | The Yankee Network, Inc. Studio—Boston Transmitter—Mt. Washington, N. H.... | 43.9 Mc | 98.1 Mc |
| WGTR | The Yankee Network, Inc. Boston | 44.3 Mc | 103.1 Mc |
| WFMR | E. Anthony & Sons, Inc. New Bedford | | 97.3 Mc |
| WBZA-FM | Westinghouse Radio Stations, Inc. Springfield | 41.1 Mc | 97.1 Mc |
| WTAG-FM | W T A G, Inc. Worcester | | 102.7 Mc |
| MICHIGAN | | | |
| WBCM-FM | Bay City Broadcasting Co., Inc. Bay City | | 97.9 Mc |
| WLou | Booth Radio Stations, Inc. Detroit | | 96.5 Mc |
| WELL-FM | Federated Publications, Inc. Battle Creek | | 102.1 Mc |
| WENA | The Evening News Association | 44.5 Mc | 96.9 Mc |

. . . FM STATIONS IN OPERATION . . .

| Call Letters | Licensee — Location | Old FM Band | New FM Band |
|------------------------|---|-------------|-------------|
| MINNESOTA | | | |
| WTCN-FM | Minnesota Broadcasting Corp. Minneapolis | | 97.1 Mc |
| KROC-FM | Southern Minnesota Broadcasting Co. Rochester | | 94.7 Mc |
| KSTP-FM | K S T P, Inc. St. Paul | | 102.1 Mc |
| MISSOURI | | | |
| WMBH-FM | Joplin Broadcasting Co. Joplin | | 102.3 Mc |
| KOZY | Commercial Radio Equipment Co. Kansas City | | 99.9 Mc |
| KMBC-FM | Midland Broadcasting Co. Kansas City | 46.5 Mc | 97.9 Mc |
| WIL-FM | Missouri Broadcasting Corporation St. Louis | | 92.1 Mc |
| KWK-FM | Thomas Patrick, Inc. St. Louis | | 95.3 Mc |
| NEBRASKA | | | |
| KOAD | World Publishing Co. Omaha | | 92.5 Mc |
| NEW JERSEY | | | |
| W2XMN (WFMN) | Edwin H. Armstrong Alpine | 44.1 Mc | |
| W2XEA (WFMN) | Edwin H. Armstrong Alpine | | 92.1 Mc* |
| NEW YORK | | | |
| WNBF-FM | Wylie B. Jones Advertising Agency Binghamton | 44.9 Mc | 96.3 Mc |
| WBEN-FM | W B E N, Inc. Buffalo | | 92.1 Mc |
| WEBR-FM | W E B R, Inc. Buffalo | | 92.5 Mc |
| WWHG | The W. H. Greenhow Co. Hornell | | 99.9 Mc |
| WHCU-FM | Cornell University Ithaca | | 101.3 Mc |
| WNYC-FM | City of New York, Municipal Broadcasting System New York | | 95.3 Mc |
| WCBS-FM | Columbia Broadcasting System, Inc. New York | | 96.9 Mc |
| WGHF | Wm. G. H. Finch New York | | 99.7 Mc |

. . . FM STATIONS IN OPERATION . . .

| Call Letters | Licensee — Location | Old FM Band | New FM Band |
|--------------|---|-------------|-------------|
| WQXQ | Interstate Broadcasting Company New York | 45.9 Mc | 97.7 Mc |
| WMGM | Marcus Loew Booking Agency New York | | 99.3 Mc |
| WABF | Metropolitan Television, Inc. New York | 47.5 Mc | 98.5 Mc |
| WGYN | Muzak Radio Broadcasting Station, Inc. New York | | 96.1 Mc |
| WNBC-FM | National Broadcasting Co., Inc. New York | | 97.3 Mc |
| WHFM | Stromberg-Carlson Co. Rochester | 45.1 Mc | 98.9 Mc |
| WHEF | W H E C, Inc. Rochester | 44.7 Mc | 96.9 Mc |
| WRUN | Rome Sentinel Co. Rome | | 98.3 Mc |
| WBCA | Capitol Broadcasting Co., Inc. Schenectady | 44.7 Mc | |
| WGFM | General Electric Co. Schenectady | 48.5 Mc | 100.7 Mc |
| WSYR-FM | Central New York Broadcasting Corp. Syracuse | | 93.5 Mc |
| WTRI | Troy Broadcasting Co., Inc. Troy | | 102.3 Mc |
| WIBX-FM | W I B X, Inc. Utica | | 97.9 Mc |
| WHLD-FM | Niagara Falls Gazette Publishing Co. Niagara Falls | | 95.7 Mc |

NORTH CAROLINA

| | | | |
|---------|--|---------|----------|
| WBBB-FM | Alamance Broadcasting Co., Inc. Burlington | | 101.3 Mc |
| WGBR-FM | Eastern Carolina Broadcasting Co., Inc. Goldsboro | | 99.7 Mc |
| WMFR-FM | Radio Station WMFR High Point | | 97.7 Mc |
| WRAL-FM | Capitol Broadcasting Co. Raleigh | | 95.3 Mc |
| WMIT | Gordon Gray Winston-Salem | 44.1 Mc | 97.3 Mc |

OHIO

| | | | |
|---------|--|---------|----------|
| WLWA | The Crosley Broadcasting Corp. Cincinnati | | 98.1 Mc |
| WELD | RadiOhio, Inc. Columbus | 44.5 Mc | 94.5 Mc |
| WFOB | Laurence W. Harry Fostoria | | 105.1 Mc |
| WFRO | Robert F. Wolfe Co. Fremont | | 104.7 Mc |
| WTOD-FM | Unity Corporation, Inc. Toledo | | 97.7 Mc |

• • • FM STATIONS IN OPERATION • • •

| Call Letters | Licensee — Location | Old FM Band | New FM Band |
|--------------|--|-------------|-------------|
| WRRN-FM | Nied & Stevens Warren | | 104.3 Mc |
| WCMW-FM | Stark Broadcasting Corp. Canton | | 96.3 Mc |

OKLAHOMA

| | | | |
|---------|---|--|----------|
| KMUS | Muskogee Broadcasting Co. Muskogee | | 92.1 Mc |
| KTOK-FM | K T O K, Inc. Oklahoma City | | 100.5 Mc |
| KOCY-FM | Plaza Court Broadcasting Co. Oklahoma City | | 98.5 Mc |
| WKY-FM | W K Y Radiophone Co. Oklahoma City | | 98.9 Mc |

OREGON

| | | | |
|--------|---|--|---------|
| KGW-FM | Oregonian Publishing Co. Portland | | 95.3 Mc |
| KPRA | Pacific Radio Advertising Service Portland | | 95.7 Mc |
| KPFM | Broadcasters Oregon, Ltd. Portland | | 94.9 Mc |

PENNSYLVANIA

| | | | |
|---------|---|---------|----------|
| WHP-FM | W H P, Inc. Harrisburg | | 97.3 Mc |
| WPEN-FM | Wm. Penn Broadcasting Co. Philadelphia | | 99.5 Mc |
| WIP-FM | Pennsylvania Broadcasting Co. Philadelphia | | 97.5 Mc |
| WCAU-FM | WCAU Broadcasting Co. Philadelphia | | 102.7 Mc |
| KYW-FM | Westinghouse Radio Stations, Inc. Philadelphia | 45.7 Mc | 100.3 Mc |
| WFIL-FM | Triangle Publications, Inc. Philadelphia | 45.3 Mc | 99.9 Mc |
| KDKA-FM | Westinghouse Radio Stations, Inc. Pittsburgh | 47.5 Mc | 92.9 Mc |
| WEAX | Peoples Broadcasting Co. Lancaster | | 92.3 Mc |
| WMOT | W W 5 W, Inc. Pittsburgh | | 94.5 Mc |
| WIZZ | Scranton-Wilkes-Barre-Pittston Broadcasting Co., Inc. Wilkes-Barre | | 103.3 Mc |
| WGAL-FM | W G A L, Inc. Lancaster | | 92.7 Mc |

SOUTH CAROLINA

| | | | |
|---------|--|--|---------|
| WSPA-FM | Spartanburg Advertising Co. Spartanburg | | 92.1 Mc |
|---------|--|--|---------|

. . . FM STATIONS IN OPERATION . . .

| Call Letters | Licensee — Location | Old FM Band | New FM Band |
|----------------------|--|-------------|-------------|
| TENNESSEE | | | |
| WTJS-FM | The Sun Publishing Co., Inc. Jackson | | 95.1 Mc |
| WROL-FM | S. E. Adcock Knoxville | | 93.1 Mc |
| WAPO-FM | Ramon G. Patterson, et al, d/b as WAPO Broadcasting System, Chattanooga | | 97.9 Mc |
| TEXAS | | | |
| KERA | A. H. Belo Corporation Dallas | | 94.3 Mc |
| KOPY | Texas Star Broadcasting Co. Houston | | 98.5 Mc |
| KPRC-FM | Houston Printing Corporation Houston | | 99.7 Mc |
| KISS | The Walmac Co. San Antonio | | 100.1 Mc |
| KYFM | Express Publishing Co. San Antonio | | 101.5 Mc |
| WOAI-FM | Southland Industries, Inc. San Antonio | | 102.3 Mc |
| KCMC-FM | K C M C, Inc. Texarkana | | 92.5 Mc |
| KTRN | Times Publishing Co. of Wichita Falls Wichita Falls | | 97.7 Mc |
| UTAH | | | |
| KSL-FM | Radio Service Corp. of Utah Salt Lake City | | 100.1 Mc |
| VIRGINIA | | | |
| WSVA-FM | Shenandoah Valley Broadcasting Corp. Harrisonburg | | 94.3 Mc |
| WCOD | Havens & Martin, Inc. Richmond | | 92.5 Mc |
| WSAP-FM | Portsmouth Radio Corp. Portsmouth | | 94.7 Mc |
| WINC-FM | Richard Field Lewis, Jr. Winchester | | 96.3 Mc |
| WEST VIRGINIA | | | |
| WCFC | Beckley Newspapers Corp. Beckley | | 101.1 Mc |
| WJLS-FM | Joe L. Smith, Jr. Beckley | | 100.7 Mc |
| WISCONSIN | | | |
| WTMJ-FM | The Journal Company (The Milwaukee Journal) Milwaukee | 45.5 Mc | 92.3 Mc |
| WDUL | Head of the Lakes Broadcasting Co. Superior | | 92.3 Mc |
| WYOMING | | | |
| KFBA | Frontier Broadcasting Co. Cheyenne | | 95.7 Mc |

Construction Permits For FM Stations

Granted By The FCC As Of Jan. 15, 1947

ALABAMA

| City | Permittee | Channel | Power |
|------------|-----------------------------------|-----------|----------|
| ANNISTON | Harry M. Ayers | 103.9 mc. | 24 kw. |
| BIRMINGHAM | Birmingham Bdgt. Co., Inc. | 93.9 mc. | 30 kw. |
| BIRMINGHAM | The Birmingham News Co. | 93.1 mc. | 370 kw. |
| BIRMINGHAM | Johnston Broadcasting Co. | 93.5 mc. | 40 kw. |
| BIRMINGHAM | Voice of Alabama, Inc. | 94.3 mc. | 13.7 kw. |
| MOBILE | Giddens & Rester | 97.9 mc. | 10.8 kw. |
| MOBILE | Mobile Daily Newspapers, Inc. | 94.1 mc. | 51 kw. |
| MOBILE | Pape Broadcasting Co. | 102.1 mc. | 32.5 kw. |
| MONTGOMERY | Montgomery Broadcasting Co., Inc. | 100.5 mc. | 29.7 kw. |

ARKANSAS

| | | | |
|------------|------------------------|-----------|---------|
| FORT SMITH | Donald W. Reynolds | 101.3 mc. | 180 kw. |
| FORT SMITH | Southwestern Hotel Co. | 95.7 mc. | 9 kw. |

CALIFORNIA

| | | | |
|-----------------|---|-----------|-----------|
| ALAMEDA | Times-Star Publishing Co. | 105.9 mc. | 750 watts |
| BEVERLY HILLS | Beverly Hills Broadcasting Co., Inc. | 104.7 mc. | 760 watts |
| EUREKA | Redwood Broadcasting Co., Inc. | 93.9 mc. | 2 kw. |
| FRESNO | The George Harm Station | 101.9 mc. | 24.5 kw. |
| LOS ANGELES | Metro-Goldwyn-Mayer Studios, Inc. | 100.1 mc. | 4.8 kw. |
| MARYSVILLE | Marysville-Yuba City Broadcasters, Inc. | 92.7 mc. | 4.7 kw. |
| MARYSVILLE | Sacramento Valley Broadcasters | 92.3 mc. | 38 kw. |
| OAKLAND | Tribune Building Co. | 94.1 mc. | 20 kw. |
| OAKLAND | Warner Brothers | 97.3 mc. | 10 kw. |
| ONTARIO | The Daily Report | 104.3 mc. | 310 watts |
| PALO ALTO | Peninsula Newspapers, Inc. | 104.3 mc. | 770 watts |
| PASADENA | Rose Bowl Broadcasters, Ltd. | 105.1 mc. | 180 watts |
| RICHMOND | Contra Costa Broadcasting Co. | 104.7 mc. | 500 watts |
| RIVERSIDE | Broadcasting Corp. of America | 102.1 mc. | 20 kw. |
| SACRAMENTO | Lincoln Dellar | 102.9 mc. | 9.3 kw. |
| SAN BERNARDINO | Lee Brothers Broadcasting Co. | 103.3 mc. | 470 watts |
| SAN BERNARDINO | The Sun Co. of San Bernardino | 103.7 mc. | 6.4 kw. |
| SAN DIEGO | Airfan Radio Corp., Ltd. | 100.9 mc. | 33 kw. |
| SAN FRANCISCO | American Broadcasting Co., Inc. | 96.9 mc. | 1.6 kw. |
| SAN FRANCISCO | The Associated Broadcasters, Inc. | 98.1 mc. | 14 kw. |
| SAN FRANCISCO | KJBS Broadcasters | 98.5 mc. | 35 kw. |
| SAN JOSE | Santa Clara Broadcasting Co. | 105.5 mc. | 1 kw. |
| SAN JOSE | Valley Broadcasting Co. | 100.5 mc. | 10 kw. |
| SAN LUIS OBISPO | The Valley Electric Co. | 92.3 mc. | 11 kw. |
| SANTA MARIA | Santa Maria Daily Times | 104.3 mc. | 336 watts |
| SAN MATEO | Amphlett Printing Co. | 105.1 mc. | 820 watts |
| STOCKTON | T. F. Pepper | 101.3 mc. | 39 kw. |

CONNECTICUT

| | | | |
|-------------|-------------------------------|-----------|----------|
| MERIDEN | Silver City Crystal Co. | 92.7 mc. | 7 kw. |
| NEW BRITAIN | New Britain Broadcasting Co. | 95.1 mc. | 20 kw. |
| NEW HAVEN | The Colony Broadcasting Corp. | 100.5 mc. | 20 kw. |
| NEW HAVEN | Elm City Broadcasting Corp. | 102.9 mc. | 20 kw. |
| NEW LONDON | Thames Broadcasting Corp. | 97.9 mc. | 20 kw. |
| WATERBURY | American Republican, Inc. | 100.1 mc. | 10.2 kw. |

FM APPLICATIONS GRANTED

| <i>City</i> | <i>Permittee</i> | <i>Channel</i> | <i>Power</i> |
|-----------------|---------------------------|----------------|--------------|
| DELAWARE | | | |
| WILMINGTON | Delaware Broadcasting Co. | 101.1 mc. | 20 kw. |

DISTRICT OF COLUMBIA

| | | | |
|------------|--|-----------|--------|
| WASHINGTON | Capital Broadcasting Co. | 100.9 mc. | 20 kw. |
| WASHINGTON | Commercial Radio Equipment Co. | 101.3 mc. | 20 kw. |
| WASHINGTON | Cowles Broadcasting Co. | 100.5 mc. | 20 kw. |
| WASHINGTON | Evening Star Broadcasting Co. | 94.1 mc. | 20 kw. |
| WASHINGTON | Theodore Granik | 93.7 mc. | 20 kw. |
| WASHINGTON | Metropolitan Broadcasting Corp. | 101.7 mc. | 20 kw. |
| WASHINGTON | National Broadcasting Co. | 94.5 mc. | 20 kw. |
| WASHINGTON | Potomac Broadcasting Cooperative, Inc. | 93.3 mc. | 20 kw. |
| WASHINGTON | WINX Broadcasting Co. | 92.9 mc. | 20 kw. |

FLORIDA

| | | | |
|-----------------|-----------------------------------|-----------|-----------|
| CORAL GABLES | Southern Media Corp. | 104.3 mc. | 270 watts |
| DAYTONA BEACH | News-Journal Corp. | 94.5 mc. | 8.5 kw. |
| JACKSONVILLE | City of Jacksonville | 96.3 mc. | 159 kw. |
| JACKSONVILLE | Florida Broadcasting Co. | 95.9 mc. | 20 kw. |
| JACKSONVILLE | Jacksonville Broadcasting Co. | 97.5 mc. | 40 kw. |
| JACKSONVILLE | The Metropolis Co. | 96.7 mc. | 35 kw. |
| MIAMI | Isle of Dreams Broadcasting Corp. | 97.5 mc. | 34 kw. |
| MIAMI | Miami Broadcasting Co. | 95.5 mc. | 49 kw. |
| MIAMI BEACH | A. Frank Katzentine | 96.7 mc. | 306 kw. |
| ORLANDO | Orlando Daily Newspapers, Inc. | 99.5 mc. | 47 kw. |
| PALM BEACH | Palm Beach Broadcasting Corp. | 97.9 mc. | 22 kw. |
| PENSACOLA | Pensacola Broadcasting Co. | 92.9 mc. | 5.5 kw. |
| ST. PETERSBURG | Pinellas Broadcasting Co. | 92.1 mc. | 37 kw. |
| TALLAHASSEE | Capital City Broadcasting Corp. | 104.3 mc. | 710 watts |
| TAMPA | The Tribune Co. | 93.3 mc. | 46 kw. |
| WEST PALM BEACH | WJNO, Inc. | 99.1 mc. | 49 kw. |

GEORGIA

| | | | |
|----------|------------------------------------|-----------|----------|
| ATLANTA | The Constitution Publishing Co. | 93.1 mc. | 20 kw. |
| AUGUSTA | Augusta Broadcasting Co. | 94.5 mc. | 30 kw. |
| AUGUSTA | Augusta Chronicle Broadcasting Co. | 94.9 mc. | 15 kw. |
| COLUMBUS | Columbus Broadcasting Co. | 96.7 mc. | 12 kw. |
| COLUMBUS | Georgia-Alabama Broadcasting Corp. | 96.3 mc. | 9.4 kw. |
| COLUMBUS | Radio Columbus Inc. | 97.1 mc. | 10.4 kw. |
| MACON | Middle Georgia Broadcasting Co. | 102.3 mc. | 36 kw. |
| MACON | Southeastern Broadcasting Co. | 101.9 mc. | 32 kw. |
| MOULTRIE | John F. Pidcock | 100.3 mc. | 10.4 kw. |
| ROME | Rome Broadcasting Corp. | 100.9 mc. | 1.4 kw. |
| SAVANNAH | Savannah Broadcasting Co. | 98.5 mc. | 45 kw. |
| SAVANNAH | WSAV, Inc. | 98.9 mc. | 11 kw. |
| TOCCOA | R. G. Letourneau | 97.7 mc. | 10 kw. |

IDAHO

| | | | |
|------------|--------------------------|-----------|---------|
| EOISE | Boise Broadcast Station | 102.1 mc. | 3.3 kw. |
| NAMPA | Frank E. Hurt & Son | 101.3 mc. | 2.5 kw. |
| POCATELLO | Radio Service Corp. | 103.3 mc. | 1.8 kw. |
| TWIN FALLS | Radio Broadcasting Corp. | 96.1 mc. | 3 kw. |

ILLINOIS

| | | | |
|-------------|--|-----------|-----------|
| BLOOMINGTON | Radio Station WJBC | 93.9 mc. | 6 kw. |
| BROOKFIELD | George M. Ives | 104.7 mc. | 250 watts |
| CARBONDALE | Southern Illinois Broadcasting Partnership | 100.5 mc. | 3 kw. |
| CHAMPAIGN | Champaign News Gazette, Inc. | 99.5 mc. | 20 kw. |
| DECATUR | Commodore Broadcasting, Inc. | 93.7 mc. | 31.2 kw. |

| City | Permittee | Channel | Power |
|--------------|--|-----------|-----------|
| ELMWOOD PARK | Elmwood Park Broadcasting Corp. | 105.5 mc. | 320 watts |
| EVANSTON | North Shore Broadcasting Co. | 104.3 mc. | 665 watts |
| FREEPORT | Freeport Journal-Standard Publishing Co. | 102.1 mc. | 9 kw. |
| HARRISBURG | Harrisburg Broadcasting Co. | 98.9 mc. | 32.7 kw. |
| HERRIN | Orville W. Lyeria | 99.7 mc. | 20 kw. |
| KANAKEE | Kanakee Daily Journal Co. | 96.5 mc. | 60 kw. |
| MT. VERNON | Midwest Broadcasting Co. | 100.9 mc. | 9.2 kw. |
| MT. VERNON | Mt. Vernon Radio & Television Co. | 103.7 mc. | 9.5 kw. |
| QUINCY | Lee Broadcasting, Inc. | 98.1 mc. | 53 kw. |
| QUINCY | Quincy Newspapers, Inc. | 97.7 mc. | 13 kw. |
| ROCK ISLAND | Rock Island Broadcasting Co. | 100.7 mc. | 36.6 kw. |
| SPRINGFIELD | WCBS, Inc. | 101.7 mc. | 19 kw. |
| SPRINGFIELD | WTAX, Inc. | 101.3 mc. | 6.7 kw. |
| WAUKEGAN | Keystone Printing Service, Inc. | 98.1 mc. | 4 kw. |

IOWA

| | | | |
|--------------|-------------------------------|-----------|----------|
| BURLINGTON | Burlington Broadcasting Co. | 99.3 mc. | 19.2 kw. |
| CEDAR RAPIDS | The Gazette Co. | 96.1 mc. | 11 kw. |
| DAVENPORT | The Tri-City Broadcasting Co. | 101.1 mc. | 47 kw. |
| DES MOINES | Central Broadcasting Co. | 100.5 mc. | 134 kw. |
| DES MOINES | Cowles Broadcasting Co. | 101.7 mc. | 158 kw. |
| DES MOINES | Kingsley H. Murphy | 101.3 mc. | 154 kw. |
| DUBUQUE | Dubuque Broadcasting Co. | 99.1 mc. | 10 kw. |
| DUBUQUE | Telegraph-Herald | 99.9 mc. | 180 kw. |

KANSAS

| | | | |
|-------------|--------------------------------|-----------|---------|
| HUTCHINSON | Hutchinson Publishing Co. | 95.3 mc. | 60 kw. |
| KANSAS CITY | Sunflower Broadcasting System | 99.1 mc. | 34 kw. |
| LAWRENCE | The World Co. | 103.7 mc. | 2.5 kw. |
| TOPEKA | Topeka Broadcasting Assn. | 102.5 mc. | 2.9 kw. |
| TOPEKA | The Topeka State Journal, Inc. | 102.9 mc. | 33 kw. |
| WICHITA | The Radio Station KFH Co. | 93.5 mc. | 185 kw. |

KENTUCKY

| | | | |
|------------|--|-----------|-----------|
| LEXINGTON | American Broadcasting Corp. | 102.3 mc. | 3 kw. |
| LOUISVILLE | Courier-Journal & Louisville Times Co. | 99.5 mc. | 29 kw. |
| LOUISVILLE | Northside Broadcasting Corp. | 103.3 mc. | 29.8 kw. |
| LOUISVILLE | WAVE, Inc. | 99.9 mc. | 280 kw. |
| OWENSBORO | Owensboro Broadcasting Co. | 92.3 mc. | 20 kw. |
| PADUCAH | Paducah Newspapers, Inc. | 97.3 mc. | 32 kw. |
| WINCHESTER | Winchester Sun Co., Inc. | 104.3 mc. | 770 watts |

LOUISIANA

| | | | |
|-------------|--------------------------------------|-----------|---------|
| ALEXANDRIA | Alexandria Broadcasting Co., Inc. | 100.1 mc. | 3 kw. |
| ALEXANDRIA | Central Louisiana Broadcasting Corp. | 100.5 mc. | 55 kw. |
| NEW ORLEANS | Supreme Broadcasting System, Inc. | 95.3 mc. | 61 kw. |
| NEW ORLEANS | The Times Picayune Publishing Co. | 94.5 mc. | 270 kw. |
| NEW ORLEANS | WSMB, Inc. | 93.5 mc. | 153 kw. |

MAINE

| | | | |
|----------|------------------------------------|-----------|----------|
| BANGOR | Portland Broadcasting System, Inc. | 94.3 mc. | 10.8 kw. |
| PORTLAND | Portland Broadcasting System, Inc. | 100.1 mc. | 3.6 kw. |

MARYLAND

| | | | |
|---------------|---------------------------------|-----------|-----------|
| ANNAPOLIS | Capital Broadcasting Co. | 100.1 mc. | 16.6 kw. |
| BALTIMORE | The A. S. Abell Co. | 99.3 mc. | 20 kw. |
| BALTIMORE | Baltimore Radio Show, Inc. | 99.7 mc. | 20 kw. |
| BALTIMORE | Belvedere Broadcasting Corp. | 98.9 mc. | 20 kw. |
| FREDERICK | The Monocacy Broadcasting Co. | 98.1 mc. | 2 kw. |
| HAGERSTOWN | Hagerstown Broadcasting Co. | 95.7 mc. | 1 kw. |
| SALISBURY | The Peninsula Broadcasting Co. | 96.9 mc. | 7 kw. |
| SILVER SPRING | Tri-Suburban Broadcasting Corp. | 104.3 mc. | 440 watts |

FM APPLICATIONS GRANTED

| <i>City</i> | <i>Permittee</i> | <i>Channel</i> | <i>Power</i> |
|----------------------|---|----------------|--------------|
| MASSACHUSETTS | | | |
| BROCKTON | Cur-Nan Co. | 105.1 mc. | 800 watts |
| FALL RIVER | Fall River Broadcasting Co., Inc. | 96.5 mc. | 20 kw. |
| FITCHBURG | Mitchell G. Myers, Ruben E. Aronheim and Milton H. Myers | 99.9 mc. | 20 kw. |
| HAVERHILL | The Haverhill Gazette Co. | 96.1 mc. | 20 kw. |
| HOLYOKE | The Hampden-Hampshire Corp. | 95.5 mc. | 3.5 kw. |
| LAWRENCE | Hildreth & Rogers Co. | 95.7 mc. | 17 kw. |
| NEW BEDFORD | Bay State Broadcasting Co. | 96.9 mc. | 20 kw. |
| NEW BEDFORD | Bristol Broadcasting Co. | 97.3 mc. | 20 kw. |
| NORTH ADAMS | James A. Hardman | 101.5 mc. | 1 kw. |
| SALEM | North Shore Broadcasting Co. | 105.5 mc. | 500 watts |
| SPRINGFIELD | WMAS, Inc. | 96.7 mc. | 3.2 kw. |

MICHIGAN

| | | | |
|---------------|-------------------------------------|-----------|-----------|
| ANN ARBOR | Vashtenaw Broadcasting Co. | 103.3 mc. | 2 kw. |
| BATTLE CREEK | Federated Publications, Inc. | 102.1 mc. | 20 kw. |
| BENTON HARBOR | The Palladium Publishing Co. | 103.9 mc. | 9.2 kw. |
| DEARBORN | Herman Radner | 104.3 mc. | 480 watts |
| DETROIT | John F. Hopkins, Inc. | 94.5 mc. | 33 kw. |
| DETROIT | Knight Radio Corp. | 95.3 mc. | 20 kw. |
| DETROIT | WJR, the Goodwill Station, Inc. | 94.9 mc. | 28 kw. |
| GRAND RAPIDS | Grand Rapids Broadcasting Corp. | 93.1 mc. | 10.5 kw. |
| GRAND RAPIDS | Lear, Inc. | 94.3 mc. | 9.8 kw. |
| GRAND RAPIDS | Leonard A. Versluis | 93.9 mc. | 54 kw. |
| JACKSON | WIBM, Inc. | 105.9 mc. | 670 watts |
| LANSING | WJIM | 99.5 mc. | 53 kw. |
| MT. CLEMENS | Macomb Publishing Co. | 105.1 mc. | 340 watts |
| MUSKEGON | Greater Muskegon Broadcasters, Inc. | 99.1 mc. | 3.3 kw. |
| OWOSSO | The Argus-Press Co. | 104.7 mc. | 1 kw. |
| PORT HURON | Times-Herald Co. | 102.3 mc. | 22 kw. |
| SAGINAW | Saginaw Broadcasting Co. | 98.3 mc. | 15 kw. |
| WYANDOTTE | Wyandotte News Co. | 104.7 mc. | 1 kw. |

MINNESOTA

| | | | |
|-------------|--|-----------|----------|
| MANKATO | F. B. Clements & Co. | 92.7 mc. | 29.2 kw. |
| MINNEAPOLIS | Independent Merchants Broadcasting Co. | 101.3 mc. | 34 kw. |
| MINNEAPOLIS | Minnesota Broadcasting Corp. | 97.1 mc. | 400 kw. |
| MOOREHEAD | KVOX Broadcasting Co. | 100.1 mc. | 8.5 kw. |
| ROCHESTER | Southern Minnesota Broadcasting Co. | 94.7 mc. | 20 kw. |
| ST. CLOUD | The Times Publishing Co. | 98.3 mc. | 50 kw. |
| ST. PAUL | KSTP, Inc. | 102.1 mc. | 320 kw. |
| ST. PAUL | WMIN Broadcasting Co. | 100.9 mc. | 59 kw. |
| WINONA | Winona Radio Service | 93.7 mc. | 55 kw. |

MISSISSIPPI

| | | | |
|---------|--------------------------|-----------|--------|
| JACKSON | Lamar Life Insurance Co. | 101.5 mc. | 69 kw. |
|---------|--------------------------|-----------|--------|

MISSOURI

| | | | |
|-------------|------------------------------------|-----------|----------|
| JOPLIN | Joplin Broadcasting Co. | 102.3 mc. | 2.6 kw. |
| KANSAS CITY | The Kansas City Star Co. | 100.3 mc. | 150 kw. |
| KANSAS CITY | KCMO Broadcasting Co. | 98.3 mc. | 20 kw. |
| KANSAS CITY | WHB Broadcasting Co. | 98.7 mc. | 20 kw. |
| ST. JOSEPH | KFEQ, Inc. | 94.7 mc. | 63 kw. |
| ST. LOUIS | Columbia Broadcasting System, Inc. | 94.5 mc. | 41 kw. |
| ST. LOUIS | Globe-Democrat Publishing Co. | 92.9 mc. | 53 kw. |
| ST. LOUIS | Missouri Broadcasting Corp. | 92.1 mc. | 32.3 kw. |

| City | Permittee | Channel | Power |
|-----------|-----------------------------|----------|----------|
| ST. LOUIS | Star-Times Publishing Co. | 93.7 mc. | 40 kw. |
| ST. LOUIS | Thomas Patrick, Inc. | 95.3 mc. | 360 kw. |
| ST. LOUIS | The Pulitzer Publishing Co. | 93.3 mc. | 36 kw. |
| ST. LOUIS | St. Louis University | 94.1 mc. | 42.6 kw. |

NEBRASKA

| | | | |
|---------|-----------------------------|----------|---------|
| LINCOLN | Cornbelt Broadcasting Corp. | 97.3 mc. | 58 kw. |
| OMAHA | Inland Broadcasting Co. | 92.1 mc. | 330 kw. |
| OMAHA | World Publishing Co. | 92.5 mc. | 160 kw. |

NEVADA

| | | | |
|-----------|-----------------------------------|-----------|-----------|
| LAS VEGAS | Nevada Broadcasting Co. | 104.3 mc. | 330 watts |
| RENO | Reno Newspapers, Inc. | 100.5 mc. | 9.7 kw. |
| RENO | Saviers Electrical Products Corp. | 104.3 mc. | 760 watts |

NEW HAMPSHIRE

| | | | |
|------------|---------------------------|-----------|---------|
| CLAREMONT | The Claremont Eagle, Inc. | 102.1 mc. | 1.5 kw. |
| PORTSMOUTH | WHEB, Inc. | 97.7 mc. | 20 kw. |

NEW JERSEY

| | | | |
|---------------|-----------------------------------|-----------|-----------|
| ASBURY PARK | Asbury Park Press, Inc. | 104.7 mc. | 1 kw. |
| ASBURY PARK | Radio Industries Broadcast Co. | 107.1 mc. | 260 watts |
| BRIDGETON | Eastern State Broadcasting Corp. | 101.5 mc. | 18 kw. |
| JERSEY CITY | Fidelity Media Broadcasting Corp. | 106.3 mc. | 360 watts |
| NEWARK | Bremer Broadcasting Corp. | 95.7 mc. | 20 kw. |
| NEW BRUNSWICK | Home News Publishing Co. | 104.3 mc. | 1 kw. |
| PATERSON | Passaic Daily News | 105.3 mc. | 190 watts |

NEW YORK

| | | | |
|---------------|--------------------------------------|-----------|-----------|
| ALBANY | Hudson Valley Broadcasting Co., Inc. | 94.1 mc. | 2.1 kw. |
| BUFFALO | Roy L. Albertson | 92.9 mc. | 48 kw. |
| BUFFALO | WEBR, Inc. | 92.5 mc. | 15 kw. |
| CORAM | Suffolk Broadcasting Corp. | 105.9 mc. | 285 watts |
| CORNING | The Corning Leader, Inc. | 95.1 mc. | 4.2 kw. |
| HORNELL | W. H. Greenhow Co. | 99.9 mc. | 10 kw. |
| ITHACA | Cornell University | 101.3 mc. | 40 kw. |
| JAMESTOWN | James Broadcasting Co., Inc. | 101.5 mc. | 9.5 kw. |
| NEW YORK CITY | Capt. William G. H. Finch | 99.7 mc. | 10.3 kw. |
| NIAGARA FALLS | Niagara Falls Gazette Publishing Co. | 95.7 mc. | 20 kw. |
| OGDENSBURG | St. Lawrence Broadcasting Corp. | 100.3 mc. | 13.7 kw. |
| ONEONTA | Oneonta Star, Inc. | 95.3 mc. | 4.2 kw. |
| OSWEGO | Palladium-Times, Inc. | 101.9 mc. | 2.6 kw. |
| POUGHKEEPSIE | Poughkeepsie Newspapers, Inc. | 103.3 mc. | 2.3 kw. |
| ROCHESTER | The Monroe Broadcasting Co., Inc. | 97.7 mc. | 27 kw. |
| ROME | Copper City Broadcasting Corp. | 104.3 mc. | 1 kw. |
| SYRACUSE | Central New York Broadcasting Corp. | 93.5 mc. | 7 kw. |
| SYRACUSE | Civic Broadcasting Corp. | 94.7 mc. | 8.5 kw. |
| SYRACUSE | Onondaga Radio Broadcasting Corp. | 93.1 mc. | 8.5 kw. |
| SYRACUSE | Radio Projects, Inc. | 94.3 mc. | 8.5 kw. |
| SYRACUSE | Syracuse Broadcasting Corp. | 92.7 mc. | 8.5 kw. |
| SYRACUSE | WAGE, Inc. | 93.9 mc. | 1.6 kw. |
| TROY | Troy Broadcasting Co., Inc. | 102.3 mc. | 2.4 kw. |
| TROY | The Troy Record Co. | 92.5 mc. | 13 kw. |
| UTICA | Rome Sentinel Co. | 98.3 mc. | 4.3 kw. |
| UTICA | WIBX, Inc. | 97.9 mc. | 9 kw. |
| WATERTOWN | The Brockway Co. | 100.9 mc. | 6.7 kw. |
| WHITE PLAINS | Westchester Broadcasting Corp. | 104.1 mc. | 120 watts |

FM APPLICATIONS GRANTED

| <i>City</i> | <i>Permittee</i> | <i>Channel</i> | <i>Power</i> |
|-----------------------|---|----------------|--------------|
| NORTH CAROLINA | | | |
| AHOSKIE | Parker Bros., Inc. | 104.3 mc. | 665 watts |
| ASHEVILLE | Radio Station WISE, Inc. | 94.7 mc. | 9.6 kw. |
| ASHEVILLE | Skyway Broadcasting Corp. | 94.3 mc. | 8.8 kw. |
| BURLINGTON | Alamance Broadcasting Co., Inc. | 101.3 mc. | 34 kw. |
| CHARLOTTE | Southeastern Broadcasting Co. | 102.5 mc. | 160 kw. |
| DURHAM | Durham Radio Corp. | 99.3 mc. | 21 kw. |
| FAYETTEVILLE | Cape Fear Broadcasting Co. | 100.5 mc. | 12 kw. |
| GASTONIA | F. C. Todd | 102.1 mc. | 11.1 kw. |
| GOLDSBORO | Eastern Carolina Broadcasting Co., Inc. | 99.7 mc. | 35 kw. |
| GREENSBORO | Greensboro News Co. | 98.1 mc. | 23 kw. |
| GREENSBORO | North Carolina Broadcasting Co. | 98.5 mc. | 20 kw. |
| HICKORY | Catawba Valley Broadcasting Co., Inc. | 99.5 mc. | 180 kw. |
| HIGH POINT | High Point Enterprise, Inc. | 103.5 mc. | 13 kw. |
| HIGH POINT | Radio Station WMFR | 97.7 mc. | 3.5 kw. |
| RALEIGH | Capitol Broadcasting Co., Inc. | 95.3 mc. | 12 kw. |
| ROANOKE RAPIDS | WCBT, Inc. | 102.9 mc. | 10 kw. |
| ROCKY MOUNT | Josh L. Horne | 103.3 mc. | 20 kw. |
| SALISBURY | Piedmont Broadcasting Corp. | 99.9 mc. | 23.2 kw. |
| WASHINGTON | Tar Heel Broadcasting System, Inc. | 101.9 mc. | 29 kw. |
| WILMINGTON | Wilmington Star-News Co. | 92.5 mc. | 37 kw. |
| WILSON | Penn Thomas Watson | 96.9 mc. | 20 kw. |
| WINSTON-SALEM | WAIR Broadcasting Co. | 96.1 mc. | 32 kw. |

OHIO

| | | | |
|----------------|--------------------------------------|-----------|-----------|
| ALLIANCE | Review Publishing Co. | 104.7 mc. | 330 watts |
| ASHLAND | Beer & Koehl | 100.7 mc. | 8.6 kw. |
| ATHENS | The Messenger Publishing Co. | 102.9 mc. | 16.5 kw. |
| BELLAIRE | Tri-City Broadcasting Co. | 100.1 mc. | 20 kw. |
| CANTON | The Ohio Broadcasting Co. | 97.1 mc. | 9 kw. |
| CANTON | Stark Broadcasting Corp. | 96.3 mc. | 15 kw. |
| CINCINNATI | The Crosley Broadcasting Corp. | 98.1 mc. | 11.5 kw. |
| CINCINNATI | Buckeye Broadcasting Co. | 97.3 mc. | 18 kw. |
| CINCINNATI | Cincinnati Times-Star Co. | 96.9 mc. | 12.6 kw. |
| CINCINNATI | L. B. Wilson, Inc. | 95.7 mc. | 31 kw. |
| CLEVELAND HTS. | Samuel R. Sague | 104.7 mc. | 1 kw. |
| COLUMBUS | The Pixleys | 92.1 mc. | 31 kw. |
| COLUMBUS | United Broadcasting Co. | 94.9 mc. | 26 kw. |
| DOVER | Tuscora Broadcasting Co. | 105.5 mc. | 700 watts |
| FINDLAY | Findlay Radio Co. | 101.7 mc. | 8.2 kw. |
| FOSTORIA | Saurence W. Harry | 105.1 mc. | 370 watts |
| FOSTORIA | Lucian E. Kinn | 102.7 mc. | 8.5 kw. |
| FREMONT | Robert F. Wolfe Co. | 104.7 mc. | 300 watts |
| HAMILTON | Fort Hamilton Broadcasting Co. | 98.9 mc. | 6 kw. |
| LIMA | Northwestern Ohio Broadcasting Corp. | 96.3 mc. | 20 kw. |
| MARION | Marion Broadcasting Co. | 102.3 mc. | 2.3 kw. |
| NEWARK | The Advocate Printing Co. | 101.5 mc. | 8.5 kw. |
| PORTSMOUTH | The Scioto Broadcasting Co. | 103.9 mc. | 4 kw. |
| STEUBENVILLE | The Valley Broadcasting Co. | 99.7 mc. | 1 kw. |
| TIFFIN | Jay R. David | 104.3 mc. | 450 watts |
| TOLEDO | The Fort Industry Co. | 98.5 mc. | 20 kw. |
| WARREN | Nied & Stevens | 104.3 mc. | 340 watts |
| WOOSTER | The Wooster Republican Printing Co. | 97.9 mc. | 9.6 kw. |
| YOUNGSTOWN | WFMJ Broadcasting Co. | 98.5 mc. | 50 kw. |
| YOUNGSTOWN | WKBN Broadcasting Corp. | 98.9 mc. | 19 kw. |

| City | Permittee | Channel | Power |
|-----------------|------------------------------|-----------|---------|
| OKLAHOMA | | | |
| ARDMORE | John F. Easley | 97.1 mc. | 8.2 kw. |
| DURANT | Democrat Printing Co. | 103.1 mc. | 2.9 kw. |
| MUSKOGEE | Muskogee Broadcasting Co. | 92.1 mc. | 6.5 kw. |
| OKLAHOMA CITY | KOMA, Inc. | 100.1 mc. | 190 kw. |
| OKLAHOMA CITY | Plaza Court Broadcasting Co. | 98.5 mc. | 176 kw. |
| OKLAHOMA CITY | WKY Radiophone Co. | 98.9 mc. | 132 kw. |
| SHAWNEE | KGFF Broadcasting Co. | 96.3 mc. | 7.2 kw. |
| TULSA | Tulsa Broadcasting Co. | 94.5 mc. | 170 kw. |

OREGON

| | | | |
|----------|-------------------------------------|-----------|-----------|
| ALBANY | Central Willamette Broadcasting Co. | 104.3 mc. | 710 watts |
| ASHLAND | Rogue Valley Broadcasting Co., Inc. | 105.1 mc. | 480 watts |
| ASHLAND | Siskiyou Broadcasting Co., Inc. | 104.7 mc. | 270 watts |
| EUGENE | Valley Broadcasting Co. | 99.7 mc. | 8 kw. |
| MEDFORD | Mrs. W. J. Virgin | 103.1 mc. | 950 watts |
| PORTLAND | Broadcasters Oregon Ltd. | 94.9 mc. | 1.5 kw. |
| PORTLAND | KALE, Inc. | 96.1 mc. | 250 kw. |
| PORTLAND | KOIN, Inc. | 94.5 mc. | 150 kw. |
| PORTLAND | Oregonian Publishing Co. | 95.3 mc. | 51 kw. |
| PORTLAND | Pacific Radio Advertising Service | 95.7 mc. | 3.2 kw. |

PENNSYLVANIA

| | | | |
|--------------|--|-----------|-----------|
| ALLENTOWN | Lehigh Valley Broadcasting Co. | 95.9 mc. | 8 kw. |
| ALLENTOWN | Penn-Allen Broadcasting Co. | 105.1 mc. | 1 kw. |
| ALTOONA | The Gable Broadcasting Co. | 100.7 mc. | 3.9 kw. |
| BETHLEHEM | Bethlehem Globe Publishing Co. | 94.7 mc. | 10 kw. |
| BRADFORD | Bradford Publications, Inc. | 97.1 mc. | 2.7 kw. |
| EASTON | Easton Publishing Co. | 105.7 mc. | 250 watts |
| HARRISBURG | Harold O. Bishop | 104.7 mc. | 107 watts |
| HARRISBURG | The Patriot Co. | 96.9 mc. | 6.3 kw. |
| HARRISBURG | WHP, Inc. | 97.3 mc. | 4 kw. |
| JOHNSTOWN | WJAC, Inc. | 99.5 mc. | 2.2 kw. |
| LEWISTOWN | Lewistown Broadcasting Co. | 102.7 mc. | 2.25 kw. |
| McKEESPORT | Mon-Yough Broadcasting Co. | 105.9 mc. | 240 watts |
| MEADVILLE | H. C. Winslow | 99.3 mc. | 3.2 kw. |
| NEW CASTLE | WKST, Inc. | 102.5 mc. | 9.2 kw. |
| PHILADELPHIA | Seaboard Radio Broadcasting Corp. | 97.1 mc. | 20 kw. |
| PITTSBURGH | Allegheny Broadcasting Corp. | 93.3 mc. | 20 kw. |
| PITTSBURGH | Pittsburgh Radio Supply House | 94.9 mc. | 20 kw. |
| PITTSBURGH | WCAE, Inc. | 92.5 mc. | 20 kw. |
| PITTSBURGH | West Virginia Radio Corp. | 93.7 mc. | 20 kw. |
| POTTSVILLE | Miners Broadcasting Service | 98.3 mc. | 5.8 kw. |
| READING | Hawley Broadcasting Co. | 93.1 mc. | 9 kw. |
| SCRANTON | Scranton Broadcasters, Inc. | 100.1 mc. | 7.5 kw. |
| SCRANTON | Union Broadcasting Co. | 100.5 mc. | 6 kw. |
| SHARON | Sharon Herald Broadcasting Co. | 102.9 mc. | 27 kw. |
| SUNBURY | Sunbury Broadcasting Corp. | 99.3 mc. | 4.4 kw. |
| UNIONTOWN | Fayette Broadcasting Corp. | 96.1 mc. | 1.5 kw. |
| UNIONTOWN | Uniontown Newspapers, Inc. | 96.5 mc. | 1.1 kw. |
| WILKES-BARRE | Louis G. Baltimore | 103.7 mc. | 2.2 kw. |
| WILKES-BARRE | Scranton-Wilkes-Barre Pittston Broad- casting Co. | 103.3 mc. | 2.5 kw. |
| WILLIAMSPORT | WRAK, Inc. | 92.5 mc. | 3.2 kw. |
| YORK | Susquehanna Broadcasting Co. | 94.9 mc. | 20 kw. |

FM APPLICATIONS GRANTED

| <i>City</i> | <i>Permittee</i> | <i>Channel</i> | <i>Power</i> |
|-----------------------|---------------------------------|----------------|--------------|
| SOUTH CAROLINA | | | |
| ANDERSON | Wilton E. Hall | 103.5 mc. | 32.2 kw. |
| CHARLESTON | Atlantic Coast Broadcasting Co. | 92.3 mc. | 20.5 kw. |
| GREENVILLE | Greenville New-Piedmont Co. | 92.9 mc. | 160 kw. |
| GREENVILLE | Textile Broadcasting Co. | 93.3 mc. | 48.6 kw. |
| LANCASTER | Lancaster Broadcasting Co. | 101.5 mc. | 12.5 kw. |
| SPARTANBURG | Spartanburg Advertising Co. | 92.1 mc. | 262 kw. |

TENNESSEE

| | | | |
|--------------|---------------------------------------|-----------|----------|
| BRISTOL | Radiophone Broadcasting Station WOPI | 96.9 mc. | 10.4 kw. |
| CHATTANOOGA | Unity Broadcasting Corp. of Tennessee | 94.9 mc. | 5.4 kw. |
| CHATTANOOGA | WAPO Broadcasting Service | 94.5 mc. | 37.2 kw. |
| CHATTANOOGA | WDOD Broadcasting Corp. | 95.3 mc. | 42 kw. |
| CLARKSVILLE | Leaf-Chronicle Co. | 98.7 mc. | 3.1 kw. |
| JACKSON | The Sun Publishing Co., Inc. | 95.1 mc. | 30 kw. |
| JOHNSON CITY | WJHL, Inc. | 101.7 mc. | 9.7 kw. |
| KINGSFORT | Kingsport Broadcasting Co., Inc. | 103.3 mc. | 44 kw. |
| KNOXVILLE | S. E. Adcock | 93.1 mc. | 76 kw. |
| KNOXVILLE | Knoxville Publishing Co. | 92.3 mc. | 20 kw. |
| MEMPHIS | Herbert Herff | 92.7 mc. | 49 kw. |
| MEMPHIS | Memphis Publishing Co. | 93.5 mc. | 136 kw. |
| NASHVILLE | WSIX Broadcasting Station | 93.3 mc. | 65 kw. |

TEXAS

| | | | |
|---------------|----------------------------------|-----------|-----------|
| ABILENE | The Reporter Broadcasting Co. | 96.9 mc. | 46 kw. |
| AMARILLO | Amarillo Broadcasting Corp. | 101.3 mc. | 3.2 kw. |
| AMARILLO | Plains Radio Broadcasting Co. | 101.7 mc. | 36 kw. |
| BEAUMONT | KRIC, Inc. | 102.1 mc. | 9 kw. |
| DALLAS | A. H. Belo Corp. | 94.3 mc. | 43 kw. |
| DALLAS | City of Dallas | 93.9 mc. | 59 kw. |
| DALLAS | KRLD Radio Corp. | 93.1 mc. | 26 kw. |
| DENTON | Harwell V. Shepard | 101.7 mc. | 3.1 kw. |
| HARLINGEN | Harbeniot Broadcasting Co., Inc. | 95.3 mc. | 13.7 kw. |
| HOUSTON | Harris County Broadcast Co. | 96.3 mc. | 177 kw. |
| HOUSTON | Houston Printing Corp. | 99.7 mc. | 39.2 kw. |
| HOUSTON | KTRH Broadcasting Co. | 99.3 mc. | 350 kw. |
| LONGVIEW | R. G. LeTourneau | 102.3 mc. | 9.1 kw. |
| LUFKIN | Darrell E. Yates | 92.9 mc. | 2.9 kw. |
| SAN ANTONIO | Express Publishing Co. | 101.5 mc. | 330 kw. |
| SAN ANTONIO | Southern Broadcasting Corp. | 100.9 mc. | 200 kw. |
| SAN ANTONIO | Southland Industries, Inc. | 102.3 mc. | 156 kw. |
| SAN ANTONIO | The Walmac Co. | 101.1 mc. | 160 kw. |
| TEMPLE | Bell Broadcasting Co., Inc. | 104.3 mc. | 220 watts |
| TEXARKANA | KCMC, Inc. | 92.5 mc. | 40 kw. |
| TYLER | East Texas Broadcasting Co. | 103.9 mc. | 4.3 kw. |
| VERNON | Northwestern Broadcasting Co. | 101.5 mc. | 8 kw. |
| WICHITA FALLS | Times Publishing Co. | 97.7 mc. | 20 kw. |

UTAH

| | | | |
|----------------|----------------------------------|-----------|-----------|
| SALT LAKE CITY | Intermountain Broadcasting Corp. | 98.5 mc. | 900 watts |
| SALT LAKE CITY | Radio Service Corp. of Utah | 100.1 mc. | 8.5 kw. |

VERMONT

| | | | |
|---------|------------------------|-----------|-----------|
| RUTLAND | Philip Weiss Music Co. | 104.3 mc. | 280 watts |
|---------|------------------------|-----------|-----------|

• • • **FM APPLICATIONS GRANTED** • • •

| <i>City</i> | <i>Permittee</i> | <i>Channel</i> | <i>Power</i> |
|-----------------|--------------------------------------|----------------|--------------|
| VIRGINIA | | | |
| DANVILLE | Piedmont Broadcasting Corp. | 92.1 mc. | 31 kw. |
| HARRISONBURG | Shenandoah Valley Broadcasting Corp. | 94.3 mc. | 37.2 kw. |
| LYNCHBURG | Lynchburg Broadcasting Corp. | 101.5 mc. | 3.7 kw. |
| LYNCHBURG | Old Dominion Broadcasting Corp. | 101.9 mc. | 20 kw. |
| NEWPORT NEWS | Hampton Roads Broadcasting Corp. | 92.3 mc. | 34 kw. |
| NORFOLK | WTAR Radio Corp. | 93.1 mc. | 33 kw. |
| PORTSMOUTH | Portsmouth Radio Corp. | 94.7 mc. | 33.2 kw. |
| RICHMOND | Haven & Martin, Inc. | 96.3 mc. | 47 kw. |
| RICHMOND | Larus & Brothers Co., Inc. | 97.1 mc. | 21 kw. |
| RICHMOND | Thomas Garland Tinsley, Jr. | 97.9 mc. | 21 kw. |
| ROANOKE | Radio Roanoke, Inc. | 93.7 mc. | 3 kw. |
| ROANOKE | Times-World Corp. | 92.9 mc. | 11.8 kw. |
| SUFFOLK | Suffolk Broadcasting Corp. | 93.8 mc. | 10.2 kw. |
| WINCHESTER | Richard Field Lewis, Jr. | 92.5 mc. | 13.4 kw. |

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| WASHINGTON | | | |
| LONGVIEW | Twin City Broadcasting Corp. | 104.3 mc. | 410 watts |
| SEATTLE | Evergreen Broadcasting Corp. | 93.1 mc. | 9.6 kw. |
| SEATTLE | Fisher's Blend Station, Inc. | 92.7 mc. | 48 kw. |
| SEATTLE | Queen City Broadcasting Co., Inc. | 93.9 mc. | 7.7 kw. |
| SEATTLE | Radio Sales Corp. | 93.5 mc. | 15 kw. |
| BECKLEY | Beckley Newspapers Corp. | 101.1 mc. | 3 kw. |
| BECKLEY | Joe L. Smith, Jr. | 100.7 mc. | 31.7 kw. |
| BLUEFIELD | Daily Telegraph Printing Co. | 97.9 mc. | 186 kw. |
| HUNTINGTON | Greater Huntington Radio Corp. | 99.9 mc. | 53 kw. |
| HUNTINGTON | Huntington Broadcasting Corp. | 99.5 mc. | 38 kw. |
| HUNTINGTON | Mayflower Broadcasting Co., Inc. | 104.3 mc. | 275 watts |
| MORGANTOWN | West Virginia Radio Corp. | 104.3 mc. | 275 watts |
| WHEELING | Community Broadcasting, Inc. | 100.9 mc. | 14 kw. |

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| WISCONSIN | | | |
| BELOIT | Daily News Publishing Co. | 93.9 mc. | 8.7 kw. |
| GREEN BAY | Green Bay Newspaper Co. | 101.1 mc. | 14.4 kw. |
| GREEN BAY | WHBY, Inc. | 101.5 mc. | 14 kw. |
| GREENFIELD | William C. Forrest | 103.1 mc. | 92 kw. |
| LA CROSSE | WKBH, Inc. | 92.1 mc. | 40.2 kw. |
| MILWAUKEE | Midwest Broadcasting Co. | 94.3 mc. | 31 kw. |
| OSHKOSH | Oshkosh Broadcasting Co. | 102.3 mc. | 2.2 kw. |
| RACINE | Racine Broadcasting Corp. | 101.3 mc. | 2.9 kw. |
| RICH LAKE | WJMC, Inc. | 99.7 mc. | 4.4 kw. |
| SHEBOYGAN | Press Publishing Co. | 98.7 mc. | 3 kw. |
| WAUSAU | Northern Broadcasting Co., Inc. | 94.9 mc. | 19.5 kw. |
| WISCONSIN RAPIDS | William F. Huffman | 104.7 mc. | 290 watts |

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| WYOMING | | | |
| CHEYENNE | Frontier Broadcasting Co. | 95.7 mc. | 9.5 kw. |

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| PUERTO RICO | | | |
| SAN JUAN | Radio Americas Corp. | 105.1 mc. | 330 watts |

FM NEWS HIGHLIGHTS—1946

(From the Files of RADIO DAILY)

JANUARY

- 2—Mark Woods, president of the American Broadcasting Co., in a year-end message summarized the network's position with regard to FM and urged "every local and regional affiliate to apply for FM" and to become active in its development.
- 2—Paul W. Kesten, executive vice-president of CBS in a year-end statement said that "it is a healthful fact that the public knows of the war-born technical advances that are now available to radio" and that "CBS has long been convinced that FM because of its superior quality, must eventually replace AM broadcasting. Public insistence on the improved system should hasten the removal of any obstacles yet remaining in the path of its development."
- 3—FCC Chairman Paul Porter, in a radio address broadcast over ABC said "FM is a new kind of broadcasting—free of interference and conveying the full tones of music and the human voice with life-like fidelity. This type of broadcasting got started in a small way before the war, but today is poised for a rapid expansion. Whereas there are only 50 FM stations on the air I expect to see the number at least tripled or quadrupled during the next 12 months."
- 3—Edgar Kobak, president of the Mutual Broadcasting System, Inc., in his report on operations for the past year said that "a comprehensive study of the network's present facilities and coverage, and its future FM requirements is now in progress to bring to Mutual all the technological improvements of the postwar era."
- 7—The FCC's battle with Zenith Radio Corp. over assignment of the Corporation's request for 42-50 mc. FM band was blasted back into the open when the Commission ordered a public hearing on the subject following a strongly worded petition from the company.
- 8—All Westinghouse FM radio stations are operating on both the old (42-50 mc.) and new (88-106 mc.) frequency bands as provided by FCC regulations effective Jan. 1.
- 14—Changes in FM Standards of Good Engineering Practice were approved by the FCC. The changes affect Sections 14 and 15.
- 15—An RMA survey of receiving set manufacturers revealed the majority favor use of official FCC channel numbers on dial markings of FM receivers. Tabulation indicated that 47 of the set manufacturers polled favored FCC markings, with 19 companies favoring dial markings using the assigned megacycles. Nine companies made qualified reports and seven companies did not submit any replies.
- 21—Zenith Radio Corp. began its plea before the FCC that an additional band be assigned FM broadcasting. Zenith requested assignment to the 42-50 megacycle band.
- 24—Attendance record was broken at the opening of the IRE meeting in N. Y., with more than 4500 radio and electronic engineers in attendance. Displays by 135 companies included the latest developments in radar, AM and FM radio, tele, sound recording, communications, testing devices, vacuum tubes, magnetic recordings, remote control devices and many other phases of electronics and allied fields.
- 25—The FCC denied Zenith Radio Corporation's request for an extra FM band.
- 28—Maj. Edwin H. Armstrong, inventor of FM assailed the FCC's decision eliminating low frequency allocations for FM broadcasting, claiming the issue is "no longer a technical one" but a public one.
- 29—MGM will begin immediate construction of a new FM radio station covering the Los Angeles area, with broadcasting schedule to start about May 1. Station will bear the call letters KMGM and will be located at the top of Mulholland Drive in Beverly Hills.

FEBRUARY

- 4—A strong protest against the FCC denial of petitions by Zenith and GE for use of the 42-50 mc. band for FM was registered with the FCC. Major reason cited by Arthur Freed, chairman of pioneer FM manufacturers conferences and v.p. of Freed Radio, was unavailability of transmitting equipment for the higher bands.
- 6—The FCC granted six new FM stations and scheduled hearings for 52 applications in four major cities, including N. Y. and Washington.

- 7—The Midwest FM network, a subsidiary of WGN, Inc., has placed an order with the General Electric Company for transmitter equipment for WGNB and four proposed new frequency modulation stations.
- 11—The FCC planned to push FM into action with a series of conferences designed to clear up engineering and other details. The FM plan is part of a general pattern set by FCC Chairman Paul Porter to get both FM and television out of the "talking stage" and on the air. Porter is determined to smooth the governmental path toward widespread operation of FM and television before he leaves the Commission.
- 15—The FCC granted CP's for five new standard stations in scattered sections of the country and OK'd the first two units in a proposed State-wide education FM network in Wisconsin.
- 26—Stratovision tests for FM verify "all of the optimistic estimates" of the systems possibilities according to a report filed with the FCC by C. J. Burnside, manager of the Westinghouse Industrial Electronics Div. which conducted the tests in cooperation with the Glenn L. Martin Co. Usable signals were transmitted over a distance of 240 airline miles from an altitude of 25,000 feet using only 250 watts of power.

MARCH

- 1—The FCC granted 15 additional FM stations and designated one application for hearing. This brings total conditional grants to 345.
- 6—Blasting Zenith Radio Corporation's stand on low-band FM, the FCC released its reasons for pushing FM up to 88-108 megacycles. "Despite earlier warnings and predictions," the Commission said, "the salient fact is that the band assigned to FM broadcasting by the Commission will furnish excellent service."
- 7—CBC expects to be able to make recommendations within the next few weeks regarding the granting of licenses for low power frequency modulation transmitters to private stations applying. A. D. Dunton, CBC chairman said. Outlining CBC's views of frequency modulation broadcasting, Mr. Dunton said that as part of a move to introduce FM broadcasting in Canada, the CBC is about to begin operation of 250-watt FM transmitters in Toronto and Montreal.
- 11—Declaring that FCC engineers erred in recommending the assignment of FM to the 100 mc. band, Major Edwin H. Armstrong, inventor of FM, revealed that these errors will be laid bare at the round table discussion on March 23rd, of the Broadcasting Engineering conference at Columbus, Ohio.
- 12—The FCC began hearings on FM applications despite the withdrawal of four applicants.
- Eleven firms are seeking the 11 channels available in Washington, D. C.
- 14—NBC officials predicted to the FCC that in three to five years there will be 2500 FM stations operating in the U. S. and the number of standard outlets will be sliced nearly in half "by FM's static-free competition."
- 14—WGN, Chicago FM station invited the public to attend a special live concert. Purpose of invitation was to stimulate interest in FM and explain principal features of frequency modulation.
- 14—Announcement was made by Major Edwin H. Armstrong of the revision of transmitter license fees for FM radio. This followed the reduction some time ago of receiving set licenses.
- 15—Hearing on 11 applications for Washington's 11 FM channels wound up, with the possibility that a scheduled night session would not be needed. The pace-making hearing was expected to set the pattern for future FM consolidated proceedings.
- 15—WGHF, the new FM-FAX broadcasting station. New York City is now undergoing station equipment tests on a frequency of 99.7 mc.
- 18—Theodore Granik presented to the FCC his radio "dream"—an FM station built around the public forum theme. Stating that only an "enlightened democracy is a true democracy," Granik outlined plans which would in effect, give Washington and the nation the first commercial radio station using the public forum idea as a basis for virtually its entire programming.
- 20—Early returns now tabulated from the FCC's poll of radio manufacturers indicate record-breaking production figures for 1946, with FM generally left out in the cold in favor of standard broadcast receivers. The Commission is known to be concerned over a trend which thus far amounts to a virtual "freeze out" of FM receivers.
- 20—The FCC set hearing dates on two of the four FM stations sought by the Midwest FM network, subsidiary of WGN, Inc. Stations would provide coverage as follows: Fort Wayne, 7850 square miles; Peoria, 7900; Grand Rapids, 6850, and Milwaukee, 7750.
- 21—The FCC granted eight applications for new FM stations in Washington, with three other applications "passed for further study."
- 25—Practical FM station operation encompasses a wide range of problems unknown to standard radio broadcasting, a five-man panel of FM authorities told the broadcast engineering conference at Ohio State University.
- 29—Niles Trammell, NBC president at a press conference in Chicago stated that if the Petrillo edict against the duplication of standard broadcast programs on FM stands, it would make necessary the setting up of

separate and distinct FM networks which would be in conflict with the FCC philosophy opposing dual avenues of communication under one ownership.

APRIL

- 4—Radio manufacturers expect to produce nearly 20,000,000 receivers this year—a record-breaking total, nearly 60 per cent higher than pre-war output, the FCC said. Of the huge total, only 9 per cent of the receivers will be devoted to FM, the pill indicated.
- 4—The Western Electric Co. has been granted a license by Maj. Edwin H. Armstrong, inventor of FM, for the manufacture and use of apparatus for mobile and certain other communication purposes. Bell System is conducting extensive trials of mobile radio telephone service, and Western Electric plans to provide FM apparatus for use in that service.
- 5—The FCC approved the basic engineering plans submitted by nine applicants for FM stations. This action is only one step from outright grants and makes a total of 24 applicants with approved engineering plans.
- 8—Criticism of the FCC report on set production plans for 1945 was voiced in FM circles in N. Y. One FM spokesman pointed out that Zenith Corp. in Chicago, pioneer manufacturers of FM receivers, was not among the manufacturers who furnished the FCC with an estimate.
- 8—The development of FM represents radio's "second chance" to fulfill its promise of service in the public interest, which has been neglected by present-day AM broadcasters. This is the theme of "Radio's Second Chance," a book by Charles A. Siepmann, former FCC consultant, published by Little, Brown & Co.
- 10—Stating that this year is "crucial" for FM, the Senate Small Business Committee called on the FCC to be "vigilant" to avoid "monopolistic tendencies" and give veterans a better break in FM broadcasting.
- 11—The FCC has declared it is "wholeheartedly" in accord with the objectives of the Senate Small Business Committee's report on FM.
- 12—The FCC denied two NAB requests for changes in FM rules and approved two other suggestions. At the same time, the Commission took no action on suggestions of the Senate Small Business Committee that the FCC reverse its abandonment of requirements for separate FM programming.
- 15—WGYN, the Muzak FM station in New York began a ten-hour broadcast day, the largest FM schedule in the city. Broadcast schedule will be from noon to 10 p.m. except Sundays, when station goes on the air at 3 p.m. Programs will be almost entirely transcribed music with newscasts three minutes before each hour.
- 18—Representatives of six Ohio newspapers which received conditional grants from the FCC for FM radio stations met in Ashland, Ohio to discuss construction plans.
- 22—The FCC issued a special statement designed to clear up the misunderstanding in the industry about its "one to a customer" policy in the granting of FM licenses. That policy it was explained, affects the order in which FM applications are being processed—and does not affect the number of FM stations which might ultimately be granted a single applicant. The multiple-ownership regulation remains applicable, banning the owning of two FM stations in the same service area and banning the holding of more than six licenses in different areas.
- 22—WHNG, the MGM Loew's owned FM affiliate of WHN, New York received the FCC's authorization to change its call letters to WMGW, effective immediately. The MGM outlet in Los Angeles, KTLO has also been granted permission to change to KMGW.
- 24—A total of 561 FM applications and grants, as of April 1, were from AM licensees, the FCC revealed in a breakdown of FM applicants. Two hundred and seventy-three applications were from individuals or firms with no standard broadcasting affiliations. These figures include both pending applications and those to which conditional approval has already been announced.
- 25—The FCC approved the bids of 38 more FM applicants, bringing the total conditional grants to 425.
- 25—Forecasting a great future for FM and declaring that there is grave danger of retarding this new service if the government inaugurates a general re-allocation of present-day standard broadcast frequencies, Frank Stanton, president of CBS testified at the clear channel hearing conducted in Washington by the FCC.
- 29—Justin Miller, president of the NAB, in course of rebuttal to Charles Siepmann's defense of the FCC pointed out that all was not well in the thinking of the FCC, especially if it was going to continue to suppose that men going into the FM broadcasting business with eight or ten thousand dollars would be expected to give ideal programming with a minimum of commercial time sold. In this case, Miller stated, there will be "a considerable number of bankrupt broadcasters around within the next few years."

- 30—Mark Ethridge, v.p. of The Louisville Times and The Courier Journal (WHAS), told the FCC that the commercial value of high-powered standard broadcasting is "bound to be diminished," by FM.
- 30—In a six month period since V-J Day, August 14, 1945, the FCC has granted applications for 425 FM stations.

MAY

- 1—Addressing 100 radio and advertising agency executives at a discussion at the Ritz-Carlton Hotel in N. Y. on the future relationship of FM to agency planning and thinking, Maj. Edwin H. Armstrong, inventor of FM said that the future of frequency modulation broadcasting is so great that "no one can readily foresee its possibilities" and added that "its life blood depends on getting sets into the hands of the public." In this way, he said, listeners will then be able to discern between present-day AM quality and the marked superiority of FM reception.
- 6—Commissioner Clifford J. Durr of the FCC, at the opening session of the 16th annual Institute for Education by radio in Columbus, Ohio said that while conditions for launching FM are "ideal," its advent is being held up because of "a disturbing inclination on the part of radio to cling to its old system of aural broadcasting, rather than give free rein to a new system."
- 9—In a N. Y. trade showing, Freed Radio Corp., makers of Freed-Eisemann FM radiophonographs, introduced their new post-war models at the Ritz-Carlton Hotel. Seven models, all consoles, housed in period and contemporary cabinets were shown, representing the first line featuring the new FCC approved FM range from 88 to 103 mc.
- 9—Rich's, Inc., Atlanta, Ga., has made application to the FCC for a class 2 experimental urban-mobile land station. The store requested any single frequency in the band 152-162 mc., using link equipment; also 50 mobile units to be installed on trucks.
- 13—A new facsimile transmitter-monitor system, consisting of two Finch high-quality precision broadcast facsimile scanners, each with associated monitor receiver, power units, amplifiers and selective switching arrangements for insuring uninterrupted transmission for any number of facsimile pages was announced by W. G. H. Finch, president of Finch Telecommunications, Inc., Passaic, N. J. The equipment will be priced at \$7500, subject to OPA approval.
- 24—The FCC in a roundup of the FM situation showed the picture shaping up as follows: 48 stations; 5 stations under construction (authorized prior to wartime restrictions); 52 additional construction permits authorized since Oct. 8, 1945; 441 conditional grants

since Oct. 8, 1945; 126 applications in hearing; 261 applications on which there has been no action.

- 29—Sweeping changes in FM rules proposed by the FCC is expected to place it in a more practical position to compete with standard broadcasting and in the absence of any protest on or before June 15, the Commission will not schedule oral argument relative to the proposed change. Under the changes, FM will be reduced to two classes and additional power authorized up to 20 kw. under certain conditions.

JUNE

- 5—The Balaban & Katz Corp. owner and operator of television station W3KB, Chicago, revealed plans for large-scale construction of FM studios and transmitting tower.
- 7—The first post-war FM transmitter to come off the General Electric production line has been delivered to WGN, Chicago, and placed in operation on WGNB, WGN's FM sister station.
- 10—The FCC adopted a precedent-breaking order proposing to withhold for one year the assignment of every fifth FM channel throughout the nation. The unusual reservation of FM channels is based on the Commission's allocation plan of last year, assigning between 1500 and 1600 channels to metropolitan cities. Under the proposed order approximately 300 FM channels would thus be "reserved" for a period of 12 months.
- 11—FCC Commissioner Clifford Durr is preparing to ask the Commission to approve a rule drastically curtailing the joint ownership of AM and FM stations. Durr will call on the Commission to extend the multiple-ownership Rule to cover AM and FM stations serving "substantially the same area" unless the coverage is considerably greater than that of the FM stations involved. The "divorcement" would take effect three years after approval of the rule.
- 14—The FCC concluded hearings in Chicago on applications for the nine FM channels remaining to be allocated in that area. Chicago now has 5 FM stations in operation out of a total allotment of 17 channels. Under the new FCC policy 3 of the remaining 12 will be lopped off for the present, leaving 9 to be granted.
- 17—A "great deal of the impetus" and promotion being given FM "arises out of the general problem of allocation of broadcasting facilities, as distinguished from any real need for FM on the part of the public," James D. Stouse, v.p. of The Crosley Corp. in charge of broadcasting told editors and publishers assembled in Colorado for the annual convention of the National Editorial Association.

- 18—Hearings for the five remaining FM channels in New York, originally scheduled for this date will be held sometime next month. Of the 20 channels set aside by the Commission for N. Y., 11 have so far been licensed, or CP's have been granted and a total of 9 remain available.
 - 20—FM radio will be used for the first time by police departments in the Toronto area when installations already approved for the York Township and Scarboro are completed.
 - 24—WGHF, FM station owned and operated by Capt. W. G. H. Finch, has its formal opening recently as a commercial outlet.
 - 24—Current FM problems will be discussed tomorrow at a meeting of NAB's FM Executive Committee in New York. Chairman of the committee is Walter Damm, of WTMJ, Milwaukee.
 - 24—The FCC further brushed up its FM rules to put FM on a firmer footing to compete with standard broadcasting. Most of the new rules were announced last month but present amendments clear up a few "loose ends."
 - 25—Senator Glen H. Taylor, Democrat of Idaho called on the Dept. of Justice to make a "thorough" investigation of radio set manufacturers to determine possible violation of anti-trust laws in "withholding" FM receivers from the market.
 - 27—Following a two-day session of the NAB's FM Executive Committee at the Hotel Ambassador in N. Y., the committee adopted a resolution calling upon the NAB to instruct its counsel to take part in the oral argument set by the FCC on July 12. At this time the proposed order of the Commission allocating and reserving every fifth channel on FM for one year, for various areas, will be contested by the NAB.
 - 27—RMA officials declined to comment directly on charges made by Sen. Glen H. Taylor, Idaho Democrat, that radio set manufacturers were withholding FM receivers from the market.
- announced. "The new Philco Advanced FM System is an entirely new system of frequency modulation detection which is considered one of the fundamental advances in the radio art," he said.
- 2—WIL, owned and operated by the Missouri Broadcasting Co., in addition to being the first AM station to operate commercially in the St. Louis area came up with another first when their new FM station took to the air with announcements and a play-by-play account of the ball game from Sportsman Park.
 - 5—The General Electric Co. is scheduled to begin production on FM receivers next week at its Bridgeport, Conn. plant, with the first sets due to appear in dealers' stores early next month. FM transmitters already are in production at the firm's Syracuse plant.
 - 9—Hearings for New York's five remaining assignable FM channels got under way in U. S. Court House with FCC Attorney J. Alfred Guest presiding and Commission Attorney Charles Hubert assisting. Guest is regional attorney for FCC in the N. Y. area.
 - 10—The Cowles Broadcasting Co., owners of KRNT, has purchased the Shrine Temple in Des Moines, Iowa to be used as a new location for their new FM outlet.
 - 11—St. Louis University, said to be the first institution of higher learning to operate a radio station, will be the first university to go on the air with FM, as a result of a contract for a 10 kw. transmitter and associated equipment with Federal Telephone and Radio Corp.
 - 12—Revolutionary developments in the field of radio communications are expected as a result of a deal concluded through which RCA will manufacture the klystron tube by arrangement with Sperry Gyroscope Co. Radio relay systems employing transmitting and receiving set-ups on towers, spaced from 25 to 30 miles apart, are being experimentally constructed to carry telegraph messages, FM and television programs, and the new klystron tube is ready to be used in these systems.
 - 15—The FCC heard a wide variety of witnesses alternately blast and approve the Commission's plan to reserve every fifth FM channel. In general, veterans, labor and farm groups lined up in favor of the reservation plan, while NAB and broadcasters condemned the plan for varying reasons. From the interest of most of the Commissioners, observers predicted the plan would be given final approval by the FCC.
 - 15—NBC and RCA have perfected a new antenna that will broadcast simultaneously, and without mutual interference, television pictures,

JULY

- 1—Denying charges of a "holdback" on FM receivers, a top RCA executive told the FCC that beginning in September, 60 per cent of all "technically feasible" radio sets produced by RCA will contain FM in combination with AM.
- 2—The Philco Corp. has licensed the Radio Corp. of America to use its "Advanced FM System" and approximately 600 other Philco patents and inventions relating to radio and television receivers and electrical phonographs, John Ballantyne, president of Philco

television sound and FM it was revealed. The antenna, which is said by NBC to provide this type of transmission for the first time in broadcasting history, will be ready for operation in the fall.

16—Radio and television broadcasting is slowly moving toward a period where all facilities will be able to compete with each other, with FM regarded in some FCC quarters as the “key” to the coming battle. A statistical roundup of present applications and grants approved by the Commission only gives an inkling of the battle which is expected to show that FM grants are increasing at a more rapid rate than AM, and that tele applications are dropping off steadily.

16—The first FM broadcast tubes for 50 kw. FM transmitters have been developed by the Federal Telephone and Radio Corp., Newark, N. J. Two of these tubes have a rated output each of 25 kw. at 110 mc.

19—Following oral argument last week, the FCC gave final approval to its plan to reserve one out of every five Class B FM channels. The Commission revealed that a new plan incorporating changes which have occurred in its allocation plan is “being prepared.” At the same time, the FCC hinted that it might also come up with a reservation plan for the large number of Class A FM channels.

25—A sweeping investigation of the FCC, it's alleged “exercise of control over broadcasting programs,” the recent re-allocation of FM frequencies, the allocation of AM and other frequencies and its general administration was demanded in the Senate by Sen. Charles W. Tobey (R., N. H.).

29—In a move calculated to speed up FM construction and discourage alleged “squatting” on FM channels, the FCC warned that it will not permit delay in the planning and construction of FM stations for which permits have been granted. In the provision of full FM broadcast service, the Commission also announced that it is questioning all present holders of FM permits concerning the steps they have taken toward getting on the air, and will send questionnaires for reply by new permittees two months after their permits are issued.

30—Taxis in Montreal, Canada are to have FM radio communication equipment in the near future and are awaiting final arrangements with the Dept. of Transport. The elimination of the need for returning to call-boxes or offices after each trip had made the advantages of FM radio to taxicab operations so apparent that all that remains to be proven is the economic feasibility of its use in their particular case.

31—WWDC, the only standard station in Washington denied an FM outlet under the Commission's proposed grants, indicated that an appeal to the high court will be if the FCC again turns down their application.

31—N. Y. State Police have completed arrangements for the installation of a state-wide, three-way FM radio system for use by the police, calling for 73 radio telephone transmitting and receiving points. Superintendent John A. Gaffney, Div. of State Police, set the deal at the direction of Gov. Thomas E. Dewey.

AUGUST

2—Described as a “glorified hatpin” owing to its 18-inch aerial, delegates to the Ontario Police Assoc. conference in Toronto, were treated to a two-way demonstration of the latest in police radio communications system. G. Gordon Patterson and J. R. Warren, engineers from Rogers-Majestic, manufacturers of the FM equipment, were in charge of the demonstration.

5—The first FM transmitter on Canada's Pacific Coast will be erected in Vancouver this fall by the Canadian Broadcasting Corp. The new 250 watt unit will be installed on the roof of the Hotel Vancouver and tests are scheduled for Oct.

9—The first General Electric post-war FM transmitter to be delivered on the West Coast has been placed in operation atop Mt. Wilson near Los Angeles, Calif. by Earle C. Anthony, Inc., operators of KFI.

13—The FCC announced its final decision granting nine applications for FM stations in Washington, D. C.

19—An extensive improvement and expansion program among radio stations in the St. Louis area is getting under way with prospects of tele, FM and facsimile slated to become important factors in the business picture during the months to come.

20—Paul A. Walker, FCC Commissioner, in a talk before the Third Annual Radio and Audio Education Forum at the University of Texas in Austin urged educational institutions to investigate the possibilities of FM if they desired radio outlets in the near future. Following his talk plans were made for the formation of a 43 station FM educational network in Texas, by the educators.

23—The FCC officially added to its regulations on FM a new sub-section to Section 3.204, Part 3, Sub-part B, incorporating the channel-reservation policy noted by the Commission a month ago.

26—KTHT, FM, aired Texas' first FM broadcast last week, only 17 days after receiving its conditional grant from the FCC. Before its first signal was sent, the station was booked solid by sponsors for its entire six-hour daily schedule.

29—With conditional FM licenses being granted to a number of stations in the San Francisco area, plans are being made to erect transmitters and start FM broadcasting just as

soon as business and operating conditions make it possible. Some stations already have secured construction sites for transmitters, and others have options on several tentative locations.

29—A campaign to inform the public of FM receiver scarcity has been inaugurated by KCOY in Oklahoma City. KCOY broadcast three spots daily urging the public to investigate before they buy a new radio set, due to the fact that Oklahoma will soon have four or more FM stations.

SEPTEMBER

4—In a new shakeup of its FM allocation plan, the FCC added a total of 78 additional channels to a total of 55 cities throughout the country and withdrew 22 channels previously allocated to 20 other cities. The revised tentative allocation plan, the FCC said, has been developed to provide an "equitable distribution" of channel for Class B stations (for Metropolitan and Rural service) with "consideration given to the present demand for channels in the various localities."

5—A final construction permit for the first FM broadcasting station in the southwest has been granted the Express Publishing Co., and the new station will be on the air within 60 days according to an announcement made by C. D. Lutz, radio division manager for the Express Publishing Co., an Antonio, Texas.

5—Harry C. Wilder, president of WSYR-FM, Syracuse, N. Y. has started an extensive campaign to "manufacture" a listening audience" and help break the FM production bottleneck by offering to buy for cash 5,000 receiving sets and distribute them to established dealers in station's listening area.

6—The FCC awarded conditional grants to 10 applicants for new FM stations in five states.

6—Announcement was made by the FCC that it has granted station WILM, Wilmington, Del. an authorization for the new FM station. Authorization is contingent upon the separation of station WILM from the Steinmann interests which at one time controlled the station.

10—Reported to be the first New York frequency modulation station on the air with full power on the new FM band, WGYN announced the installation of a new antenna atop the Cities Service Tower. Station is carrying programs on the new band, 96.1 mc. channel 241, with transmission from the tower, 950 feet above the ground.

10—California's second commercial FM station, KRFM, Fresno, has just begun operations with a 19-hour day schedule including spe-

cial emphasis on transcribed musical programs and public service features.

10—International General Electric Co., will offer demonstrations of two-way FM communications, two-way aircraft radio and ultra-high frequency waves at two separate conventions to be held in Mexico City late in September. A 250 watt FM transmitter with revolutionary GE phase-modulated circuit, scheduled to be placed in regular commercial service by leading Mexican broadcasters, will be a highlight of GE's exhibit at the broadcasters conference.

12—Delivery of postwar transmitters by major manufacturers has stepped up considerably the past few weeks with both Federal Telephone & Radio Corp. and General Electric Co. reporting sizeable production schedules. The G.E. plan at Syracuse reported that FM transmitters were coming off the lines at the rate of about one a day with 50 deliveries to broadcasters and newspapers already made. Orders for 150 transmitters from all parts of the U. S. have been received.

16—The Board of Cook County Commissioners in Illin is has received a request for \$30,000 to convert the country's highway police two-way radio system from AM to FM Signals between stations and cars would be clearer and more intelligible with the use of FM.

17—Only 15,000 of the approximately 100,000 FM receivers in the Greater N. Y. area are equipped to receive on the new 88-108 mc. band and indications are that it will be some time before receivers covering the new frequencies are available in quantities in the N. Y. market. This was learned through a survey conducted by RADIO DAILY. Seven of eight FM stations in the N. Y. area are broadcasting a total of 51 hours daily on the new frequencies. None of the stations have been able to give accurate data on their listening audiences to date although two are in the process of making surveys. Blame for the plight of FM broadcasters rests with the manufacturers, all station managers agreed. They reported that new receivers—covering the 88-108 band are coming into the market in very limited quantities and the shortage of these receivers has hampered development of audiences.

18—Southern Illinois' first FM station, WMIX, owned and operated by the Mt. Vernon Radio & Television Co., Inc., organized by a group of 25 business and professional men went on the air Sunday.

19—With the Canadian Broadcasting Corp. making ready to launch its second FM transmitter, indications are that frequency modulation will get under way on a large scale in Canada during the next several months.

- 19—Washington's first day-long commercial FM operation got under way this week following interim permission by the FCC to WINX to duplicate its present broadcast schedule on WINX-FM.
- 20—A total of 65 FM stations are now broadcasting, with several score more due to go on the air within the next few months, a survey of the FM field revealed. With production of FM transmitters showing gains and output of FM receiving sets expected to be stepped up beginning this month, the outlook for FM broadcasting appeared brightest since the ending of World War II.
- 23—Using WGFM, General Electric FM station in Schenectady as the originating station, Union College plans to broadcast all its football games on a regional network of college broadcasting stations. The tieup with Union College marks the first time that an FM setup has been used for regional collegiate football.
- 25—Developments in electronics will soon transform one of America's oldest mail coach highways, the Boston Post Road, into a communication lane equipped to provide two-way radio-telephone service for motor vehicles traveling between New York and Boston. Disclosure was made by the RCA engineering products department when initial deliveries of land and mobile FM radio transmitters and receivers were made to the three Bell System companies which will operate the service.

OCTOBER

- 4—WGYN, Muzak-owned FM station, became New York's only full time FM outlet this week when it began transmitting from 7 p.m. to 10 p.m. five days per week and until midnight every Saturday and Sunday.
- 7—Finch FM station WGHF aired its first live program, presenting news and views of Broadway and Hollywood. Series will offer a name personality each week.
- 8—Forty-one per cent of the families planning to buy radios this year consider FM a necessity according to a survey just made by American Magazine, while 40 per cent are not familiar with the term FM. Sixteen percent didn't consider FM essential and three per cent didn't answer. Mail survey reached 4000 representative families of American Magazine readers and was distributed in proportion to the distribution of the magazine's circulation by city-size groups and geographical areas. Research department of Crowell-Collier Publishing Co. made the survey.
- 9—The Caldian Broadcasting Corp. began full time FM broadcasting in the Toronto area when its new transmitter on top of the Canadian Bank of Commerce building went

into operation for the first time. Call letters of the new station are VE9EV and it broadcasts on the 99.1 mc. band.

- 10—An outstanding promotional campaign got under way in San Antonio, Texas to acquaint AM listeners with FM. Charles "Bud" Lutz, director for radio of the San Antonio Express which has been granted a license and will soon take to the air with KFYM, is in charge. A news letter is being published and sent twice monthly to dealer bringing them latest information on FM and news of the local station.
- 11—The FCC acted favorably on 30 FM applications.
- 15—Seventy-one educational institutions are licensed, have received initial authorization or have applied to operate non-profit broadcast stations, the FCC announced. In the non-commercial educational FM service, six stations are on the air, 21 are under construction and 23 applications are pending. Of 29 educational organizations functioning in the standard broadcast band, 20 are on a non-profit basis. Since the war and in spite of material shortages, 58 applications have been received from colleges, universities and public school systems for FM stations, integrated more or less, with state-wide plans.
- 16—If present talk and planning among FM licensees comes to pass a new FM group distinct from NAB will be mapped out during the NAB convention in Chicago. The new group would set up as a promotional center for FM broadcasting, with its prime purpose the education of the public to the advantages of FM.
- 18—The Chicago Board of Education completed arrangements to re-beam transmissions of the Chicago Times-WLS "Quiz down" program over its own FM transmitter to approximately 150 Chicago elementary schools.
- 21—The 24th Annual Convention of the National Association of Broadcasters opened in Chicago with paramount among the matters which broadcasters are asking the NAB to consider and act upon are the future of AM and FM radio.
- 21—Mass production of FM receivers for the low-price market was stated to be one of the chief aims of the Bendix Aviation Corp. One new model is designed for both AM and FM and it was pointed out that the company will approach the low-price market with the caution of good economics and will seek to establish itself in the quality market at in-between prices. Other new model is a combination FM and phonograph set, and all of the Bendix receivers will have built in FM antennas.
- 22—Major Edwin Armstrong, inventor of FM, speaking before the NAB Frequency Modulation panel in Chicago, recounted the

delays incident to launching FM and predicted wide development of FM within the coming year.

- 23—Thirty-seven members of the FMBI organization bolted the NAB's FM group when the FMBI dissolved. Several meetings will be held during the NAB meeting to take definite steps "to formulate ideas for the new FM organization primarily interested in the promotion and development of FM." Roy Hofheinz of KTHT and FM station KOPY of Houston, Texas stated that "due to the avowed policy of NAB which was to abstain from involvements in intra-industry disputes, it was necessary to establish an independent FM organization."
- 24—Charles Denny, acting chairman of the FCC urged broadcasters who have not yet asked for FM grants to "re-examine their position" to make certain they will not be left out in the cold when the nation-wide shift to FM comes. That the FCC looks for such a shift was made clear to the NAB convention in Chicago by Denny. He pointed out that 579 (65 per cent) of the AM stations licensed prior to Oct. of last year have applied for FM.
- 24—The RMA announced that a slight rise was noted in production of FM sets in Sept. A total of 17,541 were manufactured compared with only 13,892 in August.
- 24—Paul Mowrey, national director of television for the American Broadcasting Co. told the NAB convention that television will be one of the greatest mediums in the education field, presenting history as it actually occurs. He further stated that television would be an enormous asset to instructors and would simplify the teaching of current affairs.
- 29—The American Broadcasting Company has decided to make available to affiliated stations with FM outlets, a considerable portion of the web's regularly scheduled broadcasts, with the proviso that the program in question is broadcast simultaneously with the AM transmitter. It is understood that the non-musical programs will be the ones made available to FM in order to avoid tangling with the AFM edict against musicals. Under the new service ABC makes available 107 programs throughout the week for simultaneous AM-FM transmission to affiliated stations.
- 31—Winnipeg, Canada will become the first city in Canada to install FM equipment, which will operate on 152 megacycles, in its water-works and fire department vehicles.

NOVEMBER

- 1—Growing interest in FM radio as a sequel to the address of Charles R. Denny, acting

chairman of the FCC at last week's NAB convention, is indicated in reports from several cities on FM developments. Zenith Radio Corp., Chicago, reported that advance demands of the public for radios containing FM were so heavy that it would be many months before the company could catch up with the backlog of orders.

- 1—Zenith Radio Corp. has launched a program to help FM stations teach the public the advantages of frequency modulation. Under its promotion plan, Zenith has promised to concentrate deliveries of FM sets to areas where new FM stations are scheduled to start operation.
- 6—A total of 90 FM stations are now in operation throughout the nation, the FCC reported. Last roundup was made by the Commission on September 19 which showed a total of 65 FM stations broadcasting. Approximately half of the 90 stations now operating were licensed before the war and a total of 27 of these stations are continuing to operate in the old FM band on a temporary basis. Nearly all FM stations are employing interim equipment pending completion of full construction, the FCC said.
- 6—More than 250 radio distributors, dealers and service men were guests of KYFM, owned and operated by the Express Publishing Co., San Antonio, Texas, at a demonstration and dinner. Following the dinner the guests were shown a Frequency Modulation film produced by the General Electric Co. A demonstration of FM broadcasting was made from the new studios and rebroadcast from the stage of the auditorium.
- 7—The Stromberg-Carlson Co. announced development of a low priced FM converter which restores the usefulness of some 350,000 pre-war frequency modulation receivers so they can pick up programs on the new band as well as the old. The "Driscoll FM adapter," invented by George Driscoll, manager of Stromberg-Carlson's FM station, WHFM, in Rochester, N. Y., can be attached to the receiver chassis as a replacement for the built-in antenna. It will sell for a list price of \$6.35 plus installation cost.
- 11—Roy Dunlop, CBC representative will leave for Shanghai shortly to set up broadcasts in English for Canada and the U. S. for the Chinese Broadcasting Administration. CBA is planning to build up a chain of FM stations along the Chinese coast.
- 13—A set of five objectives and plans for an industry-wide FM meet to be held next month or in Jan. were agreed upon at a meeting of FM broadcasters and manufacturers in Washington this week to organize the new FM association. This is the group

exclusively predicted by RADIO DAILY more than a month ago to grow out of a meeting of FMers during the NAB convention in Chicago last month.

- 13—Approximately 52 FM stations owned by AM broadcasters affiliated with the four major networks, are now open for a free ride in programming, since all networks permit them to use web shows which do not contain music. ABC was the most recent network to set up the same policy as the other three webs in regard to AM affiliates with FM stations. All nets now allow use of their non-musical programs where FM transmission is simultaneous with AM broadcasts. This policy includes both commercial and sustaining programs, although some networks stipulate that an FM station cannot mix both categories of shows in the same operating day. This is done as a fairness measure to the advertiser.
- 14—FM transmitter production added momentum this week with announcements by Federal Telephone & Radio Corp. and General Electric that shipments had been made on back orders to stations all over the country, with the bulk of outstanding orders going to stations which are already on the air or set to begin operations.
- 19—FM receiver output at General Electric is rapidly nearing the "full production" mark on the company's new post-war model "417," it was announced, although actual figures were not broken down. New set incorporates the low and high FM bands, standard and shortwave bands and a phonograph.
- 19—Ewell K. Jett, member of the FCC, speaking over WWDC, Washington, predicted that at least five million FM sets will be produced during the next year.
- 19—R. Alton Reed of Dallas, Texas, chairman of the Texas Baptists radio commission recommended to the Baptists meeting in convention at Mineral Wells, Texas that the Baptists should consider owning and operating FM stations over the state. Reed told the group that "this is a new field of broadcasting in which we can get in on the ground floor." He proposed that the key station would be located in Dallas with Baptists of Dallas owning and operating the station and the State Baptist board the network. All network stations would be owned and operated locally.
- 26—United States listeners own a total of about 500,000 FM receiving sets, according to an estimate by the FCC. Of these, about 400,000 sets were on hand before the war. The FCC estimated that FM sets now are being produced at the rate of 17,000 a month.
- 26—A new method of "variable inductance tuning," designed to overcome problems arising from the transfer of FM broadcasting to

higher frequencies, has been perfected by engineers of the receiver division of General Electric Company, it was announced by I. J. Karr, manager. Method is described as being more efficient than gang condensers in the reception of FM at its new position from 88 to 108 MC; it is also said to be highly efficient in short-wave tuning. This type of tuner, according to Karr, has the advantage of being entirely tool made.

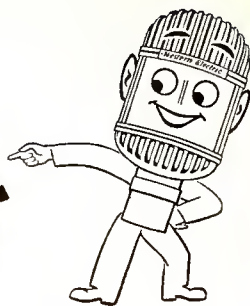
- 29—Facsimile broadcasting on FM channels will begin early in 1947 from 12 or more cities, according to a statement by Capt. W. G. H. Finch, president of Finch Telecommunications, Inc.

DECEMBER

- 2—Appointment of seven new committees and five sub-committees was announced by NAB in Washington this past week-end. Committees named include FM Executive, International Broadcasting Advisory Legislative, Public Relations Executive, Sales Managers Executive, Small Market Stations Executive and the Standard of Practice Committee of the Program Executive Committee. The personnel of the FM Executive Committee follows: Walter J. Damm, Chairman, WTMJ-FM, Milwaukee, Wis.; Gordon Gray, FM Station WMIT, Winston-Salem, N. C.; John Shepard, 3rd, FM Station WGTR, Boston, Mass.; John V. L. Hogan, FM Station WQXQ, New York, N. Y.; Leonard Asch, FM Station WBCA, Schenectady, N. Y.; Lester Nafzger, WCOL-FM, Columbus, O.; Everett Dillard, FM Station KOZY, Kansas City, Mo.; Clarence Leich, FM Station WMLL, Evansville, Ind.; Cecil Masten, WBNF-FM, Binghamton, N. Y.; Matthew Bonebrake, KOCY-FM, Oklahoma City, Okla.
- 2—In a letter to the newly-formed frequency modulation association, Acting FCC Chairman Charles R. Denny reaffirmed his faith in FM as "The finest aural broadcast system attainable in the present state of the radio art. An organization such as yours," Denny wrote, "can perform one of the most valuable services in the history of broadcasting."
- 5—The first FM station in Kansas, WIBW-FM was formally dedicated in special ceremonies, presented simultaneously over WIBW and WIBW-FM.
- 6—The FCC, in a statistical analysis of AM and FM grants and applications since V-J Day reports the total FM applications filed as of Oct. 1946:
(A) 70.8 per cent were from persons in the AM field. (B) An additional 12.3 per cent were from non-AM newspaper interests. (C) The remaining 16.9 per cent were from persons without either AM or newspaper interests. (D) Overall 34.2 per cent of the applications were from persons with news-

- paper interests. 4. Total FM authorizations (CP's and CG's) issued as of October 1, 1946: (A) 74.6 per cent were issued to persons in the AM field. (B) An additional 13.5 per cent were issued to non-AM newspaper interests. (C) The remaining 11.9 per cent were issued to persons without either AM or newspaper interests. (D) Overall 37.8 per cent of the authorizations were issued to persons with newspaper interests.
- 10—The first post-war radio station to be opened in Chicago's metropolitan area will be WEAW, an FM station, in Evanston, North Shore suburb and home of Northwestern University.
- 11—First batch of 16 orders for FM transmitting equipment placed with Federal Telephone and Radio Corp. during the last six months have already been filled, according to Norman E. Wunderlich, executive sales director, while the remainder will be shipped within the next few months. All of the 16 orders came from newspaper publishers in 11 states, some of whom have never before been associated with broadcasting. Total amount of the orders placed with Federal is estimated to run more than \$250,000.
- 12—About 3,750,000 home radio sets produced in 1947 will have an FM band, according to a prediction yesterday by Ray C. Cosgrove, president of the Radio Manufacturers Association. The nearly 4 million sets affording FM reception constitute 25 per cent of the over-all set production figure predicted by Cosgrove.
- 13—First privately-owned concern in Canada to receive a license for an FM broadcasting station on a regular basis will be the Canadian Marconi Co., a Transport Dept. official has revealed. The "FM" license has been approved and will be issued shortly. It will cover broadcasts from station CFCF in Montreal at 3,000 watts. The only other FM licensee in Canada at the present is the CBC.
- 19—A tubeless FM converter costing an estimated \$2.39 for component parts, which can be attached to an old band set in a few minutes has been developed by Henry R. Kaiser, chief engineer of Pittsburgh stations WWSW and its FM affiliate, WMOT.
- 24—An agreement for the designing and construction of FM stations and transmitters in St. Louis, Mo., Chattanooga, Tenn. and Los Angeles, Calif., owned by Unity Broadcasting Corporations of those states (International Ladies' Garment Workers' Union), was signed Friday by Frederick F. Umhey, executive secretary, and Paul Demars, representing Raymond M. Wilmotte, Inc. Construction, expected to start next spring for completion in July, is said to be in excess of \$300,000 for the three sites. Amount is said to be one of the highest expenditures in the history of FM construction.
- 26—In order to clear the 42-44 megacycle band for use by non-Government fixed and mobile services to which it has been allocated, the FCC has assigned temporary channels to FM stations now operating in the low band. The changes are effective January 1, and in no case later than February 1. Date for cessation of all FM operation in the 44-50 band has not yet been set, and will not be until the Commission gets a clearer picture of the outlook for early accessibility of FM receivers.
- 27—Forecasting that FM will make its greatest strides in 1947, Arthur Freed, vice-president and general manager of the Freed Radio Corp., declared that nearly 100 FM stations are now in operation and 900 applications have been granted or are pending in hearing before the FCC. "This prediction is based on several factors," said Mr. Freed. "For one thing, the production of table model broadcast (AM) radio sets is now catching up with demand and is soon expected to meet domestic requirements. When this occurs, receiver manufacturers will increase production of FM receivers, and in this way sustain and go on to surpass the high rate of radio production attained during 1946.
- 31—Opposing viewpoints as to the operation of FM broadcasting are expected to enliven the Frequency Modulation Association's organizational meeting in Washington, D. C., on Jan. 10. Members attending the meeting will include broadcasters who propose duplication of FM-AM programs, those who propose to operate FM and AM separately, newspaper publishers entering the FM field and individual FM station operators. The meeting will also be another pioneering step since this will be the first time that such a group has ever considered the commercial aspects of FM and made plans for its promotion.
- 31—A significant move in the history of radio in Minneapolis, Minn. was made over the weekend when WTCN-FM went on the air for the first time, using what is described as "the world's first permanent super-directive FM antenna." Principal point of interest in the opening of the new station was the 80 foot FM transmitting antenna which dominates the Minneapolis skyline from the top of the Foshay Tower. New antenna is said by station officials to be "the first FM broadcast antenna of its efficiency to be erected."

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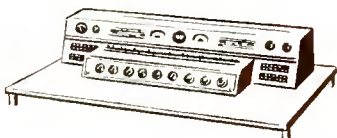


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EQUIPMENT



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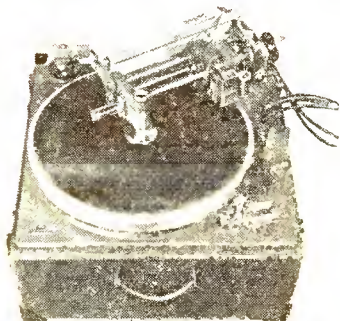
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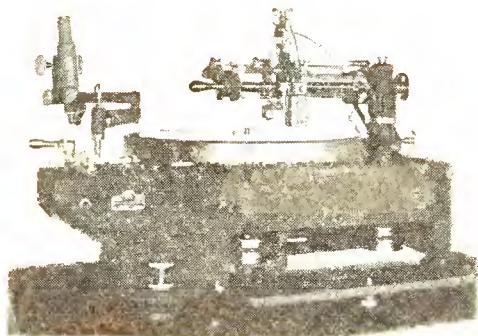
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PRODUCTION GAINS MOMENTUM

By S. P. TAYLOR, *Mgr. Distributor Sales, Radio Div., Western Electric*

PRODUCTION to meet the radio industry's increased demands for new equipment was the Western Electric Radio Division's prime objective during 1946. At the beginning of the year the phenomenal growth of FM, the pressing



S. P. Taylor

needs for replacement of equipment in existing stations and the many new applications of radio and audio facilities posed seemingly unsurmountable production problems for the electronic industry.

The many new products designed by Bell Telephone Laboratories and the continuing improvement and re-design of established equipments necessitated almost complete re-tooling at Western Electric before production in large quantities could be attained. Two new plants were acquired in Winston-Salem and Burlington, N. C. adding over 500,000 square feet of factory space to Western's production facilities devoted exclusively to the manufacture of radio broadcasting, radio communications equipment and electronic apparatus of all types.

It was only natural for the Bell Labs-Western Electric team responsible for the negative feedback amplifier, the grounded plate FM transmitter, the non-directional and cardioid microphones and other major developments, to continue pioneering in the many expanded fields of radio communications. New Bell Telephone Laboratories designs which were put into production by Western Electric during 1946 included a multitude of items from microphone to antenna.

Early in 1946 Western Electric served the radio industry by field conversion of installed Western Electric FM transmitters and within a short time after the FCC assigned the new frequencies, many of these transmitters were converted and back "on the air" at the station's new frequency. By the end of the year 22

Western Electric FM transmitters were in operation daily in the United States.

High points of the year included the introduction of the 54A Clover-leaf Antenna for FM. Symbolically this "good-luck" antenna made its bow to broadcasters on St. Patrick's Day. The use of this high gain, broad band antenna eliminated the need of complex coupling and mounting equipment and solved many of the pressing technical problems of the industry.

The new line of "Transview" FM Transmitters with power ratings up to 50 KW, was announced in July 1946 and the first 1 KW equipment of this new series was delivered in October. These transmitters employ the field tested Western Electric method of Direct FM and Synchronized center frequency control and were engineered for the best over-all efficiency and the lowest possible distortion and intermodulation products.

New developments in Speech Input Equipment included Custom Built Studio Control Desks and the Relay Type Master Control Line Switching System. Because of the unique "plug-in" type of unit construction, control booth equipment using standardized components can be custom built for a station's individual needs and assembled in a compact attractive console. The Line Switching System in itself is an outstanding piece of flexible audio facility equipment. Individual panels, one for each line, can be added to accommodate the number of lines to be controlled.

A host of new Western Electric electron tubes, thermistors, crystals, deposited carbon resistors, etc. opens the way for still further advancement in the radio and communications art.

The Graybar Electric Co., national distributors for Western Electric, increased its service facilities for the industry by the addition of a number of trained sales engineers with electronic and broadcasting experience supplemented by Western Electric's newly organized Broadcast Field Engineering Force assures the broadcaster of full realization of the unsurpassed quality and reliability which is designed and built into the equipment.

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BROADCAST EQUIPMENT-1947

By CLYDE E. DICKEY, Gen. Sales Mgr. Federal Telephone & Radio Corp.

A POLICY of continuing development and improvement coupled with maximum production of currently needed equipment is the keynote of Federal Telephone and Radio Corporation's broadcast equipment manufacturing program for 1947. Federal, a manufacturing associate of International Telephone and Telegraph Corp., is being called upon to supply a substantial portion of the equipment required by new stations, particularly FM, as well as replacement equipment for improvement and expansion of existing AM and FM stations. To meet these needs in the shortest possible time with equipment featuring the most recent advances in radio engineering has been Federal's prime consideration in developing its 1947 production program.

The diversified line of Federal equipment being produced under this policy includes such items as transmitters for AM and FM, broadcasting tubes for those applications, high frequency cable and a complete line of speech-input and transmitter control equipment. In the latter field, the latest model of the Federal transmitter control console was already being delivered at the start of 1947 and will be increasingly available during the year. Studio control consoles, as well as speech-input and allied studio equipment, have been subjected to the same intensive production schedule and are expected to be available in ample quantity within the next few months.

Federal has been a leader in the broadcast tube field since the earliest days of radio and is currently emphasizing the production of such tubes as a recently developed series of high output FM triodes and the highly regarded 6C22 television triode . . . the first tube ever to develop 600 watts output at 600 megacycles. In addition, the full Federal line of standard broadcast, industrial and special application tubes are being produced in quantities sufficient to permit immediate delivery.

In the field of FM, an indication of the extent of the 1947 equipment requirements came at the end of 1946 when the FCC announced that more than 900 applications for FM broadcasting licenses had been received and 426 construction permits and 211 conditional grants had been issued.

Since FCC has indicated the desirability of stations getting on the air as soon as possible after issuance of the CP and with the highest power obtainable within the allowed power output, it is noteworthy that Federal is now delivering transmitters rated at 1 KW, 3 KW and 10 KW. These are designed so that amplifiers for higher power may be added later.

Under this program, Federal has already made delivery on a large number of FM transmitters, antennas and associated equipment, most of which are already on the air. The first Federal 10 KW transmitter went on the air for Station WELD, Columbus, Ohio, early in 1947.

The accelerated production of Federal transmitters has been matched by the production rate of Federal's exclusive high-gain, super-directive Square Loop FM antenna. Hailed as one of the major post-war FM developments, this antenna has brought a new concept of operating efficiency and effectiveness to FM broadcasting. Impressive savings in initial transmitter investment and in day-to-day operating costs, as well as super-efficient coverage and high signal quality, are achieved through the use of these unique Square Loop antennas.

Thus is Federal carrying out its program of producing 3 and 10 KW FM transmitters to catch up with the demand in the early part of the year, pending delivery of 25 and 50 KW equipment later in the year.

The scope of expansion in FM during 1947 becomes impressively apparent through the FCC's estimate that 700 FM stations will be on the air by the end of the year. Federal is confident that the demands for its share of these requirements will be met during 1947.

Manufacturers of Frequency Modulation broadcasting equipment, confronted with the demands of an ever-increasing number of FM licensees anxious to go on the air, have adopted a policy of supplying low-powered temporary equipment rather than holding deliveries until permanent high-powered systems are available. Gearing this policy to a program of maximum production, the industry seems confident that the bulk of the demand will be satisfied, on an interim basis, at least, by the end of 1947.

BETTER RECORDING EQUIPMENT

By THOMAS B. ALDRICH, General Sales Manager, Presto Recording Co.

AS RECENTLY as eight years ago the quality of reproduction offered by instantaneous recordings was such that the average broadcasting station was by no means certain that such recordings were of any value to it. The acetate disc was just beginning to offer a material quality assuring some sort of uniformity in frequency response, lack of surface noise and consistency of behavior. Today the acetate coated disc is performing splendidly notwithstanding the fact that recording personnel continue to wish for something better.



Thomas B. Aldrich

Advances in turntable (recording and transcription) equipment have been noticeable during the last eight years but improvements in magnetic cutting heads and reproducers have been more important. The standardization of the desired characteristic by the National Association of Broadcasters has been of great help. Today the best manufacturers offer equipment which will assure the user of a recording having adequate modulation to minimize surface noise, low distortion, and the proper characteristic—the latter of course, assumes adequately wide frequency response. The manufacturers of broadcast reproducers are today offering products whose characteristics complement the accepted standards for recording. As a result of small mechanical impedance and adequate vertical compliance of the stylus, distortion has been reduced to a new minimum. Frequency response equals or exceeds the recorded frequencies. The wearing of transcriptions has been greatly reduced and the durability of the pickup head much improved.

Diameter equalization to pre-emphasize high frequencies toward the center of the disc has become less important now that the NAB recording characteristic is becoming widely accepted. The NAB equalization at 10,000 cps is such that to add to this the usual diameter equalization at the inner part of a six-

teen inch disc would only produce high frequency overloading and distortion. Some recording engineers still wish to add a small degree of high frequency equalization for diameter but the amount is strictly limited.

It is to some extent surprising that a few individuals still refuse to completely accept the new recording characteristic. That these few may consider their own curves superior is understandable but those who must play back these off-standard recordings are faced with a real problem. Fortunately the situation is better today than previously and the characteristics of reproducers and compensators may be standardized with less fear of discs of individualized response making their appearance.

The high power amplifier, 50 watts or more, is obviously what the recording engineer of today wants. The 10 watt was adequate for recording a flat characteristic of limited high frequency content. However, equalized high frequency peaks can easily require an instantaneous output peak of 35 to 45 watts. It may be argued that a cutting head will not respond to such power but at least the 50 watt amplifier will and without reaching a point of high distortion.

The trend in turntable drives seems to be leaning toward direct gear drives at both 78 and 33-1/3 rpm. Idler operated rim drives, belt drives, and ball bearing planetary drives all have their advantages and disadvantages. Positively connected gear drives offer the most perfect speed regulation and modern tools make possible a much finer gear than previously—a gear which can be completely filtered with a reasonably simple mechanism.

The requirements for frequency modulation are somewhat higher than for amplitude modulation. The best recording and transcription equipment can meet the new specifications as far as speed regulation and mechanical background noise are concerned. Uniform frequencies between 30 and 15,000 cps are not strictly attainable with commercial equipment today but are closely approached. Considering the fact that most of the listening audience will not be in a position to purchase receivers of such fidelity, the frequency question should not be serious.

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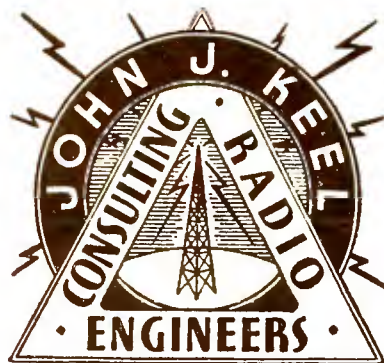
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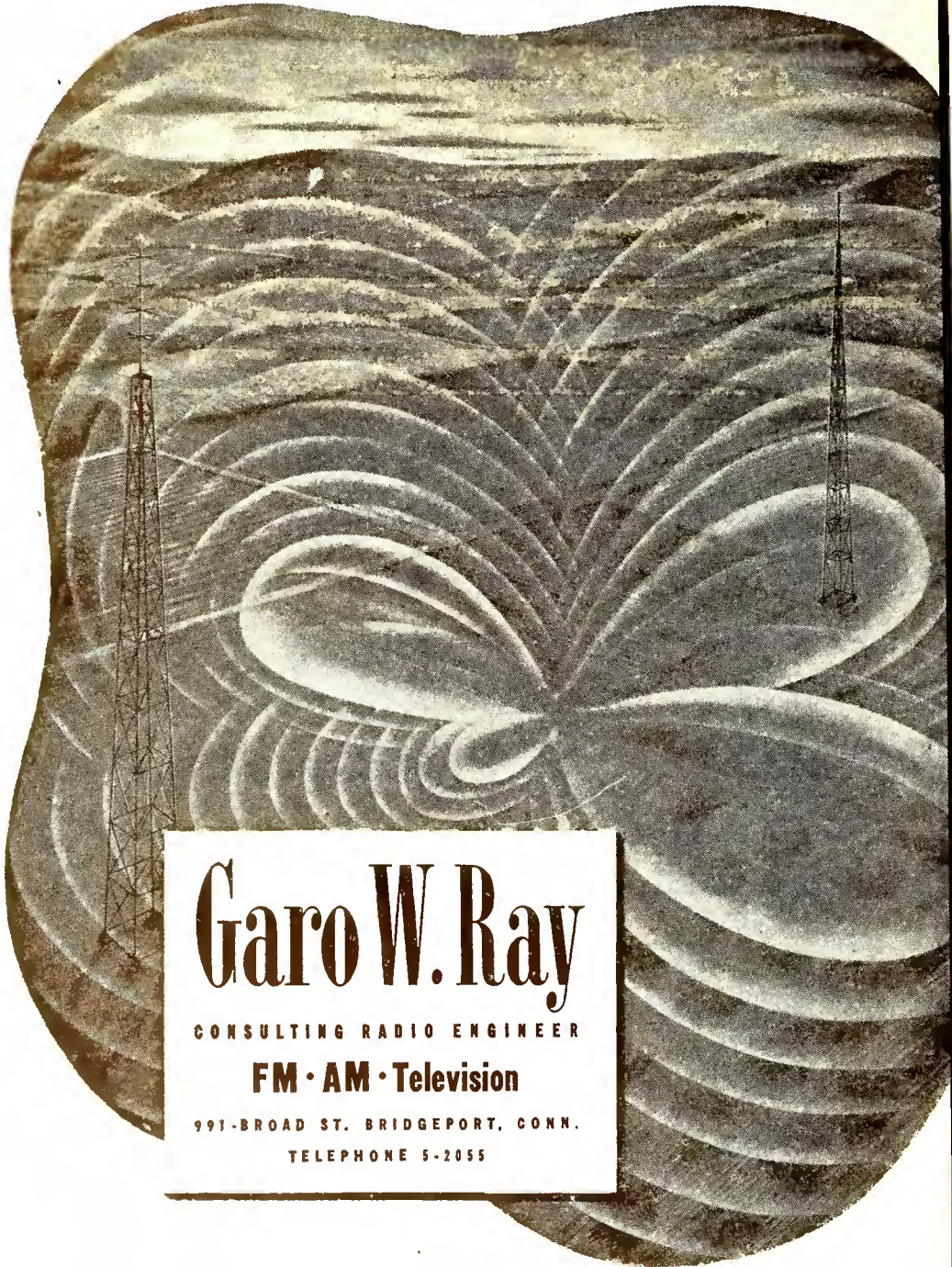
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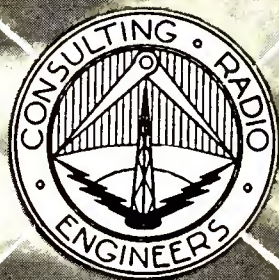
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Cedar City, KSUB.....Henry C. Mattingly

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PRODUCTS: Transmitting transformers, broadcasting equipment, audio reactors, output transformers, microphone input transformers, D. C. rectifier equipment, and other types of transformers.

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Phone PENnsylvania 6-0111

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BRANCH OFFICE: 9 Strafford Ave., Wil-
liston Pk., L. I., N. Y., Phone Garden City
658, F. Ruckh; Warren St., Lowell, Mass.,
Phone Lowell 7607, W. Day.

PRODUCTS: Playback needles, cutting
styli, phonograph needles, special needles for
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3800 Cortland St., Chicago 47, Ill.
Phone: SPAlding 1400

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PRODUCTS: Receiving Sets, Radio-Phone
Combinations, FM Receiving Sets, Record
Players, Portables, Farm Sets, and Radio
Parts, Table and Console television receivers.

Aerovox Corporation

740 Belleville Ave., New Bedford, Mass.
Phone: 6-8221

President.....W. Myron Owen
Sales Manager—Jobber

Div.Charles Golenpaul
Sales Manager—Manufacturing

Div.Frank Marshall
Chief Engineer.....Joseph L. Collins
Advertising Manager.....George Balsom
Export Manager..Roeke International Corp.

PRODUCTS: Capacitors—paper, electro-
lytic and mica for radio transmitting. Re-
ceiving and electronic applications, including
paper, oil and wax impregnated, moulded
mica, bakelite cased and ceramic cased mica
capacitors, power factor correction equip-
ment, insulated carbon and wire wound vitre-
ous resistors, motor starting capacitors, ca-
pacitor test instruments.

Air King Products Co., Inc.

1523 63rd St., Brooklyn 19, N. Y.
Phone: BE 2-6700

President.....O. H. Cogan
Sales Prom, Mgr.....E. B. Lucas
V. P.-Manufacturing.....M. Markowitz
V. P.-Engineering.....Frank A. Hinners
V. P.-Export.....Allen Straus
Prod. Manager.....R. Kalb

PRODUCTS: Home radio sets AM-FM,
short wave, portable, television receivers,
electronic equipment for U. S. Government.

Allen-Bradley Company

136 W. Greenfield Ave., Milwaukee 4, Wisc.
Phone: Mitchell 5151

President.....Harry L. Bradley
V. P.-General Manager.....F. F. Loock
V. P.-Works Manager.....R. W. Whitmore
Treasurer.....A. F. North
Purchasing Agent.....Theron C. Child

PRODUCTS: Fixed and variable composi-
tion resistors.

American Condenser Co.

4410 Ravenswood Ave., Chicago 40, Ill.
Phone: Longbeach 1386

General Manager.....I. Menschik
Chief Engineer.....H. C. Kreinick
Purchasing Agent.....W. Norder
Works Manager.....M. E. Hussey

Specification Engineer.....A. J. Hersey
Sales Manager.....W. J. Johnston
PRODUCTS: Condensers.

American Microphone Co.

1915 S. Western Ave., Los Angeles 7, Calif.
Phone PA 1161

General Manager.....F. A. Yarbrough
PRODUCTS: Crystal & dynamic micro-
phones, crystal phonograph pickups, micro-
phone stands.

American Transformer Co.

178 Emmet St., Newark 5, N. J.
Phone: Bigelow 3-4444

President-Treasurer.....Thomas M. Hunter
Executive Vice-President....Stuart F. Marvin
Vice-President.....A. A. Emlen
Vice-President.....Walter Garlick, Jr.
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PRODUCTS: Amplifiers, ballast transform-
ers for fluorescent lighting, distribution
transformers, electronic components, indus-
trial-dry type-indoor or outdoor use indus-
trial transformers, air cooled industrial phase
changers, modulation reactors, modulation
transformers, net work transformers, oil or
abestol-immersed plate transformers, power
transformers, precipitation transformers, ra-
dio type "P" precision line, radio silcor line
audio components, rectifiers, regulators, test
sets, transtats, "W" type transmitter, wave
filters, welding and soldering transformers.

Amperex Electronic Corp.

79 Washington St., Brooklyn, N. Y.
Phone Main 5-2050

Vice-Pres. Sales Manager.....S. Norris
PRODUCTS: Electronic tubes for com-
munication, industrial, television, electro-
medical and special purposes.

Amplifier Corp. of America

398 Broadway, New York 13, N. Y.
CAAnal 6-7612

Chg. Prod. & Procurement.....R. Epstein
Engineering & Sales.....N. M. Haynes
Chief Engineer.....A. C. Shaney
Sales Manager.....H. S. Manney

PRODUCTS: Electronic equipment, Regu-
lated Power Supplies, Transformers, Filter
Networks.

Amy, Aceves & King, Inc.

11 West 42nd St., New York 18, N. Y.
Phone LOngacre 5-6622

President.....Ernest V. Amy
V. P.-Treasurer.....Frank King
Secretary.....Julius G. Aceves
Sales Manager.....F. A. Klingenschmitt

PRODUCTS: Antenna Systems, Television
and FM Antennas. Electronic Developments.

Andrea Radio Corp.

27-01 Bridge Plaza North, L. I. C. 1, N. Y.
Phone: STillwell 4-5411

President.....F. A. D. Andrea
Chief Engineer.....H. L. Heindel
PRODUCTS: Radio and Television Re-
ceivers and Phono. combinations.

Ansley Radio Corp.

41 St. Joes Ave., Trenton 9, N. J.
Phone: 4-1175

President.....Arthur C. Ansley
Vice-President.....Anne Klein Ansley
General Mgr.C. A. Clinton
Plant Superintendent.....C. Donato
Advertising Mgr.Harriet Westin

BRANCH OFFICE: Empire State Bldg.,
N. Y. C. Show room, New York, N. Y., Phone,
Longacre 3-2768, Anne Klein Ansley.

PRODUCTS: Radio-phonograph combina-
tions (Ansley Dynaphone), Electronic piano
(Ansley Dynatone), Built-in-wall radio (Ans-
ley Paneltone).

The Astatic Corp.

Harbor & Jackson Sts., Conneaut, Ohio
Phone: 12-656

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Vice President.....C. M. Chorpening
Treasurer.....C. B. Fraser
Sales Mgr.—Jobber Div...R. T. Schottenberg
Sales Mgr.—Manufacturing

Div.....W. J. Doyle
Chief Engineer.....G. A. Morrell
Dir. of Purchasing.....H. G. Green

PRODUCTS: Microphones, Phonograph
pickups, pickup cartridges, recording heads,
microphone desk stands, and accessories.

Audak Company

500 Fifth Ave., New York, N. Y.
Phone LA 4-3723

Contact.....Geo. V. Sullivan
BRANCH OFFICES: All key cities.
PRODUCTS: Microdyne Pickups, Cutting
Heads, and Acoustic Instruments.

Audio Devices, Inc.

444 Madison Ave., New York 22, N. Y.
Phone: PLaza 3-0973

President.....Wm. C. Speed
Vice-President-Sec.....Bryce Haynes
Vice-President.....N. K. Hoskins
Research Engineer.....E. J. Franck
National Sales Manager.....C. C. Pell, Jr.

PRODUCTS: Recording Discs (Audio-
discs), Recording and Playback Points
(Audiopoints).

Automatic Manufacturing Corp.

900 Passaic Ave., East Newark, N. J.
Phone: Harrison 6-6630

President & Gen. Mgr. Martin H. Benedek
Vice-Pres., Charge of Sales.... Bert E. Smith
Chief Engineer..... Joseph R. Mazzola
Credit Manager..... M. E. Silver
Purchasing Agent..... J. A. Heimbruch

PRODUCTS: Mica trimmer condensers, intermediate frequency transformers, radio frequency coils, R. F. choke coils, adjustable padder condensers, permeability tuners.

John F. Beasley Construction Co.

P. O. Box 1624, Muskogee, Okla.
Phone Muskogee 4762

Manager..... John F. Beasley
Construction Mgr..... James H. Beasley
Erection Superintendent... Sydney N. Beasley
Office Manager C. A. McLarty, Jr.

BRANCH OFFICE: 1614 Mercantile Bank Bldg., Dallas, Texas, Phone, Riverside 3228, John F. Beasley.

PRODUCTS: Steel erection (radio towers).

Bendix Radio (Division of Bendix Aviation Corp.)

East Joppa Rd., Towson, Md. (Gen. Offices)
Phone: Tuxedo 4020

Gen'l Mgr..... W. P. Hilliard
Divisional Comptroller..... F. S. Gutekunst
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Dir. of Engineering & Research... W. L. Webb
Dir. of Industrial Relations..... R. Smith
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Credit Manager..... C. T. Dwyer
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Advertising Manager—Radio and Television..... Earl L. Hadley
Sales Manager—

Communications Radio... J. W. Hammond
PRODUCTS: Aviation radio receivers, transmitters, radio compasses, electronic measuring equipment and accessories, broadcast receivers and radio-phonograph combinations, television receivers, headphones, microphones.

Blaw-Knox Co.

Farmers Bank Bldg., Pittsburgh 22, Pa.
Phone St. 2700

Manager, Tower Sales..... E. J. Staubitz
Asst. Mgr., Tower Sales..... A. H. Jackson
BRANCH OFFICES: Brown Marx Bldg., Birmingham 3, Ala., Phone: 3-4931, Wm. E. Balliet; 607 Peoples Gas Bldg., Chicago 3,

Ill., Phone: Harrison 7633, J. C. McQuade; 342 Madison Ave., New York 17, N. Y., Phone: VANDerbilt 6-0661, T. M. Avery; 1617 Pennsylvania Blvd., Philadelphia 3, Pa., Phone: Rittenhouse 1681, W. F. Simmons; 423 Munsey Bldg., Washington 4, D. C., Phone: Republic 3142, J. N. Critchlow; Export Dept.: 342 Madison Ave., New York 17, N. Y., Phone: VANDerbilt 6-0661, H. T. Schwier.

PRODUCTS: Antenna Towers for FM, AM and Television.

William Brand & Co.

276 Fourth Ave., New York 10, N. Y.
Phone: ORchard 4-6960
Partners.

William Brand, William Naumburg, Jr.
Sales Manager..... J. R. Garey

BRANCH OFFICES: 325 W. Huron St., Chicago, Ill., Phone, Superior 1782, Manager, Earl W. Brinson; Case Bldg., Rochester, N. Y., Gilbert Gislason; 647 Main St., Hartford, Conn., E. E. Pack; 600 Pingree, Detroit, Mich., Ralph Hulton.

PRODUCTS: Insulation Materials, electrical; Varnished Cotton Tubing; Varnished Glass Tubing; Saturated Sleeving; Plastic Insulated Wire; Plastic Insulating Tubing; Varnished Cambric, Cloths, Tapes; Mica, Block and Films; Mica-Plate; Wire Markers, identification.

Browning Laboratories, Inc.

750 Main St., Winchester, Mass.
Phone: Winchester 2121

President..... G. H. Browning
V. P.-Sales Manager..... R. L. Purrington
Purchasing Agent..... C. W. Craven
General Manager..... C. H. Day
Chief Engineer..... F. A. Spindell

PRODUCTS: Frequency Meters, Audio & Radio; Frequency Standards, Cathode Ray Oscilloscopes, Capacity Relays, Ultra-High and Super-High Signal Generators, FM-AM Tuners, Amateur Frequency Meters, Capacitance Alarm Systems, and Special Electrical Equipment.

The Brush Development Company

3405 Perkins Ave., Cleveland 14, Ohio
Phone: Endicott 3315

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Mgr. Magnetic Recording Dept..... R. B. Matheson
Mgr. Acoustic and Hearing Aid Div..... H. D. Hill
Mgr. Industrial Instrument Div..... M. P. Odell
Mgr. Crystal Div..... R. B. Nottingham

PRODUCTS: Magnetic Recording Equip-

ment, Recording Equipment: Record cutters, phonograph pickups, cartridges, Microphones, headphones, Hushatones.

William W. L. Burnett Radio Lab.

4818 Idaho St., San Diego 4, Calif.
Phone Talbot 4943

Chief Eng.-Owner... William W. L. Burnett

PRODUCTS: Piezo-Electric Crystals, Holders, Constant Temperature Ovens, Frequency Measuring Equipment, Laboratory Equipment, Conducting of Radio Laboratory Measurements, Frequency Monitoring Service, Special Laboratory Testing Equipment.

California Telephone & Electric Co.

6075 W. Pico Blvd., Los Angeles 35, Calif.
President..... C. W. Evans
Supt., Intercommunicating Equipment

M. E. Harris
Foreman, Microphone Dept..... O. B. Carrier

PRODUCTS: Microphones, intercommunicating telephones, talk-back equipment, amplifiers.

Chicago Telephone Supply Co.

1142-1228 W. Beardsley Ave., Elkhart, Ind.
Phone: Elkhart 1205

President..... F. C. Best
Sales Manager..... W. A. Nicely
Chief Engineer..... N. C. Schellenger
Credit Manager..... M. F. Schneck
Purchasing Agent..... B. S. Turner

PRODUCTS: Volume controls, tone controls, switches, plugs, jacks, headsets, ringers, generators, remote controls, switch keys, push switches.

Clarostat Mfg. Co., Inc.

130 Clinton St., Brooklyn, N. Y.
Phone: Main 4-1190

Pres.-General Manager..... Victor Mucher
Treasurer..... William Mucher
Secretary..... Charles H. Burnell
Chief Engineer..... George Mucher
Sales Engineer..... I. J. Youngblood

BRANCH OFFICES: 540 No. Mich. Ave., Chicago. PRODUCTS: Fixed and Variable Power Resistors, Power Rheostats, Power Resistor Decade Boxes, Wire Wound Potentiometers, "T" "L" Cism Pads, 25 and 10 Watt Attenuators, Special Resistor Products, and Composition Potentiometers.

Collins Radio Co.

Cedar Rapids, Iowa
Phone: 3-3281

President..... Arthur A. Collins
Exec. V. P.—New York..... W. J. Barkley
Vice President..... R. S. Gates
Vice-President..... L. M. Craft
Secretary-Treasurer..... S. J. Storm

BRANCH OFFICES: 11 W. 42nd St., New York 18, N. Y., Phone, Lackawanna 4-0229,

Executive, W. J. Barkley; 458 S. Spring St., Los Angeles 13, Cal., Phone, Tucker 9404, Carl W. Service.

PRODUCTS: AM Broadcast Transmitter, FM Broadcast Transmitters, Broadcast Speech Equipment and Accessories, Airborne Radio Communication Transmitters and Receivers, Ground Station Radio Communication Transmitters and Receivers, Radio Amateur Transmitters, Receivers, and Variable Frequency Oscillators.

Colonial Radio Corp.

254 Rano St., Buffalo 7, N. Y.
Phone: Riverside 2450

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V. P.-Secy.-Comptroller..... H. E. Riordon
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Manager-Industrial Relations..... C. J. Kolb
Sales Mgr.—Home Set

Division..... T. P. Cunningham
Sales Mgr.—Automotive

Division..... C. H. Symington
Service Manager..... R. K. Pew

BRANCH OFFICES: Bloomington, Ill., Phone, 7631, H. P. Wangelin; 1020 Fisher Bldg., Detroit, Mich., Phone, Madison 7251, C. H. Symington.

PRODUCTS: AM and FM radio receivers, automobile receivers, battery operated radio receivers, radio-phonograph recorder combinations, television receivers.

Communication Equipment & Engineering Co.

5646 W. Race St., Chicago, Ill.
Phone: EStebrook 3109-10

President..... Robert A. Clark
Vice-President..... R. Farrell
Secretary-Treasurer..... R. E. Meyers

PRODUCTS: Transmitters, receivers, amplifiers and test equipment, carriers telephone and telegraph equipment.

Continental Carbon, Inc.

13900 Lorain Ave., Cleveland 11, Ohio
Phone: CLearwater 6500

President-Sales Manager.... G. F. Benkelman
PRODUCTS: Fixed composition resistors, suppressors, precision resistors.

Continental Electric Co.

Geneva Illinois
Phone: Col. 1216

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Secretary..... O. T. McIlvane
Vice-President..... W. S. Sims
Vice-Pres. in Charge of Publicity & Sales
R. E. Smiley

Vice-Pres. in Charge of Engineering
J. H. Hutchings
Export Manager..... E. D. Magnus

BRANCH OFFICE: 188 W. Randolph St., Chicago, Ill., Phone Andover 5029, Vice-President in charge of Publicity and Sales, R. E. Smiley.

PRODUCTS: Electronic tubes, phototubes, rectifier tubes, grid control tubes, fluorescent lamps, ultra violet and stationery lamps. Special tubes of all kinds.

Cornell-Dubilier Electric Corp.

333 Hamilton Blvd., S. Plainfield, N. J.
Phone: PLainfield 6-9000

President.....Octave Blake
Vice-President.....William Dubilier
Vice-Pres.-Treas.....Hlaim Beyer
Vice-President.....Wm. M. Bailey
Vice-President.....Paul McK. Deeley
Vice-President.....Felix Weiss
Vice-President.....T. E. Abeel
Vice-President.....Max Bleich
Secretary.....Kenneth E. Ryan
Asst. Treasurer.....L. F. Geiser
Asst. Secretary.....M. F. Keating
Comptroller.....J. A. Bertolacci

PRODUCT: Capacitors.

Corning Glass Works

Corning, New York
Phone: Corning 372

President.....W. C. Decker
Vice-President-Sales Mgr....C. D. LaFollette
Mgr. Electronic Sales Dept....C. J. Phillips

BRANCH OFFICES: New York, N. Y., C. P. Eggleton; Chicago, Ill., J. D. Brown; San Francisco, Calif., T. J. Thompson.

PRODUCTS: Glass envelopes for tubes used for radio receiving, broadcasting, cathode ray, television and all other electronic purposes, tubing and special sealing glasses, insulators, coil forms, resistor tubes, metalized glassware, including timmer capacitors, resistors, etc.

Cornish Wire Co., Inc.

15 Park Row, New York, N. Y.
Phone CO 7-2525

President.....John Cook
Contact.....W. F. Osler, Jr.

PRODUCTS: Radio and Electrical Wires and Cables.

The Crosley Corp.

1329 Arlington St., Cincinnati 25, Ohio
Phone: Klrby 6600

President.....I. B. Babcock
Vice-President &

General Manager.....R. C. Cosgrove
Vice-Pres. in Charge of Research & Engr.

L. M. Clement
V. P.-General Sales Mgr.....S. D. Mahan
Dir. of Purchases.....Frank Warner

Asst. Secy. & Asst. Treas.....E. J. Ellig
Dir. of Industrial Relations...G. F. Gamber
Asst. to V. P. & Gen. Mgr..Lincoln J. Karmen
Dir. of Purchases.....Frank W. Warner
Controller.....L. W. Adkins

PRODUCTS: Radio—AM, FM, Television.

Crystal Research Laboratories, Inc.

29 Allyn St., Hartford 3, Conn.
Phone: 7-3215

President-General Manager..Samuel I. Ward
Vice-President.....Henry F. Jochim
Secretary.....Frances M. Andrews
Mgr.—Crysecon Div.....Philip Scharr
Mgr.—Crystal Div.....Ernest B. Lewis
Mgr.—Metronoma Div....D. Harold Hickey
Chief Engineer.....Walther Anderson
Purchasing Agent.....K. O. Jacobs
Mgr.—Metavac Div.....G. Fadel
Machine Shop Head.....George Waller
Ultrasonorator Div. Head....Lewis Harden
Personnel Mgr.....D. H. Hickey
Research Physicist.....Dr. Leo Epstein

BRANCH OFFICES: 37 M Mill St., Unionville, Conn., Phone, Farm. 599, Philip Scharr; Avery Ave., Flushing, N. Y., Phone, FLushing 9-8839, George Fadel.

PRODUCTS: Quartz oscillating plates (communication and non-communication); the Ultrasonorator; the Metronoma; Padder and postage stamp condensers; fused quartz fabrications; metal and chemical coatings; amateur xtals and components; synthetic jewel operations.

De Mornay-Budd, Inc.

475 Grand Concourse, New York 51, N. Y.
Phone: Melrose 5-1900

PresidentR. DeMornay
Sales ManagerEugene L. Berman
Chief Engineer.....Leonard Sherbin
Comptroller.....Roger Baker
Production Manager.....Louis Della Penna
Electronic Sales.....Charles George
Purchasing Agent.....Robert Heffernan
Dir. of Sales Prom.....Karl A. Barleben
Dir. of Adv. & Pub.....Ben Kerner

PRODUCTS: Navigational equipment, marine and aircraft radar, R. F. transmission lines, stub-supported coaxial lines, mixers, rotating joints, directional couplers, H. F. test equipment, modulators, I. F. strips, antennae, bench and field testing equipment, wave guides.

Doolittle Radio, Inc.

7421 S. Loomis St., Chicago 36, Ill.
Phone: Radcliffe 4100

President.....E. M. Doolittle
Chief Engineer.....H. Knaack

Sales Manager.....H. V. Carlson
Purchasing Agent.....M. Yatsak

BRANCH OFFICES: Manufacturers representatives throughout the United States.

PRODUCTS: Emergency radio communications equipment, including station transmitters and receivers, mobile transmitters and receivers and all accessories. Concentric transmission line, frequency monitors, distortion meters, broadcast frequency monitors.

Allen B. DuMont Labs., Inc.

2 Main Ave., Passaic, N. J.
Phone Passaic 3-1616

President.....Allen B. Du Mont
Vice-President.....Leonard F. Cramer
Secretary.....Bernard Goodwin
Treasurer.....Paul Raibourn
Dir. Tele B'casting.....Leonard F. Cramer
Gen. Mgr. Mfg. Div.....C. Edwin Williams
Gen. Mgr. Tech. Sales....G. Robert Mezger
Dir. of Research.....Thos. T. Goldsmith, Jr.
Chief Engineer.....P. S. Christaldi
Controller.....B. L. Graham
Gen. Mgr. Tele Sales.....Ernest A. Marx
Plant Supt.....Bruce T. DuMont
Purchasing Agent.....F. P. Rice
Personnel Director.....H. Houston

BRANCH OFFICE: 515 Madison Ave., New York, N. Y., Phone, ELdorado 5-4822, Manager, Samuel H. Cuff.

PRODUCTS: Television Receivers, Transmitters and Studio Equipment, Cathode-Ray Tubes and Oscillographs and Material Test Instruments.

Dumont Electric Corp.

34 Hubert St., New York, N. Y.
Phone: CANal 6-7980

President & Sales Manager...Philip Dubilier

PRODUCTS: Paper, electrolytic and mica condensers.

DX Crystal Co.

1200 N. Claremont Ave., Chicago 22, Ill.
Phone: ARmitage 3740

Co-owner.....Louis J. Patla
Co-owner.....Maurice P. McLean
Sales Manager.....George H. Timmings
Chief Engineer.....John Laban
Credit Manager.....Corliss Bangart
Purchasing Agent.....Jane Sullivan
Advertising Manager.....Michael Mayger

PRODUCTS: Quartz xtals, toroid coils, coil transformers, screw machine parts, universal joints and mechanical assemblies, loudspeakers.

Eastern Electronics Corp.

41 Chestnut St., New Haven 11, Conn.
Phone: New Haven 8-3191

President.....Amy G. Annis
General Manager.....J. Robert Potter
Director of Engineering..Roland S. Bruneau
Secretary-Treasurer.....John J. Sullivan

Chief Mech. Engr.....George H. Newton
Office Manager.....Maurice E. Fossett

PRODUCTS: Radio, electronic, and laboratory test equipment, Precision Wire Wound Resistors, Phonograph Turntable Units, Portable Phonograph Record Players, Radio Receiving Sets, Rotary Selector Switches, Wheatstone Bridges, Impedance Bridges, Audio Oscillators, Radio-Phono Combinations.

Hugh H. Eby, Inc.

18 W. Chelton Ave., Philadelphia 44, Pa.
Phone: TENnessee 9-1800

President.....James L. Hawley
V. P.-Treasurer.....Frank Holmstrom
Secretary.....T. J. Mullaney
Chief Engineer.....L. Wanner
Purchasing Agent.....J. Gould

PRODUCTS: Binding posts and terminals, cable connectors and couplings, custom moldings, electric eyes, headphones, knobs, metal stampings, lugs, microphones, photoelectric relays, photocells, phototubes, plugs, screw-machine parts, speaker connectors, terminal plugs, terminal strips and hlocks, tube shields (miniature), tube sockets, electrical assemblies of all types for radar, telephones, headsets, microphones; jacks.

Eckstein Radio and Television Co.

914-18 LaSalle Ave., Minneapolis 2, Minn.
Phone: Main 8359

Secretary-Treasurer.....E. R. Bostrom
Chief Engineer.....Frederick Lewis
Production Manager.....D. F. Boulett
Purchasing Agent.....E. A. Eckstein
Export Manager.....Harry Scheel
Sales Manager.....E. R. Bostrom
Manager—Metal Shop.....L. D. Eldridge

BRANCH OFFICE: 4237 N. Lincoln Ave., Chicago 18, Ill., Phone, DIVersey 3672-3, Harry J. Scheel (Export Sales).

PRODUCTS: Communication type car receivers (Karadio), home receivers (Ecko), private aircraft receivers, audio amplifiers..

Electronic Corp. of America

170 - 53rd St., Brooklyn 32, N. Y.
Phone: GEDney 9-5335

President.....Garrard Mountjoy
Export Manager.....E. Rojo
Assistant Sales Manager.....Tom Ward
Advertising Manager.....Paul Rofield
Credit Manager.....Roy Neusch
Office Manager.....A. Eyer
Chairman of the Board.....S. Novick
Director of Purchases.....M. Bloom

PRODUCTS: ECA (Consumer Radios), Typatune (musical toy typewriter), Pianotune (toy piano).

Electronic Laboratories, Inc.

24 W. 24th St., Indianapolis, Indiana
Phone: Talbot 2442, Riley 1551

President.....William W. Garstang
Vice-President-Engineering.....R. H. Frye
Vice-President-Sales.....W. E. Peek
Vice-President-Manufacturing...H. C. May
Secretary.....Albert M. Campbell
Treasurer & Comptroller.....A. L. Mack
Chief Inspector.....H. Palin
Quality Control Head.....R. M. Loomis
Purchasing Agent.....D. A. Wilson

BRANCH OFFICES: 222 E. 38th St., New York 16, N. Y., Phone, VA 6-3463, Lee Rocke; 13 E. 40th St., New York 16, N. Y., VA 6-3463, Arthur Rocke.

PRODUCTS: Vibrators, regulated vibrator power supplies, inverters, converters, rectifier packs, Electrical toys, railroad, marine and bus fluorescent lighting, radios, radio permeability tuners.

Electronic Specialty Co.

3456 Glendale Blvd., Los Angeles 26, Calif.
Phone: No. 2-2168

General Manager.....D. A. Marcus
Chief Engineer.....S. K. Babcock
Purchasing Agent.....R. T. Liggitt
Controller.....Frank C. Mann
Factory Representative.....J. H. Holley
Manager—Inverter Division..W. H. Burgess

PRODUCTS: Ranger aircraft radio equipment: transmitters, receivers, and interphone, the transmeter, the electronic inverter.

Electronic Tube Corp.

1200 E. Mermaid Ave., Phila. 18, Pa.
Phone: Chestnut Hill 6800

Pres.-Sec.-Treas.Seymour Turner
V.P.-Chief Engineer.....Henry Bemford
Senior Engineer.....James W. Phillips
Engineers.....D. F. Ottolini, Paul A. Keller
Purchasing Agent.....Mary R. Scott

PRODUCTS: Multiple gun cathode ray tubes, standard cathode ray tubes, multiple channel oscilloscopes, magnetostriction oscillators, miscellaneous electronic equipment.

Emerson Radio & Phonograph Corp.

111 Eighth Ave., New York 11, N. Y.
Phone: Chelsea 2-1800

President.....Benjamin Abrams
Secretary-Treasurer.....Max Abrams
V. P.-Engineering & Production

Dorman D. Israel
V. P. Head of Home Prods. Div..P. G. Gillig
V.P. Chg. Purchasing.....Harvey Tullo
Cabinet Design.....Stephen Chew
Personnel Manager.....Peter R. Certo
Merchandising Counsel..Warren R. Lightfoot

Sales Pro. Mgr.....Charles O'N. Weisser
Advertising Manager.....E. Frances Solow
ComptrollerVictor Stevens
Chief Engr. Home Prod...A. George Rogers
Chief Engr. Special Prod...Maurice Levy

BRANCH OFFICES: 666 Lake Shore Drive, Chicago, Ill., Phone, Superior 4100. E. N. Greenebaum, Jr., Manager.

PRODUCTS: Home radio receivers—AM and FM radios: table models—AC and AC-DC, compact models—AC-DC, personal models—self powered, portable models—self powered—AC-DC, console models—AC and AC-DC, record players—table models and portables, phonoradios—table models and consoles and portables, portable recorder and playback, television receivers, hearing aid radios, public address system, industrial television, components: speakers, radio vacuum tubes, phonograph needles. Electronic Equipment: radar sets, radio transmitting and receiving sets, electronic navigation equipment, electronic traffic control equipment, marine communication equipment.

Erco Radio Laboratories Inc.

Hempstead, Long Island
Phone: Hempstead 6985-985

PRODUCTS: Receivers, Transmitters, Radio Airport Traffic Control Equipment, Radio Frequency Standards, Radio Communications Equipment, Radio Test Equipment. (*resonance meters.)

AFFILIATED COMPANY: Aero Communications, Inc., Hempstead, Long Island, N. Y., Phone, Hempstead 6985-985.

PRODUCTS: Receivers, transmitters, radio airport traffic control equipment, radio frequency standards, radio communications equipment, radio test equipment, and resonance meters.

Espey Manufacturing Co., Inc.

528 E. 72nd St., New York 21, N. Y.
Phone: BÜtterfield 8-2300

President-General Manager...Nathan Pinsley
V.P.—ProductionJames Valladares
V.P.—EngineeringHarry Zion
V.P.—Research Eng.....Jack Rosenbaum
SecretaryMorris Pinsley
Mdse, Control Div.....Gordon Poole
ComptrollerMax Goldberg
Personnel Director.....Julius Treuman
Merchandise Manager.....Michael Ross

PRODUCTS—Receiving sets, radio-phonograph combinations, FM receiving sets, record-players, television sets.

Fada Radio & Electric Co., Inc.

30-20 Thomson Ave., Long Island City, N. Y.
Phone: Ironsides 6-5400

President.....J. M. Marks

Secretary-Treasurer.....D. I. Marks
 Director of Procurement.....I. N. Marks
 Sales Manager.....A. Wellington
 Advertising Manager.....H. N. Lubet
 Export Manager.....H. N. Laubet
 Comptroller.....H. Carlish
 Plant Manager.....J. Lewandowski

PRODUCTS: Radio receivers, radio-phonograph combinations, portable receivers, portable phonograph amplifiers, phonograph wireless record players, FM receivers and radio-phonograph combinations, television receivers.

Fairchild Camera and Instrument Corporation

88-06 Van Wyck Blvd., Jamaica 1, N. Y.
 Phone Jamaica 6-3800

President.....J. S. Ogsbury
 Exec. Vice-Pres.....E. Robinson
 Vice-President—Sales.....C. A. Harrison
 Vice-Pres. & Secy.....C. L. Terrill
 Vice-President.....J. A. Hewlett
 Treasurer.....J. H. Dalton
 Dir. Eng. & Research.....R. H. Lasche
 Asst. Vice-Pres. & Works Manager

R. A. Draghi
 Asst. Vice-President.....R. G. Sanders
 Purchasing Agent.....O. Leutz
 Dir. of Publicity.....R. H. Bailey
 Advertising Manager.....H. K. Yulke

PRODUCTS: Sound recorders (console and portable), amplifier-equalizers, transcription turntables, dynamic pick-ups, magnetic cutterheads, radio direction finders, precision potentiometers, special motors.

Farnsworth Television & Radio Corp.

3702 E. Pontiac St., Fort Wayne 1, Indiana
 Phone: Anthony 5301

President.....E. A. Nicholas
 Vice-President—Engineering

B. Ray Cummings
 Vice-President—Sales.....E. H. Vogel
 Vice-President—Secretary.....E. M. Martin
 Vice-President—Treasurer.....J. P. Rogers
 General Superintendent.....R. C. Jenkins
 Manager—Research.....Madison Cawein
 Chief Engineer—Electronic

Apparatus Division.....J. C. Ferguson
 Chief Engr.—Receiver Div.....W. H. Myers
 Dir. of Public Relations.....Paul J. Boxell
 Mgr.—Broadcast Div.....Pierre Boucheron
 Mgr.—Mobile Communications

Division.....J. A. Curtis
 Sales Mgr.—Farnsworth Div.....E. H. McCarthy
 Sales Mgr.—Capehart Div.....I. C. Hunter
 Adv. Sales Prom. Mgr.....J. S. Garceau
 Special Prod. Sales Div. Mgr.....E. S. Needler
 Export Dept. Mgr.....Frank Harris
 Purchasing Agent.....R. L. Colfax

BRANCH OFFICES: 3301 S. Adams St., Marion, Ind., Phone, 4600, J. P. Rogers; Lucretia Ave., Huntington, Ind., Phone, 1331, R. C. Jenkins; 805 W. Walnut St., Bluffton, Ind., Phone, 911, R. C. Jenkins.

PRODUCTS: AM radios and phonograph-radios, AM/FM radios and phonograph-radios, Capehart and Panamuse by Capehart AM/FM phonograph-radios; automobile radios, television receivers, television transmitting equipment, television studio equipment, television-telemetering equipment, FM transmitters, railroad radio communications equipment, taxicab radio communications equipment, mobile communications equipment, automatic record changers, television tubes, television antennas.

Federal Recorder Co., Inc.

630 S. Wabash Ave., Chicago, Ill.
 Phone Har. 8330

General Manager.....Ralph Rubenstein
 Engineer.....Earl Kent

BRANCH OFFICES: 251 Fourth Ave., Gramercy 5-0711, New York, N. Y.; 150 Marietta St., N. W., Atlanta, Ga.; 569 Mission St., San Francisco, Calif. PRODUCTS: 12 and 16" Recording Discs, Cutter Heads, Recording Amplifiers, Home Recorders, Cutting and Playback Needles, Steel, Glass and Paper Base Recording Blanks.

Federal Telephone and Radio Corp.

200 Mt. Pleasant Ave., Newark 4, N. J.
 Phone: Humboldt 2-8000

President.....Sosthenes Behn
 Vice-President.....Theodore M. Douglas
 Vice-President.....Edward N. Wendell
 Exec. Sales Dir.....Norman E. Wunderlich
 Chief Engineer.....Francis X. Rettenmeyer

BRANCH OFFICES: 343 N. Michigan Ave., Chicago 11, Ill., Phone, Central 6900, Harold KaDell; 8 DuPont Circle, Washington, D. C., Phone, Michigan 0622, E. J. Girard.

PRODUCTS: Complete broadcast systems—AM, FM, TV; FM square-loop antenna; AM-FM transmitting and rectifying tubes; coaxial cable; FM and lead-in wire; selenium rectifiers; home radio receivers.

Ferranti Electric, Inc.

30 Rockefeller Plaza, New York, N. Y.
 Phone: Circle 7-0912

Vice-President.....W. R. Spittal
 PRODUCTS: Audio and power, transformers, chokes, filters, wiring and assembly, sheet metal, and bakelite fabrication.

Finch Telecommunications, Inc.

4th & Virginia Sts., Passaic, N. J.
 Phone: Passaic 2-3440

President.....W. G. H. Finch
 Treasurer.....Harold J. Frees
 Secretary.....Margaret C. Harkey
 Plant Mgr.—Chief Engineer.....Richard E. Mathes
 Sales Manager.....Herman H. Rathkamp

BRANCH OFFICE: 10 E. 40th St., New York 16, N. Y. Phone, Circle 6-8080. W. G. H. Finch, President.

PRODUCTS: Facsimile, recording paper, Finch rocket antennas.

A. W. Franklin Mfg. Corp.

43-20 34th St., Long Island City 1, N. Y.
Phone: STillwell 4-1160

President.....Albert W. Franklin
V.P.—Engineering Prod...Joseph M. Vananzi
Vice-President—Sales.....N. H. Lawton
Credit Manager.....Fred Weller
Purchasing Agent.....S. Yurman
Service Manager.....William Telmoss

BRANCH OFFICES: 635 N. Penn St., Indianapolis 4, Ind., Phone, Lincoln 5191, George R. Brand, Sales; 2216 W. 11th St., Los Angeles 6, Calif., Phone, Drexel 1263, Harry A. Lasure, Sales & Warehouse.

PRODUCTS: Sockets, plugs, switches, terminal strips, plastic and metal fabrications and assemblies, locking rings, metal stampings, plastic molded products, air-loops.

Freed Radio Corp.

200 Hudson St., New York 13, N. Y.
Phone: WAlker 5-8765

President.....Max Adelberg
Vice-President-General Mgr...Arthur Freed
Treasurer.....Melvin Zalkin

PRODUCTS: Manufacturer of Freed-Eisemann high-fidelity radio-phonograph combinations, all incorporating frequency modulation band.

Galvin Mfg. Corporation

4545 Augusta Blvd., Chicago 51, Ill.
Phone: SPAulding 6500

President.....Paul V. Galvin
Vice-President in Charge of Production
Frank J. O'Brien

Vice-President in Charge of Automotive DivisionElmer H. Wavering
Vice-President in Charge of Home Products Division.....W. H. Stellner

PRODUCTS: Motorola Home Receiving Sets, Radio Phonograph Combinations, FM Receiving Sets, Automatic Record Players, Auto Radio Receiving Sets, AM and FM 2-Way Police Radio Communication Systems, Aircraft Radio, Gasoline car heaters.

Garod Radio Corp.

70 Washington St., Brooklyn 1, N. Y.
Phone: MAIn 4-6044

President.....Max W. Weintraub
Assistant to President....Maurice Raphael
Sales Manager.....Louis Silver
Treasurer.....B. S. Trott
Purchasing Agent.....Emanuel Weintraub
Advertising Manager.....Joseph G. DeVico

PRODUCTS: Radio and television re-

ceivers, television-phonograph-radio combinations, radio-phonographs, portables, farm radios.

**General Electric
Electronics Department**

Thompson Road, Syracuse, N. Y.
Phone: 6-4411

President of Company.....C. E. Wilson
Vice-Pres. in Charge of Electronics Dept.

Dr. W. R. G. Baker
Genl. Sales Mgr.....A. A. Brandt

BRANCH OFFICES: 140 Federal St., Boston, Mass., R. L. Hanks; 570 Lexington Ave., New York 22, N. Y., H. J. Mandernach; 1405 Locust St., Philadelphia 2, Pa., T. B. Jacobs; 187 Spring St., N.W., Atlanta 3, Ga., T. B. Willard; 4966 Woodland Ave., Cleveland 4, Ohio, R. P. VanZile; 840 So. Canal St., Chicago 80, Ill., G. S. Peterson, 106 W. 14th St., Kansas City 6, Mo., R. J. Meigs; 1801 N. Lamar St., Dallas 2, Texas, W. M. Skillman; 235 Montgomery St., San Francisco 4, Calif., W. M. Boland.

PRODUCTS: Receivers, Transmitters, Tubes, Components.

General Electronics Inc.

1819 Broadway, Room 1410
New York 23, N. Y.
Phone: Circle 7-8093

Vice-President-Treasurer...D. E. Replogle
Sales Manager.....T. A. Haish

PRODUCTS: Electron power and transmitting tubes, fluorescent starters.

The General Industries Co.

Olive & Taylor Sts., Elyria, Ohio
Phone: 2235

President.....A. W. Fritzsche
Treasurer.....C. F. Russert
Vice-Pres., Factory Mgr.-Plastics Div.

O. W. Marsh
Vice-Pres., Factory Mgr.-Mech. Div.

W. A. Schmittgen
Vice-Pres., Sales Mgr. of Mechanical Div.

H. E. Moon
Vice-Pres., Sales Mgr. of Plastics Div.

Steve Hildebrandt

PRODUCTS: Molded plastics — electric spring phonograph motors, record changers; recorders — combination record changer; heater and defroster motors.

General Instrument Corp.

Subsidiaries:

General Instrument & Appliance Corp.

General Electronic Apparatus Corp.

829 Newark Ave., Elizabeth 3, N. J.

Phone: Elizabeth 3-4400

Chairman of the Board.....Samuel Cohen
 President-Treasurer.....A. Blumenkrantz
 Executive Vice-President...Richard E. Laux
 Vice-President—Sales.....Don J. Phelps
 Sales Manager.....George P. Marron
 Speaker Division.....Leon Golder
 Chief Engineer.....Berne N. Fisher

PRODUCTS: Variable condensers, push button devices, record changers, loud speakers.

General Laminated Products, Inc.

2857 South Halsted Street, Chicago 8, Ill.
 Phone: Victory 0707

PresidentMorris Perlman
 Gen. Manager.....Edward Metzger
 Chief Engineer.....Lester Lindgren
 Credit Manager.....Vera Ludwig
 Purchasing Agent.....Ernest Neustadter
 Sales.....L. Tenenber, Vera Chrest

PRODUCTS: Coil Forms, Terminal Strips, Radio Backs, Baffle Boards, Loop Forms, Sockets, Battery & Wafer, etc., Special Assemblies, Fabricators of Laminated Phenolic Materials and other products.

General Radio Co.

275 Massachusetts Ave., Cambridge 39, Mass.
 Phone: TRowbridge 4400

Chairman of Board.....H. B. Richmond
 President.....E. H. Locke
 Vice-Pres. for Sales.....A. E. Thiessen
 Vice-Pres. for Production.....C. C. Carey
 Secretary-Treasurer.....F. L. Tucker
 Asst. Secretary-Treasurer....C. E. Hills, Jr.
 Chief Engineer.....M. Eastham

BRANCH OFFICES: Rm. 815, 90 West St., New York 6, N. Y., Phone, WOrth 2-5837, I. G. Easton; 950 N. Highland Ave., Los Angeles 38, Calif., Phone, Hollywood 6201, Fred Ireland; 920 S. Michigan Ave., Chicago 5, Ill., Phone, Wabash 3820, Kiplin Adams.

PRODUCTS: Precision radio and electronic laboratory and testing instruments.

The Fred Goat Co., Inc.

314 Dean Street, Brooklyn 17, N. Y.
 Phone: TRiangle 5-0940

President.....Walter Goat
 Vice-President & Gen. Mgr....J. R. Ellison
 V. P. & Sales Mgr.....E. M. Haines
 Secretary.....H. D. Smith

PRODUCTS: Tube shields—small intricate drawn, formed and stamped parts, manufactured to very close tolerances from the difficult working metals and alloys.

The Hallicrafters Co.

4401 W. 5th Ave., Chicago 24, Ill.
 Phone: Van Buren 6300

President.....W. J. Halligan
 Exec. Vice-President.....R. W. Durst
 Vice-President—Engineering R. E. Samuelson
 Secretary-Treasurer.....J. J. Frendreis

Sales Manager.....R. J. Sherwood
 Asst. Sec.-Purch. Agent.....E. J. Corcoran
 Assistant Treasurer.....M. P. Heinz
 Vice-President.....L. L. Kelsey
 Works Manager.....G. H. Hartley

PRODUCTS: Short-wave radio communication receivers and transmitters, marine radio-telephones; home set receivers.

Hamilton Radio Corp.

510 Sixth Ave., New York 11, N. Y.
 Phone: GRamercy 7-5210

President.....A. A. Juviler
 Vice-President.....P. L. Schoenen
 Asst. Treasurer.....M. Sobin
 Director of Sales.....J. F. Crossin
 Chief Engineer.....J. Ravdin
 Purchasing Engineer.....M. Z. Landau
 Office Manager.....L. Haber

PRODUCTS: Complete line of home receivers. AM and FM television receivers.

The Hammarlund Mfg. Co., Inc.

460 West 34th St., New York 1, N. Y.
 Phone LOngacre 5-1300

President.....Lloyd A. Hammarlund
 V-P & Treasurer.....Joseph Lush
 V-PH. B. Macartney
 Secretary-Comptroller.....E. A. Wittmer
 Advertising Mgr.....G. W. Shuart

PRODUCTS: Manufacturers of precision communications equipment.

Frederick Hart & Co., Inc.

(Formerly Amertype Recordgraph Corp.)
 350 Madison Ave., New York 17, N. Y.
 Phone: Vanderbilt 6-3236

Vice-President.....Albert D. Stern

PRODUCTS: Sound recording-reproducing instruments for radio stations, 2-way telephone conversations where authorized, radio interception and monitoring, film recorder-reproducers, magnetic recorder-reproducers.

Hartenstine Zane Co., Inc.

225 Broadway, New York 7, N. Y.
 Phone: BA 7-8390-1

Secretary-Gen.-Mgr.....Chas. J. Hartenstine

BRANCH OFFICE: 571 Springdale Ave., East Orange, N. J. Phone, Orange 4-6054. M. A. Hartenstine, Asst. Secretary. PRODUCTS: Antennae Installation including all field work for foundations, erection, painting, lighting, and servicing radio towers. Installing ground systems and coaxial cable.

Harvey Radio Laboratories, Inc.

447 Concord Avenue, Cambridge 38, Mass.
 Phone: Trowbridge 2800

President.....Frank Lyman, Jr.
 Asst. to Pres.....David T. Ferrier
 Clerk of Corp.....Ronald W. Martin
 Chief Engineer.....Bernard J. Cosman

• • • **EQUIPMENT MANUFACTURERS** • • •

Purchasing Agent.....Frank Waterhouse
Comptroller.....Gordon Genthner
PRODUCTS: FM Broadcast Transmitters,
Marine Radio Equipment, Police Radio
Equipment, Regulated Power Supplies, Elec-
tronic Equipment, Communications Equip-
ment.

Haydu Brothers

P. O. Box 1226, Plainfield, New Jersey
Phone: Plainfield 6-0878
Partner-Sales Manager... George K. Haydu
Chief Engineer.....Zoltan Haydu
Purchasing Agent.....E. Sichel

PRODUCTS: Precision stampings and
wire forms for radio, radar and television
tubes; burner equipment for glass forming
machinery.

Hazeltine Corporation

1775 Broadway, New York 19, N. Y.
Phone: COlumbus 5-0793

Chairman.....Edgar Rickard
President.....Jack Binns
Vice-Pres.-Chief Eng.....W. A. McDonald
Asst. Treas.....Herbert F. Clough

PRODUCTS: Patents and engineering ser-
vice to manufacturers.

Hewlett-Packard Co.

395 Page Mill Road, Palo Alto, Calif.
Phone: Palo Alto 2-4651

Partner.....David Packard
Partner.....William R. Hewlett
General Manager.....Glenn Zieber
Chief Development Engineer..Bruton Bauer
PRODUCTS: Laboratory instruments.

Hoffman Radio Corp.

3761 S. Hill St., Los Angeles 7, Calif.
Phone: Prospect 3446

Sales Manager.....R. J. McNeely
Director of Engineering.....M. J. Manahan
Chief Engineers..A. E. Bennett, Stanley Cutler
Export Agents.....Exportadora, Inc.,
Los Angeles, Calif.

Manager, Special
Electronics Division.....Elmer P. Gertsch
Comptroller.....C. E. Underwood
Treasurer.....R. A. Yarcho
Purch. Agent.....P. L. Fleming
Sales Prom. Mgr.....Daniel E. Anderson
Service Manager.....F. J. Bauer
Vice-President.....Walter D. Douglas
Asst. Sales Mgr.....D. D. Spence

BRANCH OFFICE: Merchandise Mart,
1355 Market St., San Francisco, Calif., Walter
J. Epstein.

PRODUCTS: Radios, table models, con-
soles, combinations, combinations with re-
corders.

Howard Radio Co.

1731-35 Belmont Ave., Chicago 13, Ill.
Phone: Diversey 2000

President.....Joseph F. Riley
Vice-President.....J. M. Muniz
Vice-President.....Howard C. Briggs
Chief Engineer.....W. James
PRODUCTS: AM-FM radios and phono-
graph combinations, television receivers and
other electronic products.

Hytron Radio & Electronics Corp.

76 Lafayette St., Salem, Mass.
Phone: Salem 2260

President.....Bruce A. Coffin
Chairman of Board-Treas...Lloyd H. Coffin
Sales Manager.....John Q. Adams
Chief Engineer.....C. F. Stromeyer
Credit Manager.....M. S. Jones
Advertising Manager.....Harry G. Burnett
PRODUCTS: The following vacuum tubes:
receiving, ballast, very-high-frequency triodes
and pentodes, miniatures, medium and low-
power transmitting triodes, R. F. beam te-
todes (particularly instant-heating), R. F.
pentodes, gaseous voltage regulators, and
rectifiers.

Ideal Fluorescent Products Co.

150 Summit St., Newark, N. J.
Phone: Mi 2-6466

Manager.....Herman K. Kuthe
PRODUCTS: "Ideal" fluorescent starter
switches, and electronic tubes.

The Indiana Steel Products Co.

6 N. Michigan Ave., Chicago, Ill.
Phone: FRAnklin 1114

President & Treas....A. D. Plamondon, Jr.
Vice-Pres. & Genl. Mgr...Joseph F. Drennan
Secretary.....Albert Kahn
Asst. Secretary.....M. J. Drew
PRODUCTS: Permanent magnets, radar
magnet assemblies, alloy castings. 149 Devon-
shire Court, Rochester, N. Y., Gerald Troy.

Industrial & Commercial Electronics

601 O'Neill Ave., Belmont, Calif.
Phone: Belmont 664

President.....Ralph C. Shermund
Vice-President.....Charles V. Litton
Chief Engineer.....D. Gordon Clifford
Credit Manager.....G. C. Stuparich
Purchasing Agent.....M. M. Fisch
PRODUCTS: Industrial transmitting tubes,
vacuum condensers, vacuum relays.

Insuline Corp. of America

3602-10 35th Ave., Long Island City 1, N. Y.
Phone AStoria 8-3738

.....S. J. Spector

Sales Manager.....Bernard L. Cahn
 Vice-President.....M. Sherover
 Treasurer.....A. S. Spector
 Chief Engineer.....John Donato

PRODUCTS: Radio Receiving-Transmitting Parts and Accessories, Stamping Metal Goods, Radio Chassis, Metal Cabinets, Plugs, Jacks, Sockets, Screw Machine Parts, Test Tools, Test Leads, Auto Antennas, Auto Radio Noise Suppressors.

International Detrola Corporation

Beard Avenue at Chatfield, Detroit 9, Mich.
 Phone: Vinewood 1-8100

V.P. in Chg. Sales.....G. A. Bodem
 Sales Mgr. Home Radios...Harley R. Wall
 Advertising Manager.....G. E. Rakovan
 Dir. of Purchases.....J. E. Ruder
 Dir. of Engineering.....R. M. Daugherty
 Works Manager.....W. S. Wright
 Service Manager.....K. L. Granger

PRODUCTS: Receivers: Electric—Compact, table, portable, console; Battery—Automobile, portable, portable AC-DC, table, console; Combinations—Radio-Phonograph, radio—phonograph—recorder; Frequency Modulation—Table, console, FM-AM table, FM-AM console; record players and automatic record changers.

**International Detrola Corporation
 Utah Radio Products Division**

Beard Avenue at Chatfield
 Detroit 9, Mich.

Phone: Vinewood 1-8100

V.P. Chg. Sales & Eng'g...W. Austin Ellmore
 Sales Mgr. Wholesale & Sound....J. Prince
 Sales Engineers....Ed O'Flara, A. M. Stump

PRODUCTS: For radio set manufacturer—Speakers; For jobber replacements—Loud speakers, transformers, chokes, vibrators, wire wound resistors, volume controls, jacks, jack switches, button switches, plugs.

**International Detrola Corporation
 Saswell-Runyan Division
 Huntington, Indiana**

General Manager.....Adolph H. Schenkel
 Asst. Secty., Asst. Treas.

& Credit Manager.....R. P. Schmelzer

PRODUCTS: Radio cabinets.

International Resistance Co.

407 N. Broad St., Phila. 8, Pa.
 Phone: Walnut 2-2166

President.....Ernest Searing
 Vice-Pres., Sales.....Harry Ehle
 Vice-Pres., Chief Eng.....Jesse Marsten
 Manager, Radio Division.....C. H. Griffith

BRANCH OFFICE: 165 Broadway, Room 1438, New York, N. Y., Phone, Cortland 7-5020, Manager, A. H. Harddick.

PRODUCTS: Fixed and variable resistors

Isolantite Inc.

343 Cortland St., Belleville 9, N. J.
 Phone: Belleville 2-4600

President.....K. D. Hamilton
 Vice-President.....P. H. Mouraud
 Secty.-Treas.A. Heard
 Sales Manager.....L. C. Sanford

PRODUCTS: Steatite, heat shock refractories, high frequency radio insulators, coaxial transmission line and accessory equipment, special antenna equipment and radar assemblies.

J. F. D. Manufacturing Co.

4109-4123 Fort Hamilton Parkway,
 Brooklyn 19, N. Y.

Phone: Windsor 3-3100

President.....Julius Finkel
 Vice-President.....Albert Finkel
 Sales Manager.....Edward Finkel

PRODUCTS "Sockette" radio tube adapters, exact duplicate ballast tubes, phosphor bronze dial cable, battery adapter harnesses, adjustable ballast tubes, resistance cord adapters, phono adapter switches, microphone connectors, midget jacks & plugs, phonograph needles, resistance cords, AC service cords, toggle switches, auto condensers, speaker cement, antenna loops, auto antennas, battery plugs, tube shields, radio wire, suppressors, dial belts, dial cord, dial pointers, test lead wire, remote-o-cable-replacer, flashlite cable, casing, auto radios, fittings.

**The Jackson Electrical
 Instrument Co.**

16-18 S. Patterson Blvd., Dayton 1, O.
 Phone: Hemlock 4076

President-Sales Manager...Paul F. Jackson
 Chief Engineer.....George M. Buchard

PRODUCTS: Test equipment.

Jefferson Electric Co.

25th Ave. & Madison St., Bellwood, Ill.
 Phone: MANsfield 7161

President.....J. C. Daley
 Exec. Vice-Pres.....Alfred E. Tregenza
 Vice-Pres. & Secy.....J. M. Bennan
 Vice-President.....R. A. Hoagland
 V.-P., Engineer.....L. Maurer
 Executive Engineer.....R. J. Horstman
 Credit Manager.....Victor E. Lee
 Export Manager.....M. J. Schmitt
 Director of Purchases...Edward J. Banigan

PRODUCTS: Power transformers, chokes and audio input and output transformers, television deflecting yokes, horizontal and vertical scanning transformers, centering and focusing coils.

Jensen Radio Manufacturing Co.

6601 S. Laramie Ave., Chicago 38, Ill.
 Phone: Portsmouth 7600

EQUIPMENT MANUFACTURERS

President.....Thomas A. White
Vice-President.....Hugh S. Knowles
Purchasing Agent.....George H. Turner
Secretary.....A. L. Oliver
Advertising Manager.....Bayard H. Clark
Chief Engineer.....Hugh S. Knowles

BRANCH OFFICE: Box 825, Oakland, Calif. Phil Bechamber, rep.

PRODUCTS: Loudspeakers, reproducers.

Johns-Manville Corp.

22 East 40th St., New York 16, N. Y.
Phone LExington 2-7600

PRODUCTS: Sound-control materials for broadcasting studios.

Kellogg Switchboard & Supply Co.

6650 S. Cicero Ave., Chicago, Ill.
Phone: Portsmouth 6900

President.....J. G. Kellogg
Executive Asst. to President...C. D. Manning
Secretary.....J. H. Kellogg
Treasurer.....H. C. McCluskey

PRODUCTS: Oil and wax condensers, communications equipment, microphones, earphones, noise filters, volume controls, retractable electrical cords (Koilod Kords).

Ken-Rad Tube & Lamp Corp., Inc.

Owensboro, Ky.
Phone: Owensboro 2000

President.....Roy Burlew
Sales Manager.....R. W. Metzner

PRODUCTS: Receiving, transmitting, cathode ray and special purpose tubes.

Kenyon Transformer Co., Inc.

840 Barry St., New York 59, N. Y.
Phone DAYton 9-0100

President.....Franklin P. Kenyon
Vice-President & Chief Engineer

Richard B. Shimer

PRODUCTS: Transformers, Reactors, Filters.

Kerrigan Lewis, Mfg. Co.

4421 W. Rice St., Chicago 51, Ill.
Phone: Spaulding 7208

Partner.....Vincent M. Kerrigan
Partner.....Charles F. Lewis

PRODUCTS: Magnet and Litzendraht Wire.

King Laboratories, Inc.

127 Solar St., Syracuse 4, N. Y.
Phone: 2-5209

President.....Aden J. King
Vice-President.....F. M. Michaelian
General Manager.....W. R. MacLeod

Secy. & Treas.....George L. King
PRODUCTS: Special alloys, chemicals and metals, radio tube parts, metal punchings and stampings, barex getters.

Kludge Electronics Co.

2125 1/4 Sunset Blvd., Los Angeles 26, Calif.
Phone: Exposition 1742, Fitzroy 7430

President.....Myron E. Kludge
Vice-President.....Edward C. Bickhart
Chief Engineer.....Paul D. Langrick
Sales Manager.....J. R. Muratta

BRANCH OFFICE: Main Factory: 137 W. Commercial, Pamona, Calif., Myron E. Kludge.

PRODUCTS: Transmitters, tubes, frequency & modulation monitors, magnetic recording & reproducing equipment.

Kuthe Laboratories, Inc.

150 Summit St., Newark 4, N. J.
Phone: MITchell 2-6466

President.....Herman K. Kuthe
Vice-President.....Bernard Hellring
Treasurer.....Hedwig Kuthe

PRODUCTS: Electronic transmitting tubes, rectifiers, voltage regulators, indicators, fluorescent starter switches, specialty-gas filled tubes.

The Langevin Co., Inc.

36 W. 65th St., New York 23, N. Y.
Phone: Endicott 2-7200

President.....Carl C. Langevin
V.P.—Sales.....H. B. Miller
V.P.—Manufacturing.....P. F. Kavanagh
V.P.—Field Engineering.....W. J. Jurek
V.P.—Development.....W. J. Dallin

BRANCH OFFICES: 1050 Howard St., San Francisco 3, Calif., H. A. Wollenberg, Vice-President. 1000 N. Seward St., Los Angeles 38, Calif., W. T. Brown, Vice-President.

PRODUCTS: Speech input equipment and audio amplifying facilities, rectifiers, transformers.

Lapp Insulator Co., Inc.

Le Roy, N. Y.
Phone Le Roy 385

President.....J. S. Lapp
Vice-President.....W. F. Young
Chief Engineer.....Ralph L. Jenner

PRODUCTS: Tower footing and guy insulators; standoff, entrance and antenna insulators; radio frequency high voltage condensers.

Lear, Inc.

110 Ionia Ave., N. W., Grand Rapids 2, Mich.
Phone: 6-9651

President.....William P. Lear

Vice-President in
Chg. Radio.....Elmer R. Crane
V.P. Chg. Electro-Mechanical...R. M. Mock
Mdse. Manager—Home Radio Div. Nate Hast
Sales Manager—Aircraft Radio Div.

Hal T. Sagert
Manager—Wire Recording Div.

Andy W. Korb
Advertising Co-Ordinator.....H. J. Silbar

PRODUCTS: Radio Division (aircraft & home): automatic aircraft antenna reels, shielded antennae, gyro & directional compasses, control tower equipment, automatic direction finders. Receivers: aircraft, home, beacon, grid marker, portable, phonograph combinations, receiver-transmitters, wire recording combination, ultra high frequency, very high frequency, wire record. Transmitters: aircraft, portable, ultra high frequency, very high frequency. Wire recorders for office, commercial and home use. Trade name, "Learadio."

Lehigh Structural Steel Co.

17 Battery Place, New York, N. Y.
Phone Whitehall 4-1424

Contact.....J. F. Neary
BRANCH OFFICES: In all principal cities.
PRODUCTS: Vertical Radiators, Antenna
Towers and Masts. Supporting Towers for
FM and Television.

Lektra Laboratories, Inc.

30 E. 10th St., New York 3, N. Y.
Phone: Algonquin 4-0230

President.....Milton W. Blatner
Vice-President.....Ben Eisenberg
Purchasing Agent.....A. Severin
PRODUCTS: Electronic Photo Timers,
Electronic Industrial Timers, Electro Shock
Therapy equipment, Galvanic Generators,
Faradic Generators, Sinusoidal Generators,
Electrolysis Equipment.

Lewyt Corp.

60 Broadway, Brooklyn 11, N. Y.
Phone: Evergreen 8-9600

President.....Atex M. Lewyt
Works Manager.....Arnold Wolf
Sales Mgr.—Contract Div. Jerome L. Strauss

PRODUCTS: (Manufactured by Radio-
Electronic-Television Consumer Division):
Radios, table and portable models; radio-
phonograph combinations, consoles, FM, AM,
television, record players. (Manufactured by
Contract Division): Radios and electronic
equipment to customer's specifications.

Libbey Glass

Division of Owen-Illinois Glass Co.
Ohio Bldg., Toledo 1, Ohio
Phone: Main 7131

President.....J. Preston Levis

V.P. Gen'l Mgr.,
Libbey Glass.....John H. Wright
Mgr., Industrial

Glassware Sales.....R. W. Rogers
Adv. & Mdse. Mgr.....C. U. Fauster

BRANCH OFFICES: 405 Lexington Ave.,
New York, N. Y., C. J. Zihlman; 1582 Mer-
chandise Mart, Chicago, Ill., F. W. Levis.

PRODUCTS: Component glass parts for
radio and television tubes.

John E. Lingo and Son, Inc.

2814 Buren Ave., Camden, N. J.
Phone Camden 0487

President.....J. E. Lingo
Asst. to President.....Joseph J. Taylor
Chief Engineer.....Wesley Thompson
Production Superintendent..George Burrows

PRODUCTS: Vertical Radiators; Guyed
Tubular Steel and Portable Dural; Turn-
stile and UHF Antennae, Tubular Steel
Supporting Poles (for UHF Antennae).

Machlett Laboratories, Inc.

Power Tube Division: 25 Grand St.
Norwalk, Conn.

Phone: Norwalk 6-5581

X-Ray Division: 1063 Hope Street
Springdale, Conn.

Phone: Stamford 4-5781

President.....R. R. Machlett
Vice-President

in Chg. Sales.....W. E. Stevenson
Treasurer.....J. A. Lambert
General Sales Manager.....H. J. Hoffman

PRODUCTS: High power Radio transmit-
ting tubes, high vacuum & Mercury vapor
rectifiers, V.H.F. transmitting tubes for re-
lay application, hydrogen thyratrons, magne-
trons, water and forced air-cooled tubes for
industrial R.F. heating, electron tubes for
diatherm.

The Magnavox Company

2131 Bueter Rd., Fort Wane 4, Indiana
Phone: A-5474

President.....Richard A. O'Connor
Executive Vice-President...Frank Freimann
Factory Manager.....L. E. Quinnell
Chief Electrical Engineer, Radio-
Phonograph Division...R. H. Dreisbach
Sales Manager—Components Div.

Stanley S. Sondles

PRODUCTS: Receivers: Combinations
radio-phonograph, radio-phonograph modula-
tion-table, console, FM-AM console, tele-
vision-console, speakers, capacitors, solenoids,
sound slide film equipment.

Majestic Radio & Television Corp.

Elgin, Ill.

Phones:

(Chicago Exchange) EST. 6900
(Elgin Exchange) 8300

President.....Tracey

EQUIPMENT MANUFACTURERS

V.P.-Dir. of Sales.....Parker H. Eriksen
V.P.-Exec. Engr.....E. B. Passow
VP.-Prod. Mgr.....John Stevens

PRODUCTS: Home receivers; table model radios; table model radio-phonographs; radio-phonograph consoles, AM and FM.

Measurements Corp.

116 Monroe St., Boonton, N. J.
Phone: Boonton 8-2131

President.....H. W. Houck
Chief Engineer.....Jerry B. Minter
Chief Research Engineer...John van Beuren

PRODUCTS: Model 58 radio noise & field strength meter, model 62 vacuum tube voltmeter, models 65B, 78 78FM, 80, 84 UHF signal generators, model 71 square wave meter, model 79B pulse generator, megacycle meters, megohm meters, moisture meters, FM & Television test equipment, models M-234, M-235 R. F. attenuators; phase sequence indicators; peak voltmeters; inductance bridges; capacitance bridges.

John Meck Industries, Inc.

Liberty at Pennsylvania Sts., Plymouth, Ind
Phone: Plymouth 33

President.....John S. Meck
Secty. & Controller.....Russell G. Eggo

BRANCH OFFICE: 35 E. Wacker Dr., Chicago, Ill., Phone, And. 3550, B. L. Bethel, Dir. of Purchases.

PRODUCTS: Radios, radio-phonograph combinations, phonographs, transmitters, amplifiers, public address systems and other miscellaneous electronic products.

Meissner Mfg. Division Maguire Industries, Inc.

Mt. Carmel, Illinois
Phone: 733

Vice-President.....James T. Watson
Sales Manager.....Oden F. Jester
Director of Purchases...William F. Covert
Works Manager.....Fred Lester
Chief Engineer.....E. J. Stanmyre
Jobbing Sales Manager.....R. M. Karet
Asst. Secretary.....Madge A. Hubbard
Division Accountant.....G. W. Osbeck
Service Manager.....W. M. Atkins

PRODUCTS: AM & FM radio receivers, radio-phonograph combinations, radio amateur equipment, radio coils for replacement, radio coils for equipment, radio servicemen's test equipment.

Miles Reproducer Co., Inc.

812 Broadway, New York, N. Y.
Phone GRamercy 5-9466

President.....Dr. R. Byrne

Secretary—Ch. Eng.....J. M. Kuhlik, Sc.D.
Treasurer.....H. B. Kuhlik
Advertising Mgr.....A. Altomari
Vice-President.....G. Ruskin
Public Relations.....B. Burns
Electronics Head.....P. Katzoff, E.E.

PRODUCTS: Sound-On Film Recorders, Sound-On Film Reproducers, Telephone Recording Machines, Dictating Recording Machines, Dictating Transcribers, Throat Microphones, Sound Protection Equipment, Continuous Recorders and Transcribers for every occasion, "Talkie" Recorders for 8-16 mm. Motion Pictures.

Mirror Record Corp.

1133 Broadway, New York 10, N. Y.
Phone CH 3-2222

Pres. & Treas.....Paul K. Trautwein
PRODUCTS: Recording accessories (discs, cutting needles, playback needles).

The Muter Co.

1255 S. Michigan Ave., Chicago 5, Ill.
Phone: Wabash 8800

President-Treasurer.....Leslie F. Muter
V.P.-Credit Manager.....A. A. Dailey
Sales Mgr.-Vice-President....Paul J. Pfohl
Chief Engineer.....K. E. Rollefson
Purchasing Agent.....A. R. Campbell

PRODUCTS: Resistors, switches, ceramic condensers, ballasts, coils, spira shields, antenna loops, I. F. and R. F. transformers.

National Carbon Co., Inc.

30 East 42nd St., New York 17, N. Y.
Phone: MUrray Hill 2-6800

President.....A. V. Wilker
Vice-Pres. & Gen. Mgr.....J. M. Spangler
Vice-Presidents.....C. O. Kleinsmith,
H. M. Warren

General Sales Mgr.....R. P. Bergan
Mgr. Battery Eng. Dept.....W. H. Fritz

PRODUCTS: "Eveready" "Mini-Max" "B" batteries for portable and farm type receivers, "Eveready" dry cells, "Eveready" flashlight batteries for miniature receivers, "Eveready" "Air Cell" batteries for 2-volt and 1.4 volt receivers.

National Union Radio Corp.

57 State St., Newark 2, N. J.
Phone: HUmboldt 2-5050

President.....S. W. Muldowny
Controller.....E. O. Sandstrom
Dir. of Labor Relations.....A. C. Beeson
Dir. of Distributor Sales.....J. J. Clune
Production Manager.....F. A. Turnquist
Credit Manager.....H. A. Pope
Advertising Manager.....E. J. Maginot

PRODUCTS: Receiving Tubes, Cathode Ray Tubes, Television Tubes, Transmitting Tubes, Ballast Tubes, Phototubes, Condensers, Dry Batteries, Volume Controls, Radio Sets, Vibrators, Panel Lamps.

Oxford Radio Corp.

3911 S. Michigan Ave., Chicago, Ill.
Phone: ATLantic 6161

President.....John A. Proctor
V.P. & General Manager....Robert Adams
Secretary-Treasurer.....David E. Davis
V.P.-Sales Manager.....Robert Adams
Service Manager.....J. H. Wood
Chief Engineer.....Harold Sappenfield
Chief Inspector.....Stanley O'Gorek
Production Manager.....A. A. Polak

PRODUCTS: Radio speakers, output and line transformers.

Packard-Bell Co.

3443 Wilshire Blvd., Los Angeles 5, Calif.
Phone: Fairfax 241

President.....Herbert A. Bell
Ex. V.P. & Gen. Mgr....H. D. Thomas, Jr.
V.P. & Director of Sales.....J. M. Spain
V.P. & Asst. Gen. Mgr.....Lowell Wood
Sales Manager.....F. E. Ware
Advertising Manager.....C. C. Alsop
Purchasing Agent.....A. T. Baxter
Production Manager.....C. Davies
Personnel Director.....A. S. White
Comptroller.....L. R. Day

PRODUCTS: Radios, phonographs, home recording instruments, FM and Television equipment.

Philco Corp.

Tioga & C Sts., Philadelphia 34, Pa.
Phone: NEBraska 4-5100

Chairman of the Board.....Larry E. Gubb
Chairman of Exec. Comm..James T. Buckley
President.....John Ballantyne
V.P., Charge of Operations..Wm. Balderston
V.P., Charge of Industrial Relations...Harold W. Butler
V.P., Charge of Merchandising.....James H. Carmine
V.P., Charge of Radio Production.....Joseph H. Gillies
V.P., Charge of Home Radio Division....Larry F. Hardy
Vice-President.....Russell L. Heberling
V.P., Charge of Storage Battery Division..M. W. Heinritz
V.P., Charge of Service Division.....Robert F. Herr
V.P., Charge of Sales...Thomas A. Kennally
V.P., Charge of Engineering..David B. Smith
Treasurer.....William R. Wilson
Secretary.....Charles F. Steinruck, Jr.
Comptroller.....William B. Yoder
Chief Radio Engr.....Palmer M. Craig
Chief Television Engr.....F. J. Bingley
General Purchasing Agent....R. A. Boyce

PRODUCTS: Radio receivers, auto radios, radio-phonographs, Television receivers, refrigerators, freezers, air conditioners, storage batteries, dry batteries, radio tubes, replacement parts, export products, electronic equipment, mobile radio-telephones. For the Government: Advanced research in radar and electronics; airborne radar equipment.

Philharmonic Radio Corp.

528 E. 72nd St., New York 21, N. Y.
Phone: Butterfield 8-2300

President-Treasurer.....Z. Soucek
Vice-President—Engineering...V. Brociner
Asst. Secretary-Treasurer.....L. Ertle
Plant Manager.....P. Cassata
Personnel Manager.....I. Juliber
Chairman of Board.....Thomas R. Jones

PRODUCTS: FM-AM radio-phonographs, FM-AM receiving sets, television sets, airborne radar equipment, radio transmitters, test equipment, synchroscopes, square-wave generators, underwater sound equipment, two-band high sensitivity portable receivers, cathode ray equipment, monitor and control equipment.

Philmore Mfg. Co.

113 University Pl., New York 3, N. Y.
Phone: ALgonquin 4-3363

Manager.....Philip Schwartz
Chief Engineer.....Reginald Burke
Credit Manager.....C. Levine
Export Manager.....M. L. Granat
Purchasing Agent.....Murray Granat

PRODUCTS: Amateur sets, crystal sets, microphones (carbon type), detectors, plugs, 1, 2 and 3-tube receivers, headphones, signal keys, short wave and broadcast plug-in coils, aerial kits, speaker microphones.

Pilot Radio Corp.

37-06 36th St., Long Island City 1, N. Y.
Phone: Stillwell 4-5455

President.....Isidor Goldberg
Executive Vice-President.....E. L. Hall
Secretary.....I. W. Wyckoff
General Prod. Manager.....J. Benjamin
Domestic Sales Manager...Allen D. McGehee
Export Sales Manager.....J. E. Chorlian
Chief Engineer.....Dr. W. Auerbacher
Purchasing Agent.....A. Weissman

PRODUCTS: AM-FM table models and phono combinations, portable radio receivers and television receivers, non-breakable pilotone vinylite records.

Precision Specialties

210 N. Western Ave., Los Angeles, Calif.
Phone: Hi. 8333

General Manager-Co-owner.....L. Glaser
Sales Manager-Co-owner...J. Raeburn
Radio Dept. Head.....W. F. Frankart
Chief Purchasing Agent.....C. Gould

Chief Engineer—Plastics.....M. R. Roberts
 Comptroller.....P. Gatov
 General Sales Manager.....P. Belvin, 3rd
 Plant Manager—Plastics.....Mr. Washburn
 Plastic Stylist-Engineer.....Lee McMurray

PRODUCTS: Broadcast receivers AC-DC, Phono-combinations, FM-AM consoles, crystal sets, electronic toys, short wave communication equipment, civilian walkie-talkie, radio equipment.

Press Wireless Mfg. Corp.

1475 Broadway, New York 18, N. Y.
 Phone: Bryant 9-5030

President.....A. Warren Norton
 Vice-President.....F. P. Andrews
 Treasurer.....James Humphry, Jr.
 Secy. & Gen. Counsel.....James E. Denning
 Factory Manager.....M. G. Himmel
 Chief Engineer.....L. N. Hatfield
 Sales Manager.....Stephen Horbach

BRANCH OFFICE: (Factory) — Hicksville, L. I., Phone, Hks. 988, M. G. Himmel, Factory Manager.

PRODUCTS: Radio Transmitters, Radio Receivers, Transmitting Keyers, Radio Facsimile, Radio Amplifiers, Radio Transceivers, Radio Recorders, Frequency Shift Converters, Radio Photo Transceivers Facsimile High Speed Ink Tape Recorders and Optical Tape Scanners.

Presto Recording Corp.

242 W. 55th St., New York 19, N. Y.
 Phone: Circle 5-7760

President.....George J. Saliba
 Secretary.....Morris M. Gruber
 Treasurer.....A. Benjamin
 Comptroller.....Ruth B. Sholes
 Sales Manager.....Thomas B. Aldrich

BRANCH OFFICES: 13000 Mackenzie Ave., Detroit, Mich., Phone, University 1-0180, Art Adams, Manager. 139 S. Fairview Ave., Upper Darby, Pa., Phone, Sunset 2383R, Malcolm A. Peckham, Manager. 350 Lake St., Boston, Mass., Phone, Belmont 4510, H. M. Lane, Manager. 309 Reliance Bldg., Kansas City, Mo., Phone, Victor 4631, C. E. Terry, Manager. 139 N. Central Ave., Clayton, Mo., Lee Maynard, Manager. 1836 Euclid Ave.; Cleveland, Ohio, Phone, Main 1565, E. P. Scott, Manager. 600 S. Michigan Ave., Chicago, Ill., Phone, Harrison 4240, Leroy W. Beier, Manager. Washington, D. C. (Silver Spring, Md.), Phone, Shepherd 4003, Morris F. Taylor, Manager. 7422 Melrose Ave., Los Angeles, Calif., Phone, Whitney 1147, Norman B. Neeley, Manager. 104 Battery St., Seattle, Wash., Phone, Sen. 2560, L. D. Marsh, Manager. P. O. Box 1805, Dallas, Texas, Phone, Tenni-

son 3-7093, J. Earl Smith, Manager. Dominion Square Bldg., Montreal, Quebec, Phone, Marquette 6368, W. P. Downs, Manager. 4253 Quitman St., Denver, Colo., Phone, Grand 1768, Richard A. Hyde, Manager. 25 Warren St., New York, N. Y. (Export), Phone, Barclay 7-5513, Norman Simons, Manager. 940 Lake Elbert Drive, Winter Haven, Fla., Phone, 22-684, R. H. Van Dusen, Manager. Ellicott Square Bldg., Buffalo, N. Y., Phone, Washington 2517, R. W. Mitscher, Manager. 3355 Dell Trail, Chattanooga, Tenn., Phone, 4-4026, Jesse P. Johnson, Manager. 1105 Kapiolani Blvd., Honolulu, Hawaii, Phone, 3966, Tommy Kearns, Manager.

PRODUCTS: Sound recording equipment, discs, needles, transcription turntables, recording amplifiers and accessory recording equipment.

Radio Condenser Co.

Davis & Copewood Sts., Camden, N. J.
 Phone: Camden 7300

President.....Stanley S. Cramer
 Vice-President.....Russell E. Cramer
 Vice-President.....Russell E. Cramer, Jr.
 Sales Manager.....William J. May
 Factory Manager.....Charles F. Molzen
 Treasurer.....William W. Paul
 Purchasing Agent.....James W. Willard

PRODUCTS: Variable air condensers and mechanical push-button controls.

**Radio Corp. of America
 (RCA Victor Division)**

Front & Cooper Streets
 Camden, New Jersey
 Phone Camden 8000

Exec.-Vice-Pres., Charge of Division
 Frank M. Folsom

Operating V. P.—
 RCA Victor Div.....J. G. Wilson
 V. P.—General Attorney....J. H. McConnell
 Dir. of Purchasing.....V. dePaul Goubeau
 V. P.—Charge Engr. Dept.....D. F. Schmit
 Pres.—RCA Service Co.....E. C. Cahill
 V. P.—Charge Home
 Instrument Dept.....J. B. Elliott
 Chief Engineer—Home
 Instrument Dept.....D. D. Cole
 Sales Manager—Home
 Instrument Dept.....H. G. Baker
 V. P.—Charge Record Dept....J. W. Murray
 Chief Engr.—Record Dept...H. I. Reiskind
 V. P., Actg. Gen. Sales Mgr.—
 Charge Tube Dept.....L. W. Teegarden
 Chief Engr.—Tube Dept....Dr. G. R. Shaw
 V. P.—Chg. Engr.
 Products Dept.....W. W. Watts
 Chief Engr.—Engr.
 Products Dept.....M. C. Batsel

Sales Mgr.—Engr.

Products Dept.....T. A. Smith

DIVISION PLANTS: Main Offices: Camden, N. J.; Harrison, N. J.; Lancaster, Pa.; Indianapolis, Ind.; Bloomington, Ind.; Monticello, Ind.; Pulaski, Va.; Chicago, Ill.; Detroit, Mich.; Hollywood, Calif.

PRODUCTS: Antenna Systems, Application & Maintenance, Engineering Services, Aviation Radio Equipment, Battle Announce Systems; Brenkert Projection Equipment, Broadcast Station Equipment (AM and FM), Communications Equipment, Component Radio & Electronic Parts, Custom Disc Recordings, Direction Finders, Drive-In Theatre Equipment, Electronic Carillons & Chimes, Electronic Fire Control Equipment, Electronic Tube Parts & Machinery, Electron Microscopes, Facsimile Equipment, Faradon Condensers, Film Recording Equipment, Film Recording Service Studio (New York and Hollywood), High Frequency Heating Equipment, Industrial Electronic Products, Industrial Sound Equipment, Inter-Communication Equipment, Microphones, Music Library Service, Police Radio Equipment; Projection Booth Equipment, Public Address & Plant Broadcasting Equipment, Radar Equipment, Radio Parts, RCA Dry Batteries, RCA Victor Radios, RCA, Cunningham, and RCA Victor Electron Tubes, RCA Victor Records, Albums, Needles, Recording Equipment, Scientific Equipment, Screens, Service & Maintenance for Theatre Sound Equipment, 16mm Sound Film Projectors, Sonar Equipment, Sound Discs for Slide Films, Sound Powered Telephones, Sound Systems & Components, Special Apparatus & Technical Services for U. S. Government, Television Receivers, Transmitters, and Associated Equipment, Test & Measuring Equipment, Theatre Furnishings, Theatre Sound Systems, Victrola Radio-Phonographs.

Radio Development & Research Corp.

26 Cornelison Ave., Jersey City 4, N. J.

Phone: Bergen 3-6900 Rector 2-2337

President.....S. Irving Weiss
Asst. to President.....C. A. Porter
Sales Manager.....C. A. Porter
Purchasing Agent.....Kenneth Malbie
Chief Engineer.....Robert Dorr
Plant Superintendent.....A. H. Baus
Service Manager.....Richard Simms

PRODUCTS: Home receivers, two-way plane communications, magnetic steel tape recorders, public address systems, ship-to-shore communications. Trade names Magitone, Chronovox.

Radio Engineering Labs., Inc.

35-54—36th St., Long Island City 1, N. Y.

Phone: Astoria 8-1010

President.....Charles M. Srebroff

Vice-Pres.....Frank A. Gunther
Secretary.....Marion Wade
Chief Engineer.....Malbon H. Jennings
Plant Manager.....Henry Dietz
Sales Manager.....Joseph Behr
Director of Purchases.....Marion Wade
Director of Research.....James R. Day

PRODUCTS: Broadcast transmitters, FM and AM, 250 watts to 50 kw; Antennas—FM, speech input equipment, Frequency Modulation monitors, FM receivers, FM studio to transmitter link equipment, portable transmitters for remote pick up service, mobile two-way FM transmitters.

Raytheon Manufacturing Co.

Waltham 54, Mass.

President.....Laurence K. Marshall
Vice-Pres.-Treas.....David T. Schultz
Secretary.....D. L. Trouant
Vice-President.....Joseph Pierson
Vice-President.....Ray C. Ellis
Gen. Sales Dept. Mgr. John H. Fenstermacher

BRANCH OFFICES: Offices in New York, N. Y.; Chicago, Ill.; Los Angeles, Calif.; Waltham, Mass.; Newton, Mass. Plants Located in Newton, Mass.; Waltham, Mass.; Chicago, Ill.

PRODUCTS: Electronic components, equipments, systems.

Scophony Corp. of America

527 Fifth Ave., New York 17, N. Y.

Phone: MURray Hill 2-5960

President.....Arthur Levey
Vice-President.....Joseph E. Swan
Treasurer.....Franklin Field
Director of Research...Dr. A. H. Rosenthal

BRANCH OFFICES: 40 Gloucester Sq. W., London, Eng. Sir M. B. Carter, Chairman. Wells, Somerset, England, W. G. Elcock, Managing Director.

PRODUCTS: Television projectors, electronic devices.

Sentinel Radio Corp.

2100 Dempster St., Evanston, Illinois

Phone: University 2400

President.....E. Alschuler
Vice-President.....O. F. Taylor
Production Manager.....I. Jacobsen

PRODUCTS: Radio receiving sets and table, console models, portable radios, radio-phonograph combinations, table and console models, FM-AM table console and radio phonograph combinations.

Sheridan Electronics Corp.

2850 South Michigan Ave., Chicago 16, Ill.

Phone: Calumet 2100

President.....John J. Sheridan
Vice-President.....Arthur Sheridan
Secretary.....L. Schlifkin
Comptroller.....Lucille Daniels

Plant Supt.....F. Lorentz
 Purchasing Agent.....J. H. Stackhouse
PRODUCTS: Radio Receivers AC/DC,
 Table Models, Consoles AM/FM, Phonographs AC, Amplifiers.

Sonora Radio & Television Corp.

77 W. Washington St., Chicago 2, Ill.
 Phone: Cen. 3614

V. P.—Charge Sales.....Edward Harris
 V. P.—Charge Finances.....Ray Shadley
 Executive Vice-President.....Ben Freund
 V. P.—Charge Engineering...Don Fetterman
 Advertising Mgr.....Herbert S. Hall
 Recording Director.....Marie Ruebens

BRANCH OFFICES: Reko-Plastik Div.,
 Meridan, Conn., W. R. Dodds, Sr.; Sonora
 Radio & Tel. Corp., 730 Fifth Ave., New
 York 19, N. Y., Phone, Circle 7-5492, Milton
 J. Benjamin; Sterling Wood Working Div.,
 Chicago, Ill., Walter Roberts.

PRODUCTS: Radios, radio-phonographs,
 portables, AM-FM combinations, television
 receivers, phonograph records, Sterling cedar
 chests.

Stewart-Warner Corp.

1826 Diversey Pkwy., Chicago 14, Ill.
 Phone: Lakeview 6000

President.....J. S. Knowlson
 Exec. Vice-President.....F. A. Hiter
 Mgr. Radio Department.....F. D. Masters
 Asst. Mgr. Radio Dept.....J. R. Brandenburg
 Mgr. Radio Service.....N. J. Cooper
 Mgr. Radio Adv.....L. B. Pambrun
 E. L. Ebran, K. B. Doan, G. W. Oehlsen
 Field Representatives.....Frank Helderle,
 M. O. Beckham, E. R. Rutledge

PRODUCTS: Radios: AM-FM, Console,
 Table, Console Combinations, Table Com-
 binations, Portable. Television: AM-FM, Con-
 sole.

Stromberg-Carlson Co.

100 Carlson Road, Rochester 3, N. Y.
 Phone: Culver 260

Chairman of Board.....Wesley M. Angle
 President.....Ray H. Manson
 Vice-President-General Mgr....Lee CcCanne
 Vice-President—Finance....Gordon G. Hoit
 Vice-President.....Sales..Lloyd L. Spencer
 Vice-President—Engineering
 and Research.....Frederic C. Young
 Secretary.....Edwin C. Roworth
 Treasurer.....Wilbur W. Hetzel
 Controller.....J. Lester Gasser

BRANCH OFFICES: 564 W. Adams St.,
 Chicago 6, Ill., Phone, State 4234; 2017 Grand
 Ave., Kansas City 8, Mo., Phone, Harrison
 6618; 1355 Market St., San Francisco 3, Calif.,
 Phone, Underhill 5388; 211-219 Geary Ave.,

Toronto, Ont., Canada, Phone, Melrose 2453,
 Ralph A. Hackbusch, Vice-President-Manag-
 ing Director; 2152 W. Washington Blvd.,
 Los Angeles 7, Calif., Phone, Rochester 2168.

PRODUCTS: Communications equipment,
 including radio, television, telephone, sound
 equipment and wire recording equipment.

Sylvania Electric Products, Inc.

500 Fifth Ave., New York, N. Y.
 Phone: CHickering 4-4470

President.....W. E. Poor
 Executive Vice-President,

Sales.....D. G. Mitchell
 Director of Engineering....E. Finley Carter
 General Sales Manager, Radio Tube Sales

C. W. Shaw
 D. R. Adv. S. P.....Henry C. L. Johnson
 Director Public Relations....Paul S. Ellison

PRODUCTS: Receiving tubes, cathode ray
 tubes, transmitting tubes, electronic devices.

Telefone Radio Co.

609 W. 51st St., New York 19, N. Y.
 Phone: Circle 6-7590

President.....S. W. Gross
 V. P., Dir. Sales & Adv.....John S. Mills
 Chief Engineer.....B. Singer

PRODUCTS: Table model radios, table
 model radio-phono combinations.

Television Associates, Inc.

190 N. State St., Chicago 1, Ill.
 Phone: Andover 3294

President.....C. Collette
 Vice-President.....Judge C. Woolridge
 Secretary-Treasurer.....E. C. Upton

PRODUCTS: Manufacturers and distrib-
 utors of Bill Eddy gadgets for television,
 including Tele-Lites, Kaleidoscopes, Special
 Effects, etc.

Telicon Corp.

851 Madison Ave., New York 21, N. Y.
 Phone: Butterfield 8-1900

President.....Solomon Sagall
 Vice-President.....Samuel Surrey
 Vice-Pres.-Secretary.....Colin Ives
 Vice-President.....W. R. Rich
 Chief Engineer.....Richard Shottenfeld
 Production Manager.....Martin Auerbach
 Purchasing Agent.....I. Hecht

PRODUCTS: AM & FM broadcast receivers,
 television receivers, intra-video systems,
 television receiving antenna, quartz crystals.

Templetone Radio Mfg. Corp.

Templeton Bldg., New London, Conn.
 Phone: New London 5346

President.....Oscar Dane
 Vice-President—Manufacturing....Eli Dane

EQUIPMENT MANUFACTURERS

Vice-Pres., Charge of

Engineering.....Dr. Dale Pollack
Purchasing Agent.....M. A. Gardner
Director Distribution.....S. A. Kelsey

PRODUCTS: Radios and electronic test equipment, receivers, television receivers, record players, combinations.

United States Television Mfg. Corp.

3 W. 61st St., New York 23, N. Y.

Phone: CIRCLE 6-4255

PresidentHamilton Hoge
Vice-PresidentJohn Hoge

PRODUCTS: AM & FM radios, television receivers, television test equipment and component parts, television transmitting equipment.

Universal Microphone Co.

424 Warren Lane, Inglewood, Calif.

Phone: OREGON 8248

General Manager.....James L. Fouch
Purchasing Agent....."Rick" Ricksecker

BRANCH OFFICES: Gerber Sales Company, 94 Portland St., Boston, Mass.; Howard F. Smith, 259 W. 14th St., New York 11, N. Y.; Stanley Wallace, Lutz (Tampa), Fla.; E. C. Edwards Sales Agency, 504 Erie Bldg., Cleveland, O.; L. G. Cushing Sales Company, 210 E. Ohio, Chicago, Ill.; Don R. Lewis, Box 512, Salt Lake City, Utah; Jas. J. Backer, 2321 Second Ave., Seattle, Wash.; R. W. Farris Company, 406 W. 34th St., Kansas City, Mo.; Mil Klicpera, Box 3113, Houston, Tex.; Robert Misk, 642 Beaubien Ave., Kerr Bldg., Detroit, Mich.; Al Leban, 5716 Nassau Road, Philadelphia, Pa.; Bursell & Chermak, 2233 University Ave., St. Paul, Minn.; Sig Cohn, 282 W. Santa Barbara, Suite 208, Los Angeles, Calif.

Foreign Division: 301 Clay St., San Francisco 11, Calif.

Canadian Division: 560 King St., W., Toronto 1, Canada.

Western Electric Co., Inc.

(Radio Division)

120 Broadway, New York 5, N. Y.

Phone CORTLAND 7-7700

Vice-Pres.-Mgr.....F. R. Lack
Manager—Distributor Sales....S. P. Taylor

PRODUCTS: FM and AM transmitters, antennas and antenna accessories, phase monitors and antenna phasing equipment, speech input equipment for FM and AM, speech input amplifiers and accessories, sound distribution systems and components, microphones and accessories, transcription turntables and pickups, loudspeakers, power supplies, electron tubes, relays, keys, jacks, and mountings, sound and vibration measur-

ing equipment, aviation, marine, police radio transmitters and receivers, vehicular equipment, single sideband and point-to-point radiotelephone equipment, carrier telephone and train dispatching equipment, telephone apparatus, cable and wire, thermistors, varistors and resistors, crystals, fastax cameras, field engineering services.

Westinghouse Electric Corp.

Industrial Electronics Division

2519 Wilkens Ave., Baltimore 3, Maryland

Phone: Edmondson 2300

Home Radio Division

Front Street and Susquehanna Ave.,

Sunbury, Pa.

Phone: Sunbury 2520

Lamp Division

MacArthur Ave., Bloomfield, N. J.

Phone: Bloomfield 2-2200

President.....Gwilym A. Price

Vice-PresidentWalter Evans

Asst. to Vice-President....Walter E. Benoit
Mgr., Industrial Electronics

Div.....C. J. Burnside
Sales Mgr., Ind. Elect. Div.....C. W. Miller
Engr. Mgr., Ind. Elect. Div....R. N. Harmon
Purchasing Agent, Ind. Elect.

Div.David M. Nelson
Manager, Home Radio Division.H. B. Donley
Asst. Mgr., Home Radio Div..H. W. Schaefer
Purchasing Agent, Home

Radio Div.....C. W. Lutz
Vice-President, Lamp Div.....R. C. Stuart
Sales Mgr., Electronic Tubes....A. Frankel
Engr. Mgr., Electronic Tubes..D. D. Knowles
Purchasing Agent,

Lamp Div.....Frederick C. Esser

BRANCH OFFICES: In all principal cities.

PRODUCTS: Commercial broadcast transmitters, radio receivers, all types of radio transmitters and receiver equipment for military and industrial purposes, and radio tubes.

Zenith Radio Corp.

6001 Dickens Ave., Chicago 10, Ill.

Phone: Berkshire 7500

President-General Mgr..E. F. McDonald, Jr.

Exec. V. P.-Treasurer.....Hugh Robertson

V. P. Chg. Engineering.....G. E. Gustafson

V. P. Dir. of Sales.....H. C. Bonfig

Sales Mgr. Auto Radio.....Walter Dyer

Chief Engr., Asst. V. P.....J. E. Brown

Dir. Public Relations.....Ted Leitzell

Director Advertising.....E. R. Taylor

Sales Manager Export.....E. E. Loucks

Sales Mgr. Hearing Aids.....B. J. Ferwig

BRANCH OFFICES: All principal cities.

PRODUCTS: Household radio receivers; radio-phonograph combinations; FM radio receivers; radionic hearing aids; automobile radio receivers.

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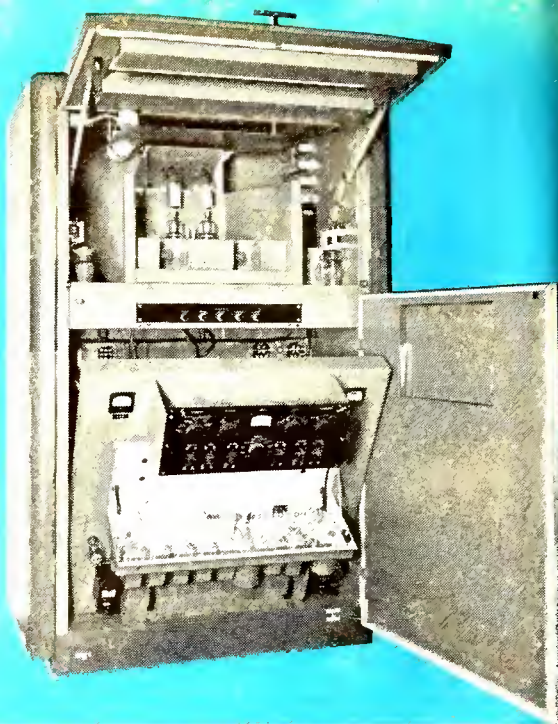
TRANS-LUX
News-Sign Corporation

1270 Avenue of the Americas "Flashcast" Department
NEW YORK 20, N. Y. PHONE CIRCLE 7-4970

PICTURE IN BACKGROUND SHOWS CROWD OF 40,000 PEOPLE AT HOLLYWOOD AND VINE STREETS, LOS ANGELES, CAL., WATCHING WARNER BROS. STATION KFWB "FLASHCAST" SIGN FLASHING ITS FIRST NEWS MESSAGE ON AUG. 6, 1946.

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Collins Type 731A
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locks provide maximum personnel protection.

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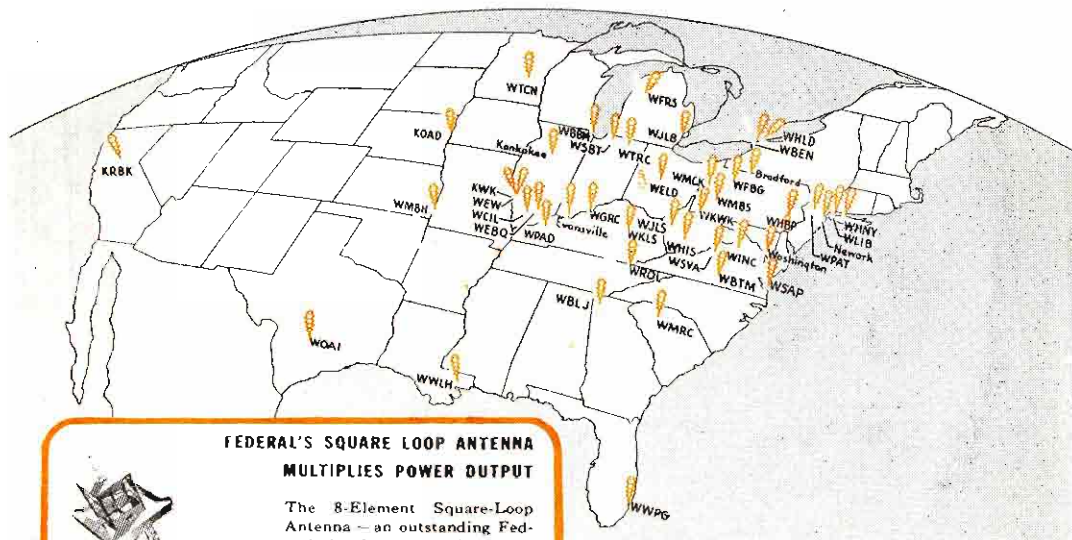
COLLINS RADIO COMPANY, Cedar Rapids, Iowa

11 West 42nd St., New York 18, N. Y.

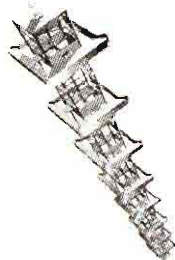
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With Leading Stations from Coast to Coast

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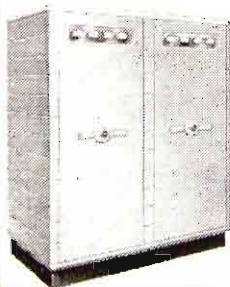


FEDERAL'S SQUARE LOOP ANTENNA MULTIPLIES POWER OUTPUT



The 8-Element Square-Loop Antenna — an outstanding Federal development — gives your FM station an effective radiated power more than eight times that of the transmitter rating. A single adjustment per loop tunes for any frequency from 88 to 108 mc. Complete antenna and rugged supporting tower are designed to withstand heavy winds and icing loads.

FEDERAL FM TRANSMITTERS FEATURE "FREQUEMATIC" MODULATOR



The "Frequematic" modulator — an exclusive feature of every Federal FM transmitter — assures outstanding fidelity and mean carrier stability. Simple all-electronic circuits with standard receiver tubes simplify initial alignment and reduce maintenance expense. Holds center frequency within .001%. Signal-to-noise ratio reduced to 5600-to-1.

*Trade Mark

TODAY, station operators everywhere look to FM for finer broadcasting. And they look to Federal for the finest in FM. Already, Federal equipment is on the job in major FM stations throughout the country — setting new records for performance and dependability.

Remember that FM by Federal means complete equipment — and complete service, too. For Federal can supply your entire transmitting system, from microphone to antenna — all components precision engineered and designed to work together. And Federal will see the job through until your station is *on the air*. Factory-trained engineers will supervise installation, tune the equipment, and instruct your personnel in its operation and maintenance — all without extra charge. For complete information, write today to Dept B269.

Federal Telephone and Radio Corporation

In Canada: — Federal Electric Manufacturing Company, Ltd., Montreal.
Export Distributors: — International Standard Electric Corp. 67 Broad St., N.Y.C.



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