

Licensee and Location	Call Letters	Frequency (kc) or Group	POWER	
			Visual	Aural
General Electric Co. Bridgeport, Conn.	W1XA	60000-86000	175 w	100 w (CP only)
General Electric Co. New Scotland, N. Y.	W2XB	60000-86000	10000 w	3000 w
General Electric Co. Schenectady, N. Y.	W2XD	156000-168000	40 w	(CP only)
General Electric Co. Schenectady, N. Y.	W2XH	288000-294000	40 w	
General Electric Co. New Scotland, N. Y.	W2XI	156000-162000	20 w	(Television relay station with W2XB)
Hughes Tool Co. Los Angeles, Calif.	W6XHH	60000-66000	10000 w	10000 w
Hughes Tool Co. San Francisco, Calif.	W6XHT	60000-66000	1000 w	1000 w
The Journal Co. Milwaukee, Wisc.	W9XMJ	66000-72000	1000 w	1000 w
Kansas State College of Agriculture and Applied Science Manhattan, Kans.	W9XAK	50000-56000	100 w	100 w
May Department Stores Co. Los Angeles, Calif.	Unassigned	210000-216000	1000 w	1000 w
Metropolitan Television, Inc. New York, N. Y.	W2MT	162000-168000	250 w	1000 w
Don Lee Broadcasting System Los Angeles, Calif.	W6XAO	50000-56000	1000 w	150 w
Don Lee Broadcasting System San Francisco, Calif.	W6XDL	50000-56000	1000 w	1000 w (CP only)
Don Lee Broadcasting System Portable-area of Los Angeles, Calif.	W6XDU	318000-330000	6.5 w	
National Broadcasting Co., Inc. New York, N. Y.	W2XBS	50000-56000	12000 w	15000 w
National Broadcasting Co., Inc. Portable—Camden, N. J. and New York, N. Y.	W2XBT	162000-168000	400 w	100 w (Television relay station with W2XBS)
National Broadcasting Co., Inc. Portable-area of New York.	W2XBU	282000-294000	15 w	(Television relay station with W2XBS)
National Broadcasting Co., Inc. Washington, D. C.	W3XNB	60000-66000	1000 w	1000 w (CP only)
National Broadcasting Co., Inc. Philadelphia, Pa.	W3XPP	102000-108000	1000 w	1000 w (CP only)

Licensee and Location	Call Letters	Frequency (kc) or Group	POWER	
			Visual	Aural
Philco Radio & Television Corp. Philadelphia, Pa.	W3XE	66000-72000	10000 w	10000 w
Philco Radio & Television Corp. Philadelphia, Pa.	W3XP	234000-246000 (Television relay station with W3XE)	15 w (CP 125 Watts)	
Purdue University West Lafayette, Ind.	W9XG	66000-72000	750 w	750 w (CP only)
Radio Pictures, Inc. Long Island City, N. Y.	W2XDR	42000-56000 60000-86000	1000 w	500 w
RCA Mfg. Co., Inc. (Portable) Bldg. No. 8 of Camden Plant, Camden, N. J.	W3XAD	321000-327000	500 w	500 w
RCA Mfg. Co., Inc. Camden, N. J.	W3XEP	84000-90000	30000 w	30000 w
B. B. Shapiro, F. P. Shapiro and H. Shapiro, d/b as Leroy's Jew- elers, Los Angeles, Calif.	W6XLJ	186000-192000	1000 w	1000 w
State University of Iowa Iowa City, Iowa.	W9XUI	50000-56000 210000-216000	100 w	
Television Productions, Inc. Los Angeles, Calif.	W6XLA	234000-246000	250 w	250 w (Television relay station)
Television Productions, Inc. Los Angeles, Calif.	W6XYZ	78000-84000	1000 w	1000 w (CP only)
WCAU Broadcasting Co. Philadelphia, Pa.	W3XAU	84000-90000	1000 w	1000 w (CP only)
Zenith Radio Corp. Chicago, Ill.	W9XZV	50000-56000	1000 w	1000 w

Pending Applications

Boston Edison Co.	78000-84000	10000 w	10000 w
Boston, Mass.			
R. B. Eaton.	66000-72000	46 w	100 w
Des Moines, Iowa			
Grant Union High School District.	50000-56000	1000 w	1000 w
Sacramento, Calif.			
Hughes Tool Co.	301250 and 305750	25 w	25 w
Portable-area of California			
Hughes Tool Co.	307250 and 311750	25 w	25 w
Ventura County, Calif.		(Television relay station)	
Hughes Tool Co.	319250 and 323,750	25 w	25 w
Monterey County, Calif.		(Television relay station)	
Hughes Tool Co.	307250 and 311750	25 w	25 w
Santa Clara County, Calif.		(Television relay station)	
KSTP, Inc.	44000-50000	1000 w	1000 w
Midland Broadcasting Co.	50000-56000	1000 w	500 w
Kansas City, Mo.			



TELEVISION STATIONS



— IN THE UNITED STATES —

— LOCATION — PERSONNEL — FACILITIES —

W6XEA *

LOS ANGELES

FREQUENCY: 96000-102000 Kc. POWER: Sight, 1000 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: Earle C. Anthony, Inc. BUSINESS ADDRESS: 141 N. Vermont St., Los Angeles, Calif.

W9XBK *

CHICAGO

FREQUENCY: 60000-66000 Kc. POWER: Sight, 1000 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: Balaban & Katz Corp. BUSINESS ADDRESS: Chicago, Ill.

W9XBT *

AREA OF CHICAGO (PORTABLE)

FREQUENCY: 204000-216000 Kc. POWER: 250 Watts (Sight only). OWNED AND OPERATED BY: Balaban & Katz Corp. BUSINESS ADDRESS: Chicago, Ill.

W2XBB *

NEW YORK CITY

FREQUENCY: 96000-102000 Kc. POWER: Sight, 1000 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: Bamberger Broadcasting Service. BUSINESS ADDRESS: 1440 Broadway, New York, N. Y.

W2XAB

NEW YORK CITY

FREQUENCY: Sight 51.25 Mcs. SOUND, 55.75 Mcs. POWER: Sight, 15,000 Watts (measured at peak of synchronizing pulses); Sound, 7,500 Watts. OWNED AND OPERATED BY: Columbia Broadcasting System. BUSINESS ADDRESS: 485 Madison Ave. PHONE: Wlckersham 2-2000. STUDIO ADDRESS: Grand Central Terminal Bldg., 15 Vanderbilt Ave. TRANSMITTER AND ANTENNA LOCATION: Chrysler Bldg.

Personnel

Executive Director of Television,

Adrian Murphy

Manager of Television Operations,

Leonard Hole

Director of Television Programs.. Gilbert Seldes

Chief Engineer.....Dr. Peter C. Goldmark

Assistant Chief Engineer.....John N. Dyer

FACILITIES

The transmitter facilities of Station W2XAB are located on the 73, 74 and 75 floors of the Chrysler Building. The video transmitter radiates a single side band signal of negative polarity with a frequency band width of 30 cycles to 4.25 Mc. DC transmission is employed. The transmitter radiates about 15 kw on the peaks of the synchronizing pulses. The audio transmitter radiates about 7.5 kw of carrier power. Pre-emphasis of the high audio frequencies is used in accordance with suggested standards. The video and the audio input and monitoring equipment is located in a shielded room on the 74 floor where the transmitters also are situated. On the 73 floor transformers, reactors, motor generators and water cooling equipment are placed, while the air conditioning equipment and the single side band filter are on the 75 floor.

COLOR TELEVISION

In September, 1940, CBS first showed to the press Color Television from film. Within less than four months Columbia's engineers had carried to the demonstration stage a large number of additional developments in the color television field.

The following specific developments of the Columbia laboratories were demonstrated to the Federal Communications Commission and representatives of the industry on January 25, 1941:

- (1) Real life objects and human beings were televised in natural color.
- (2) Color breakup was proven to be no problem.
- (3) High fidelity of color rendition was shown. (This simplifies the makeup problems, since women now need only ordinary street makeup when appearing before the television camera).
- (4) The level of light intensity on the scene for color television was well within the bounds of practicality.

* Station had a construction permit at time of going to press and no further information was available.

- (5) Cool fluorescent lighting was used. (The studio temperature was comfortable).
- (6) That a color television receiver need not be large was indicated by the small and compact table model receiver on which the full color images appeared.
- (7) Operation of a special speed control for the receiver color disc. This makes the receiver and studio color filters run at identical speeds even when on different power supplies.
- (8) A simple push button device for putting the colors at the receiver in step with the colors at the pick-up end.
- (9) A new 24-frame-per-second scanner of film showed that color film, taken by any amateur or commercial camera, can be picked up for color television.
- (10) Multi-channel operation for color television demonstrated a lap dissolve technique of one color scene fading smoothly and gradually into another.

That much in everyday life is given meaning by color was demonstrated comparatively by scenes in black and white, and then by the same scenes in color. Illustrations last year revealed that in fields of educational and cultural pursuits, such as geography and art, color is required for fuller understanding and appreciation.

The color television pictures also showed how in football, as in other sports, the distinctively colored uniforms of the players identify them at once, and make the play easy to follow. A dramatic example of a football sequence was televised from color film. Here, there were comparative shots showing the same plays in black and white, and then in color. In black and white, identity of the teams was lost, and the course of the play had little meaning. In the color pictures, however, even when the play was tangled and complicated, the ball carrier could be followed as he crashed through the opposing line.

W2XCB *

**AREA OF NEW YORK CITY
(PORTABLE)**

FREQUENCY: 336000-348000 Kc. POWER: 6½ Watts (Sight only). OWNED AND OPERATED BY: Columbia Broadcasting System. BUSINESS ADDRESS: 485 Madison Ave., New York, N. Y.

W9XCB *

CHICAGO

FREQUENCY: 78000-84000 Kc. POWER: Sight, 1000 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: Columbia Broadcasting System, Inc. BUSINESS ADDRESS: 410 N. Michigan Ave., Chicago, Ill.

W6XCB *

LOS ANGELES

FREQUENCY: 162000-168000 Kc. POWER: Sight, 1000 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: Columbia Broadcasting System, Inc. BUSINESS ADDRESS: 6121 Sunset Blvd., Los Angeles, Calif.

W8XCT *

CINCINNATI

FREQUENCY: 50000-56000 Kc. POWER: Sight, 1000 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: Crosley Corp. BUSINESS ADDRESS: 1329 Arlington St., Cincinnati, Ohio.

W6XAO

LOS ANGELES (HOLLYWOOD)—

EST. 1931

FREQUENCY: Sight, 51250 Kc.; Sound, 55750 Kc. POWER: Sight, 1000 Watts; Sound, 150 Watts. OWNED AND OPERATED BY: Don Lee Broadcasting System. BUSINESS ADDRESS: 5515 Melrose Ave., Hollywood. PHONE: VAndike 7111. STUDIO AND TRANSMITTER LOCATION: 1 Lee Drive, Mt. Lee, Hollywood. TIME ON THE AIR: Sunday, 1:15 to 4:00 P.M.; Monday and Friday, 8:15 to 10:30 P.M.; Tuesday and Thursday, 8:00 to 9:15 P.M.; Wednesday, 8:00 to 9:45 P.M.; Saturday, 2:00 to 4:30 P.M. and 8:00 to 9:15 P.M.

Personnel

President..... Thomas S. Lee
 Vice-President and General Manager,
 Lewis Allen Weiss
 Director of Television..... Harry R. Lubcke
 Assistant Director of Television Wilbur E. Thorp
 Television Engineer..... William S. Klein
 Television Engineer..... Harold W. Jury
 Television Engineer..... Robert L. Pitzer
 Television Producer..... Ray Coffin
 Assistant Director..... L. Turner
 Audio Engineer..... H. Lyons
 Makeup Man..... A. Cramer

FACILITIES

SYSTEM IN USE: 441 line 30-60 frame and 525 30-60 frame, Standard, cathode-ray. Horizontal Polarization. Film equipment for broadcasting newsreels, shorts, and test items.

Mosaic live-pickup camera equipment for studio pickup. Portable television cameras and equipment for outside events. (W6XDU) RCA Manufacture.

W6XDU operates on 324 Megacycles and is a beam relay type transmitter.

* Station had a construction permit at time of going to press and no further information was available.

TELEVISION STATIONS

DEVELOPMENTS OF 1940: During 1940, W6XAO provided Los Angeles and surrounding cities with a complete television service. Daily programs were transmitted for a total of 840 hours, including 224 hours of remote television pickup via W6XDU on 73 separate programs.

The studio presentations included educational items and demonstrations, interviews, singers, dancers, fashion shows, sports exhibitions and instruction, plays, dramas, musical comedies, serial plays and many variations of the above.

Film presentations included full-length features, comedies, travel shorts, educational reels, and industrial subjects. Many disaster pickups, such as an oilwell fire, metropolitan fires, flood damage, sea and wind damage at the Beach cities, and earthquake damage in Imperial Valley were recorded on 16mm. film and telecast soon after happening.

Remote television pickups included weekly pickup of the Hollywood Stars Coast League professional baseball, twice weekly pickup of professional boxing and wrestling bouts at the American Legion Stadium in Hollywood, pickup of the filming of the Lum-and-Abner picture "Dreaming Out Loud" from a major motion picture lot, televising the Soap-box Derby, the Pasadena New Year's Tournament of Roses Parade, the Hollywood Bowl Easter Sunrise Service, the Young Skippers Regatta, the Coast IRE-AIEE Convention, the Screen Actors Guild Bathing Beauty Parade and many other events of interest.

Personalities to appear before our cameras have included Dick Powell, Tyrone Power, Kenny Baker, Leo Carrillo, Maxine Gray, Betty Jane Rhodes, Fritz Leiber, Don Wilson, Max Rheinhardt, Clarence Brown, Sally Rand, Arturo Godoy, Rube Wolf, and many others, less well-known but ranking in top interest and ability over television.

RECEIVERS: Receivers are on sale to the public in large department stores and radio dealers. A few hundred receivers are estimated to be in operation in Los Angeles, Hollywood, Inglewood, West Hollywood, North Hollywood, Burbank, Glendale, Pasadena, Long Beach and Pomona. The greatest distance of public reception is recorded at the city of Pomona which is thirty miles airline east of W6XAO and behind a range of hills.

PUBLIC DEMONSTRATIONS: Public demonstrations of the Don Lee television transmission are held almost daily by large downtown department stores and radio dealers.

PATENTS: United States and foreign patents covering film and live pickup, amplification, scanning sources, synchronization, receivers and cathode-ray tubes of Harry R. Lubcke are used in the work. The methods and equipment of the Don Lee System, though

producing RMA Standard images functions considerably differently from those of other television organizations.

W 6 X D U

AREA OF LOS ANGELES
(PORTABLE)

FREQUENCY: 318000-330000 Kc. POWER: 6½ Watts (Sight only). OWNED AND OPERATED BY: Don Lee Broadcasting System. BUSINESS ADDRESS: 5515 Melrose Ave., Hollywood, Calif.

W 6 X D L *

SAN FRANCISCO—EST. 1941

FREQUENCY: 50000-56000 Kc. POWER: Sight, 1000 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: Don Lee Broadcasting System. BUSINESS ADDRESS: 5515 Melrose Ave., Hollywood. STUDIO AND TRANSMITTER LOCATION: San Francisco.

W 2 X V T

PASSAIC, N. J.—EST. 1938

FREQUENCY: Sight, 79.25 Mc.; Sound, 83.75 Mc. POWER: 5000 Watts (Sight and Sound). OWNED AND OPERATED BY: Allen B. DuMont Laboratories, Inc. BUSINESS ADDRESS: 2 Main Ave. STUDIO ADDRESS: Same. TRANSMITTER AND ANTENNA LOCATION: Same.

FACILITIES

The transmitter is being used to test out the features of the DuMont Television System which does away with the necessity of the standardization of the number of pictures per second or lines per picture. This system requires approximately one-half the frequency band over that required by conventional systems now in use. At the end of 1940 transmitter was testing with 735 lines and 15 pictures per second.

W 10 X K T

AREA OF PASSAIC, N. J.
(PORTABLE)

FREQUENCY: Sight, 264 Mc. POWER: 50 Watts (Sight only). OWNED AND OPERATED BY: Allen B. DuMont Laboratories, Inc. BUSINESS ADDRESS: 2 Main Ave., Passaic, N. J. STUDIO ADDRESS: Variable. TRANSMITTER

* Station had a construction permit at time of going to press and no further information was available.

• • • TELEVISION STATIONS • • •

AND ANTENNA LOCATION: Variable. TIME ON THE AIR: No stated schedule.

FACILITIES

This transmitter is used to pick up outside events.

•
W 2 X W V *

NEW YORK CITY

FREQUENCY: Sight, 79.25 Mc.; Sound, 83.75 Mc. POWER: 1000 Watts (Sight and Sound). OWNED AND OPERATED BY: Allen B. DuMont Laboratories, Inc. BUSINESS ADDRESS: 515 Madison Ave., New York, N. Y. STUDIO ADDRESS: Same. TRANSMITTER AND ANTENNA LOCATION: Same.

FACILITIES

This transmitter utilizing DuMont television system has complete facilities for the transmission of film, direct pick-up and studio programs.

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W 3 X W T *

WASHINGTON, D. C.

FREQUENCY: 50000-56000 Kc. POWER: 1000 Watts (Sight and Sound). OWNED AND OPERATED BY: Allen DuMont Laboratories, Inc. BUSINESS ADDRESS: 2 Main Ave., Passaic, N. J. STUDIO, TRANSMITTER AND ANTENNA LOCATION: Washington, D. C.

•
unassigned*

FORT WAYNE, IND.

FREQUENCY: 66000-72000 Kc. POWER: Sight, 1000 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: Farnsworth Television & Radio Corp. BUSINESS ADDRESS: Fort Wayne, Ind.

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W 1 X A *

BRIDGEPORT—EST. 1939

FREQUENCY: 60,000 to 86,000 Kc. POWER: Sight, 175 Watts; Sound, 100 Watts. OWNED AND OPERATED BY: General Electric Co. BUSINESS, STUDIO, TRANSMITTER AND ANTENNA LOCATIONS: Bridgeport.

•
W 2 X B

SCHENECTADY—EST. 1939

FREQUENCY: Sight, 67.250 Kc.; Sound, 71.750 Kc. (Channel 3). POWER: Sight, 10,000 Watts; Sound, 3000 Watts. OWNED AND OPERATED BY: General Electric Co. BUSINESS ADDRESS: 1 River Road. STUDIO ADDRESS: Same. TRANSMITTER AND AN-

TENNA LOCATION: Helderberg Mountains, 12 miles south of Schenectady. TIME ON THE AIR: No stated schedule.

Personnel

Technical Supervisor.....W. J. Purcell
Program Manager.....J. G. T. Gilmour

FACILITIES

G. E. uses a system similar to the RCA-NBC equipment but with several entirely new variations. This includes low level modulation with radio relay link between studio and transmitter and linear Class B R. F. amplifiers to bring the power up to 40 kilowatts black level. It is an all-electric system designed to produce a 441-line definition, 30 frames per second, 60 fields per second with an aspect ratio of 4 to 3. General Electric has developed high power transmission at television frequencies and proper modulation of the television carrier signal. It has also developed improved vacuum tubes which exhibit more favorable characteristics, developed wide band output coupling circuits without sacrificing plate efficiency and increased transmission fidelity by expanding the frequency range up to 4 megacycles. Simultaneous operation of stations at Schenectady and Bridgeport on the same frequency is expected to increase knowledge of diurnal and seasonal signal strength variations and determination of the amount of interference permissible, necessary geographic separation and effect of directional antennas.

This transmitter provides a high signal level to Albany, Troy, Schenectady and other nearby cities.

Engineering field tests are now in progress and a regular schedule of public broadcasts is expected to be announced late in 1939 or early in 1940. Engineering tests also under way on receiving equipment at a special receiving site in the Helderbergs near the transmitter which are expected to result in high quality reception of programs from New York City suitable for rebroadcast transmission over W2XB.

Technical supervision under W. J. Purcell; program manager, J. G. T. Gilmour.

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W 2 X D - W 2 X H

SCHENECTADY—EST. 1939

FREQUENCY: W2XD: 156,000 to 168,000 Kcs., used for relaying programs; W2XH: 288,000 to 294,000 Kcs., used for experimental laboratory work. POWER: 40 Watts (Sight, only). OWNED AND OPERATED BY: General Electric Co. BUSINESS AND STUDIO ADDRESS: 1 River Road. TRANSMITTER AND

* Station had a construction permit at time of going to press and no further information was available.

• • • TELEVISION STATIONS • • •

ANTENNA LOCATION: Schenectady. TIME ON THE AIR: No stated schedule.

FACILITIES

These stations, on completion, will be used for the most part in connection with experimental work in the laboratory and to supplement the experimental public service television programs of the G.E.'s Helderberg and Bridgeport transmitters. One of the Schenectady transmitters, W2XD, serves as a relay visual station to transmit programs from the studio to the transmitter on a sharply directive beam obviating the necessity of a coaxial cable. For further information concerning system used for these stations, facilities, etc., see information listed under W2XB, Schenectady, N. Y. (above).

W 1 X G
BOSTON

FREQUENCY: 51.25 Mc. POWER: 500 Watts (visual). OWNED AND OPERATED BY: General Television Corp. PHONE: Commonwealth 6410. BUSINESS ADDRESS: 70 Brookline Ave. STUDIO, TRANSMITTER AND ANTENNA LOCATION: 70 Brookline Ave. TIME ON THE AIR: Monday through Friday, 2:30 to 3:30 P.M. and 8:30 to 9:30 P.M.

Personnel

President.....Thompson L. Guernsey
Program Director.....Stuart Mosher
Musical Director.....William Fuller
Chief Engineer.....Hollis Baird

W 6 X H H *
LOS ANGELES

FREQUENCY: 60000-66000 Kc. POWER: Sight, 10000 Watts; Sound, 10000 Watts. OWNED AND OPERATED BY: Hughes Tool Co. BUSINESS ADDRESS: Los Angeles, Calif.

W 6 X H T *
SAN FRANCISCO

FREQUENCY: 60000-66000 Kc. POWER: Sight, 1000 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: Hughes Tool Co. BUSINESS ADDRESS: San Francisco, Calif.

W 9 X M J
MILWAUKEE

FREQUENCY: 66000 to 72000 Kc. POWER: 1000 Watts (Sight and Sound). OWNED AND OPERATED BY: The Journal Co. BUSINESS ADDRESS: 333 West State St., Milwaukee, Wisc.

W 6 X L J *
LOS ANGELES

FREQUENCY: 186000-192000 Kc. POWER: Sight, 1000 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: B. B. Shapiro, F. P. Shapiro and H. Shapiro, d b as Leroy's Jewelers. BUSINESS ADDRESS: Los Angeles, Calif.

W 9 X A K *
MANHATTAN, KANS.

FREQUENCY: 50000-56000 Kc. POWER: Sight, 100 Watts; Sound, 100 Watts. OWNED AND OPERATED BY: Kansas State College of Agriculture & Applied Science. BUSINESS ADDRESS: Manhattan, Kans.

W 6 X M C *
LOS ANGELES

FREQUENCY: 210000-216000 Kc. POWER: Sight, 1000 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: May Department Stores Co. BUSINESS ADDRESS: Los Angeles, Calif.

W 2 M T *
NEW YORK CITY

FREQUENCY: 162000-168000 Kc. POWER: Sight, 250 Watts; Sound, 1000 Watts. OWNED AND OPERATED BY: Metropolitan Television, Inc. BUSINESS ADDRESS: New York, N. Y.

W 2 X B S
NEW YORK CITY—EST. 1928

FREQUENCY: Sight, 51250 Kc.; Sound, 55750 Kc. POWER: Sight, 12000 Watts; Sound, 15000 Watts. OWNED AND OPERATED BY: National Broadcasting Co. BUSINESS ADDRESS: 30 Rockefeller Plaza. STUDIO ADDRESS: Same. TRANSMITTER LOCATION: Empire State Bldg.

Personnel

Vice-President In Charge of Television, A. H. Morton
Assistant to the Vice-President, Noran E. Kersta
Manager of Television Program Division, Thomas H. Hutchinson
Chief Television Engineer... Robert E. Shelby

FACILITIES

This station uses the RCA television system. Beginning on April 30, 1939, a regular television program service for the public in the New York City area was inaugurated. Service continued until July 31, 1940 when a tempo-

* Station had a construction permit at time of going to press and no further information was available.

rary cessation occurred to permit alteration in transmitter equipment necessary to comply with a new channel assignment made by the Federal Communications Commission. Since October 27, 1940, testing of the new equipment has been taking place in the form of an irregular and limited program schedule. When these tests are completed an increased program service is contemplated.

Television transmissions over W2XBS have been in accordance with RMA Technical Standards. RCA studio and transmitter equipment is utilized. The programs are supplied from a direct pickup studio equipped with three cameras, a film studio equipped with two cameras, a mobile unit having two cameras for televising scenes outside the studio and a transportable unit for supplementing mobile unit service. A large variety of programs utilizing all methods of pickup has been transmitted, and a systematic study of audience reaction has been developed. The National Broadcasting Co. employs over 50 persons in its television activity.

Signals of this station have been received within a radius of approximately 60 miles. Considerably longer distances are not uncommon. In fact, W2XB, a television transmitter in Schenectady, has relayed program from W2XBS after receiving signals over an air line distance of 120 miles.

Besides this station the National Broadcasting Co. operates Television Station W2XBT, mobile television station which operates on Channel No. 8 (162,000-168,000 Kc.) with a power of 400 Watts for sight transmission and 100 Watts for sound transmission. A transportable sight transmitter, W2XBU, is also operated by the National Broadcasting Co. This transmitter is licensed to operate in two channels (282,000 to 288,000 Kc. and 288,000 to 294,000 Kc.) The power for sight transmission for the latter is 15 watts.

HISTORY

Experimental television station W2XBS was originally installed at the RCA Technical and Test Laboratory, Van Cortlandt Park, New York City. The first construction permit was granted on April 4, 1928 and the first temporary license was issued in June, 1928. From time to time various station permits allowed television experimental transmission on 4800 Kc., 2300 to 3300 Kc., 2050 to 2150 Kc., 2000 to 2100 Kc. and 2100 to 2200 Kc. The first permanent license was issued on December 1, 1928 with an assigned frequency band of 2100 to 2200 Kc. In the latter part of 1928 the station was moved to the RCA Telephone Building, 411 Fifth Avenue. On June 27, 1930, it was moved to the Times Square Studio of the National Broadcasting Company, where on July 7, 1930 it passed from RCA to NBC management.

In 1931 NBC television was carried on from

W2XBS's present location on the top of the Empire State Building.

During 1936 and 1937 NBC operated with the new high definition standards, demonstrating television to hundreds of groups from all walks of industrial and national life.

In 1938 standards were further improved to conform with the Radio Manufacturers Association recommendations.

Television mobile equipment was demonstrated in Washington, D. C., for Congress in February, 1939, just prior to the beginning of the New York public service on April 30, 1939. Outstanding transmitters since then include the Inaugural Exercises of the New York World's Fairs of 1939 and 1940; the complete proceedings of the Republican National Convention meeting in Philadelphia (sent by coaxial cable from Philadelphia to New York for transmission by W2XBS); the Democratic and Republican political rallies from Madison Square Garden prior to the 1940 election; and the transmission of actual returns on Election night.

Standards of transmission continue to conform to recommendations of the RMA. Future standards to be used will be those chosen by the National Television Systems Committee.

W 2 X B T

AREA OF NEW YORK, N. Y.

(PORTABLE)

FREQUENCY: Sight 162000-168000 Kc.
POWER: Sight, 400 Watts; Sound, 100 Watts.
OWNED AND OPERATED BY: National Broadcasting Co. BUSINESS ADDRESS: 30 Rockefeller Plaza. STUDIO ADDRESS: Variable (outdoor and indoor remotes). TRANSMITTER AND ANTENNA LOCATION: Variable (Mobile Unit 1B).

FACILITIES

This transmitter is a mobile unit used for pickups of remote programs with public interest such as baseball, football, boxing, wrestling, parades, public meetings, sidewalk interviews, aircraft flying and performance, etc. The technical staff for the unit consists of nine persons. Two cameras connect to the unit by means of 400 to 800 feet of 32 conductor cable. Picture in its completed state is sent to the transmitter unit through the cable and thence to the Empire State Building receiving location by means of a permanent antenna on the unit or a portable antenna which is affixed to roof tops, etc. At the end of 1940 power was obtained from public utility mains (750 foot cable carried). The greatest distance of successful transmissions at the time of going to press was 27 miles on test and 24 miles on a regularly scheduled tennis telecast.

W2XBU

AREA OF NEW YORK, N. Y.

(PORTABLE)

FREQUENCY: Sight only licensed at present 282,000-288,000 Kc. and 288,000-294,000 Kc. POWER: Sight only, 15 watts. OWNED AND OPERATED BY: National Broadcasting Co. BUSINESS ADDRESS: 30 Rockefeller Plaza. STUDIO ADDRESS: Locale of use variable. Outdoor and indoor remotes. TRANSMITTER LOCATION: Variable.

FACILITIES

This transmitter is transportable. It is a very compact unit weighing under 1000 pounds divided into carrying cases not exceeding 75 to 90 pounds each. It is used for difficult remote pickups impractical for the larger Mobile unit W2XBT. The equipment includes in addition to the transmitter, two cameras with appropriate monitoring apparatus and operates from 60 cycle AC current. In practice W2XBU would relay its signal to the Mobile Unit nearby (W2XBT) for re-transmission by W2XBS atop the Empire State Building.

W3XPP *

PHILADELPHIA

FREQUENCY: 102000 to 108000 Kc. POWER: 1000 Watts (Sight and Sound). OWNED AND OPERATED BY: National Broadcasting Co. BUSINESS ADDRESS: 30 Rockefeller Plaza, New York, N. Y. STUDIO, TRANSMITTER AND ANTENNA LOCATION: Philadelphia, Pa.

W3XNB *

WASHINGTON, D. C.

FREQUENCY: 60000 to 66000 Kc. POWER: 1000 Watts (Sight and Sound). OWNED AND OPERATED BY: National Broadcasting Co. BUSINESS ADDRESS: 30 Rockefeller Plaza, New York, N. Y. STUDIO, TRANSMITTER AND ANTENNA LOCATION: Washington, D. C.

W3XE

PHILADELPHIA—EST. 1931

FREQUENCY: 68000 to 72000 Kc. POWER: Sight, 10000 Watts; Sound, 10000 Watts. OWNED AND OPERATED BY: Philco Radio & Television Corp. BUSINESS ADDRESS: Tioga and "C" Sts. STUDIO AND TRANSMITTER LOCATION: Same. TIME ON THE AIR: No stated schedule; at the end of 1940 station was maintaining a minimum program schedule of 10 hours per week.

Personnel

Program Director.....E. N. Alexander
Engineer in Charge.....William N. Parker

FACILITIES

This station uses the Philco Television System. Reception is heard in the homes throughout Philadelphia and surrounding territory and has been reported from points 50 miles from the transmitter.

This station is used for experimentation and research in connection with television development. It has been used in field testing many new standards such as 525 lines, etc.

W3XP

PHILADELPHIA (PORTABLE)—

EST. 1938

FREQUENCY: 234000 to 246000 Kc. POWER: 15 Watts (Sight and sound) (C.P. 125 watts). OWNED AND OPERATED BY: Philco Radio & Television Corp. BUSINESS ADDRESS: Tioga and "C" Sts. STUDIO ADDRESS: Same. TRANSMITTER AND ANTENNA LOCATION: Remote pick-ups in and around Philadelphia. TIME ON THE AIR: No stated schedule.

Personnel

Program Director.....E. N. Alexander
Engineer in Charge.....William N. Parker

FACILITIES

This transmitter is used for relaying television pickups to the main transmitter, W3XE. Typical of such programs were the 1940 Republican National Convention and the entire home football schedule of the University of Pennsylvania.

W9XG *

WEST LAFAYETTE, IND.—EST. 1931
(PORTABLE)

FREQUENCY: 66000 to 72000 Kc. POWER: 750 Watts (Sight and Sound). OWNED AND OPERATED BY: Purdue University. BUSINESS ADDRESS: Electric Bldg., Purdue University. PHONE: 2917. TRANSMITTER LOCATION: West Lafayette.

* Station had a construction permit and was under reconstruction at time of going to press. Upon completion experimental programs only will be broadcast.

W2XDR

LONG ISLAND CITY, N. Y.

FREQUENCY: 42000 to 56000 Kc. and 60000 to 86000 Kc. POWER: Sight, 1000 Watts;

* Station had a construction permit at time of going to press and no further information was available.

Sound, 500 Watts. OWNED AND OPERATED BY: Radio Pictures, Inc.

W3XAD

CAMDEN, N. J.—EST. 1931

(PORTABLE)

FREQUENCY: 321,000 to 327,000 Kcs. POWER: Sight, 500 Watts; Sound, 500 Watts. OWNED AND OPERATED BY: RCA Manufacturing Co. BUSINESS ADDRESS: RCA Frequency Bureau, 30 Rockefeller Plaza, New York City. TRANSMITTER LOCATION: Portable Laboratories in Camden, N. J. TIME ON THE AIR: No stated schedule.

FACILITIES

This station is an experimental portable unit and no one system is strictly adhered to; a complete description of the basic method used in transmission is given in the Proceeding of the Institute of Radio Engineers (Vol. 22, No. 1, November, 1934).

Several experimental television receivers have been set up within a 2 or 3 mile radius for experimental purposes.

The frequency band occupied by this transmitter varies from one to six megacycles on each side of the carrier. The band emitted during a particular test period is dependent upon the particular experimental project under test. This band width is determined by measuring the overall frequency characteristics of the system.

W3XEP

CAMDEN, N. J.—EST. 1935

FREQUENCY: 84000 to 90000 Kc. POWER: Sight, 30000 Watts; Sound, 30000 Watts. OWNED AND OPERATED BY: RCA Manufacturing Co. BUSINESS ADDRESS: RCA Frequency Bureau, 30 Rockefeller Plaza, New York City. TRANSMITTER LOCATION, Camden, N. J. TIME ON THE AIR: No stated schedule.

FACILITIES

This station is experimental and no one system is strictly adhered to; a complete description of the basic method used in transmission is given in the Proceeding of the Institute of Radio Engineers (Vol. 22, No. 11, November, 1934).

Several experimental television receivers have been set up within 2 or 3 miles of each other. The receivers are a part of the equipment used in television research.

The frequency band occupied by the transmitter varies from one to six megacycles on each side of the carrier. The band emitted during a particular test period is dependent upon the particular experimental project

under test. This band width is determined by measuring the overall frequency characteristics of the system.

W6XLA *

LOS ANGELES

FREQUENCY: 234000-246000 Kc. POWER: Sight, 250 Watts; Sound, 250 Watts. OWNED AND OPERATED BY: Television Productions, Inc. BUSINESS ADDRESS: Los Angeles, Calif.

W9XUI

IOWA CITY

FREQUENCY: 50000 to 56000 Kc. and 210000 to 216000 Kc. (Sight only). POWER: 100 Watts (Sight only). OWNED AND OPERATED BY: University of Iowa. BUSINESS ADDRESS: Iowa City. STUDIO, TRANSMITTER AND ANTENNA LOCATION: Same.

Personnel

Head of Electrical Engineering Department,
E. B. Kurtz

W6XYZ *

LOS ANGELES

FREQUENCY: 78000 to 84000 Kc. POWER: 1000 Watts (Sight and Sound). OWNED AND OPERATED BY: Television Productions, Inc. BUSINESS ADDRESS: Los Angeles, Calif. STUDIO, TRANSMITTER AND ANTENNA LOCATION: Same.

W3XAU *

PHILADELPHIA

FREQUENCY: 84000 to 90000 Kc. POWER: 1000 Watts (Sight and Sound). OWNED AND OPERATED BY: WCAU Broadcasting Co. BUSINESS ADDRESS: 1622 Chestnut St., Philadelphia, Pa. STUDIO, TRANSMITTER AND ANTENNA LOCATION: Philadelphia, Pa.

W9XZV

CHICAGO, ILL.

FREQUENCY: Sight, 51.25 Mc.; Sound, 55.75 Mc. POWER: 1000 Watts (Sight and Sound). OWNED AND OPERATED BY: Zenith Radio Corp. BUSINESS ADDRESS: 6001 Dickens Ave. PHONE: BERKSHIRE 7500. STUDIO ADDRESS: Same. TRANSMITTER AND ANTENNA LOCATION: Same.

Personnel

President.....E. F. McDonald, Jr.
Station Manager.....J. E. Brown

* Station had a construction permit at time of going to press and no further information was available.

Television Headlines Of 1940—From Radio Daily

JANUARY

- Jan. 3—Philco's Prexy Gubb Sees Television In For Big Improvement.
- Jan. 9—More Film Material Set For NBC's Television.
- Jan. 10—Bulova Uses Television To Show New Line.
Low Cost "Boosters" Speed Television Network.
- Jan. 12—FM Group To Ask FCC Delay On Television Decision.
- Jan. 16—Television Hearing Under Way; Varied Viewpoints Heard By FCC Both Defending And Attacking The Commission's Report.
- Jan. 18—Kesten Offers Television Plan; Proposals For Protecting Both Public And Industry Against Kickback; FCC Hearing Resumes.
- Jan. 22—Television Hearing Gets Serious; Ramifications Over RMA Standards Keeps Chairman Fly On The Alert; DuMont Battles "Freezing."
- Jan. 23—Television Standards In "Middle" Of Confusing Free-For-All.
- Jan. 24—Fly Ends Television Hearing; Scrappy Pros And Cons Over Patents, License-Agreements Toward Close; Summaries To Be Filed.
Germany Resuming Television On a Skeleton Basis.
- Jan. 31—New RCA Television Relay Developed; Can Cover Vast Area.
Lubcke Sees Don Lee Telecasting 100 Miles.

FEBRUARY

- Feb. 1—Television's "Crucial" Moment; Much Depends On Commission's Tour Which Starts Today; All Concerns File Hearing-Memoranda.
- Feb. 2—Television Briefs Differ Widely As To Standard And Public.
Great Britain May Resume Television Utilizing Phone Wires.
- Feb. 6—FCC Concludes Television Tour; Views RCA's Large Screen.
- Feb. 7—Complete Legitimate Drama Gets Equity Television Okay.
- Feb. 9—Television's Light Sensitivity Aided By New Discovery.
- Feb. 14—Equity Names Its Representatives For Union Television Board.
- Feb. 16—Philco Television Progresses With 605-Line Picture.
Asks FCC To Approve Immediate Commercial Television.
- Feb. 19—See IATSE Grabbing Television For Own Jurisdiction.

- Feb. 20—Seeks "Junior" Union Talent For Experimental Television And FM.
- Feb. 23—Coast Television Impresses FCC Field Inspector.
First Dual Television Show Gets Under Way Over NBC.
- Feb. 27—Television Hook-up Feasible Between New York And Chicago.
- Feb. 29—See United States In Television Lead, Says Scophony Official.

MARCH

- Mar. 1—Television Standards Kept Open; Limited Commercials With Coast Borne By Sponsor Set For September 1; Larger Screens Favored By FCC.
NBC Boosting Schedule Of Special Television Shows.
- Mar. 5—Television Steps Np Survey Of Film Availability.
International Television Convention Readies For Coast In June.
- Mar. 6—NBC Television "Mysteries" To Give Cash Prizes.
KFRC Closes Television Deal To Give Don Lee Films.
- Mar. 7—Television From Airplane Proves Revelation.
Morton Of NBC Tells Chicago It Is Second Television Market.
- Mar. 13—RCA Television Sales Drive; As Expected, Set Prices Are To Be Cut One-Third And To Hold For Two Years; Extensive Advertising Campaigns.
- Mar. 14—Esso Signs For NBC Television; Limited Commercial Set, While RCA Files For Three More Stations.
- Mar. 19—Armstrong Fires First FM Gun; Inventor Presents Case As Opening Witness In FCC Hearing; Sees Television Use For Higher Frequency.
- Mar. 21—Special NBC Service For Television Set Owners.
Agency Radio Executives Attend Esso Television Debut.
Cath-Ray Introduces Low Priced Television Set.
- Mar. 22—Public Reaction Good To Lower Priced Television Units.
- Mar. 25—RCA-NBC Covers On FM; Application In For Five Such Stations In Key Cities Across The Country; Also Files For Television CPs.
NBC Television Film Supply Goor For Whole Year.
FCC Calls Television Hearing; Kills Limited Commercials.

- Mar. 26—RCA Halts Campaign But Not Sale Of Television Sets.
 Mar. 27—Press Reaction Unfavorable Anent FCC's New Television Order.

APRIL

- Apr. 2—Radio Writer's Guild Seeks To Hold Television Rights.
 Apr. 3—Fly Explains Television Stand; Makes Two Speeches Defending Action Harping On Public Protection; Defines Regulatory Powers.
 Apr. 4—Television Setup Grows Tense; RCA et al Completing Their Briefs For FCC's Hearing Next Monday; Stiff Battle Indicated. Television And Facsimile Looms In ANPA Report.
 Apr. 9—FCC Opens With DuMont; RCA Tact Avoids Early Clash In Television Hearing.
 Apr. 11—Senate Hears Television Story; Fly Defends Recent Action; Sarnoff Foresees Billion Dollar Industry; Barbour Introduces FCC Bill.
 Indie Television Manufacturers Ask FCC For Free Rein On Selling.
 Apr. 15—FDR Fights Monopoly In Television Field.
 First W2XBS Serial Set; DuMont Sales Increase.
 Apr. 17—DuMont's September Start Using 625-Line Pix.
 Apr. 19—Television Set Sales Mount In Metropolitan Area.
 Apr. 22—Biow Agency Installing Complete Television Equipment.
 Apr. 23—Joyce Sees Television As Aid To All Picture Companies.
 Paramount Pictures To Be Telecast By DuMont; FCC Receives Squawk.
 Apr. 24—Say New Television System Aids Camera's Scope.
 Apr. 25—Television-FM Interests File Briefs With FCC.
 Apr. 26—Morton Reviews Television Year; Sees Regional Net In Offing.
 Apr. 29—Philco New Financing To Cover Television And FM.
 Apr. 30—Farnsworth For Television; Zenith Will Lay Off.

MAY

- May 1—Urges FCC To Free Television; Farnsworth Brief Favors Commercial Status Immediately, Unrestricted; See Public's Role Important.
 May 6—RCA's Strong Plea For Television's Freedom.
 NBC Will Present A Television Beauty Show.
 May 7—Television Political Debut At GOP Convention.
 May 8—Attack FCC's Policies; Lundeen And GOP Chairman Both Denounce Commission Tactics As Fly Speeds Television Report.
 NBC Large Screen Television Show Reveals Perfect Reception.
 May 9—Over 100 Television Sets Weekly Being Sold In New York.
 May 10—CBS Strong For Television; Denies Opposition To Its Development. Citing Very

Costly Pioneering Although Not Owning Patents.

- May 14—Television Report In Few Days; Final Draft Being Set By Counsel But FCC Remains Non-Committal As To Actual Content.
 May 16—Television's Relay System Visioned By Harbord.
 Television Headline 1940 New York World's Fair.
 May 21—Fly Sees Television Report Delay; NBC-RCA Mulls Channel Loss.
 May 22—DuMont Off Smaller Sets; Large Television Screens Only.
 May 23—Twenty-Nine Television Patent Being Sold By Receiver.
 May 24—Secures Patent For New Television Color System.
 May 28—DuMont Has Television Subject At Paramount Theaters.
 May 28—Quash Television Commercials; FCC's Report Still Holds Off September 1 Order For Limited Business, Until All Are Agreed On Standards.
 May 29—Television Report Flayed By Senator Lundeen.

JUNE

- June 3—Fair Radio Time Booms; More Than 100 Shows Originating On Grounds Weekly; Television And Facsimile Attract Large Crowds. DuMont Expanding Plant To Meet Heavy Demand.
 June 4—Fly Finds No Television Hurry; Others View Big Industry.
 June 7—Farnsworth Shows Television Units At Sales Session.
 June 11—Monopoly Report Ready; Release Within Three Days Says Fly Who Adds That Television Setup Has "Proved Encouraging."
 June 13—Sees Television Mobile Unit As U. S. Defense Measure.
 June 14—Craven Tells Lundeen Television Will Be Helped.
 NBC Gets Details Of Its Television Coverage Ready For GOP Convention.
 June 18—Net Cuts Television Staff; Time Schedule Remains.
 June 19—FCC Sets New Rules Governing Television.
 June 20—DuMont's Transmitter Opens New York Television Tests.
 Kolorama Television Lab. Seeks Okay For Reorganization.
 June 24—Television's Severest Test Underway In Philadelphia.
 June 25—Television From Philadelphia Held Highly Satisfactory.
 June 28—Initial Deliveries Made Of New DuMont Television Set.

JULY

- July 1—Don Lee Rushing Plans For Television Plant On January 1.
 July 5—RMA Withholds Tie-Up With Coast Television Show.
 July 8—Extensive Television Program For New York World's Fair.
 July 11—Television-Pathe In Tieup To Cover Convention.

IATSE Sets Committee To Survey Television On Coast.

- July 15—Balaban & Katz's Television Station Readied For January 1 Debut.
- July 17—DuMont Reverts To Leases In Television Set Selling Plan.
- July 18—NBC And Don Lee Television Taking No. 1 Channel.
- July 22—Baker Made Chairman Of New Television Committee.
Television Improvement Revealed By New York World's Fair Poll.
- July 23—Assign New Channels For CBS-DuMont Television.
Television Outlook "Encouraging" And Setup Good, Says Fly.
- July 25—English Large-Screen Television Plans Early Debut In U. S.
- July 26—WCAU Gets Television Construction Permit; Purdue And Iowa University Also Get Okay.
DuMont Commends NBC In Making Television Change.
"Unit Assembly" Urged In Television Construction.

AUGUST

- Aug. 1—National Television Committee Set; Nine Subcommittees To Prepare Studies Of Individual Problems; Compromise On Standards In Offing.
Television Take; Vacation.
- Aug. 2—Zenith Television Transmitter Closes For Line Changes.
- Aug. 6—FCC Grants Two Television CPs In Chicago And Washington.
- Aug. 8—Two New Television Stations In Los Angeles And New York.
- Aug. 13—Television Committee Confabs Set For Next Six Weeks.
- Aug. 14—Expects \$200,000,000 Television Sales Within Coming Decade.
- Aug. 15—Additional Television CPs Sought By CBS, Balaban & Katz And Television Productions, Inc.
- Aug. 16—Frank Mullen Sees Television-FM Eventually Accepted.
- Aug. 19—Television History Being Compiled By RMA For National Television Systems Committee.
- Aug. 20—Television Study Ready January 1; Television Committee Sets Informal Goal For Completion Of Studies.
- Aug. 22—Commercial Television Outlook Brightens As Committee Chairmen Meet.
- Aug. 26—Television Confab Predicts Broad Reorganization.
- Aug. 27—Ultimate Television-Motion Picture Unity Imperative—Fly.
- Aug. 29—Television Okay Received By Crosley From FCC.
DeForest's Television-Plane To Be Ready In Year.
Gulf Oil To Sponsor KDKA Television Show.
- Aug. 30—CBS Develops Color Television System.

SEPTEMBER

- Sept. 3—DuMont Polling Television Audiences Regarding Programs.

- Sept. 5—CBS Shows Color Television; Special Demonstration Reveals Sharp, Detailed Transmission For Films; To License Receiver Manufacturers.
- Sept. 17—See Television Standards Ready By End Of Year.
- Sept. 18—Agency-Oil Company Join To Televisе Football.
- Sept. 19—WOR Granted Permit For New York Television Outlet.
- Sept. 24—Unions Still Worrying Over Television Supervision.
- Sept. 25—RMA Sets Big Meet Oct. 7-8; Will Hear FM-Television Reports.
- Sept. 26—Saturday Evening Post Article Attacks FCC Television Stand.

OCTOBER

- Oct. 1—National Television Systems Committee To Convene For Panel Discussions.
- Oct. 4—NBC Advances Plans For Television In Capital.
- Oct. 9—Rush Television Standards For January 1 Completion.
- Oct. 14—See Television Resuming On Big Scale Soon.
- Oct. 18—CBS Sets Television Tests For January 1941.
Balaban & Katz Gets Television Permit.
- Oct. 23—NBC Resuming Television; First Program On Sunday.
- Oct. 29—Will Rush FM Says Fly; FCC Meeting Called For Next Friday To Expedite Station Applications; Television Committee Reports Soon.
- Oct. 31—Television Election Coverage; Complete Pictorial Story To Show Returns—Progress Of Candidates In Elaborate NBC Plan.

NOVEMBER

- Nov. 1—FCC Stalls Television Confab To Sometime In January.
- Nov. 7—1,400,000 Saw Television During New York World's Fair.
- Nov. 12—IRE Opens 12th Confab; RMA-Engineer Institute Starts Sessions With Talks On Industry Problems; CBS Color Television Study Today.
- Nov. 13—Optimistic Television Note At Engineer Conclave.
- Nov. 28—NBC Not Letting Down In Television Experiments.
- Nov. 29—Future Television Plans Revealed By Mullen.
IATSE Considers Television During AFL Convention.

DECEMBER

- Dec. 9—DuMont And WOR Cooperating On Televising Pigskin Games.
- Dec. 10—NBC Television Transmitter Resumes Minus "Bugs."
- Dec. 11—Big Television-FM Agenda For Engineer Confab.
- Dec. 13—W2XBS Television Schedule Accents Mobile Pickups.
FM-Television Activity To Be Synchronized By Metropolitan Television, Inc.
- Dec. 26—General Electric Television Show Readied For Shell Oil.

TELEVISION STANDARDS

As an aftermath of the granting of limited commercial television operations, which were to start on September 1, 1940, and the subsequent revocation of the order by the Federal Communications Commission, television's engineering leaders, representing diverse and in some cases conflicting schools of thought, met last August to form the National Television Systems Committee in an attempt to reach an agreement on standards. This committee, while a non-governmental group, received the full cooperation of the FCC and operated under the auspices of the Radio Manufacturers' Association. Nine sub-committees made exhaustive studies of the problem and the result of their work was submitted in the form of a report to the Commission at the end of January.

Twenty-two standards for commercial television were submitted to the FCC by the Committee, following reports of the various sub-committee chairmen. The recommendations provided:

1. The width of the standard television broadcast channel shall be six megacycles per second.

2. It shall be standard to locate the picture carrier 4.5 megacycles per second lower in frequency than the unmodulated sound carrier.

3. It shall be standard to locate the unmodulated sound carrier 0.25 megacycles per second lower than the upper frequency limit of the channel.

4. The standard picture transmission amplitude characteristic agreed upon was represented by a diagram.

5. The standard number of scanning lines per frame period in monochrome shall be 441, interlaced two to one.

6. The standard frame frequency shall be 30 per second and the standard field frequency shall be 60 per second in monochrome.

7. The standard aspect ratio of the transmitted television picture shall be 4 units horizontally to 3 units vertically.

8. It shall be standard, during the active scanning intervals, to scan the scene from left to right horizontally and from top to bottom vertically, at uniform velocities.

9. It shall be standard in television transmission to use amplitude modulation for both picture and synchronizing signals, the two signals occupying different amplitude ranges.

10. It shall be standard that decrease in initial light intensity cause an increase in radiated power.

11. It shall be standard that the black level be represented by a definite carrier level, independent of light and shade in the picture.

12. It shall be standard to transmit the black level at 75 per cent (with a tolerance of plus or minus 2.5 per cent) of the peak carrier amplitude.

13. It shall be standard to use frequency modulation for the television sound transmission.

14. It shall be standard to pre-emphasize the sound transmission in accordance with the impedance frequency characteristic of a series inductance-resistance network having a time constant of 100 microseconds.

15. It shall be standard in television transmission to radiate the synchronizing waveform shown in (diagram).

16. It shall be standard that the time interval between the leading edges of successive horizontal pulses shall vary less than one-half of one per cent of the average interval.

17. It shall be standard in television studio transmission that the rate of change of the frequency of recurrence of the leading edges of the horizontal synchronizing signals be not greater than 0.15 per cent per second, the frequency to be determined by an averaging process carried out over a period of not less than 20, nor more than 100 lines, such lines not to include any portion of the vertical blanking signal.

18. It shall be standard to rate the picture transmitter in terms of its peak power when transmitting a standard television signal.

19. It shall be standard in the modulation of the picture transmitter that the radio frequency signal amplitude be 15 per cent or less of the peak amplitude, for maximum white.

20. It shall be standard to employ in undulated radiated carrier power of the sound transmission not less than 50 per cent nor more than 100 per cent of the peak radiated power of the picture transmission.

21. It shall be standard in the modulation of the sound that the maximum deviation shall be plus or minus 75 kilocycles per second.

22. It shall be standard in television broadcasting to radiate horizontally polarized waves.

F. C. C. REGULATIONS REGARDING BROADCAST STATIONS FOR TELEVISION AND FACSIMILE

As of January 1, 1941

The term "visual broadcast service" means a service rendered by stations broadcasting images for general public reception. There are two classes of stations recognized in the visual broadcast service, namely: Television broadcast stations and Facsimile broadcast stations.

Television Broadcast Stations

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. The transmission of the synchronized sound (aural broadcast) is considered an essential phase of television broadcasting and one license will be authorized for both visual and aural broadcast as herein set forth.

A license for a television broadcast station will be issued for the purpose of carrying on research, which must include engineering experimentation tending to develop uniform transmission standards of acceptable technical quality, and which may include equipment tests, training of technical personnel, and experimental programs.

Licensing Requirements

A license for a television broadcast station will be issued only after a satisfactory showing has been made in regard to the following:

1. That the applicant has a definite program of research and experimentation in the technical phases of television broadcasting, which indicates reasonable promise of substantial contributions to the developments of the television art.
2. That upon the authorization of the proposed station the applicant can and will proceed immediately with its program of research.
3. That the transmission of signals by radio is essential to the proposed program of research and experimentation.

4. That the program of research and experimentation will be conducted by qualified personnel.

5. That the applicant is legally, financially, technically, and otherwise qualified to carry forward the program.

6. That the public interest, convenience or necessity will be served through the operation of the proposed station.

Charges

No charges either direct or indirect shall be made by the licensee of a television station for the production or transmission of either aural or visual programs transmitted by such station.

Announcements

A licensee of a television broadcast station shall make station identification announcement (call letters and location) at the beginning and ending of each time of operation and during operation (other than purely test operation) on the hour and half hour as provided below:

1. Such identification announcement during operation need not be made when to make such announcement would interrupt a single consecutive speech, play, religious service, symphony concert, or operatic production of longer duration than 30 minutes. In such cases the identification announcement shall be made at the first interruption of the entertainment continuity and at the conclusion of such program.

2. In case of variety-show program, baseball-game broadcasts, or similar program of longer duration than 30 minutes, the identification announcement shall be

made within 5 minutes of the hour and half hour.

3. In case of all other programs (except as provided in paragraphs (1) and (2) of this section) the identification announcement shall be made within 2 minutes of the hour and half hour.

4. In making the identification announcement, the call letters shall be given only on the channel of the station identified thereby.

At the same time station identification announcements are made, there shall be added the following:

"This is a special television broadcast made by authority of the Federal Communications Commission for experimental purposes."

Operating Requirements

Each licensee of a television broadcast station shall diligently prosecute its program of research from the time its station is authorized.

Each licensee of a television station will from time to time make such changes in its operation as may be directed by the Commission for the purpose of promoting experimentation and improvement in the art of television broadcasting.

Frequency Assignment

(a) The following groups of channels are allocated for assignment to television broadcast stations licensed experimentally:

Group A		Group B	
Channel		Channel	
No. 1	50,000-56,000 kc	No. 8	162-000-168,000 kc
2	60,000-66,000	9	180,000-186,000
3	66,000-72,000	10	186,000-192,000
4	78,000-84,000	11	204,000-210,000
5	84,000-90,000	12	210,000-216,000
6	96,000-102,000	13	234,000-240,000
7	102,000-108,000	14	240,000-246,000
Group C		15	258,000-264,000
Any 6000 kc band		16	264,000-270,000
above 300,000 kc		17	282,000-288,000
excluding band		18	288,000-294,000
400,000-401,000 kc.			

No television broadcast station will be authorized to use more than one channel in Group A except for good cause shown. Both aural and visual carriers with side bands for modulation are authorized but no emission shall result outside the authorized channel.

No person (including all persons under common control) shall, directly or indirectly, own, operate or control more than three television stations on channels in Group A and no such person shall, directly or indirectly, own, operate or control on channels in Group A more than one

television station which would serve in whole or substantial part the same service area as another station operated or controlled by such person. This paragraph shall not apply to stations which do not transmit programs for public reception.

Channels in Groups B and C may be assigned to television stations to serve auxiliary purposes such as television relay stations. No mobile or portable station will be licensed for the purpose of transmitting television programs to the public directly.

Power

The operating power of a television station shall be adequate for but not in excess of that necessary to carry forward the program research and in no case in excess of the power specified in its license.

Reports

A report shall be filed with each application for renewal of station license which shall include a statement of each of the following:

1. Number of hours operated.
2. Full data on research and experimentation conducted including the type of transmitting and studio equipment used and their mode of operation.
3. Data on expense of operation during the period covered.
4. Power employed, field intensity measurements and visual and aural observations and the types of instruments and receivers utilized to determine the service area of the station and the efficiency of respective types of transmissions.
5. Estimated degree of public participation in reception, and the results of public observation as to the efficiency of types of transmission.
6. Conclusions, tentative and final.
7. Program for further developments in television broadcasting.
8. All developments and major changes in equipment.
9. Any other pertinent developments.

Special or progress reports shall be submitted from time to time as the Commission shall direct.

Facsimile Broadcast Stations

The term "facsimile broadcast station" means a station licensed to transmit images of still objects for record reception by the general public.

A license for a facsimile broadcast station will be issued only after a sat-

isfactory showing has been made in regard to the following, among others:

1. That the applicant has a program of research and experimentation which indicates reasonable promise of substantial contribution to the development of the facsimile broadcast service.

2. That sufficient facsimile recorders will be distributed to accomplish the experimental program proposed.

3. That the program of research and experimentation will be conducted by qualified engineers.

4. That the applicant is legally and financially qualified and possesses adequate technical facilities to carry forward the program.

5. That the public interest, convenience and/or necessity will be served through the operation of the proposed station.

Conditions of Licensing

(a) A licensee of a facsimile broadcast station shall not make any charge, directly or indirectly, for the transmission of programs.

(b) No licensee of any standard broadcast station or network shall make any additional charge, directly or indirectly, for the transmission of some phase of the programs by a facsimile broadcast station, nor shall commercial accounts be solicited by any licensee of a standard broadcast station or network, or others acting in their behalf, upon representation that images concerning that commercial program will be transmitted by a facsimile station.

Frequencies Allotted

a. The following groups of frequencies are allocated for assignment to facsimile broadcast stations which will be licensed experimentally only:

<i>Group A</i>	<i>Group B</i>	<i>Group C</i>
25,025 kc	43,540 kc	Any frequency above
25,050	43,580	300,000
25,075	43,620	kc excluding
25,100	43,660	band
25,125	43,700	400,000 to
25,150	43,740	401,000
25,175	43,780	kc.
25,200	43,820	
25,225	43,860	
25,250	43,900	
	43,940	

b. Other broadcast or experimental fre-

quencies may be assigned for the operation of facsimile broadcast stations on an experimental basis provided a sufficient need therefor is shown and no interference will be caused to established radio stations.

c. One frequency only will be assigned to a facsimile station from the Groups in subsection (a) of this rule. More than one frequency may be assigned under provisions of subsection (b) of this rule if a need therefor is shown.

d. Each applicant shall specify the maximum modulating frequencies proposed to be employed.

e. The operating frequency of a facsimile broadcast station shall be maintained in accordance with the frequency tolerance of 0.05 per cent or less as required, provided, however, where a lesser tolerance is necessary to prevent interference, the Commission will specify the tolerance.

f. A facsimile broadcast station authorized to operate on frequencies regularly allocated to other stations or services shall be required to abide by all rules governing the stations regularly operating thereon, which are applicable to facsimile broadcast stations and are not in conflict with other FCC rules which apply to all stations generally.

Power Limitations

The operating power of a facsimile broadcast station shall not be in excess of that necessary to carry forward the program of research, provided, however, not more than 1000 watts will be authorized on a frequency in Group A. The operating power may be maintained at the maximum rating or less, as the conditions of operation may require.

A supplemental report shall be filed with and made a part of each application for renewal of license and shall include statements of the following:

1. Number of hours operated for transmission of facsimile programs.

2. Comprehensive report of research and experimentation conducted.

3. Conclusions and program for further developments of the facsimile broadcast service.

4. All developments and major changes in equipment.

5. Any other pertinent developments.

Distinctive Calls For FM As Directed By The FCC

TO PROVIDE distinctive calls for FM (frequency modulation) broadcast stations, the Federal Communications Commission has adopted a new system of call letters with interposed numbers for this now commercially recognized broadcast service.

Under international agreement, to which the United States is a party, the first letter (in some cases the first two letters) of a call signal indicates the nationality of a station. The United States is assigned the use of three letters—N, K, and W. Hence the present domestic assignment of combinations beginning with these letters. Call letters beginning with N are reserved for the exclusive use of the Navy and Coast Guard. Call letters beginning with K are assigned to broadcast stations located west of the Mississippi River and in the territories. Call letters beginning with W are assigned to stations east of the Mississippi River. Any existing call letters not in accordance with this procedure is due to the fact that the station was licensed before the allocation plan was adopted.

Consequently, the first call letter of an FM station must be K or W, depending on its geographical location.

Alphabetical Order

A second letter for an FM station will be assigned in alphabetical order (with exception of E, which will be reserved for non-commercial educational stations using frequency modulation) to each station on a given frequency as licensed, thus providing 25 stations in each area for a given frequency. If more than 25 stations are assigned on a given frequency, an additional letter will be necessary.

However, between the initial letter and supplemental letter (or letters) two numbers will be utilized. These numbers will indicate the frequency assignment. This is possible because all FM stations are in the 42,500-50,000 kilocycle band, and because all FM frequencies are assigned on the odd hundreds in kilocycles. Thus, the first figure and the last two figures of the frequency assignment can be dropped.

City Indication

In addition, and where possible, the city or area will be indicated by the second letter or a combination of second and third letters. Letter combinations of this mnemonic character have been assigned to each of the metropolitan trading centers. Thus, stations in Boston will terminate with the letter B, while stations in New York City will terminate with NY. Similarly, stations in the District of Columbia will be identified with the suffix DC.

In brief, here is how the system works: W41B would indicate an FM station in the eastern section of the country (Bos-

ton) operating on the frequency of 44,100 kilocycles. By the same token, K43SF would apply to an FM station in the western part of the United States (San Francisco) on the 44,300 kilocycle frequency.

The letter E in the alphabetical arrangement will identify non-commercial educational broadcast stations employing FM on the new high frequency broadcast band. Five channels (42,000 to 43,000 kilocycles) are available to these educational stations.

There is no international regulation to bar the use of this FM identifying system. In fact, a like principle is followed by Chile in assigning calls to standard broadcast stations in that country. The arrangement provides ample source of calls for future FM stations. It is about the only source of new call combinations which can be adapted, inasmuch as other types of calls are assigned by treaty to stations and services other than broadcast. It has the additional advantage of permitting identification of the frequency actually used, and for that reason should be popular with listeners as well as broadcasters.

Further, it will not disturb the approximately 15,000 remaining four-letter call combinations which are being assigned to the older services at the rate of between 40 and 50 a week. Even if this average does not increase, such a reservoir will not last more than six years. Under treaty, ship stations have priority in the assignments of radio call letters from the four-letter group.

HIGH FREQUENCY— FREQUENCY MODULATION BROADCAST STATIONS

The term "high frequency broadcast station" means a station licensed primarily for the transmission of radiotelephone emissions, intended to be received by the general public and operated on a channel in the high frequency broadcast band. Commercial high frequency broadcast stations must use frequency modulation.

LOCATION	Call Letters	Licensee	Frequency Kilocycles	Service Area Sq. Mi.
Baton Rouge, La.....	W45RG	Baton Rouge Broadcasting Co.....	44500	8100
Binghamton, N. Y.....	W49BN	Howitt-Wood Radio Co.....	44900	6500
Boston, Mass.	W39B	The Yankee Network, Inc.....	43900	31000
Brooklyn, N. Y.....	W59NY	Frequency Broadcasting Corp.....	45900	8500
Chicago, Ill.....	W67C	Columbia Broadcasting System, Inc.	46700	10800
Chicago, Ill.....	W63C	National Broadcasting Co.....	46300	10800
Chicago, Ill.....	W59C	WGN, Inc.	45900	10800
Chicago, Ill.....	W47C	WJJD, Inc.	44700	10800
Chicago, Ill.....	W51C	Zenith Radio Corp.....	45100	10760
Columbus, Ohio	W45CM	WBNS, Inc.	44500	12400
Detroit, Mich.	W45D	The Evening News Association.....	44500	6820
Evansville, Ind.	W45V	Evansville On the Air, Inc.....	44500	8397
Hartford, Conn.	W53H	Travelers Broadcasting Service Corp.	45300	6100
Hartford, Conn.	W65H	WDRC, Inc.	46500	6100
Los Angeles, Calif.....	K45LA	Don Lee Broadcasting System.....	44500	6944
Nashville, Tenn.	W47NV	National Life & Accident Insurance Co.	44700	16000
Milwaukee, Wisc.	W55M	The Journal Co.....	44500	8540
New York, N. Y.....	W71NY	Bamberger Broadcasting Service, Inc.	47100	8500
New York, N. Y.....	W67NY	Columbia Broadcasting System, Inc.	46700	8500
New York, N. Y.....	W55NY	William G. H. Finch.....	45500	8500
New York, N. Y.....	W63NY	Marcus Loew Booking Agency.....	46300	8500
New York, N. Y.....	W75NY	Metropolitan Television, Inc.....	47500	8500
New York, N. Y.....	W51NY	National Broadcasting Co.....	45100	8500
Philadelphia, Pa.	W69PH	WCAU Broadcasting Co.....	46900	9300
Philadelphia, Pa.	W53PH	WFIL Broadcasting Co.....	45300	9300
Pittsburgh, Pa.	W47P	Walker & Downing Radio Corp.....	44700	8400
Pittsburgh, Pa.	W75P	Westinghouse Radio Stations, Inc...	47500	8400
Schenectady, N. Y.....	W47A	Capitol Broadcasting Co.....	44700	6589
Schenectady, N. Y.....	W57A	General Electric Co.....	45700	6600
Salt Lake City, Utah.....	K47SL	Radio Service Corp. of Utah.....	44700	623
South Bend, Ind.....	W71SB	South Bend Tribune.....	47100	4300

Pending Applications

LOCATION	Licensee	Frequency Kilocycles	Service Area Sq. Mi.
Albany, N. Y.	WOKO, Inc.	45100	7164
Amarillo, Texas	Amarillo Broadcasting Co.	45100	6503.89
Ashland, Ky.	Ashland Broadcasting Co.	46100	5119.5
Baltimore, Md.	The A. S. Abell Co.	44300	15489
Battle Creek, Mich.	Federated Publications, Inc.	48100	4100
Boston, Mass.	Columbia Broadcasting System, Inc.	44100	16230
Boston, Mass.	Westinghouse Radio Stations, Inc.	46500	6652
Boston, Mass.	The Yankee Network, Inc.	44300	19230
Cedar Rapids, Ia.	The Gazette Company	44700	7400
Chicago, Ill.	The Moody Bible Institute of Chicago	43900	15300
Cicero, Ill.	WHFC, Inc.	47500	2885
Detroit, Mich.	John Lord Booth	44100	4400
Detroit, Mich.	James F. Hopkins, Inc.	46500	2130
Detroit, Mich.	WJR, The Goodwill Station	43700	14144
Duluth, Minn.	Head of Lakes Broadcasting Co.	44500	2754
Ft. Lauderdale, Fla.	Tom M. Bryan	44500	2150
Ft. Wayne, Ind.	Westinghouse Radio Stations, Inc.	44900	6150
Grand Rapids, Mich.	Federated Publications, Inc.	46100	5300
Kansas City, Mo.	Commercial Radio Equipment Co.	44900	2995
Lansing, Mich.	Federated Publications, Inc.	47100	3820
Lexington, Ky.	American Broadcasting Corp. of Kentucky	45100	7290
Los Angeles, Calif.	Earle C. Anthony, Inc.	44900	1371
Los Angeles, Calif.	Echo Park Evangelistic Assn.	45500	1344
Los Angeles, Calif.	Standard Broadcasting Co.	45100	1427.97
New York, N. Y.	Bremer Broadcasting Corp.	47100	8500
New York, N. Y.	FM Radio Broadcasting Co.	48300	8600
New York, N. Y.	New Jersey Broadcasting Corp.	47900	8500
New York, N. Y.	Wodaam Corp.	45300	8500
Philadelphia, Pa.	Pennsylvania Broadcasting Co.	44700	9585
Philadelphia, Pa.	Seaboard Radio Broadcast Corp.	48300	9600
Philadelphia, Pa.	Westinghouse Radio Stations, Inc.	45500	11492
Pittsburgh, Pa.	Pittsburgh Radio Supply House	43900	11488
Portland, Ore.	KOIN, Inc.	44500	8175
Providence, R. I.	Cherry & Webb Broadcasting Co.	47500	6207
Providence, R. I.	The Outlet Co.	44300	16370
Rochester, N. Y.	Stromberg-Carlson Telephone Mfg. Co.	45100	2240
Rockford, Ill.	Rockford Broadcasters, Inc.	45100	6000
St. Louis, Mo.	The Pulitzer Publishing Co.	43500	6564
St. Louis, Mo.	St. Louis University	44300	13500
St. Louis, Mo.	Star-Times Publishing Co.	44700	12480
Springfield, Mass.	Westinghouse Radio Stations, Inc.	48100	2022
San Francisco, Calif.	Don Lee Broadcasting System	43500	3080
South Bend, Ind.	South Bend Tribune	47100	4330
Syracuse, N. Y.	Central New York Broadcasting Corp.	46300	6800
Trenton, N. J.	Mercer Broadcasting Co.	44700	3700
Winston-Salem, N. C.	Gordon Gray	44100	69400
Winston-Salem, N. C.	Piedmont Publishing Co.	46700	4600
Worcester, Mass.	Worcester Telegram Publishing Co.	43100	19230
Youngstown, Ohio	William F. Maag, Jr.	43500	12304

F. M. HEADLINES

Of 1940—From Radio Daily

JANUARY

- Jan. 8—FM Interests Organize; Will Coordinate Setup For FCC And Make Future Studies.
 Jan. 12—New Armstrong System To Be Shown In Capital.
 FM Group To Ask FCC To Delay Television Decision.
 Jan. 16—Stewart Warner Readyng FM Receivers.
 Jan. 25—Western Eelectric To Build New FM Transmitters.
 Jan. 26—Quick Universal Use Of FM Seen By Zenith's McDonald.
 Armstrong Licenses Pilot Radio Corp.
 Jan. 29—FM Sets On Sale At Macy's.

FEBRUARY

- Feb. 2—Stromberg Carlson Drive To Sell FM Receivers.
 More Stations Expected To Start FM Tests Soon.
 Feb. 16—FM Gathers Momentum; 12 Experimental Transmitters In Use With 5 Manufacturers Making Receivers; Investment Now \$1,500,000.
 Feb. 20—Seek "Junior" Union Talent For Experimental Television And FM.
 Feb. 23—Big FM Watter Sought By Brooklyn Concern.
 General Electric To Push FM Sets; Sees Expanding Market.
 Feb. 29—Four-Way FM Hookup Does Its Stuff Tonight.

MARCH

- Mar. 4—FM Hookup Schedule To Start This Summer.
 Two Web Schedules Available For Owners Of FM Sets.
 Mar. 6—FM Group's Strong Front; Will Battle For Commercial Status At March 18th Hearing Before FCC; Big Delegation Readied. All WHN Programs Set For Finch FM Station.
 Mar. 8—Marshall FM Witnesses; Some 29 Individuals And Organizations Signify Intention Of Appearance At FCC Hearing On March 18.
 Experimental FM Relay Started Today By WOR.
 Four New York Stations Testing FM Operation.
 Mar. 11—FCC Allots Six Hours To Hear FM Broadcasters Story.
 Mar. 13—Big Chicago Delegation To Attend FM Hearing.
 Mar. 14—Set Makers Prepared For Larger FM Sales.

- Mar. 15—FCC Allotting More Time To FM Hearing Schedule.
 Mar. 18—FCC Opens FM Hearing; Strong Attendance On Tap Including Networks, Stations, Manufacturers, Et Al; To Last Through Thursday.
 Mar. 19—Armstrong Fires First FM Gun; Inventor Presents Case As Opening Witness In FCC Hearing; Sees Television Use For Higher Frequency.
 Mar. 20—Explain FM Advantages; Major Armstrong Again Heads Witnesses Informing FCC Of Various Angles; Universal Adoption Far Off.
 Mar. 21—Shepard Makes Plea For FM Green Light.
 Mar. 22—Allocation Crops Up; FM Hearings Adjourn.
 Mar. 25—RCA-NBC Covers On FM; Application In For Five Such Stations In Key Cities Across The Country; Also Files Television CPs.
 Mar. 28—RCA Gives Stand On FM; No 100 Percent Adoption Possible, It Believes, But Urges Approval; Cites Own Experiments.

APRIL

- Apr. 3—WDRG Makes Application For 50,000-Watt FM Construction Permit.
 Stromberg-Carlson Optimistic On Television-FM Activity.
 Apr. 5—Newspapers And Stores Rush To Get FM Licenses.
 Scott Labs Readyng FM Receivers.
 Apr. 10—FM Radio Men Meet To Discuss Policies.
 Apr. 12—FCC Extends Time Limit For Filing Briefs On FM.
 FM Tries Mobile Transmitter.
 Apr. 24—RMA Opens Studies Anent FM Standards.
 Apr. 26—FM "Limited" Tube Developed.
 Apr. 29—Philco Financing To Cover Television And FM.

MAY

- May 1—CBS Asks FCC Permit To Build FM Stations.
 May 2—Sees 116 FM Applications Filed With FCC.
 May 10—FM Manufacturers See Boom After FCC Action.
 Facsimile-FM Showing By Finch Laboratories.
 May 17—Western Eelectric Introduces First FM Transmitter.
 May 20—FM Gets Commercial Okay; Goes Into Effect Forthwith As FCC Sees Full Industry Accord; Other Activity By Commission.

- May 21—Tremendous FM Activity; Progress On All Fronts As Stations And Manufacturers, Et Al, Rush To Benefit By Commercial Status.
- May 23—FM Potential Sales Up For RMA Studies.
- May 24—FM Broadcasters, Inc. Call Confab To Discuss FM Moves.
- May 27—FM Gathers Momentum; Wide Activity Among Receiver Manufacturers While FCC Paves Way For Filing New Station Permits.
- May 28—All Possible Speed Is Keynote Of FM Broadcasters, Inc., Meeting.
- May 31—NAB To Consider Expansion of Membership, Such As FM.

JUNE

- June 7—Yankee Network Uses FM To Transmit Pictures.
Westinghouse Stations Readied for FM On January 1.
- June 13—Farnsworth's Spot Advertising Campaign In Behalf Of FM.
- June 24—WOR's FM Transmitter Takes Skyscraper Site.
- June 25—FM Gets Green Light As FCC Sets Up Rules.
- June 26—General Electric Readies FM Line.
- June 27—Worcester's FM Station On Full Time Schedule.
- June 28—Institute Of Radio Engineers' Members See FM At Boston Gathering.

JULY

- July 8—General Electric Sells Four FM Transmitters To Civil Aeronautics Authority.
- July 11—FCC Readies New Forms For FM Applicants.
- July 12—RCA's FM Transmitter To Be Offered On August 1.
- July 22—FCC Simplifies Plan For FM Applications.
- July 25—New FM Outlet Debuts In New York On August 1.
- July 26—WGN Makes Application For 50 Kw. FM Station.

AUGUST

- Aug. 2—WOR's FM Transmitter Makes Formal Debut.
Freed-Eisemann In FM Field.
- Aug. 5—Miller Request FCC To Simplify FM Form.
- Aug. 7—NIB Discusses BMI-AFM-FM; Sets Chicago And New York Meetings.
- Aug. 8—FM Gets Complete Once-Over At NAB Convention.
- Aug. 9—Western Electric Sees FM Creating New Replacement Sales.
U. S. Army Tests FM.
- Aug. 16—First FM Educational Use Planned By San Francisco Schools.
- Aug. 21—Huge FM Audience Seen; Station Operators Plan Coverage of 15,000 Square Miles; Fifty New Stations Expected by January 1.
- Aug. 28—Special FM Meeting Explores Web Plans.
- Aug. 29—FM Station Costs \$20,000.

SEPTEMBER

- Sept. 3—FM Reports Headway As NBC Sets Activity.

- WDRC Begins Exclusive FM Program Service.
- Sept. 6—FM Network To Start In 1941 With 42 Outlets.
- Sept. 13—WIP To Woo Advertisers To FM With Special Show.
Educators Hop On FM Bandwagon.
- Sept. 18—Two Daily FM Programs Via General Electric And WOR At New York World's Fair.
- Sept. 26—See FM Development Air By Newspapers.
- Sept. 30—FM Inventor Wins Additional Patent.
General Electric And Other Utilities Buy FM Units.

OCTOBER

- Oct. 2—Chicago FM Outlet For NBC.
- Oct. 3—FCC Further Defines Rules For FM Area.
- Oct. 4—W. R. G. Baker Sees Gradual Advances For FM.
- Oct. 7—FM Programs In New York Area Heard 60 Hours Weekly.
- Oct. 11—Cleveland Schools To FM.
- Oct. 24—A. T. & T. Says It Can Handle Wire Transmissions Of FM.
- Oct. 29—Will Rush FM Says Fly; FCC Meeting Called For Next Friday To Expedite Station Applications; Television Committee Reports Soon.

NOVEMBER

- Nov. 1—FM Goes Commercial; FCC Working Fast Gives 15 Outlets Okay To Sell Time Immediately They Find It Feasible.
FM Applicants Reduce Station Coverage Claims.
- Nov. 4—Null FM Call Letters; Coverage Area Issued.
- Nov. 7—Nashville Goes For FM As City Emergency Setup.
- Nov. 8—FCC Explains Unusual FM Coverage Problems.
DeMars Sees FM Web As No. 1 Network.
- Nov. 14—FM And Color Television Talk Closes Institute Of Radio Engineers' Meeting.
- Nov. 15—General Electric Readies FM Schedule; First Program November 20.
- Nov. 19—CBS Files Request For Chicago FM Station.
- Nov. 22—FCC Grants 2 FM Commercial Licenses.
George Henry Payne Lauds FM At General Electric Company's Inauguration.
- Nov. 29—FM Product Okay Despite War Orders.

DECEMBER

- Dec. 2—General Electric Makes Arrangements To Handle Opera Via FM.
- Dec. 10—First FM Commercial; WOR Sells Longine Co.
- Dec. 11—Big Television-FM Agenda For Engineer Confab.
- Dec. 17—Commission Releases New FM Applications; Sets Simplified Procedure.
- Dec. 18—Yankee Network's FM Station On Air Soon.
- Dec. 20—FCC Extending Time For FM Adjustments.
- Dec. 27—Two New York Firms File For FM Permits.
Yankee Network's FM Station Set For Maine And New Hampshire.

—F. C. C. Regulations Regarding— High Frequency Broadcast Stations

As of January 1, 1941

The term "high frequency broadcast station" means a station licensed primarily for the transmission of radiotelephone emissions intended to be received by the general public and operated on a channel in the High Frequency broadcast band. High frequency broadcast stations must use frequency modulation.

Definitions

High Frequency Broadcast Band. The term "high frequency broadcast band" means the band of frequencies extending from 43,000 to 50,000 kilocycles, both inclusive.

Frequency Modulation. The term "frequency modulation" means a system of modulation of a radio signal in which the frequency of the carrier wave is varied in accordance with the signal to be transmitted while the amplitude of the carrier remains constant.

Center Frequency. The term "center frequency" means the frequency of the carrier wave with no modulation. (With modulation the instantaneous operating frequency swings above and below the center frequency. The operating frequency with no modulation shall be the center frequency within the frequency tolerance).

High Frequency Broadcast Channel. The term "high frequency broadcast channel" means a band of frequencies 200 kilocycles wide and is designated by its center frequency. Channels for high frequency broadcast stations begin at 43,100 kilocycles and continue in successive steps of 200 kilocycles to and including the frequency of 49,900 kilocycles.

Service Area. The term "service area" of a high frequency broadcast station means the area in which the signal is not subject to objectionable interference or objectionable fading. (High frequency broadcast stations are considered to have only one service area; for determination of such area see *Standards of Good Engineering Practice for High Frequency Broadcast Stations.*)

Antenna Field Gain. The term "antenna field gain" of a high frequency broadcast antenna means the ratio of the effective free space field intensity produced at one mile in the horizontal plane expressed in millivolts per meter for 1 kilowatt antenna input power to 137.6.

Free Space Field Intensity. The term "free space field intensity" means the

field intensity that would exist at a point in the absence of waves reflected from the earth or from reflecting objects.

Frequency Swing. The term "frequency swing" is used only with respect to frequency modulation and means the instantaneous departure of the carrier frequency from the center frequency resulting from modulation.

Multiplex Transmission. The term "multiplex transmission" means the simultaneous transmission of two or more signals by means of a common carrier wave. (Multiplex transmission as applied to high frequency broadcast stations means the transmission of facsimile or other aural signals in addition to the regular broadcast signals.)

Percentage Modulation. The term "percentage modulation" with respect to frequency modulation means the ratio of the actual frequency swing to the frequency swing required for 100 per cent modulation expressed in percentage. (For high frequency broadcast stations, a frequency swing of 75 kilocycles is standard for 100 per cent modulation.)

Experimental Period. The term "experimental period" means that period of time between 12 midnight and sunrise. This period may be used for experimental purposes in testing and maintaining apparatus by the licensee of any high frequency broadcast station, on its assigned frequency and with its authorized power, provided no interference is caused to other stations maintaining a regular operating schedule within such period.

Allocation of Facilities¹

Basis of Licensing High Frequency Broadcast Stations. High frequency broadcast stations shall be licensed to serve a specified area in square miles. The contour bounding the service area and the radii of the contour shall be

¹The rules relating to allocation of facilities are intended primarily for the information of applicants. Nothing contained in said rules shall be regarded as any recognition of any legal right on behalf of any person to a grant or denial of any application.

determined in accordance with the *Standards of Good Engineering Practice for High Frequency Broadcast Stations*.

Service Areas (Definitions)

For the purpose of determining the areas to be served by high frequency broadcast stations, the following definitions apply:

(a) "Basic trade areas" and "limited trade areas" consist of areas the boundaries of which are determined by the Commission on the basis of showings made in applications as to retail trading areas or consumer trading areas and for government data². Each basic trade area includes one "principal city." The boundaries of the basic trade areas are adjoining and the aggregate of all such areas is the total area of the United States. Each "limited trade area" includes one city. The boundaries of limited trade areas are not necessarily adjoining. Such areas may include portions of other limited trade areas and may extend into more than one basic trade area.

(b) "Principal city" means the largest city or the city or cities designated as "principal city" by the Commission, within a basic trade area. "City" means any city, town, or borough in a basic trade area except the principal city. Each "city" has a limited trade area.

(c) "Rural area" means all land area outside incorporated towns or cities with population greater than 2500 and where the density of population is less than 150 per square mile. Incorporated towns or cities with population from 2500 to 5000 without a high frequency broadcast station and not adjacent to larger cities may be considered rural area.

Service Areas—Established

The Commission in considering applications for high frequency broadcast stations will establish service areas. Such stations will be licensed to serve areas having the following characteristics:

(a) An area comprising a limited trade area and a city. The station shall render good service to the city and its service area shall conform generally with the limited trade area.

(b) An area comprising a basic trade area and a principal city. The station shall render good service to the principal city and its service area shall conform generally with the basic trade area.

(c) An area of at least 15,000 square

miles comprising primarily a large rural area, and particularly that part of basic trade areas which cannot be served by stations assigned basic trade areas due to economical and technical limitations. The service area may include one or more principal city or cities, provided that in rendering service to such cities, the service to rural areas which the station is designated to serve is not impaired. The transmitter of such a station shall be located in such a manner that the service area, (1) shall extend into two or more basic trade areas, (2) shall not conform generally with a basic trade area, and (3) shall not merely extend beyond a basic trade area.

(d) An area having substantially different characteristics (social, cultural, or economic) from those areas specified in subsections (a), (b) and (c) of this section where, by reason of special conditions, it is shown that a need (which cannot be supplied by a station serving areas under subsections (a), (b) or (c) of this section) for the proposed service both program and technical exists which makes the establishment of the service area in the public interest, convenience or necessity. The Commission will give particular consideration in this connection to competitive advantages which such stations would have over other stations established under other provisions.

(e) In case it is not economically and technically feasible for a station assigned a basic or limited trade area to serve substantially all such area, the Commission will establish the service area on the basis of conditions which obtain in the trade area.

(f) In case an applicant proposes a change in an established service area, the applicant shall make a full showing as to need for such change and the effect on other stations serving the area.

Time of Operation. All high frequency broadcast stations shall be licensed for unlimited time operation.

Showing Required. Authorization for a new high frequency broadcast station or increase in facilities of an existing station will be issued only after a satisfactory showing has been made in regard to the following matters:

(a) That the area which the applicant proposes to serve has the characteristics of an area described in subparagraphs (a), (b), or (c) of the section on *Service Areas* stated above. The application shall be accompanied by a full analysis of the basis upon which the area as set forth in the application was determined. No application for construction permit for a new station or change of service area will be accepted unless a definite

² There are several current and recognized authorities on retail trading areas or consumer trading areas from which the applicant may prepare its showing and to which the Commission will give consideration in making its determination.

site, full details of the proposed antenna, and a suitable map showing the expected service area are furnished with the application.

(b) Where a service area has been established in which one or more existing high frequency broadcast stations are in operation, that the contours of any new station proposed to serve such area will compare with those of the existing station or stations as nearly as possible, or that the service area already established should be modified.

(c) That objectionable interference will not be caused to existing stations or that if interference will be caused the need for the proposed service outweigh the need for the service which will be lost by reason of such interference.

(d) That the proposed station will not suffer interference to such an extent that its service would be reduced to an unsatisfactory degree.

(e) That the technical equipment proposed, the location of the transmitter, and other technical phases of operation comply with the regulations governing the same, and the requirements of good engineering practice.

(f) That the applicant is financially qualified to construct and operate the proposed station; and, if the proposed station is to serve substantially the same area as an existing station, that applicant will be able to compete effectively with the existing station or stations.

(g) That the program service will include a portion of programs particularly adapted to a service utilizing the full fidelity capability of the system, as set forth in the Standards of Good Engineering Practice for High Frequency Broadcast Stations.

(h) That the proposed assignment will tend to effect a fair, efficient, and equitable distribution of radio service among the several states and communities.

(i) That the applicant is legally qualified, is of good character, and possesses other qualifications sufficient to provide a satisfactory public service.

(j) That the facilities sought are subject to assignment as requested under existing international agreements and the Rules and Regulations of the Commission.

(k) That the public interest, convenience, and necessity will be served through the operation under the proposed assignment.

Channel Assignments

The channels set forth below with the indicated center frequencies are available for assignment to high frequency broad-

cast stations to serve the areas provided in the section on *Service Areas Established* stated above:

(a) An applicant for a station to serve an area specified in paragraphs (a) or (b) of that section to be located in a principal city or city which has a population less than 25,000 (city only) shall apply for one of the following channels:

48900	49300	49500	49700
49100			49900

(b) An applicant for a station to serve an area specified in paragraph (a) or (b) of that section to be located in a principal city or city which has a population greater than 25,000 (city only) shall apply for one of the following channels:

44500	45700	47900	46700
44700	45900	48100	46900
44900	46100	48300	47100
45100	46300	48500	47300
45300	46500	48700	47500
45500			47700

(c) An applicant for a station to serve primarily a large rural area, specified in paragraph (c) or an area specified in paragraph (d) of that section shall apply for one of the following channels:

43100	43500	43900	44300
43300	43700	44100	

Special Provisions Concerning Assignments

(a) Stations located in the same city shall have substantially the same service area.

(b) High frequency broadcast stations shall use frequency modulation exclusively.

(c) Stations serving a substantial part of the same area shall not be assigned adjacent channels.

(d) One channel only will be assigned to a station.

Multiple Transmission

Facsimile Broadcasting and Multiplex Transmission. The Commission may grant authority to a high frequency broadcast station for the multiplex transmission of facsimile and aural broadcast programs provided the facsimile transmission is incidental to the aural broadcast and does not either reduce the quality of or the frequency swing required for the transmission of the aural program. The frequency swing for the modulation of the aural program should be maintained at 75 kc and the facsimile signal added thereto. No transmission outside the authorized band of 200 kc shall result from such multiplex operation nor shall interference be caused to other stations operating on adjacent channels. The transmission of multiplex signals may also be authorized on an

experimental basis in accordance with standard broadcast station rule on special experimental authorizations.

Proof of Performance Required. Within one year of the date of first regular operation of a high frequency broadcast station, continuous field intensity records along several radials shall be submitted to the Commission which will establish the actual field contours, and from which operating constants required to deliver service to the area specified in the license are determined. The Commission may grant extensions of time upon showing of reasonable need therefor.

Multiple Ownership. (a) No person (including all persons under common control¹) shall, directly or indirectly, own, operate, or control more than one high frequency broadcast station that would serve substantially the same service area as another high frequency broadcast station owned, operated, or controlled by such person.

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

Normal License Period. All high frequency broadcast station licenses will be issued so as to expire at the hour of 3 a.m., Eastern Standard Time, and will be issued for a normal license period of one year, expiring as follows:

(a) For stations operating on the frequencies 48900, 49100, 49300, 49500, 49700, and 49900, April 1.

(b) For stations operating on the frequencies 44500, 44700, 44900, 45100, 45300, 45500, 45700, 45900, 46100, 46300, and 46500, May 1.

(c) For stations operating on the frequencies 46700, 46900, 47100, 47300,

¹The word "control" as used herein is not limited to majority stock ownership but includes actual working control in whatever manner exercised.

47500, 47700, 47900, 48100, 48300, 48500, and 48700, June 1.

(d) For stations operating on the frequencies 43100, 43300, 43500, 43700, 43900, 44100, and 44300, July 1.

Equipment

Maximum Power Rating. The Commission will not authorize the installation of a transmitter having a maximum rated power more than twice the operating power of the station.

Maximum Rated Carrier Power; How Determined. (a) The maximum rated carrier power of a standard transmitter shall be determined by the manufacturer's rating of the equipment.

(b) The maximum rated carried power of a composite transmitter shall be determined by the sum of the applicable commercial ratings of the vacuum tubes employed in the last radio stage.

Frequency Monitor. The licensee of each high frequency broadcast station shall have in operation at the transmitter a frequency monitor independent of the frequency control of the transmitter. It shall have a stability of 20 parts per million.

Modulation Monitor. The licensee of each high frequency broadcast station shall have in operation at the transmitter an approved modulation monitor.

Required Transmitter Performance. (a) The external performance of high frequency broadcast transmitters shall be within the minimum requirement prescribed by the Commission contained in the Standards of Good Engineering Practice for High Frequency Broadcast Stations.

(b) The transmitter center frequency shall be controlled directly by automatic means which do not depend on inductances and capacities for inherent stability.

(c) The transmitter shall be wired and shielded in accordance with good engineering practice and shall be provided with safety features in accordance with the specifications of article 810 of the current National Electrical Code as approved by the American Standards Association.

Indicating Instruments. The direct plate circuit current and voltage shall be measured by instruments having an acceptable accuracy.

Changes in Equipment and Antenna System. Licensees of high frequency broadcast stations shall observe the following provisions with regard to change in equipment and antenna system:

(a) No changes in equipment shall be made:

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

2. That would result in the external performance of the transmitter being in disagreement with that prescribed in the Standards of Good Engineering Practice for High Frequency Broadcast Stations.

(b) Specific authority, upon filing formal application² therefor, is required for a change in service area or for any of the following changes:

1. Changes involving an increase in the maximum power rating of the transmitter.

2. A replacement of the transmitter as a whole.

3. Change in the location of the transmitter antenna.

4. Change in antenna system, including transmission line, which would result in a measurable change in service or which would affect the determination of the operating power by direct method. If any change is made in the antenna system or any change made which may affect the antenna system, the method of determining operating power shall be changed immediately to the indirect method.

5. Change in location of main studio to outside of the borders of the city, state, district, territory, or possession.

6. Change in the power delivered to the antenna.

(c) Specific authority, upon filing *informal* request therefor, is required for the following change in equipment and antenna:

1. Change in the indicating instruments installed to measure the antenna current or transmission line, direct place circuit voltage and the direct current of the last radio stage, except by instruments of the same type, maximum scale reading and accuracy.

2. Minor changes in the antenna system and/or transmission line which would not result in an increase of service area.

3. Changes in the location of the main studio except as provided for in subsection (b) 5.

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

Operating Power; How Determined. The operating power, and the requirements for maintenance thereof, of each high frequency broadcast station shall be de-

termined by the Standards of Good Engineering Practice for High Frequency Broadcast Stations.

Modulation. (a) The percentage of modulation of all stations shall be maintained as high as possible consistent with good quality transmission and good broadcast practice and in no case less than 85 per cent on peaks of frequent recurrence during any selection which normally is transmitted at the highest level of the program under consideration.

Frequency Tolerance. The operating frequency without modulation of each broadcast station shall be maintained within 2000 cycles of the assigned center frequency.

Operation

Minimum Operating Schedule; Service.

(a) Except Sundays, the licensee of each high frequency broadcast station shall maintain a regular daily operating schedule which shall consist of at least three hours of operation during the period 6 a.m. to 6 p.m., local standard time, and three hours of operation during the period 6 p.m. to midnight, local standard time. In an emergency, however, when due to causes beyond the control of the licensee, it becomes impossible to continue operating, the station may cease operation for a period not to exceed ten days, provided that the Commission and the Inspector in Charge of the radio district in which the station is located shall be notified in writing immediately after the emergency develops.

(b) Such stations shall devote a minimum of one hour each day during the period 6 a.m. to 6 p.m., and one hour each day during the period 6 p.m. to midnight, the programs not duplicated simultaneously as primary service in the same area by an standard broadcast station or by any high frequency broadcast station. During said one hour periods, a service utilizing the full fidelity capability of the system, as set forth in the Standards of Good Engineering Practice for High Frequency Broadcast Stations, shall be rendered. However, the Commission may, upon request accompanied by a showing of reasons therefor, grant exemption from the foregoing requirements, in whole or in part, for periods not in excess of three months.

(c) In addition to the foregoing minimum requirements, the Commission will consider, in determining whether public interest, convenience, and necessity has been or will be served by the operation of the station, the extent to which the station has made or will make use of the facility to develop a distinct and separate service from that otherwise available in the service area.

² See Standards of Good Engineering Practice for High Frequency Broadcast Stations for specific application form required.

EXPERIMENTAL FACSIMILE BROADCAST STATIONS

<i>Licensee and Location</i>	<i>Call Letters</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>	<i>Emission</i>
Bamberger Broadcasting Service New York, N. Y.....	W2XUP	25250	100	A3 & A4
Courier-Journal & Louisville Times Co. N. E. of Eastwood, Ky.....	W9XWT	25250	500	A3 & A4
The Crosley Corporation Cincinnati, Ohio	W8XUJ	25025	1000	A3 & A4
The National Life & Accident Insurance Co. Nashville, Tenn.	W4XIH	25250	1000	A4
The Pulitzer Publishing Co. St. Louis, Mo.....	W9XZY	25100	100	A4
Symons Broadcasting Co. Spokane, Wash.	W7XSW	25150	100	A4 (C.P. only)
WBNS, Inc. Columbus, Ohio	W8XUM	25200	100	A4
WOKO, Inc. Albany, N. Y.....	W2XWE	25050	500	A3 & A4

BROADCAST STATIONS LICENSED FOR EXPERIMENTAL TRANSMISSION OF FACSIMILE SIGNALS

<i>Call Letters</i>	<i>Licensee and Location</i>	<i>Frequency Kilocycles</i>	<i>Power Authorized Watts</i>
WGN . . .	WGN, Inc. Chicago, Ill.	720	50000
WHK . . .	United Broadcasting Co. Cleveland, Ohio	1390	1000
WLW . . .	Crosley Corp. Cincinnati, Ohio	700	50000
WOR . . .	Bamberger Broadcasting Service, Inc..... Newark, N. J.	710	50000



ORGANIZATIONS



NATIONAL ASSOCIATION
OF BROADCASTERS

RADIO GROUPS
PERSONNEL
ADDRESSES
UNIONS
GUILDS
CLUBS
ASSOCIATIONS

NATIONAL ASSOCIATION OF BROADCASTERS



Headquarters: 1626 K. St., N.W., Washington, D. C.

HEADQUARTERS STAFF

Neville Miller <i>President</i>	Edward M. Kirby <i>Director of Public Relations</i>	Arthur Stringer <i>Promotion</i>
C. E. Arney, Jr. <i>Assistant to the President and Acting Secretary-Treasurer</i>	Joseph L. Miller <i>Director of Labor Relations</i>	J. Robert Meyers <i>Research Assistant</i>
Russell P. Place <i>Counsel</i>	Paul F. Peter <i>Director of Research</i>	Everett E. Revercomb <i>Auditor</i>
	Lynne C. Smeby <i>Director of Engineering</i>	

**New York Office: 30 Rockefeller Plaza, Room 1812
Phone, Circle 5-5965**

STAFF

A. K. Mills <i>Executive-in-Charge</i>	Richard Tryon <i>Publicity Staff</i>	John Murphy <i>Press Secretary to the President</i>
Jo Millward <i>Publicity Staff</i>	Barbara Brandt <i>Research Staff</i>	Robinson MacLean <i>Publicity Staff</i>
	Barbara Hunt <i>Research Staff</i>	

BOARD OF DIRECTORS

District No.	Member	States Comprising District
*1.	Paul W. Morency, Assistant Secretary Radio Station WTIC Hartford, Conn.	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
2.	Clarence Wheeler Radio Station WHEC Rochester, N. Y.	New York
*3.	Clifford M. Chafey, President Radio Station WEEU Reading, Pa.	Delaware, New Jersey, Pennsylvania
4.	John A. Kennedy, President Radio Station WBLK Clarksburg, W. Va.	District of Columbia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
*5.	W. Walter Tison, Director Radio Station WFLA Tampa, Fla.	Alabama, Florida, Georgia, Puerto Rico
6.	Edwin W. Craig, Vice-President Radio Station WSM Nashville, Tenn.	Arkansas, Louisiana, Mississippi, Tennessee
*7.	J. H. Ryan, Vice-President, General Manager Radio Station WSPD Toledo, Ohio	Kentucky, Ohio
8.	John E. Fetzer, President Radio Station WKZO Kalamazoo, Mich.	Indiana, Michigan
*9.	William H. West, President Radio Station WTMV East St. Louis, Ill.	Illinois, Wisconsin

• • • **National Association of Broadcasters** • • •

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| 10. | John J. Gillin, Jr., Manager
Radio Station WOW
Omaha, Nebr. | Iowa, Missouri, Nebraska |
| *11. | Earl H. Gammons, General Manager
Radio Station WCCO
Minneapolis, Minn. | Minnesota, North Dakota,
South Dakota |
| 12. | Herbert Hollister, President
Radio Station KANS
Wichita, Kans. | Kansas, Oklahoma |
| *13. | O. L. Taylor, General Manager
Radio Station KGNC
Amarillo, Texas | Texas |
| 14. | Eugene P. O'Fallon, President
Radio Station KFEL
Denver, Colo. | Colorado, Idaho, Wyoming,
Utah, Montana |
| *15. | Howard Lane, General Manager
Radio Station KFBK
Sacramento, Calif. | Nevada, Hawaii, California
(excluding the counties
of San Luis Obispo, Kern,
San Bernardino, Santa
Barbara, Ventura, Los Angeles,
Orange, Riverside,
San Diego, and Imperial). |
| 16. | Harrison Holliday, General Manager
Radio Stations KFI-KECA
Los Angeles, Calif. | Arizona, California (counties
of San Luis Obispo, Kern,
San Bernardino, Santa Barbara,
Ventura, Los Angeles, Orange,
Riverside, San Diego and Imperial,
only), New Mexico. |
| *17. | C. W. Myers, President
Radio Station KOIN
Portland, Ore. | Alaska, Oregon, Washington |

* Term expires in 1941.

DIRECTORS-AT-LARGE

◆ ◆
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Radio Station WBAP
Fort Worth, Texas

Mark Ethridge
Radio Station WHAS
Louisville, Ky.

Medium Stations

George Norton, Jr., President
Radio Station WAVE
Louisville, Ky.

Don Searle, General Manager
Radio Station KOIL
Omaha, Nebr.

Small Stations

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Radio Station WCBM
Baltimore, Md.

Harry R. Spence, President
Radio Station KXRO
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Columbia Broadcasting System
New York, N. Y.

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Mutual Broadcasting System
New York, N. Y.

Frank M. Russell, Vice-President
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Herbert Hollister, KANS, Wichita,
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Calvin J. Smith, KFAC, Los Angeles, Calif.

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District 3

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District 4

Scott Helt, WIS, Columbia, S. C.

District 5

James R. Donovan, WTOG, Savannah, Ga.

District 6

J. H. DeWitt, WSM, Nashville, Tenn.

District 7

R. Morris Pierce, WGAR, Cleveland, Ohio.

District 8

Walter Hoffman, WJ, Detroit, Mich.

District 9

Carl Meyers, WGN, Chicago, Ill.

District 10

Paul Lovet, WHO, Des Moines, Iowa.

District 11

Julius Hetland, WDAY, Fargo, N. D.

District 12

K. W. Pyle, KFBI, Wichita, Kans.

District 13

William G. Edgerton, KTSA, San Antonio, Texas.

District 14

Eugene G. Pack, KSL, Salt Lake City, Utah.

District 15

R. V. Howard, KSFO, San Francisco, Calif.

District 16

Jay Tapp, KGER, Long Beach, Calif.

District 17

Francis Brott, KOMO-KJR, Seattle, Wash.

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District 3

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District 5

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District 6

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District 7

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District 10

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District 11

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National Association of Broadcasters

District 12

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District 13

Kern Tips, KPRC, Houston, Texas.

District 14

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District 15

Ralph R. Brunton, KJBS, San Francisco, Calif.

District 16

Lewis Allen Weiss, KHJ, Los Angeles, Calif.

District 17

Louis Wasmer, KGA-KHQ, Spokane, Wash.

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Mark Ethridge, WHAS, Louisville, Ky.

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District 2

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District 3

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District 4

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District 5

Norman MacKay, WQAM, Miami, Fla.

District 6

Vernon Anderson, WJBO, Baton Rouge, La.

District 7

D. A. Brown, WHIO, Dayton, Ohio.

District 8

W. W. Behrman, WBOW, Terre Haute, Ind.

District 9

Ed Cuniff, WKBH, La Crosse, Wisc.

District 10

Karl Koerper, KMBC, Kansas City, Mo.

District 11

Barney Lavin, WDAY, Fargo, N. D.

District 12

Ellis Atteberry, KCKN, Kansas City, Kans.

District 13

Jack Keasler, KGNC, Amarillo, Texas.

District 14

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District 15

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District 16

Harry W. Witt, KNX, Los Angeles, Calif.

District 17

Loren B. Stone, KIRO, Seattle, Wash.

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Charles Caley, WMBD, Peoria, Ill.

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Willard Egolf, KVOO, Tulsa, Okla.

Craig Lawrence, KRNT, Des Moines, Iowa.

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C. T. Lucy, WRVA, Richmond, Virginia.

Clair R. McCollough, WGAL, Lancaster, Pa.

W. C. Swartley, WBZ-WBZA, Boston-Springfield, Mass.

Departments and Activities

of

National Ass'n. of Broadcasters

The National Association of Broadcasters is the trade organization of the radio broadcasting industry. Its headquarters staff is headed by President Neville Miller, and C. E. Arney, Jr., Assistant to the President and acting Secretary-Treasurer, both of whom are responsible to the Board of Directors. In addition there are seven departments each in charge of a Director who reports to the president. These are as follows:

Edward M. Kirby.....	Director of Public Relations
Joseph L. Miller.....	Director of Labor Relations
Paul F. Peter.....	Director of Research
Russell P. Place.....	Counsel
Lynne C. Smeby.....	Director of Engineering
Arthur Stringer..	Supervisor of Circulation and Promotion Dept.

For purposes of equitable representation on the Board of Directors, the United States and its territories and possessions has been divided into seventeen districts. Each District elects one Director to the Board for a two-year term; each class of station (class of station is based upon power and frequency and is referred to as small, medium and large) elects two Directors and each of the three major networks appoints one Director. These two latter classes of Directors serve for only one year.

The objects of this Association are to foster and promote the development of the art of radio broadcasting; to protect its members in every lawful and proper manner from injustices and unjust exactions; to foster, encourage and promote laws, rules, regulations, customs and practices which will be for the best interest of the public and the radio industry.

The NAB is the united front of the industry. It not only attempts to solve the problems of the broadcasters, but also strives to educate the listener to the American System of Privately-owned and Competitively-operated Radio.

There has been an appreciable increase in the membership of the Association. From a total of 428 at the beginning of 1940, the year closed with the figure pushing the 500 mark. This is a result of a membership campaign in which the seventeen District Directors and fifty-two area chairmen actively participated.

However, behind this membership drive was the recognition of those in the industry that the Association is really making headway in meeting the prob-

lems of the industry. Its various services and activities have been recognized and appreciated by broadcasters, large and small. The Association enters the year 1941 in a position where it can truly say it represents the united front of the broadcasting industry.

Labor Relations

The NAB set up its Labor Relations Department in May, 1938, to foster friendship between the broadcasting industry and organized labor. Joseph L. Miller, for many years labor editor of the Associated Press, was appointed director.

The department deals with all problems involving broadcasting stations and labor — both personnel problems and problems concerning labor programs on the air. The department advises all member stations on the application of labor laws to their employees; furnishes information and advice with regard to collective bargaining; and keeps the membership informed of all labor developments affecting the industry.

The director's principal work, however, has been to mediate in countless minor disputes between labor unions and broadcasting stations. In this field the director has been singularly successful.

Research Department

Recognition that research can materially contribute to the success of broadcasting caused the Board of Directors to establish the office of Research Director as a vital part of the Associa-

tion. The director maintains contact and relations with organizations engaged in radio research and cooperates with the government departments concerned with radio and business information.

The work of this department dovetails into all NAB activities in that its collection, analysis and dissemination of facts supplies the raw materials for the other departments.

Information gathered by the NAB Research Department is instantly available in usable form to members. This is essential to an industry accustomed to move at incredible speed.

An important function of the department is to develop the values of research as a management tool. Proper research methods are being developed so that NAB member stations will be able to gather pertinent facts with which to gauge the success of station operation in all its departments. Naturally, in this work, the Research Department is readily available to the membership for research counsel.

Constant effort is made to expand and improve the existing store of information on radio set ownership, listening habits of the radio audience and other fundamental data on the broadcasting industry. In this work contact is maintained with the research heads of advertiser organizations and advertising agencies.

Promotion Department

Institutional promotion of broadcasting in 1940 was themed on the premise that John Q. Public and no other is the real boss of American radio.

His response to the superlative services of broadcasters and his appreciation of their value was stimulated by vigorous and sustained promotion. Results were easily measurable. Set ownership crossed the 50 million mark. In many localities the hours devoted to listening exceeded the time consumed by every other activity except working and sleeping.

In one section of the country or another promotions were in progress every month of the year. Simultaneous coast to coast promotions were four in number: "National Radio Festival"; "Listen before You Vote"; "Radio's 20th Birthday" and "50,000,000 Radio Sets by Christmas." Official status was given National Radio Festival by National Radio Festival proclamations issued by nine governors and more than one hundred mayors of American cities.

Other promotions included an essay

contest on the "American System of Broadcasting—Why It Is Best for Americans"; "Listen Before You Vote" campaign which emphasized that the American way means listening to both sides of the question and then registering a decision at the polls. It further pointed out that radio has become the modern, streamlined counterpart of the New England town meeting which served the cause of democracy so well in earlier days. Two color "Listen before You Vote" posters were displayed and distributed by radio stations, set and tube manufacturers, servicemen and jobbers.

Observance of Radio's 20th Birthday covered a period of twenty days, November 11-30. A birthday dinner in Washington, November 26, was attended by industry leaders, government officials and members of Congress.

"50,000,000 Radio Sets by Christmas" was the year's final promotion. One phase was concerned with the giving of new radios as Christmas gifts; the other was the giving of reconditioned radio sets to the needy and to charitable institutions. Radio Servicemen of America, set and parts distributors and manufacturers were extremely cooperative in this work.

One of the year's developments was the large increase of studio radio shows (of sets), sponsored jointly by stations and the local radio trade.

During the year assistance was given the industry by electric leagues and institutes.

Assistance of leading radio manufacturers was likewise helpful.

Early in the year just under half a million copies of a sixteen page roto-gravure booklet, "Radio's Riches," were purchased by stations for distribution to their listeners.

The Bureau of Radio Advertising

The NAB has long recognized the importance of radio's commercial side through the existence of the NAB Sales Managers' Division. This recognition has now been given new emphasis with the establishment of the Bureau of Radio Advertising.

The Bureau is designed to promote radio as an advertising medium. Its work takes two major forms: 1. To provide the industry with facts and figures of a promotional nature and in other ways to assist stations to sell more time in the national and local fields. 2. To cooperate with broadcasters and others

in increasing the effectiveness of radio advertising.

Special efforts are made to develop certain untapped fields of business for stations, and to combat the claims and challenges of competing media. The Bureau is also charged with protecting members from the so-called "time chiselers"—and from advertisers who seek to place business on a percentage or "cost-per-inquiry" basis. It acts as a buffer against exorbitant publicity and merchandising requests by sponsors.

In cooperation with the NAB Sales Managers' Committee, of which E. Y. Flannigan, commercial manager of WSPD, Toledo, is chairman, the Bureau formulates its plans and policies for furthering the commercial aspects of the industry.

Engineering Department

The engineering activities of NAB are carried out by the Director of Engineering with the assistance of an Engineering Committee. The duties of the Director of Engineering were assumed by Lynne C. Smeby on December 1, 1939. The Engineering Department of NAB deals with the general industry problems. All FCC hearings of general interest to broadcasters are attended and reported to the membership by the Director. Liaison work is also carried on with the Engineering Department of the FCC, on rules and regulations pertaining to engineering. As an example of this work, a Sample Transmitter Log with instructions for its use was drawn up with the cooperation of the FCC Engineering Department. This was distributed to all NAB members. Another duty of the Engineering Department is to keep the NAB "Engineering Handbook" up-to-date. The handbook is now being revised and much new data will be added such as material on Frequency Modulation and Ultra-High-Frequencies.

Each year in February, a Broadcast Engineering Conference is conducted at Ohio State University. The Conference functions to keep the engineers up-to-date with their profession under classroom conditions. NAB was privileged to cooperate in the 1940 Conference and the Director of Engineering is taking an active part in assisting Dr. W. L. Everitt, Director of the Conference, in formulating the plans for the Fourth Conference, to be held February 10 through 21, 1941.

The Director of Engineering is available to the individual members of NAB for service on individual matters that do

not transcend the field of private engineers.

Legal Department

The work of the legal department divides itself into several categories: (1) Study and analysis of all bills, introduced in the Congress and the State Legislatures affecting broadcasters directly or indirectly; (2) assistance or advice in litigation whose decision will have a direct or indirect bearing on the interests of broadcasters; (3) assistance to member stations and their attorneys; (4) assistance to the NAB staff and committees.

Congressional bills which drew the attention of the legal department during 1940 were the Thomas Bill, the McGranery Bill, the Johnson Bill, the Ditter Bill, the Pepper Bill, the Walter-Logan Bill, among others. (For a digest of these bills refer to the Legislative Digest in the legal section of this volume.) The NAB, through its legal department, cooperated with New York broadcasters in contesting the Perry Bill in the New York Legislature; this bill, which was the only one of importance in state legislatures, was eventually killed in one of the committees after having been passed by the State Senate.

The major litigation which has engaged the legal department's attention was the RCA vs. Whiteman case, which has now reached the Supreme Court; special counsel was employed in connection with this case to protect and represent the interests of the broadcasting industry. The legal staff has given upon request of member stations and their attorneys specific information and advice concerning FCC rules and regulations and on matters pertaining to performing rights licenses, the playing of phonograph records, lotteries, treatment of political candidates, defamation, income tax, Social Security and Wage-Hour rulings, misleading advertising and other topics of importance to members.

In addition the legal staff has been in touch with government agencies and commissions and has attended hearings which affect the interests of broadcasters. A special study of Federal anti-trust laws as they affect the NAB was made and submitted to the Board of Directors of the organization. And finally the legal department made analyses of statutes, contracts, forms, the drafting of resolutions and proposed amendments, and rendered general assistance to NAB members.

Annual Report of Neville Miller, President, National Association of Broadcasters

As Presented to the 1940 NAB Convention

WITH this Eighteenth Annual Convention, the National Association of Broadcasters rounds out another twelve months of activity. It has been radio's greatest year. The trend which has heretofore existed in all phases of radio continued throughout the year and gives promise of continuing far into the future. A constant growth in listening audience is evidence of the public's confidence and approval, and broadcasters have responded by steady improvement in the scope and quality of programs.

During the past year, more than 9,000,000 radio sets were sold, increasing the total number of sets in American homes and automobiles to over 45,000,000. With less than 7% of the world's population, our country has nearly a half of all broadcasting stations and receiving sets, and a greater percentage of radio equipped homes than any other nation. The American people want radio sets more than they want anything else in the line of electrical equipment, for more sets were sold than electric irons or toasters, or washing machines, or vacuum cleaners, or any other electrical device. In various polls, radio has won first place time and again in the preference of the American family. The American radio industry has grown faster—in units, in dollar volume and in public service—than has the radio industry of any other country.

Naturally, there is a reason for this continued development and improvement, and it is not hard to find. Radio has a tremendously intimate effect upon American life. Today it is impossible to conceive of our way of life without radio. Annihilating space and distance, American radio has in a short span of two decades commanded the largest single audience of listeners ever gathered in the history of mankind, over 100,000,000 men, women and children. Today we receive the last minute bulletins directly from Europe as an everyday occurrence. New cultural avenues have been opened and educational features developed; new technical frontiers have been broken through in frequency modulation and television. However, a brilliant future surpassing all the achievements of the past lies before us. It is our task to consolidate our advances along many fronts and to lay a firm foundation upon which the

future structure of public service broadcasting and television may soon be built.

I am sure that broadcasters realize that radio, although mighty as a force for good, can do equal evil. The experiences abroad of the past year have all too clearly proved this fact and have stirred us to still greater efforts to keep radio in America free, free for all to speak, for all views of all sides, and from breakfast to bedtime to fill the day of the American people with entertainment, education and news reflecting our culture and aspirations, impossible in any nation where democratic principles do not flourish.

The broadcasters have borne well their part of radio's responsibilities of the past year. Your Association has experienced a busy and most satisfactory year. You will find in the report of each Staff Director, detailed information concerning the activities of his Department. I urge you to read these reports, because by so doing you will secure an excellent idea of the varied and manifold activities of the NAB Staff and by reason of this knowledge will make in the future more and constant use of the services which are available to you in the way of assistance by Staff members. I shall not duplicate those reports, but shall review briefly the larger aspects of the work of this Association.

The value of trade associations to industries has resulted in rapid growth of associations over a period of years. Today trade associations occupy a definite place in business life and perform a useful social and economic function sanctioned by law. The work of your Trade Association divides itself roughly into two divisions—one—tangible services rendered to our members, and the other—intangible services, which occupy the greater portion of our time.

Without minimizing the importance of our tangible assets, may I emphasize the necessity for protecting our intangible assets, such as, freedom of speech, public confidence, the basic value of advertising as a force in developing industry and employment and freedom from unnecessary and burdensome government regulation. No one individual can alone protect these, but united we can—and to unite the industry, to organize the common effort, to promote a working-together of competing units, to encourage

a broader outlook based on research and facts, and to mobilize the best experience and opinion in the industry—this is one of the major tasks of the NAB.

Persistent effort has been maintained throughout the year to perfect the united front of the radio industry. With the enthusiastic cooperation of the Directors and members who served as membership Chairmen in the various states and areas, it is gratifying to report a gain in membership from 427 at the time of our last Convention, to 462 as of today. I cannot emphasize too strongly the need of continued and everlasting effort to bring into membership every radio station in the United States.

The District Meetings have become forums of practical usefulness and of great value in promoting discussion of our problems on an informal basis. I believe these meetings can be developed to even greater usefulness. Together with the meetings of the Board of Directors; the Executive Committee, and the various other committees they have enabled us to develop an industry consciousness and unification greater than has ever existed before within the industry.

May I here express our appreciation to the Directors, to those who served on the various committees and to the entire membership for so generously giving of your time and energy to the work of the Association. Without your assistance, it would have been impossible to carry on the affairs of the NAB during the past year.

I am happy to report that for the first time in the history of either major political party, the platform of each party this year contains a radio plank. This is not only a well deserved recognition of the importance of radio but indicates that the leaders of Congress are well aware of our problems and encourages us to believe that helpful legislation may be enacted in the not too distant future, giving to American radio by law the dignity and protection that has already been given by public opinion.

Legislation

The Johnson Bill prohibiting the advertising on the radio of alcoholic beverages and the Thomas Resolution for adherence to the International Copyright Union were the two major legislative threats during the present session of Congress. We are pleased to report that neither of these pieces of legislation, nor

any other legislation adversely affecting broadcasters, was enacted. The Association's Staff scrutinized all national and state legislation, did not blindly oppose all legislation, but in cooperation with other organizations helped steer the legislation into constructive channels.

Following our custom of being represented by special counsel in litigation involving matters affecting the entire industry, the Association retained special counsel in the RCA v. Whiteman case and has kept in close touch with all phases of the problems dealing with the playing of phonograph records. We are happy to report that we have been successful in our fight to prevent the levy of an additional burden on stations through another license system. On July 25 the United States Circuit Court of Appeals in New York reversed the decision of the District Court and held that broadcasters had the right to play records without a license.

Radio must not be content to fight a purely defensive legislative battle. We must take the initiative. The present Copyright Law was passed in 1909, prior to the advent of commercial broadcasting. It has many antiquated provisions, such as, the statutory minimum damage provision. The Law should be revised and brought down to date.

The libel law as it applies to broadcasters is unsatisfactory. Broadcasters should either be given the right to eliminate libelous matter, or they should be exempted from liability. The decision in Summit Hotel v. Jolson, in which case the NAB was represented by special counsel, was a decision favorable to broadcasters, and was a step in the right direction, but many phases of the subject justify further study, to the end that this troublesome question may be correctly solved.

The present conception of the functions of administrative agencies leaves much to be desired. Granting that administrative agencies should be free of supervision by the courts, certainly some procedure should exist for the testing of the legality of an agency's rules and regulations, without requiring the applicant to first violate them.

In all quasi-judicial proceedings, before the FCC, we believe that there should be an opportunity for facts to be judicially found by an independent examiner or some independent quasi-judicial or judicial tribunal. Some such separation of the powers of the Com-

mission as recommended by the President's Committee on Administrative Procedure would be an acceptable solution. In particular, in those cases which involve revocation of or failure to renew broadcast licenses, and where the licensee's entire business is at stake, we have urged that there be provided a separate judicial determination of the facts as well as of the law. Our views on these matters have been submitted to the Attorney General's Committee on Administrative Procedure, which is at present considering the entire subject.

These are but a few of the many legislative problems which we face and which I am sure with assured industry-wide cooperation we can solve.

Public Relations

In our community life today there are propagandists about and we in radio, like many other businesses, are in the line of fire. Public opinion is the controlling factor in our Democracy, and therefore we have a legitimate interest in the public's knowing the real facts about radio in all its manifold branches. To do the job right, it must be done both nationally and locally. During the past year, with your help, we have endeavored to do it nationally, and to supply you with the tools, the weapons and the ammunition to do it locally.

Our public relations activity has covered a broad field. We have worked closely with the United States Office of Education through the Federal Radio Education Committee, and have taken a leading part in the Ohio State Institute on Radio and Education, and in many other conferences. There has been a marked change in the attitude of educators generally with reference to radio and radio relationship. The idea that education needed more time on the air has been abandoned because of the realization that educational radio needs not more, but less time on the air, and more time in preparation and rehearsal. Pressure for legislation to set aside a specific time for educational programs has therefore been eliminated.

For some time, advertising has been under attack from several angles. It has been charged that advertising is wasteful and burdensome to the consumer and that it gives an undue advantage to large companies and thereby fosters monopoly. These attacks are not directed against abuses in the use of advertising, but against advertising as a business tool.

This is a serious threat to radio and to all media. We have believed it important that consumers, educators and public officials should be convinced of the specific economic benefits and social improvements gained through advertising. We have taken an active part in the work of the Committee on Consumer Relations in Advertising, Inc., through which, in cooperation with other media, agencies and advertisers, the public will be given the real story of advertising's contribution to our standard of living. We have been represented at every consumers relations conference held in the last two years. We are working closely with such organizations as the Association of National Advertisers, the American Association of Advertising Agencies and the Advertising Federation of America, all of which are giving serious attention to the consumer movement. The preparation is under way of a program to demonstrate the contribution made by advertising to better consumer service and lower consumer costs.

Our relations with the press have steadily improved. In this connection, we report a most cordial attitude on the part of J. S. Gray, Radio Chairman of the American Newspaper Publishers Association, whose friendly report on radio was a feature of the recent ANPA convention. In passing, it is well to observe that much of the change toward friendliness in the attitude of the newspapers is attributable to the excellent manner in which radio has acquitted itself in the war crisis and the use by radio of newspaper war correspondents, and the cooperation between these and radio correspondents constitutes a noteworthy chapter in this relationship. Still another factor in bringing about better relationship with the press has been the affirmative manner in which the NAB Bureau of Radio Advertising has been conducted. Its purpose has been to sell radio as a medium of advertising by constructive methods rather than through negative belittling competition. We proceed upon the theory that there is room for both the radio and the newspaper advertising dollar.

In cooperation with committees of the American Bar Association, the American Newspaper Publishers Association and the Newspaper Editors Association, the reporting of judicial proceedings has been studied to the mutual advantage of all groups.

The list of outstanding national or-

ganizations with which we have worked during the past year is too long to include here, but you may be sure we have overlooked no opportunity to tell the story of the American System of Broadcasting and to make friends for radio. The efforts of the year were brought to a fitting close in the unprecedented radio ceremonies of last Saturday, when the New York World's Fair of 1940 and the San Francisco Golden Gate Exposition joined hands to convey the thanks of our listeners for public service rendered and to dedicate plaques symbolic of American free radio.

Code

The widespread acceptance and endorsement of the Code bespeaks the regard in which it is held not only by broadcasters generally but by women's organizations, labor groups, religious groups, civil liberties groups and the public at large. It has been said, "When all think alike, no one thinks very much." The discussions which have taken place during the past year have emphasized the fact that broadcasters have been thinking a lot and the Code has rendered a real service in stimulating this thinking. We all realize that many times right and wrong dress in shades of gray and that, although we have much of which to be proud, we must not be smug or refuse to listen to criticism. Also, we must be careful not to be more concerned with profits than prestige lest the result be that we lose both. Although our action may be attributed partly to enlightened self-interest, may I emphasize that broadcasters have learned a great deal through experience; they, better than any other group, know what the public prefers and it certainly is in the public interest to prevent the kind of legislation which would mean that pressure groups would succeed in ramming down the throats of the public that which we know from our study and experience the public does not want.

I believe the adoption of the Code was a distinct step forward; that it has proved its value during the past year and that it will continue to grow in usefulness. To the Code Committee and its able chairman, we owe a debt of gratitude. It is especially pleasing to mention that the American Trade Association Executives bestowed a certificate of Honorable Mention on the NAB for its Code, citing the "achievement of instituting a system of self-regulation designed to make further government

regulation or control unnecessary, and which would deserve and earn public confidence."

Labor Relations

For another year the industry has operated without any major labor trouble, and, generally speaking, the relationship between our industry and organized labor is friendly. Our employes are well paid; our average weekly pay check of \$45.20 is believed to be the highest in the country. Without surrendering our rights, we have complied with both the spirit as well as the letter of the various laws enacted in recent years, and both labor officials and government officials dealing with labor problems have publicly praised the policy and activity of the NAB Labor Relations Department. Labor is a friend of the American System of Broadcasting.

Research

The activities of the Research Department have been many and varied, in the form of supplying facts and information for the work of the various departments and committees; in working with the FCC, the Census Bureau, the FREC and other governmental agencies, and with various groups and associations in assisting in analyzing the music copyright problem; in the preparation of a master station file, primarily designed for research purposes, but of immeasurable value to the entire industry; and, in taking a leading part in the preparation of the Program Log and Accounting Manual.

The Program Log Recommendation, and the Transmitter Log Recommendation prepared by the Engineering Department, furnish excellent examples of what can be accomplished by cooperation between the staffs of the FCC and the NAB.

We believe the recently issued FCC Forms 301 and 319—the new forms for application for construction permit or modification thereof for standard broadcast stations and high frequency broadcast stations—impose an excessive burden upon applicants. Although we are in sympathy with the Commission's desire to secure on these forms full information regarding the applicant's qualifications, we believe that many of the questions can be so modified as to relieve the applicants of considerable burden in supplying information without unduly increasing the work of the Com-

mission. We hope that by cooperative effort the excellent result which was obtained with respect to the Log Recommendations can be duplicated with respect to these forms.

A Plan for Unit Volume Measurement has been prepared in detail and will be submitted to this Convention for consideration, and we believe this is but the first of many very definite accomplishments which we believe will be achieved in the very near future.

Bureau of Radio Advertising

The Bureau of Radio Advertising was placed in full time operation on September 1st, to assist members in sales and promotion problems. Trade studies, sales manuals covering specific selling problems, together with other material, have been issued and many members report having secured tangible results with the material. The Bureau is getting at the true facts in fields where resistance in radio advertising has existed and has given the commercial managers not only an impetus to get together, discuss their problems and exchange ideas, but has also given sales data with the aid of which many contracts were closed.

In cooperation with the Sales Managers' Division, the Bureau has taken an active part in AFA and NRDGA conventions, and has cooperated with the ANA and AAAA. It has done a good job in promoting the use of radio as an advertising medium.

Promotion

The relationship with the RMA has been most friendly and cooperative and the Joint RMA-NAB Promotion Campaign has produced very satisfactory results. A continuous campaign has been carried on to increase the number of listeners, to increase the hours of listening per day, to increase the appreciation of the American radio programs and to spread an understanding of the American system of broadcasting. During the past year, it has sponsored such nationwide events as the "Curtain Raiser," "Radio Christmas," the "National Radio Festival," "Listen While You Ride," and "Listen While You Play," and now has in active swing the "Listen Before You Vote" campaign. Under the theme, "Your Electric Utility Can Be Your Best Local Account," a campaign for utility advertising has been conducted.

This department has also worked in

cooperation with the radio servicemen and the set manufacturers to reduce the number of inoperative or partially inoperative set and much progress has been made.

Engineering

In an industry such as radio, it is but natural that engineering is fundamentally first and foremost. This past year has been one of great activity due to the development of television and frequency modulation. Also the ratification of the Havana Treaty by Mexico brings to the front not only the problem of changing the frequency of most of the stations in the country but also other problems in connection with the public and the receivers. I wish to here express the hope that the difficulties which have arisen in connection with the Havana Treaty will be solved, and that the Treaty will become effective at an early date. In addition to keeping in close touch with all these problems, in working with the FCC and the NAB members, our Director of Engineering took a leading part in the preparation of the Transmitter Log and has under preparation a revision of the Engineering Handbook which should be of real value to the industry.

Information Pool

Before ending the report on the work of the various Staff members, may I mention a service of the Association Staff, the value of which I do not believe is fully appreciated by NAB members. Each Staff member has collected a pool of information for the use of members—labor statistics, legal authorities, research methods, engineering data, information for speeches, for promotional activities, and data on various other subjects.

We urge you to use this for two reasons: First, because we know it will be of value to you; and second, by using it instead of diminishing its value, you increase its value by testing its usefulness, adding your results to the pool, and thereby making it of greater value to the industry.

Music Copyright

Broadcasters have always been willing to pay a fair and equitable price for the use of music. They are the first to acknowledge the cultural value of music, and that music has played a prominent part in the development of radio. How-

ever, they demand the right to purchase music in a free and competitive market the same as they purchase their other requirements. They are unwilling to pay ASCAP on news broadcasts, on sports broadcasts, and on other programs using no music. They are also unwilling to pay ASCAP on programs which use non-ASCAP music. They are unwilling to be required to pay the entire price for music to a relative few composers merely because those composers have secured a monopolistic control of the means of exploitation of their output. They believe the cultural life of America would be greatly benefited by encouraging the creative genius of young and able composers whose works are at present never played because of the character of ASCAP's present contracts. Today, broadcasters pay forty times as much per dollar of their gross as any other customer of ASCAP, and the new ASCAP contracts now demand they pay eighty times as much, increasing their payments from \$4,500,000 to nearly \$9,000,000. This we will not do!

A year ago, a sincere and honest attempt was made to sit across the table from representatives of ASCAP to negotiate a renewal of the contracts on a business basis. This effort was thwarted by the refusal of the President of ASCAP to appoint a committee to meet with the broadcasters; even though ASCAP's Board of Directors had authorized the appointment of such a committee. In accordance with the mandate of the NAB convention held last year, a final positive effort was made to reach an agreement with ASCAP, upon the failure of which, the special convention was called last September in Chicago. In accordance with the practically unanimous vote of that convention, Broadcast Music, Inc., was organized for the purpose of developing a pool of non-ASCAP music and to assure the broadcasters of the right to purchase their music in a free competitive market. BMI has passed through the organization stage and today is a well-staffed organization, with a membership of over 300 stations. These BMI member stations pay over two-thirds of the revenue which ASCAP receives from the entire industry. Complete information concerning BMI will be given you Tuesday and plans for the future will be discussed at length. Suffice it here to say that today broadcasters have it within their power for once and all to end ASCAP monopoly, to solve this most

troublesome question, to give the young composers a chance, and to stimulate creative effort in the United States. Moreover, the solution of this problem by a united industry will have a very salutary effect upon a number of our other pressing problems. Now is a most critical time for broadcasters. We must not fail! Let this Convention send out word that San Francisco is to be no Munich! We are in this fight to win!

Conclusion

What of the future? Today we meet in a very different world from that which existed this time last year. It would be a bold man indeed who would attempt to prophesy under what conditions we shall meet this time next year. There is need for much long-range thinking, realizing as we must that radio will have a most influential and material effect upon the future of this country. It is not our job to decide for the citizens the questions which must be decided, but it is our task to fairly, adequately and honestly bring them the facts. In so doing, we perform a service in assisting people to govern themselves. We must do it courageously, fearlessly and effectively.

Our part in the world picture today is to do our job—and it is a most important job—well and right in the hope and confidence that in the scheme of things the many stones which form the mosaic we call the American way of life will fit together. We must be sure that, regardless of what may happen, radio's pillar in the temple of Democracy will be sound and will not crumble. The fountain of that pillar must be a free radio. There must not only be no censorship, but no threat of censorship. For, as the U. S. Supreme Court recently said, "It is not the sporadic abuse of power by the censor but the pervasive threat inherent in its very existence that constitutes the danger to freedom of discussion."

The foundation of free radio must be good broadcasting. The American public is the only champion radio needs. So long as our thinking is dominated by intelligence and common sense, there will be no serious threat to free speech, a free press or to a free radio. The American broadcasting industry has good reason to be proud of its record. Its position is one to be treasured and guarded from any hands within and without, which may threaten to destroy it. The American public we serve is marching with us.

THE NAB CODE

SINCE it became effective on October 1, 1939, the NAB Code has received increasingly wide-spread acceptance and endorsement among broadcasters, sponsors and listeners. In his message to the 1940 annual convention NAB President Neville Miller stated: "I believe the adoption of the Code was a distinct step forward; that it has proved its value during the past year and that it will continue to grow in usefulness." A citation of "achievement for instituting a system of self-regulation designed to make further governmental regulation or control unnecessary, and which would deserve and earn public confidence" was bestowed on the NAB for its Code by the American Trade Association Executives. Code provisions are six, as follows:

Children's Programs

Programs designed specifically for children reach impressionable minds and influence social attitudes, aptitudes and approaches and, therefore, they require the closest supervision of broadcasters in the selection and control of material, characterization and plot.

This does not mean that the vigor and vitality common to a child's imagination and love of adventure should be removed. It does mean that programs should be based upon sound social concepts and presented with a superior degree of craftsmanship; that these programs should reflect respect for parents, adult authority, law and order, clean living, high morals, fair play and honorable behavior. Such programs must not contain sequences involving horror or torture or use of the supernatural or superstitious or any other material which might reasonably be regarded as likely to over-stimulate the child listener, or be prejudicial to sound character development. No advertising appeal which would encourage activities of a dangerous social nature will be permitted.

To establish acceptable and improving standards for children's programs, the National Association of Broadcasters will continuously engage in studies and consultations with parent and child study groups. The results of these studies will be made available for application to all children's programs.

Controversial Public Issues

As part of their public service, networks and stations shall provide time for the presentation of public questions including those of controversial nature. Such time shall be allotted with due regard to all the other elements of balanced program schedules and to the degree of public interest in the questions to be presented. Broadcasters shall use their best efforts to allot such time with fairness to all elements in a given controversy.

Time for the presentation of controversial issues shall not be sold,

except for political broadcasts. There are three fundamental reasons for this refusal to sell time for public discussion and, in its stead, providing time for it without charge. First, it is a public duty of broadcasters to bring such discussion to the radio audience regardless of the willingness of others to pay for it. Second, should time be sold for the discussion of controversial issues, it would have to be sold, in fairness, to all with the ability and desire to buy at any given time. Consequently, all possibility of regulating the amount of discussion on the air in proportion to other elements of properly balanced programming or of allotting the available periods with due regard to listener interest in the topics to be discussed would be surrendered. Third, and by far the most important, should time be sold for the discussion of controversial public issues and for the propagation of the views of individuals or groups, a powerful public forum would inevitably gravitate almost wholly into the hands of those with the greater means to buy it.

The political broadcasts excepted above are any broadcasts in connection with a political campaign in behalf of or against the candidacy of a legally qualified candidate for nomination or election to public office, or in behalf of or against a public proposal which is subject to ballot. This exception is made because at certain times the contending parties want to use and are entitled to use more time than broadcasters could possibly afford to give away.

Nothing in the prohibition against selling time for the presentation of controversial public issues shall be interpreted as barring sponsorship of the public forum type of program when such a program is regularly presented as a series of fair-sided discussions of public issues and when control of the fairness of the program rests wholly with the broadcasting station or network.

Educational Broadcasting

While all radio programs possess some educative values, broadcasters nevertheless desire to be of assistance in helping toward more specific educational efforts, and will continue to use their time and facilities to that end and, in cooperation with appropriate groups, will continue their search for improving applications of radio as an educational adjunct.

News

News shall be presented with fairness and accuracy and the broadcasting station or network shall satisfy itself that the arrangements made for obtaining news insure this result. Since the number of broadcasting channels is limited, news broadcasts shall not be editorial. This means that news shall not be selected for the purpose of furthering or hindering either side of any controversial public issue nor shall it be colored by the opinions or desires of the station or network management, the editor or others engaged in its preparation or the person actually delivering it over the air, or, in the case of sponsored news broadcasts, the advertiser.

The fundamental purpose of news dissemination in a democracy is to enable people to know what is happening and to understand the meaning of

events so that they may form their own conclusions and, therefore, nothing in the foregoing shall be understood as preventing news broadcasters from analyzing and elucidating news so long as such analysis and elucidation are free of bias.

News commentators as well as all other newscasters shall be governed by these provisions.

Religious Broadcasts

Radio, which reaches men of all creeds and races simultaneously, may not be used to convey attacks upon another's race or religion. Rather it should be the purpose of the religious broadcast to promote the spiritual harmony and understanding of mankind and to administer broadly to the varied religious needs of the community.

Commercial Programs and Length of Commercial Copy

Acceptance of programs and announcements shall be limited to products and services offered by individuals and firms engaged in legitimate commerce; whose products, services, radio advertising, testimonials and other statements, comply with pertinent legal requirements, fair trade practices and acceptable standards of good taste.

Brief handling of commercial copy is recommended procedure.

Member stations shall hold the length of commercial copy, including that devoted to contests and offers, to the following number of minutes and seconds:

Daytime

Fifteen-minute programs.....	3:15
Thirty-minute programs.....	4:30
Sixty-minute programs.....	9:00

Nighttime

Fifteen-minute programs.....	2:30
Thirty-minute programs.....	3:00
Sixty-minute programs.....	6:00

Exceptions:

The above limitations do not apply to participation programs, announcement programs, "musical clocks," shoppers' guides and local programs falling within these general classifications.

Because of the varying economic and social conditions throughout the United States, members of the NAB shall have the right to present to the NAB for special ruling local situations which in the opinion of the member may justify exceptions to the above prescribed limitations.



INDEPENDENT RADIO NETWORK AFFILIATES, INC.

INDEPENDENT RADIO NETWORK AFFILIATES, INC., under the Chairmanship of Samuel R. Rosenbaum, put in an active year, procedure being centered on certain network operating practices, particularly regarding the chain-break periods and "hitch-hiker" announcements.

IRNA has also been actively called in for discussions of industry policy in connection with the Ascapi situation and the suits as proposed by the government.

Somewhat of a furor was caused during the course of filing briefs with the FCC relative to the latter's Committee report on chains, when IRNA denounced the report under consideration. It was subsequently revealed however, that only one affiliate dropped its membership as a result of this move. Thus the organization is considered to have taken a course feasible to the majority of the affiliates.

During the year approximately 120 affiliates paid dues to IRNA, but as pointed out by Chairman Rosenbaum, the policy is to function on behalf of all of the affiliated outlets whether or not they pay dues. Members who forwarded their dues paid in a total of nearly \$8,000.

It is expected that during the 1941-2 season, IRNA will become more active than ever, having already proven its worth in reaching its original objective when it averted serious trouble with the AFM. Formal incorporation of IRNA was directed by its membership in September 1939, after nearly two years of activity as an informal group.

Executive Committee

MARTIN B. CAMPBELL,
WFAA, Dallas, Tex.
H. K. CARPENTER,
WHK, Cleveland
DON S. ELIAS,
WWNC, Asheville, N. C.

I. R. LOUNSBERRY,
WGR, Buffalo
P. W. MORENCY, *Vice Chairman*
WTIC, Hartford
SAMUEL R. ROSENBAUM, *Chairman*
WFIL, Philadelphia

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KMBC, Kansas City
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WSM, Nashville
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WHAS, Louisville
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WWNC, Asheville
JOHN A. KENNEDY,
WCHS, Charleston, W. Va.
I. R. LOUNSBERRY,
WGR, Buffalo

PAUL W. MORENCY,
WTIC, Hartford
CHARLES W. MYERS,
KOIN, Portland, Ore.
GEORGE W. NORTON, JR.,
WAVE, Louisville
SAMUEL R. ROSENBAUM,
WFIL, Philadelphia
W. J. SCRIPPS,
WWJ, Detroit
HULBERT TAFT, JR.,
WKRC, Cincinnati
L. B. WILSON,
WCKY, Cincinnati



NATIONAL INDEPENDENT BROADCASTERS, INC.

NATIONAL INDEPENDENT BROADCASTERS, INC. put in a full year of progressive activity during 1940, the organization, comprised of independently owned local broadcasting stations having concerned itself with at least eight important developments.

Two convention meetings were held during the year, the first August 5th, in San Francisco at the time of the NAB Convention and the second October 21st and 22nd in New York. Harold A. Lafount, president, presided over the two meetings. Earlier in the year permanent offices were opened at 500 Edmonds Building, Washington, D. C., and on November 1, 1940 all association activities were transferred there and a permanent staff installed under Edwin M. Spence, managing director.

Summary of the outstanding activities of the Association during 1940 include: FCC Rule 3.93 was amended in regard to transcription announcements; Modification of the Sunrise Rule, for the benefit of part-time stations; Revision of the Application Forms 301 and 319, the former concerning standard broadcast stations and the latter FM; Broadcast Music, Inc. held conferences with NIB officials and a low scale license fee was arranged, effective April 1, 1941.

Throughout the summer conferences were held with the AFM relative to independent station contracts which expired on September 15, and it was agreed by President Petrillo of the AFM that relations would remain status quo.

HAROLD A. LAFOUNT, *President*
630 Fifth Avenue, New York City

EDWARD A. ALLEN, *Vice President*
WLVA, Lynchburg, Va.

ANDREW W. BENNETT, *Gen. Counsel*
EDWIN M. SPENCE, *Mng. Director*,
500 Edmonds Bldg., Washington, D. C.
LLOYD C. THOMAS, *Secy.-Treas.*,
KGFV, Kearney, Nebr.

Directors

Edward A. Allen, WLVA, Lynchburg, Virginia, Dist. 4; Ralph L. Atlass, WJJD, Chicago, Illinois, Dist. 9; Scott Howe Bowen, WIBX, Utica, N. Y., Dist. 2; Ralph R. Brunton, KJBS, San Francisco, Calif., Dist. 15; S. A. Cisler, WGRC, Louisville, Kentucky, Dist. 7; Maurice C. Coleman, WATL, Atlanta, Georgia, Dist. 5; James R. Curtis, KFRO, Longview, Texas, Dist. 13; Jack M. Draughon, WSIX, Nashville, Tenn., Dist. 6; Gregory Gentling, KROC, Rochester, Minn.,

Dist. 11; W. B. Greenwald, KWBG, Hutchinson, Kans., Dist. 12; James F. Hopkins, WJBK, Detroit, Mich., Dist. 8; Frank E. Hurt, KFXD, Nampa, Idaho, Dist. 14; Harold A. Lafount, WCOP, Boston, Mass., Dist. 1; Frank R. Smith, Jr., WWSW, Pittsburgh, Pa., Dist. 3; T. W. Symons, Jr., KXL, Portland, Oregon, Dist. 17; Lloyd C. Thomas, KGFV, Kearney, Nebraska, Dist. 10; and Leo B. Tyson, KMPC, Los Angeles, Calif., Dist. 16.



ORGANIZATIONS

PERSONNEL — ADDRESSES

Acoustical Society of America

919 North Michigan Ave., Chicago, Ill.
OFFICERS

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(University of Illinois)
Vice-President.....F. A. Firestone
(University of Michigan)
Secretary.....Wallace Waterfall
(The Celotex Corp)
Treasurer.....G. T. Stanton
(Electrical Research Products, Inc.)
Editor.....F. A. Firestone
(University of Michigan)

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Actors' Equity Association

45 W. 47th St., New York, N. Y.
BRyant 9-3550

OFFICERS

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Second Vice-President.....Florence Reed
Third Vice-President.....Augustin Duncan
Fourth Vice-President.....Peggy Wood
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Recording Secretary.....John Beal
Counsel.....Paul N. Turner
Auditor.....Frank Mesurac
Executive Secretary.....Ruth Richmond
Executive Secretary Emeritus.....Dorothy Bryant
Honorary President.....John Emerson
President Emeritus.....Frank Gillmore

COUNCIL

Terms Expire in 1945: Walter Abel, Leon Ames, Jean Beryl, Matt Briggs, Audrey Christie, William David, John Emery, Ruth Hammond, Sam Jaffe, Sam Levene, Kent Smith.

Terms Expire in 1944: Patricia Collinge, Dudley Digges, Muriel Kirkland, Philip Loeb, John A. Lorenz, Emily Marsh, Hiram S. Sherman, Jack Whiting, Merwin Williams, Harold Vermilyea.

Terms Expire in 1943: Lee Baker, Hugh Cameron, Broderick Crawford, Eric Dressler, Alfred Kappeler, Earle Larimore, Winifred Lenihan, Gerald Moore, Hugh Rennie, Joseph A. Vitale, Katherine Warren.

Terms Expire in 1942: Glenn Anders, Franklyn Fox, William Gaxton, Walter N. Greaza, Edith Gresham, Ben Lackland, Leroy MacLean, Claudia L. Morgan, Leona Powers, Edith L. Van Cleve, Richard Whorf.

Terms Expire in 1941: John Alexander, Jay Amiss, Beverly Bayne, E. J. Blunkall, Reed Brown, Jr., J. Malcolm Dunn, Clyde Fillmore, Robert T. Haines, Alan Hewitt, Robert Keith, Maida Reade, Richard Sterling.

BRANCH OFFICES

Los Angeles: I. B. Kornblum, 6331 Hollywood Blvd., Hollywood, Calif.
San Francisco: Theodore Hale, 111 O'Farrell Street.
Chicago: Frank Dare, 729 Waveland Avenue.

Advertising Federation of America

330 West 42nd St., New York, N. Y.
BRyant 9-0430

OFFICERS

President.....Elon G. Borton
(La Salle Extension University)
Vice-President.....Ray Maxwell
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(Beaver Engraving Co.)
Vice-President.....Alan Taylor
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Vice-President.....Aubyn Chinn
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DIRECTORS

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FUNCTIONS

To provide a common forum and a central medium for cooperative effort on behalf of all individuals and groups interested in advertising.

To elevate the standards of advertising practice and to combat any unfair competitive methods in its sale.

To help increase the effectiveness of advertising as an instrument of distribution, with its resulting benefits to business and the general public.

To determine and disseminate more accurate knowledge of the functions of advertising in business, and its social and economic values.

To aid in raising the standards of education and training for advertising practitioners.

American Association of Advertising Agencies

420 Lexington Ave., New York, N. Y.
MOhawk 4-7932

OFFICERS

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Managing Director.....Frederic R. Gamble
Vice-President.....Guy C. Smith
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Treasurer.....E. DeWitt Hill
Director of Service.....L. W. MacKenzie
Counsel.....McKercher & Link

FUNCTIONS

The American Association of Advertising Agencies was formed in 1917 by the amalgamation of the New England, New York, Philadelphia, Southern and Western Advertising Agency Associations—to promote the interests and raise the standards of advertising and of the advertising agency business.

It welcomes to membership any advertising agency qualified to aid in this purpose by reason of its ability to serve the cause of advertising, its financial soundness and its demonstrated desire to adhere to sound and ethical business practices.

The aims of the Association are partly ethical and partly economic. It is a professional body and also a trade association. It aims to raise standards, to improve technique, to ascertain values, to safeguard relations, and to cooperate with other organized effort in related fields.

One of the major aims of the Association is to keep advertising agency practice on a high level, in order that it may be most useful to the advertiser, most helpful to the publisher and respected by business men.

ORGANIZATIONS

Early in its career the Association adopted for the guidance of its members two official statements. One is entitled "Agency Service Standards," in which agency service is defined, so that advertisers and publishers may know what to expect and agencies may know what should be required of them, thus discouraging the incompetent and encouraging those equipped to render effective service.

The other statement, entitled "Standards of Practice," deals with agency relations with media, clients and the public, with fair and ethical agency competition, and other professional ethics.

American Bar Association (Standing Committee on Communications)

Office of the Chairman: 920 Southern Bldg., Washington, D. C.

COMMITTEE

Chairman..... Robert N. Miller
 Committeeman..... Edwin M. Borchard
 Committeeman..... John Morgan Davis
 Committeeman..... Charles E. Kenworthy
 Committeeman..... Whitney North Seymour
 Secretary..... David W. Richmond

FUNCTIONS

The main function of this committee is to keep in touch with any phase of the field of communications in which the American Bar Association may have an interest. It reports to the Bar Association at intervals with recommendations for action, and carries out such mandates as it receives from the Association.

American Communications Association (C. I. O.)

10 Bridge St., New York, N. Y.
 Bowling Green 9-3006

OFFICERS

President..... James P. Selly
 Vice-President..... James Benson
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 Vice-President..... L. Ohl

American Council on Education

744 Jackson Place, Washington, D. C.
 National 6591

EXECUTIVE OFFICERS

President..... George F. Zook
 President Emeritus..... C. R. Mann
 Vice-President..... C. S. Marsh
 Assistant to President..... Donald J. Shank
 Chief Accountant..... Grace R. Ontrich

FUNCTIONS

This Council's purpose is to advance American education through comprehensive voluntary, cooperative action on the part of educational associations, organizations and institutions, through the promotion, initiation and administration of systematic studies, cooperative experiments, and conferences. It has sponsored two national conferences on educational broadcasting to provide a national forum of educational and broadcasting interests for the furthering of education by radio. It also has an educational motion picture project which is evaluating and producing classroom films.

American Federation of Musicians

1450 Broadway, New York, N. Y.
 Pennsylvania 6-2545

OFFICERS

President..... James C. Petrillo
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 Secretary..... Fred W. Birnbach
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EXECUTIVE COMMITTEE

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American Federation of Radio Artists (AFRA)

2 West 45th St., New York, N. Y.
 Vanderbilt 6-1810

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BRANCH OFFICES

Chicago Local—540 North Michigan Avenue, Chicago, Ill.; Raymond Jones, Executive Secretary; Phone, Superior 6517.

Lcs Angeles Local—6331 Hollywood Boulevard, Hollywood, Calif.; I. B. Kornblum, Executive Secretary; Phone, Hillside, 5121.

San Francisco Local—111 O'Farrell Street, San Francisco, California; Vic Connors, Executive Secretary; Phone, Sutter 3196, San Francisco, California.

Cincinnati Local—Box No. 2, Burnet Woods Station, Cincinnati, Ohio.

Montreal Local—1126 St. Catherine St., West Montreal, Canada.

Detroit Local—1003 Tuller Hotel, Detroit, Mich.

St. Louis Local—4317 Lindell Blvd., St. Louis, Mo.

Miami Local—Box 3082, Miami, Fla.

Denver Local—598 South Navajo St., Denver, Colo.

Racine Local—804 Hamilton St., Racine, Wisc.

Cleveland Local—11418 Bellflower Rd., Cleveland, Ohio.

Other locals located in Des Moines, Ia.; Philadelphia, Pa.; Pittsburgh, Pa.; Schenectady, N. Y.; Boston, Mass.; Birmingham, Ala.; Shreveport, La.; Racine, Wisc.; Washington, D. C.; Charlotte, N. C.; Portland, Ore.

American Guild of Musical Artists, Inc. (A. F. L.)

545 Fifth Ave., New York, N. Y.
 Vanderbilt 6-6340

OFFICERS

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 Third Vice-President..... Margaret Speaks
 Fourth Vice-President..... Frank Sheridan
 Fifth Vice-President..... Daniel Harris
 Recording Secretary..... Queena Mario
 Treasurer..... Frank La Forge
 Executive Secretary..... Blanche Witherspoon
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BRANCH OFFICES

Hollywood: 7046 Hollywood Blvd.—Phone, Hollywood 7311; San Francisco: 111 O'Farrell St.—Phone, Sutter 3196; Chicago: 540 N. Michigan Blvd.—Phone, Superior 6517.

FUNCTIONS

AGMA is a union whose purpose is to bargain collectively on behalf of solo musical artists in the protection of their common interests. It is not directly engaged in the radio industry and is affiliate of the American Federation of Radio Artists which has direct jurisdiction over broadcasting artists.

American Guild of Radio Announcers and Producers

13-26 142nd St., Melba, Long Island
INdependence 3-2633

OFFICERS

Secretary-Treasurer Roger Bower

FUNCTIONS

This organization is an independent labor union, industrial in character, representing announcers, producers, sound effects technicians, radio engineers, etc., at radio stations throughout the United States.

American Institute Of Electrical Engineers

33 West 39th St., New York, N. Y.
PENnsylvania 6-9220

OFFICERS

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Vice-President J. W. Barker
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National Treasurer H. H. Henline

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FUNCTIONS

The major purposes of the American Marketing Association are: (1) To foster scientific study and research in the field of marketing; (2) To develop sound thinking in marketing theory and more exact knowledge and definition of marketing principles; (3) To improve the methods and technique of marketing research; (4) To contribute to the improvement of the teaching of marketing; (5) To develop better public understanding and appreciation of marketing problems; (6) To study and discuss legislation and judicial decisions regarding marketing; (7) To improve marketing personnel and study personnel problems; (8) To record progress in marketing through the publication of a journal; (9) To encourage and uphold sound, honest practices, and to keep marketing work on a high ethical plane.

American Newspaper Publishers Association

370 Lexington Ave., New York, N. Y.
CALedonia 5-2000

OFFICERS

President John S. McCarrens
Vice-President Walter M. Dear

Secretary Norman Chandler
Treasurer W. G. Chandler
General Manager Cranston Williams

FUNCTIONS

To foster and protect the business and business interests of daily newspapers.

The American Radio Relay League, Inc.

38 LaSalle Road, West Hartford, Conn.
Hartford 3-6269

OFFICERS

President George W. Bailey
Vice-President Charles E. Blalack
Managing Secretary Keneth B. Warner
Treasurer A. A. Hebert
Communications Manager F. E. Handy

FUNCTIONS

The American Radio Relay League is a non-commercial association of radio amateurs, bonded for the promotion of interest in amateur radio communication and experimentation, for the relaying of messages by radio, for the advancement of the radio art and of the public welfare, for the representation of the amateur in legislative matters, and for the maintenance of fraternalism and a high standard of conduct. The League publishes QST, a publication devoted solely to amateur radio, issued monthly. It also publishes The Radio Amateur's Handbook annually and other publications.

American Society of Composers, Authors and Publishers

30 Rockefeller Plaza, New York, N. Y.
COLUMbus 5-7464

OFFICERS

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Vice-President Louis Bernstein
Vice-President Otto A. Harbach
Secretary George W. Meyer
Treasurer Gustave Schirmer
Assistant Secretary J. J. Bregman
Assistant Treasurer Irving Caesar
General Manager John G. Paine

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BOARD OF DIRECTORS

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FUNCTIONS

ASCAP licenses public performance for profit of music copyrighted by its members and the members of many similar societies located in foreign countries.

BRANCH OFFICES AND REPRESENTATIVES

ALABAMA: I. T. Cohen, 607-11 First National Bank Bldg., Atlanta, Ga.
ALASKA: Herman D. Kenin, 911 Public Service Bldg., Portland, Ore.
ARIZONA: Frank E. Hickey, 414 Guaranty Bldg., 6331 Hollywood Blvd., Hollywood, Calif.
ARKANSAS: Milsten and Milsten, 1613-14 Tower Petroleum Bldg., 1905 Elm St., Dallas, Texas.
CALIFORNIA: (Northern Part) H. A. Levinson, 111 Sutter Bldg., San Francisco, Calif.; (Southern Part) Murray Stravers, 414 Guaranty Bldg., 6331 Hollywood Blvd., Hollywood, Calif.
COLORADO: H. O. Bergkamp, 1101-2 Security Bldg., Denver, Colo.
CONNECTICUT: R. W. Rome, 44 School Street, Boston, Mass.
DELAWARE: E. A. Sherwood, 1616 Baltimore Trust Bldg., Baltimore, Md.
DISTRICT OF COLUMBIA: E. A. Sherwood, 1616 Baltimore Trust Bldg., Baltimore, Md.
FLORIDA: I. T. Cohen, 607-11 First National Bank Bldg., Atlanta, Ga.

ORGANIZATIONS

GEORGIA: I. T. Cohen, 607-11 First National Bank Bldg., Atlanta, Ga.
IDAHO: Hermin Kenin, 911 Public Service Bldg., Portland, Ore.
ILLINOIS: E. S. Hartman, 7 So. Dearborn St., Chicago, Ill.
INDIANA: Sneathen & Summers, 1214 Circle Tower, Indianapolis, Ind.
IOWA: John C. Wooden, 601 Des Moines Bldg., Des Moines, Iowa.
KANSAS: American Society of Composers, Authors & Publishers, 30 Rockefeller Plaza, New York, N. Y.
KENTUCKY: William F. Clarke, Jr., Louisville Trust Bldg., Louisville, Ky.
LOUISIANA: J. Studebaker Lucas, 1015 Carondelet Bldg., New Orleans, La.
MARYLAND: E. A. Sherwood, 1616 Baltimore Trust Bldg., Baltimore, Md.
MASSACHUSETTS: R. W. Rome, 44 School Street, Boston, Mass.
MICHIGAN: Grosner & Burak, 782-784 Penobscot Bldg., Detroit, Mich.
MINNESOTA: Dwain M. Ewing, 909 Northwestern Bank Bldg., Minneapolis, Minn.
MISSISSIPPI: J. Studebaker Lucas, 1015 Carondelet Bldg., New Orleans, La.
MISSOURI: (Address Nearest Office) Maurice J. O'Sullivan, 700 Cloyd Bldg., Kansas City, Mo. Karl P. Spencer, 950 Telephone Bldg., 1010 Pine St., St. Louis, Mo.
NEBRASKA: E. N. Blazer, 301 Electric Bldg, Omaha, Nebr.
NEVADA: H. A. Levinson, 111 Sutter Bldg., San Francisco, Calif.
NEW HAMPSHIRE: R. W. Rome, 44 School St., Boston, Mass.
NEW JERSEY: Rothkranz & Kane, 744 Broad St., Newark, N. J.
NEW MEXICO: H. O. Bergcamp, Security Bldg., Denver, Colo.
NEW YORK: (Address Nearest Office) American Society of Composers, Authors and Publishers, 30 Rockefeller Plaza, New York, N. Y. Lawrence Schlus, 1140 Lincoln-Alliance Bank Bldg., Rochester, N. Y.
NORTH CAROLINA: I. T. Cohen, 607-11 First National Bank Bldg., Atlanta, Ga.
NORTH DAKOTA: Dwain M. Ewing, 909 Northwestern Bank Bldg., Minneapolis, Minn.
OHIO: (Address Nearest Office) Samuel Feldman, 3910-11 Carew Towers, Cincinnati, Ohio. Frankel & Frankel, 1520 NBC Bldg., Cleveland, Ohio.
OKLAHOMA: Milsten & Milsten, 1613-14 Tower Petroleum Bldg., 1905 Elm St., Dallas, Texas.
OREGON: Herman Kenin, 911 Public Service Bldg., Portland, Oregon.
PENNSYLVANIA: (Address Nearest Office) (Western Part) William J. O'Brien, 509 Grant Bldg., Pittsburgh, Pa. (Eastern Part) H. A. Brown, 1638 Lincoln Liberty Bldg., Philadelphia, Pa.
RHODE ISLAND: R. W. Rome, 44 School Street, Boston, Mass.
SOUTH CAROLINA: I. T. Cohen, 607-11 First National Bank Bldg., Atlanta, Ga.
SOUTH DAKOTA: Dwain M. Ewing, 909 Northwestern Bank Bldg., Minneapolis, Minn.
TENNESSEE: I. T. Cohen, 607-11 First National Bank Bldg., Atlanta, Ga.
TEXAS: Milsten & Milsten, 1613-14 Tower Petroleum Bldg., 1905 Elm Street, Dallas, Texas.
UTAH: H. O. Bergcamp, Security Bldg., Denver, Colo.
VERMONT: R. W. Rome, 44 School Street, Boston, Mass.
VIRGINIA: I. T. Cohen, 607-11 First National Bank Bldg., Atlanta, Ga.
WASHINGTON: American Society of Composers, Authors and Publishers, 30 Rockefeller Plaza, New York, N. Y.
WEST VIRGINIA: I. T. Cohen, 607-11 First National Bank Bldg., Atlanta, Ga.
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EUROPEAN REPRESENTATIVE: Hugo Bryk, 27-33 Champs-Elysees, Paris (8e), France.
JAPAN: Dr. W. Plage, 29 Mikawadaimachi, Azabu-Ku, Tokyo, Japan.
ARGENTINA: G. Giacompol, Sante Fe 1548, Buenos Aires, Argentina.
HAWAII: H. A. Levinson, 111 Sutter Bldg., San Francisco, Calif.
PUERTO RICO: Stanley Shepard, Camino Del Acueducto de Guaynabo, Box 3667, Santurce, Puerto Rico.
CUBA: Dr. Ricardo E. Viurrun, 7 O'Keilly Street, Havana, Cuba.

Associated Actors and Artistes of America

45 West 47th St., New York, N. Y.
 Phone: BRyant 9-3550

OFFICERS

President-Executive Director.....Frank Gillmore
 Executive Secretary.....Paul Dultzell
 1st Vice-President.....Jean Greenfield
 2nd Vice-President.....Kenneth Thomson
 Treasurer.....Ruth Richmond
 Counsel.....Paul M. Turner

FUNCTIONS

Associated Actors and Artistes of America, generally known as the Four A's, holds the international charter from American Federation of Labor covering theatrical entertainers. Actors' Equity, American Federation of Radio Artistes, Screen Actors Guild, Chorus Equity, American Guild of Variety Artists, American Guild of Musical Artists, etc., are granted charters via Four A's.

Associated Broadcast Technicians, Unit of the International Brotherhood of Electrical Workers

1200 Fifteenth St., N.W., Washington, D. C.

OFFICERS

President.....Lyman C. Swendson
 (WCCO, Minneapolis)
 Recording Secretary.....Robert J. Mayberry
 (WABC, New York City)
 Financial Secretary.....Edward L. Philbrick
 (WEEI, Boston)
 Treasurer.....Ted Denton, Jr.
 (KNX, Los Angeles)
 National Business Manager and International Representative.....D. J. Dunlop

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 (WEEI, Boston)
 2nd Region.....Robert J. Mayberry
 (WABC, New York City)
 3rd Region.....Edwin F. Laker
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 4th Region.....Ralph F. Painter
 (WBT, Charlotte, N. C.)
 5th Region.....Howard Hayes
 (WKRC, Cincinnati)
 6th Region.....F. A. George
 (WCFL, Chicago)
 7th Region.....Percy Zeigler
 (KOWH, Omaha)
 8th Region.....Ted Denton, Jr.
 (KNX, Los Angeles)

FUNCTIONS

This association is a labor union representing broadcast technicians only.

Association of Canadian Advertisers, Inc.

85 Richmond St., West, Toronto, Ont.
 Adelaide 9774

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 (The Borden Co., Ltd.)

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FUNCTIONS

Association of Canadian Advertisers (ACA) is a mutual organization of national advertisers in Canada, organized to make advertising better and more effective for its members. The organization compiles "Analysis of Circulation of Canadian Publications," which is published every two years.

Association of National Advertisers, Inc.

330 West 42nd St., New York, N. Y.
 BRyant 9-6330

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Albert Brown, The Best Foods, Inc.; Robert B. Brown, Bristol-Myers Co.; A. O. Buckingham, Cluett Peabody & Co.; Northrop Clarey, Standard Oil Co. of New Jersey; Keith J. Evans, Inland Steel Co.; Price Gilbert, Jr., The Coca Cola Co.; P. C. Handerson, The B. F. Goodrich Co.; W. A. Hart, E. I. du Pont de Nemours & Co.; M. H. Leister, Sun Oil Co.; C. G. Mortimer, Jr., General Foods Corp.; Leo Nejeleski, The PepsiCo Co.; D. P. Smelser, The Proctor & Gamble Co.; H. M. Warren, National Carbon Co.

FUNCTIONS

The Association of National Advertisers is composed of the leading companies of the United States who use advertising. Its function is to represent them and further their interests as buyers of advertising.

Association of Radio Transcription Producers of Hollywood, Inc.

Hollywood Blvd. at Cosmo, Hollywood, Calif.
 HOLLYWOOD 3545

OFFICERS

President Gerald King
 Secretary C. P. MacGregor
 Treasurer J. Messer
 General Counsel John J. Wilson

DIRECTORS

Gerald King, C. P. MacGregor, A. Schrade.

FUNCTIONS

This organization is a cooperative trade association of companies active in the transcription business in Hollywood. Membership is composed of: Allied Phonograph & Record Co.; Radio Transcription Co. of America, Ltd.; C. P. MacGregor Sound Studios; Ray Morgan & Co.; Standard Radio; Field Bros.; Edward Sloman Productions, Ltd.; George Logan Price, Inc.

Authors' Guild

6 E. 39th St., New York, N. Y.
 MURRAY HILL 5-6930

OFFICERS

President Hendrik Willem van Loon

Vice-President Henry F. Pringle
 Secretary Margaret Widdemore

Authors' League

6 E. 39th St., New York, N. Y.
 MURRAY HILL 5-6930

OFFICERS

President Elmer Davis
 Vice-President Howard Lindsay
 Secretary Homer Croy
 Assistant Secretary Margaret Scheuerman

FUNCTIONS

The Authors' League of America, Inc., is the national organization of authors, dramatists, screen writers and radio writers. It was organized in 1912 in order to procure adequate copyright legislation, both international and domestic; to protect the rights and property of all those who create copyrightable material of whatever kind or nature; to advise and assist all such in business matters relating to the disposal of their productions and to obtain for them prompt remuneration therefor; to disseminate information among them as to their just rights and remedies. Its membership is approximately 4,200.

Broadcast Music, Inc. (BMI)

580 Fifth Ave., New York, N. Y.
 PENNSYLVANIA 6-4566

OFFICERS

President Neville Miller
 Vice-President-General Manager M. E. Tompkins
 Vice-President-General Counsel Sydney M. Kaye
 Treasurer C. E. Lawrence

DIRECTORS

Neville Miller, National Association of Broadcasters; Walter Damm, WTMJ; John Elmer, WCBM; Edward Kauber, Columbia Broadcasting System; Niles Trammell, National Broadcasting Co.; Paul Morency, WTIC; John Shepard, 3rd, The Yankee Network; Theodore C. Streibert, Mutual Broadcasting System.

BRANCH OFFICES

1549 North Vine St., Hollywood, Calif.
 Executive-in-Charge Harry Engel

54 West Randolph St., Chicago, Ill.
 Executive-in-Charge James Cairns

FUNCTIONS

The functions of BMI are: (1) To buy and publish original music; (2) to coordinate and license the performing rights to music published under its own imprint and of music in the catalogs of affiliated publishers and performing rights societies; (3) to provide equal opportunity of recognition for all writers and composers.

Canadian Association of Advertising Agencies

401 Yardley House, Toronto, Ont., Canada
 Waverly 6157

OFFICERS

President E. W. Reynolds
 (E. W. Reynolds & Co.)
 Vice-President J. W. Thain
 (A. McKim, Ltd.)
 Treasurer A. J. Denne
 (A. J. Denne & Co.)

FUNCTIONS

Canadian Association of Advertising Agencies is a trade organizations made up of the majority of advertising agencies in Canada.

Canadian Association of Broadcasters

801 Victory Bldg., Toronto, Ont.
 Canada
 Elgin 5623

OFFICERS

President Glenn Bannerman
 Vice-President H. Gordon Love
 Secretary-Treasurer T. Arthur Evans

ORGANIZATIONS

DIRECTORS

Harry Sedgwick, CFRB, Toronto; J. N. Thivierge, CHRC, Quebec; E. T. Sandell, CKTB, St. Catharines; George Chandler, CJOR, Vancouver; J. Stewart Neill, CFWB, Fredericton; H. R. Carson, CFAC, Calgary; H. Gordon Love, CFCN, Calgary.

FUNCTIONS

The Canadian Association of Broadcasters is a trade association comprising 57 privately owned radio stations.

Canadian Performing Right Society, Ltd.

1003 Royal Bank Bldg., Toronto, Canada

OFFICERS

President-Managing Director... H. T. Jamieson, F.C.A.

BOARD OF DIRECTORS

Gene Buck, Louis Bernstein, John G. Paine, Ralph Hawkes, Holmes Maddock, H. T. Jamieson.

Catholic Actors Guild of America, Inc.

Hotel Astor, New York, N. Y.
Circle 6-5566

OFFICERS

President.....George M. Cohan
First Vice-President.....Gene Buck
Second Vice-President.....Hugh O'Connell
Honorary Vice-Presidents:

Bing Crosby, Dan Healy, Pat O'Brien

Chaplain.....Very Rev. Edward F. Leonard

Treasurer.....Rev. John F. White

Recording Secretary.....Don Caufier

Counsel.....Hon. Alfred J. Tavey

Historian.....Allyn Gillyn

Executive Secretary.....George Buck

Chairman of Executive Board.....William David

Social Secretary (Theatrical).....Jane Hoy

Social Secretary (Non-Theatrical).....Mrs. Cornelius J. Gallagher

FUNCTIONS

The Catholic Actors Guild is a charitable, benevolent and social organization for the people of the theatre, screen and radio, non-sectarian in scope.

Catholic Writers Guild of America, Inc.

128 W. 71st St., New York, N. Y.
Endicott 2-0411

OFFICERS

President.....Joseph Avery Durkin

1st Vice-President.....Edwin P. Kilroe

2nd Vice-President.....Richard Reid

3rd Vice-President.....Daniel D. Halpin

Treasurer.....Hugh A. O'Donnell

Financial Secretary.....Eleanor M. Tucker

Recording Secretary.....Clarence F. Hunter

Corresponding Secretary.....Bernadette A. Forrest

Counsel.....Henry N. Steinert

Spiritual Director.....Rev. John B. Kelly

Honorary President.....Very Rev. Francis Joseph Spellman

President Emeritus.....James J. Walsh

BOARD OF GOVERNORS

Thomas E. Woodlock, Very Rev. Fulton J. Sheen, Eugene A. Colligan, Victor Ridder, Elizabeth Jordan, James O'Shaughnessy, Kathleen Norris, Rev. Hugh Morley, Katherine Egerly, Charles H. Moran, Margaret Marshall, Nick Kenny, Mrs. Philip Brennan, Nicholas Farley, Kenton Kilmer.

Clear Channel Group

914 National Press Building, Washington, D. C.
Metropolitan 1464

OFFICERS

Chairman.....Edwin W. Craig

Chairman, Engineering Committee.....J. H. DeWitt, Jr.

Counsel.....Louis G. Caldwell

FUNCTIONS

The function of the Clear Channel Group is to

foster the interests of independently-owned clear channel standard broadcast stations in matters of engineering allocation, national and international, to the end of preserving and improving radio reception to rural and sparsely settled areas and to cities and towns having no stations of their own.

Defense Communications Board

Chairman's Office: c-o Federal Communications Commission, Washington, D. C.

PERSONNEL

James Lawrence Fly, Chairman, Federal Communications Commission; Major General Joseph O. Mauborgne, Chief Signal Officer of U. S. Army; Rear Admiral Leigh Noyes, Director of Naval Communications; Breckenridge Long, Assistant Secretary of State in charge of the Division of International Communications; Herbert E. Gaston, Assistant Secretary of Treasury in charge of Coast Guard.

COMMITTEES

Coordinating: E. K. Jett, Chief Engineer of the Federal Communication Commission, Chairman; Francis C. De Wolf, Department of State; Major W. T. Guest, Department of War; Commander Earl E. Stone, Department of Navy; Commander J. F. Far'c, Chief of Communications, U. S. Coast Guard, Department of Treasury.

Law: Telford Taylor, General Counsel of Federal Communications Commission, Chairman; Captain J. W. Huysson, Office of the Judge Advocate General, Department of War; Steven Spingarn, Department of Treasury; Lt. Commander Franz O. Willenbacher, Department of Navy; Raymond T. Ringling, Department of State.

Labor Advisory: (not named at time of going to press).

Industry Advisory: (not named at time of going to press).

Domestic Broadcasting: Neville Miller, Chairman; Andrew D. Ring, Secretary.

Subsidiary Committees: International Radio Advisory Committee, International Broadcasting Committee, Radio Communications Committee, State and Municipal Facilities Committee, Telegraph Committee, Telephone Committee, Amateur Radio Committee, Aviation Radio Committee, Cable Committee.

The Dramatists' Guild

6 E. 39th St., New York, N. Y.
Murray Hill 5-6930

OFFICERS

President.....Elmer Rice

Vice-President.....George S. Kaufman

Chairman of the Board.....Edward Childs Carpenter

Secretary.....Richard Rodgers

Executive Secretary.....Luise Silcox

Annual meeting and election: November; Membership: 2500.

FUNCTIONS

The Dramatists' Guild is one of the guilds of the Authors' League of America, Inc. The guild is primarily a protective organization for playwrights.

Federal Communications Bar Association

921 Tower Bldg., Washington, D. C.

OFFICERS

President.....Herbert M. Bingham

First Vice-President.....John M. Littlepage

Second Vice-President.....Ralph A. Van Orsdal

Secretary.....Percy H. Russell, Jr.

Treasurer.....Paul A. Porter

FUNCTIONS

To promote the proper administration of the Communications Act of 1934 and related acts, to uphold the honor of practice before the Federal Communications Commission, and to encourage cordial intercourse among the practitioners. It issues a monthly publication, the Federal Communications Bar Journal, which is devoted to matters of interest pertaining to communications law.

• • • ORGANIZATIONS • • •

Federal Radio Education Committee (FREC)

Room 3555 South Interior Bldg., Washington, D. C.
 Republic 1820, Extension 2280

OFFICERS

Chairman..... J. W. Studebaker
 Vice-Chairman..... C. F. Klinefelter
 Secretary..... Gertrude G. Broderick
 Assistant to the Chairman
 In Charge of Service..... W. D. Boutwell
 Assistant to the Chairman
 In Charge of Research and Editor..... Leonard Power

COMMITTEE

John Elmer, WCBM, Baltimore; Willard Givens, National Education Association; Reverend George Johnson, Catholic University of America; Neville Miller, National Association of Broadcasters; Harold B. McCarthy, National Association of Educational Broadcasters; A. D. Ring, Federal Communications Commission; Walter G. Preston, Jr., National Broadcasting Co.; Levering Tyson, Muhlenberg College; Sterling Fisher, Columbia Broadcasting System; John W. Studebaker, United States Commissioner of Education.

FUNCTIONS

The Federal Radio Education Committee was appointed in 1935 by the Federal Communications Commission with the recommendation at that time that the broadcasters, on one hand, and the educators, on the other, would combine forces which would: (1) eliminate controversy and misunderstanding between groups of educators and between the industry and educators; (2) promote actual cooperative arrangements between educators and broadcasters on national, regional and local bases. Publications to date include Script Exchange Catalog, Glossary of Radio Terms, "Americans All—Immigrants All," a supplementary teaching aid in the use of recordings of program series of the same name, the FREC Service Bulletin, and Forums on the Air.

Federal Trade Commission

Constitution Ave. at 6th St., N.W., Washington, D.C.
 National 8206

PERSONNEL

Chairman..... Charles H. March
 Commissioner..... Ewin L. Davis
 Commissioner..... Garland S. Ferguson
 Commissioner..... William A. Ayres
 Commissioner..... Robert E. Freer
 Secretary..... Otis B. Johnson
 Chief Economist..... Col. William H. England
 Director, Radio & Periodical Division..... P. B. Morehouse
 Assistant Director, Radio & Periodical Division..... William F. Davidson

FUNCTIONS

The Federal Trade Commission is a Governmental agency whose object is to prevent unfair methods of competition and unfair and deceptive acts and practices in commerce. For a description of the actual procedure and work of this body see articles appearing in other sections of this volume.

Financial Advertisers Association

221 S. La Salle St., Chicago, Ill.
 State 5547

OFFICERS

President..... Robert J. Izant
 First Vice-President..... Victor Cullin
 Second Vice-President..... L. E. Townsend
 Third Vice-President..... Lewis F. Gordon
 Treasurer..... Fred W. Mathison
 Executive Vice-President..... Preston E. Reed

First Advertising Agency Group

524 Union Commerce Bldg., Cleveland, Ohio
 Main 5194

OFFICERS

President..... Lee E. Donnelley
 Vice-President..... Norman Lewis
 Secretary-Treasurer..... Melvin F. Hall

BRANCH OFFICES

Membership in this organization includes advertis-

ing agencies in the following cities: Albany, N. Y.; Atlanta, Ga.; Buffalo, N. Y.; Cincinnati, Ohio; Cleveland, Ohio; Denver, Colo.; Des Moines, Iowa; Detroit, Mich.; Jacksonville, Fla.; Los Angeles, Calif.; Nashville, Tenn.; New York, N. Y.; Oakland, Calif.; Philadelphia, Pa.; Pittsburgh, Pa.; Portland, Ore.; Richmond, Va.; San Francisco, Calif.; San Jose, Calif.; Salt Lake City, Utah; Seattle, Wash.; St. Louis, Mo.; Tacoma, Wash.; Toronto, Ont.; Montreal, Que.; Halifax, Nova Scotia; Vancouver, B. C.; Winnipeg, Manitoba.

FUNCTIONS

This organization is a cooperative group of independently owned advertising agencies using identical standards of agency procedure and acting as branch offices in the interest of each member.

F M Broadcasters, Inc. (FMBI)

21 Brookline Ave., Boston, Mass.
 Commonwealth 0800

OFFICERS

President..... John Shepard, 3rd
 Vice-President..... John V. L. Hogan
 Secretary-Treasurer..... Robert T. Bartley

DIRECTORS

Walter J. Damm; Franklin M. Doolittle, C. M.
 Walter J. Damm, Franklin M. Doolittle, C. M.
 Jansky, r., Ray H. Manson, Carl Meyers, Paul W.
 Morency, T. C. Streibart.

BRANCH OFFICE

52 Vanderbilt Ave., New York, N. Y.
 Phone, Murray Hill 7201

Director of Promotion..... Dick Dorrance

FUNCTIONS

FM Broadcasters, Inc., is a national organization of a non-profit nature, representing the concerted efforts of leading FM proponents to see that FM advances in a coordinated, logical manner.

Georgia Association of Broadcasters

c-o Radio Station WRBL, Columbus, Ga.

OFFICERS

President..... James Woodruff, Jr.
 (WRBL, Columbus)
 Vice-President..... Ray Ringston
 (WRDL, Augusta)
 Secretary-Treasurer..... Margie Willis
 (WTOG, Savannah)

DIRECTORS

E. K. Cargill, WMAZ, Macon; Jack Williams, WAYX, Waycross; Leon Reinsch, WSB, Atlanta.

FUNCTIONS

The Georgia Association of Broadcasters is a regional trade association of 19 Georgia broadcasting stations.

Independent Radio Network

Affiliates, Inc. (IRNA)

Chairman's Office: 200 Bankers Securities Bldg., Philadelphia, Pa.

OFFICERS

Chairman..... Samuel R. Rosenbaum
 (WFIL, Philadelphia)
 Vice-Chairman & Treasurer..... Paul W. Morency
 EXECUTIVE COMMITTEE

Martin B. Campbell, WFAA, Dallas, Texas; H. K. Carpenter, WHK, Cleveland, Ohio; Don S. Elias, WWNC, Asheville, N. C.; I. R. Lounsbury, WGR, Buffalo, N. Y.; P. W. Morency, WTIC, Hartford, Conn.; Samuel R. Rosenbaum, WFIL, Philadelphia, Pa.

DIRECTORS

Martin Campbell, WFAA, Dallas, Texas; H. K. Carpenter, WHK, Cleveland, Ohio; Arthur B. Church, KMBC, Kansas City, Mo.; Edwin W. Craig, WSM, Nashville, Tenn.; Mark Ethridge, WHAS, Louisville, Ky.; Don S. Elias, WWNC, Asheville, N. C.; John A. Kennedy, WCHS, Charleston, W. Va.; I. R. Lounsbury, WGR, Buffalo, N. Y.; Paul W. Morency, WTIC, Hartford, Conn.; Charles W. Myers, KOIN, Portland, Ore.; George W. Norton, WAVE, Louisville, Ky.; Samuel R. Rosenbaum, WFIL, Philadelphia, Pa.; W. J. Scripps, WWJ, Detroit, Mich.; Hulbert Taft, Jr.,

ORGANIZATIONS

WKRC, Cincinnati, Ohio; L. B. Wilson, WKCY, Cincinnati, Ohio.

Institute of Radio Engineers, Inc.

330 West 42nd St., New York, N. Y.
MEdallion 3-5661

OFFICERS

President.....F. E. Terman
Secretary.....Harold P. Westman

FUNCTIONS

The Institute of Radio Engineers is a professional organization of engineers in radio and allied fields. It publishes a magazine entitled "Proceeding of the Institute of Radio Engineers" and conducts meetings in New York and various other cities in the United States, Canada and Argentine.

Interdepartment Radio Advisory Committee (IRAC)

Chairman's Office: Federal Communications Commission, Washington, D. C.

OFFICERS

Chairman.....E. K. Jett
Vice-Chairman.....J. H. Dellinger
Secretary.....Gerald C. Gross
Assistant Secretary.....P. F. Siling

MEMBERS

Department of Agriculture.....E. W. Loveridge
Department of Commerce.....Dr. J. H. Dellinger
Federal Communications Commission.....E. K. Jett
Department of Interior.....C. D. Monteith
Department of Justice.....T. D. Quinn
Maritime Commission.....D. S. Brierly
Department of Navy.....Admiral S. C. Hooper
Post Office Department.....Roy M. Martin
Department of State.....Thomas Burke
Department of Treasury.....Commander J. F. Farley
Department of War.....Major General J. O. Mauborgne

ALTERNATE MEMBERS

Department of Agriculture.....Wallace L. Kaddery
Department of Commerce.....L. H. Simson
Federal Communications Commission.....Gerald C. Gross
Department of Interior.....John S. Cross
Department of Justice.....H. J. Walls
Maritime Commission.....J. T. Welsh
Department of Navy.....Commander John R. Redman
Post Office Department.....none
Department of State.....Francis C. de Wolf
Department of Treasury.....Commander C. H. Peterson
Department of War.....Major Wesley T. Guest

FUNCTIONS

This committee, composed of representative officials from the various government departments and agencies is charged with advising the President in regard to the assignment of frequencies to government station or classes of station. Little of the committee's work is divulged for public information because of its nature (e.g. National Defense), which is confidential.

International Committee On Radio (Comite International de la T. S. F.)

President's Office: c-o Federal Communications Commission, Washington, D. C.
Treasurer's Office: Colorado Bldg., Washington, D.C.
Secretary's Office: 1112 Connecticut Ave., N.W., Washington, D. C.

OFFICERS

President.....T. A. M. Craven
Vice-President.....Louis G. Caldwell
Treasurer.....Howard S. LeRoy
Secretary.....F. P. Guthrie

EXECUTIVE COUNCIL

John W. Guider, Chairman; A. L. Ashby, Thad H. Brown, J. H. Dellinger, Francis C. DeWolf, William R. Vallance.

FUNCTIONS

This organization is the American Section of the Comite International de la T. S. F.

International Radio Club

Court House Bldg., Miami, Fla.
Phone, 3-4431

OFFICERS

President.....Jack Rice
Vice-President.....F. C. Sowell
(WLAC, Nashville, Tenn.)
Vice-President.....E. K. Cargill
(WMAZ, Macon, Ga.)
Vice-President.....Norman Reed
Vice-President.....Gene O'Fallon
(KFEL, Denver, Colo.)
Secretary.....Peggy Tooke
Legal Counsellor.....Roger E. Davis
Program Director.....Joseph Ries
(WLW, Cincinnati, Ohio)
Historian.....George Malcolm-Smith
(WTIC, Hartford, Conn.)
Musical Director.....Vincent Sorey

International Short Wave Club

923 Vine Street, East Liverpool, Ohio
Phone, 3546-W

OFFICERS

President & Editor.....Arthur J. Green
Board of Advisors.....Joseph B. Sessions
Board of Advisors.....Jacob N. Kleimans
Board of Advisors.....Charles H. Schroeder
European Representative.....Arthur E. Bear

BRANCH OFFICES

New York Chapter: Jacob N. Kleimans, Sec.; London (England) Chapter: Arthur E. Bear, Sec.; Manchester (England) Chapter: Officers to be elected monthly; Brighton (England) Chapter: John Bennett, Sec.; Guernsey (England) Chapter: F. S. LaPavoux, Sec. (Note: The English Chapters have temporarily suspended operations.)

FUNCTIONS

The purpose of the organization is to gather information, helpful hints, station schedules, etc., and send this to members of the organization. The club has members in 141 countries and possessions that act as news reporters.

The Lambs

130 W. 44th St., New York, N. Y.
BRyant 9-8020

OFFICERS

Shepherd.....Fred Waring
Boy.....Raymond Peck
Corresponding Secretary.....Jack Whiting
Recording Secretary.....Bobby Clark
Treasurer.....J. C. Cuppia
Librarian.....Harold C. Hoffman

MEMBERS OF THE COUNCIL

Arthur Hurley, Kenneth Webb, J. W. Powell, Martin Gillen, James E. Meighan, Earl Benham, John Hayden, Edward C. Lilley, John McManus, Percy Moore, Edwin Burke, Dr. M. Sayle Taylor, M. D. Stauffer, William P. Adams.

LIFE DIRECTORS: R. H. Burnside, A. O. Brown, Frank Crummit, William Gaxton.

Market Research Council

122 East 42nd St., New York, N. Y.
LExington 2-9680

OFFICERS

President.....Arno H. Johnson
(J. Walter Thompson Co.)
Vice-President.....Frank M. Surface
(Standard Oil Co. of N. J.)
Secretary-Treasurer.....Will S. Johnson
(Vick Chemical Co.)

EXECUTIVE COMMITTEE

Arno H. Johnson, Arthur Hirose (McCall Corp.), Frank M. Surface, Will S. Johnson, Eimo Roper (Elmo Roper, Inc.).

FUNCTIONS

This organization is a small informal group (limited membership) of leading market research men interested in general market research who meet monthly for a discussion of mutual problems.

ORGANIZATIONS

The Masquers

1755 N. Sycamore Ave., Hollywood, Calif.
HOLLYWOOD 2164

OFFICERS

Harlequin Robert Armstrong
Kierol Alan Mowbray
Ponchinello Stanley Taylor
Crescus Howard B. Henshey
Pantaloone Joe E. Brown
Reader Frank Campeau

JESTERATE

Billy Gilbert, Frank M. Fynn, David H. Thompson, William H. Dunn, Charles Vanda, Harry Joe Brown, William B. Davidson, James P. Normanly, Joseph M. Ratliff, Benjamin W. Shipman, Clay Clement, Russell Hicks, Charles Middleton, Gus Glassmire, John Sheehan.

FUNCTIONS

The Masquers is a non-profit social club catering to male members of the stage and screen with a limited number of non-professional members.

Music Publishers' Protective Association, Inc.

45 Rockefeller Plaza, New York, N. Y.
Circle 6-3084

OFFICERS

Chairman of the Board Walter G. Douglas
President E. H. Morris
Vice-President Lester Santly
Treasurer J. J. Bregman
General Manager Harry Fox

National Advisory Council on Radio in Education

60 E. 42nd St., New York, N. Y.
MUrray Hill 2-3420

OFFICERS

Secretary Dr. Levering Tyson

FUNCTIONS

The National Advisory Council on Radio in Education was organized to promote the more effective utilization of the art of broadcasting in the general field of American education. Its membership includes representatives in the field of education, government and industry as well as the general public.

National Association of Broadcasters

Normandy Bldg., 1627 "K" Street, N. W.,
Washington, D. C.
National 2080

OFFICERS

President Neville Miller
Assistant to President-Acting
Secretary-Treasurer C. E. Arney, Jr.
General Counsel Russell P. Place
Director of Public Relations Edward M. Kirby
Director of Labor Relations Joseph L. Miller
Director of Research Paul F. Peter
Assistant Research J. Robert Myers
Director of Engineering Lynne C. Smeby
Bureau of Radio Advertising Sam J. Henry, Jr.
Promotion Arthur Stringer
Auditor Everett E. Revercomb

BOARD OF DIRECTORS

District

- 1—Paul Morency, WTIC, Hartford, Conn.
- 2—Clarence Wheeler, WHEC, Rochester, N. Y.
Edward Klauber, CES, New York, N. Y. (director-at-large)
Fred Weber, New York, N. Y. (director-at-large)
- 3—Clifford M. Chafey, WEEU, Reading, Pa.
- 4—John A. Kennedy, WBLK, Clarksburg, W. Va.
Frank M. Russell, WRC, Washington, D. C. (director-at-large)
John Elmer, WCBM, Baltimore, Md. (director-at-large)
- 5—W. Walter Tison, WFLA, Tampa, Fla.
- 6—Edwin W. Craig, WSM, Nashville, Tenn.
- 7—J. H. Ryan, WSPD, Toledo, Ohio

Mark Ethridge, WHAS, Louisville, Ky. (director-at-large)

George W. Norton, Jr., WAVE, Louisville, Ky. (director-at-large)

- 8—John E. Felzer, WKZO, Kalamazoo, Mich.
- 9—William E. West, WTMV, East St. Louis, Ill.
- 10—John J. Gillin, Jr., WOW, Omaha, Nebr.
Don Searle, KOIL, Omaha, Nebr. (director-at-large)
- 11—Earl H. Gammons, WCCO, Minneapolis, Minn.
- 12—Herbert Hollister, KFBI, Wichita, Kans.
- 13—O. L. Taylor, KGNC, Amarillo, Tex.
Harold Hough, WBAP, Fort Worth, Tex. (director-at-large)
- 14—Eugene P. O'Fallon, KFEL, Denver, Colo.
- 15—Howard Lane, KFBK, Sacramento, Calif.
- 16—Harrison Hollway, KFI-KECA, Los Angeles, Calif.
- 17—C. W. Myers, KOIN, Portland, Ore.
Harry R. Spence, KXRO, Aberdeen, Wash. (director-at-large)

EXECUTIVE COMMITTEE

Neville Miller, Paul W. Morency, Don Searle, John A. Kennedy, Edwin W. Craig, Herbert Hollister, John Elmer.

National Association of Educational Broadcasters

Exec. Secy., Radio Station WILL, Univ. of Illinois, Urbana, Illinois

OFFICERS

President Harold G. Ingham
(KFBU, Lawrence, Kans.)
Vice-President M. C. Jensen
(WCAL, Northfield, Minn.)
Treasurer W. I. Griffith
(WOI, Ames, Iowa)
Executive Secretary Frank Schooley
(WILL, Urbana, Illinois)

FUNCTIONS

To further the interests of educational broadcasting stations and educators broadcasting over commercial stations.

National Association of Performing Artists

630 Fifth Ave., New York, N. Y.
Circle 7-8194

OFFICERS

President James J. Walker
First Vice-President Fred Waring
Vice-President Meyer Davis
Vice-President Paul Whiteman
Vice-President Al Jolson
Secretary Frank Crumit
Treasurer Don Voorhees
General Counsel Maurice J. Speiser

BOARD OF DIRECTORS

Fred Waring, Chairman; Connie Boswell, Noel Coward, Bing Crosby, Frank Crumit, Meyer Davis, Mary Garden, Benny Goodman, Jascha Heifetz, Lewis James, Al Jolson, Hal Kemp, Arthur W. Levy, Guy Lombardo, John McCormack, Grace Moore, Ray Noble, Walter O'Keefe, Josef Pasternack, Dick Powell, Fritz Reiner, Jacob Rosenberg, Fabien Sevitsky, Nathaniel Shilkret, Lawrence Tibbett, Rudy Vallee, Don Voorhees, James J. Walker, Paul Whiteman, Victor Young, Efreim Zimbalist.

FUNCTIONS

The object of the Association is to protect the recordings of its members and the prevention of their unauthorized use primarily by broadcast stations, coin-operated machines, etc.

National Association of Regional Broadcast Stations

Munsey Bldg., Washington, D. C.
METropolitan 0023

OFFICERS

President John Shepard 3rd
(The Yankee Network, Boston)

ORGANIZATIONS

Secretary-Treasurer.....Grace C. Inge's

DIRECTORS

Campbell Arnoux, WTAR, Norfolk, Va.; Edgar L. Bill, WMBD, Peoria, Ill.; Edward Crancy, KGIR, Butte, Mont.; Edgar H. Twamley, WBEN, Buffalo, N. Y.; Hoyt Wooten, WREC, Memphis, Tenn.; Lewis Allen Weiss, Don Lee Broadcasting System, Los Angeles, Calif.

FUNCTIONS

The objects of this association are to protect the interests of the members of the Association by opposing the enactment or adoption of any laws, rules, regulations, customs or practices which would discriminate against or in any way injure the members to any greater degree or in any different manner than licensees of broadcast stations who are ineligible for membership.

National Better Business Bureau, Inc.

405 Lexington Ave., New York, N. Y.
Murray Hill 6-3535

OFFICERS

President.....R. P. Clayberger
Vice-President.....Harry Dwight Smith
Secretary.....Warren C. Agry
Treasurer.....John L. Anderson
General Manager.....Edward L. Greene

FUNCTIONS

This organization assists the public, advertisers and publishers to avoid false and deceptive advertising. It cooperate with law enforcement agencies in this work.

National Committee on Education by Radio

Room 308, One Madison Ave., New York, N. Y.
CAledonia 5-6965

OFFICERS

Chairman.....Arthur G. Crane
(Pres., University of Wyoming)
Vice-Chairman.....H. J. Umberger
(Dir., Division of Extension, Kansas State College)
Secretary.....S. Howard Evans

FUNCTIONS

Acts as spokesman in radio matters for organized education. Publishes a bulletin titled "Education By Radio." Aids and encourages non-commercial radio stations. Promotes cooperation between educators and commercial broadcasters. Acts as clearing house for information about education by radio.

National Independent Broadcasters, Inc. (NIB)

President's Office: 730 Fifth Ave., New York, N. Y.
Washington Office: Edmonds Bldg., 917 Fifteenth St., N.W., Washington, D. C.
Phone, Republic 3607

OFFICERS

President.....Harold A. Lafount
Vice-President.....Edward A. Allen
Secretary-Treasurer.....Lloyd C. Thomas
General Counsel.....Andrew W. Bennett
Managing Director.....Edwin M. Spence

DIRECTORS

District
1—Stanley N. Schultz, WLAW, Lawrence, Mass.
2—Harold A. Lafount, WOV, New York, N. Y.
3—Frank R. Smith, Jr., WWSW, Pittsburgh, Pa.
4—Edward A. Allen, WLVA, Lynchburg, Va.
5—Maurice C. Coleman, WATL, Atlanta, Ga.
6—Jack M. Draughton, WSIX, Nashville, Tenn.
7—Steve A. Cisler, WGRC, Louisville, Ky.
8—James F. Hopkins, WJBK, Detroit, Mich.
9—Ralph L. Atlass, WJJD, Chicago, Ill.
10—Edgar P. Shutz, WIL, St. Louis, Mo.
11—Gregory Gentling, KROC, Rochester, Minn.
12—W. B. Greenwald, KWBG, Hutchinson, Kans.
13—James R. Curtis, KFRO, Longview, Texas
14—Frank Hurt, KFXD, Nampa, Idaho
15—Arthur Westlund, KRE, Berkeley, Calif.
16—Calvin J. Smith, KFAC, Los Angeles, Calif.
17—T. W. Symons, Jr., KXL, Portland, Ore.

FUNCTIONS

This association was organized by independent and local broadcasting stations to meet the need of special representation for such stations in handling the problems and activities peculiar to them as a group.

National Industrial Advertisers Association, Inc.

100 E. Ohio St., Chicago, Ill.
Superior 8140

OFFICERS

President.....Richard P. Dodds
(Truscon Steel Co.)
Vice-President.....E. J. Goes
(Koehring Co.)
Vice-President.....Herbert V. Mercready
(Magnus Chemical Co.)
Vice-President.....Terry Mitchell
(Frick Co.)
Vice-President.....William D. Murphy
(Sloan Valve Co.)
Vice-President.....Louis J. Ott
(Ohio Brass Co.)
Vice-President.....R. T. Reinhardt
(California Corrugated Culvert Co.)
Secretary-Treasurer.....E. C. Howell
(The Carboley Co.)
Past President.....Charles McDonough
(Combustion Mfg. Co.)
Headquarters Secretary.....M. R. Webster

DIRECTORS

Fred C. Noyes, Horton-Noyes Co.; Roy D. Baldwin, Simonds Saw & Steel Co.; Harry Neal Baum, Fairbanks, Morse & Co.; Frederic I. Lacksens, The Hays Corp.; Theodore Brown, Perry-Brown, Inc.; George F. Mathews, The Lunkenheimer Co.; J. L. Beltz, The Thew Shovel Co.; H. W. Fortey, The Warner & Swasey Co.; Lloyd R. Vivian, Ditzler Color Co.; Tom Moule, Ralph L. Wolfe & Associates, Inc.; M. W. Dallas, E. C. Atkins & Co.; B. C. O'Brien, Roots-Connersville Blower Corp.; Richard F. O'Mara, Western Precipitation Corp.; Martin R. Klitten, The McCarthy Co.; Frank W. Pen-singer, Landis Tool Co.; F. S. Foltz, Foltz-Wessinger, Inc.; P. C. Ritchie, Waukesha Motor Co.; Arnold J. Andrews, Bucyrus-Erie Co.; F. A. McLean, Canadian Ingersoll-Rand Co., Ltd.; D. W. Kelley, Canadian Industries, Ltd.; Richard S. Hayes, The Okonite Co.; F. H. Pinkerton, United States Rubber Co.; Robert J. Barbour, The Eakelite Corp.; Keith B. Lydiard, Alan Bridgeman Sanger; Douglas C. Miner, E. F. Houghton Co.; R. E. Lovekin, R. E. Lovekin Corp.; David A. Wolff, Edwin L. Wiegand Co.; Edmund D. Kennedy, Copperweld Steel Co.; E. L. Mathy, Victor Equipment Co.; R. T. Reinhardt, California Corrugated Culvert Co.; Clifford F. Boyer, Kwick-Kut Mfg. Co., Inc.; Anthony Nether, Century Electric Co.; Allen P. Colby, The National Supply Co.; Philip Linne, Owens-Corning Fiberglass Corp.; T. S. Glover, Russell T. Kelley, Ltd.; John A. M. Galilee, Canadian Westinghouse Co., Ltd.; E. V. Creagh, American Chain & Cable Co., Inc.; George B. Wright, Nash Engineering Co.; Paul L. Callahan, Truscon Steel Co.; L. H. Taylor, The Deming Co.; C. D. Davenport, Union Steel Products Co.; C. M. Buchanan, Van Sant, Dugdale & Co.

FUNCTIONS

This organization is a trade association devoting its efforts exclusively to the advancement of industrial advertising and marketing technique and practice.

National Television Systems Committee

PERSONNEL

Chairman.....Dr. W. R. G. Baker
(General Electric Co.)
Committeeman.....Adrian Murphy
(Columbia Broadcasting System)
Committeeman.....Harry R. Lubcke
(Don Lee Broadcasting System)
Committeeman.....Allen B. DuMont
(Allen B. DuMont Laboratories, Inc.)
Committeeman.....B. Ray Cummings
(Farnsworth Television & Radio Corp.)

ORGANIZATIONS

Committeeman..... E. F. W. Alexanderson
(General Electric Co.)
Committeeman..... Daniel E. Harnett
(Hazeltine Corp.)
Committeeman..... John V. L. Hogan
(WQXR, New York, N. Y.)
Committeeman..... Albert I. Lodwick
(Hughes Tool Co.)
Committeeman..... Dr. A. N. Goldsmith
(Institute of Radio Engineers)
Committeeman..... David B. Smith
(Philco Corp.)
Committeeman..... E. W. Engstrom
(Radio Corp. of America)
Committeeman..... Frederic C. Young
(Stromberg-Carlson Telephone Mfg. Co.)
Committeeman..... John R. Rutland
(Zenith Radio Corp.)
SUBCOMMITTEE CHAIRMAN
System Analysis..... P. C. Goldmark
Subjective Aspects..... A. N. Goldsmith
Television Spectre..... J. E. Brown
Transmitter Power..... E. W. Engstrom
Transmitter Characteristics..... B. R. Cummings
Transmitter-Receiver Coordination..... I. J. Kaar
Picture Resolution..... D. E. Harnett
Synchronization..... T. T. Goldsmith
Radiation Polarization..... D. B. Smith

National Variety Artists, Inc.

225 W. 46th St., New York, N. Y.
Columbus 5-2638

OFFICERS

President..... Louis Handin
First Vice-President..... Al Edwards
Second Vice-President..... Billy Gould
Treasurer..... William Marble

DIRECTORS

Joseph McInerney, Charles H. Preston, Jack Boyle,
Joe Verdi, Nick Elliott, Charles Johnson, Harry Brooks,
Lester Rose, John Connery.

FUNCTIONS

The function of National Variety Artists, Inc., is to promote Americanism and fraternal and welfare activities among the members of the theatrical profession.

Nebraska Broadcasters Association

Secretary's Office: c/o WJAG, Norfolk, Nebr.
Phone: 432

OFFICERS

President..... W. I. LeBarron
(KGNF, North Platte)
Vice-President..... L. L. Hilliard
(KGKY, Scottsbluff)
Secretary-Treasurer..... Art Thomas
(WJAG, Norfolk)

DIRECTORS

John Gillin, Jr., WOW, Omaha; Vernon H. Smith,
KOWH, Omaha.

MEMBER STATIONS

KFAB, Lincoln; KFOR, Lincoln; KGFW, Kearney;
KCKY, Scottsbluff; KGNF, North Platte; KMMJ, Grand
Island; KORN, Fremont; KOWH, Omaha; KOIL, Omaha;
WJAG, Norfolk; WOW, Omaha.

North Carolina Association of Broadcasters

President's Office: c/o WPTF, Raleigh, N. C.

OFFICERS

President..... Richard H. Mason
(WPTF, Raleigh)
Vice-President..... George Walker
(WAIR, Winston-Salem)
Secretary..... Richard A. Dunlea
(WMFD, Wilmington)
Treasurer..... Earl Gluck
(WSOC, Charlotte)

FUNCTIONS

This association coordinates the activities of all member stations in connection with problems in which they have a mutual interest.

Pacific Advertising Clubs Association

215 Bank of Commerce Bldg., Oakland, Calif.
TEmplebar 5181

OFFICERS

President..... Don Belding
(Lord & Thomas)
Senior Vice-President..... Howard Willoughby
(Foster & Kleiser Co.)
Secretary-Treasurer..... Charles A. Storke
(Santa Barbara News-Press)
Executive Secretary..... Lela M. Huey
(Kay's Advertising Mail)
V-P District 1..... J. Corning Todd
(McCandlish Lithograph Co.)
V-P District 2..... A. A. Campbell
(Salt Lake City Tribune-Telegram)
V-P District 3..... Kelmar K. LeMaster
(Portland Oregonian)
V-P District 4..... Jack Leatherman
(Blake, Moffitt & Towne)
V-P District 5..... Fred A. Palmer
(KOY, Salt Lake City)
Vice-President-At-Large..... Mildred Peery
Director..... Morton W. Mogge
(J. Walter Thompson Co.)
Chairman Junior Division..... Robert L. Phillipi
(Union Oil Co.)

FUNCTIONS

This Association is composed of advertising and sales clubs in the states of California, Washington, Oregon, Utah, Nevada, Arizona and Idaho and Vancouver, B. C. Convention is held annually.

George Foster Peabody Radio Awards Board

c/o Board of Regents, University System of Georgia,
Athens, Ga.

PERSONNEL

Dr. S. V. Sanford, University System of Georgia;
Bruce Barton, Batten, Barton, Durstine & Osborn; John
H. Benson, American Association of Advertising Agencies;
Virginus Dabney, Richmond Times Dispatch;
Norman H. Davis, American Red Cross; Jonathan Daniels,
Raleigh News & Observer; Mark F. Ethridge,
Louisville Courier-Journal & Times; Waldemar Kaempfert,
New York Times; Alfred A. Knopf; Dr. John W. Studebaker,
U. S. Office of Education; Marjorie Peabody Waitte;
Edward Weeks, Atlantic Monthly; Grace Moore.

Professional Music Men, Inc.

1270 Sixth Ave., New York, N. Y.
Circle 7-6075

OFFICERS

President..... Rocco Vocco
First Vice-President..... Joseph Santly
Second Vice-President..... Charles Warren
Third Vice-President..... Solly Cohn
Treasurer..... Irving Tanz
Financial Secretary..... Michael L. Schloss
Recording Secretary..... Louis E. Schwartz
Sergeant-at-Arms..... David Kent
Executive Director..... Bob Miller

BRANCH OFFICES

54 West Randolph St., Chicago, Ill.
Regional Director..... Harold Lee
6425 Hollywood Blvd., Hollywood, Calif.
Regional Director..... Jack Archer
11 Lewis Street, Somerville, Mass.
Regional Director..... Frank Machado
316 Porter St., Philadelphia, Pa.
Regional Director..... David Blum

FUNCTIONS

Professional Music Men, Inc., is a benevolent and charitable organization of people engaged in promoting music as professional music men.

Pennsylvania Broadcasters Association

P. O. Box 11, Harrisburg, Pa.

OFFICERS

President..... Clair R. McCollough

ORGANIZATIONS

(WGAL, Lancaster)
 Vice-President Clifford Chafey
 (WEEU, Reading)
 Secretary C. G. Moss
 (WKBO, Harrisburg)
 Treasurer Dr. Leon Levy
 (WCAU, Philadelphia)

DIRECTORS

H. Kenneth Brennen, WJAS, Pittsburgh; George E. Joy, WRAC, Williamsport; Arthur Simon, WPEN, Philadelphia.

FUNCTIONS

This organization is a mutual association of the broadcasting stations of Pennsylvania, formed for the purpose of conducting business negotiations concerning matters of interest to the radio broadcasting stations of the state. Its membership is active on the part of practically every station in the state.

The Proprietary Association

701 Otis Bldg., 810 Eighteenth St., N. W.,
 Washington, D. C.
 National 1914

President Charles S. Beardsley
 (Miles Laboratories, Inc.)
 Honorary Vice-President Dr. V. Mott Pierce
 (Pierce's Medicines, Inc.)
 First Vice-President W. W. White
 (Emerson Drug Co.)
 Second Vice-President H. H. Hoyt
 (Carter Products, Inc.)
 Third Vice-President Fred E. Rathburn
 (Olive Tablet Co.)
 Secretary-Treasurer Charles P. Tyrrell
 (Syracuse Medicine Co.)
 Executive Vice-President Dr. F. J. Cullen
 Counsel Rogers, Ramsay & Hills

FUNCTIONS

This organization is a trade association devoting its efforts to the mutual cooperation and advancement of its members who are manufacturers of packaged medicines, cosmetics and proprietary articles. Its Advisory Committee on Advertising reviews copy (including radio scripts) in the association's campaign of self-regulation of the industry in an effort to improve advertising standards and practices and to assist members of the industry in the preparation of copy that will be in compliance with the requirements of the law and to further assist wherever possible with other advertising problems. Members are furnished with digests of FTC Cease and Desist orders or Stipulations issued against advertising in the proprietary field.

The Radio Club of America, Inc.

11 W. 42nd St., New York, N. Y.
 Longacre 5-6622

OFFICERS

President J. K. Henney
 Vice-President J. L. Callahan
 Corresponding Secretary C. E. Dean
 Recording Secretary C. F. Goudy
 Treasurer J. J. Stantley

FUNCTIONS

Object of the club is the promotion of cooperation among those interested in scientific investigation and amateur operation in the art of radio communication.

Radio Correspondents' Association

United States Capitol, Washington, D. C.
 National 1410

OFFICERS

President Albert Warner
 Vice-President W. R. McAndrew
 Secretary Fred Morrison
 Treasurer Stephen McCormick
 Ex-Officio Member, Executive Committee Fulton Lewis

FUNCTIONS

This is an organization of radio news reporters and correspondents in the National Capitol, gather-

ing daily news for dissemination through the medium of radio. It controls the membership of the Senate and House radio galleries and is vested with complete responsibility for any radio representatives who attend news conferences at the White House or government as well as providing facilities for radio newsmen at national political conventions.

Radio Council On Children's Programs

9 Rockefeller Plaza, New York, N. Y.
 Circle 6-8430

OFFICERS

Acting President Mrs. Harold B. Milligan
 Acting Executive Secretary Mrs. Nathaniel Singer
GOVERNING BOARD
 Dr. Alice B. Keller, Wilson Parkhill, Rita Hockheimer,
 Dr. Paul Lazarsfelder, Mary Gould Davis.

Radio Manufacturers Association

1317 F Street, N. W., Washington, D. C.

OFFICERS

President J. S. Knowlson
 (Stewart-Warner Corp.)
 Executive Vice-President-General Manager Bond Geddes
 Vice-President Paul V. Galvin
 (Galvin Manufacturing Corp.)
 Vice-President Roy Burlew
 (Ken-Rad Tube & Lamp Co.)
 Vice-President H. E. Osmun
 (Centralab)
 Vice-President Donald MacGregor
 (Webster-Chicago Corp.)
 Treasurer Leslie Muter
 (The Muter Co.)
 General Counsel John W. Van Allen
 (Buffalo, N. Y.)

DIRECTORS

Ben Abrams, Emerson Radio & Phonograph Corp.; Powel Crosley, Jr., The Crosley Radio Corp.; Octave Blake, Cornell-Dubilier Electric Co.; James C. Daley, Jefferson Electric Co.; B. G. Erskine, Hygradesylvania Corp.; Jerome J. Kahn, Standard Transformer Corp.; James S. Knowlson, Stewart-Warner Corp.; Ernest Searing, International Resistance Co.; H. E. Osmun, Centralab; Donald MacGregor, Webster-Chicago Corp.; Ray H. Manson, Stromberg-Carlson Tel. Mfg. Co.; H. C. Bonfig, RCA Mfg. Co.; E. A. Nicholas, Farnsworth Television & Radio Corp.; G. W. Thompson Noblitt-Sparks Industries, Inc.; P. S. Billings, Belmont Radio Corp.; P. V. Galvin, Galvin Manufacturing Corp.; David T. Schultz, Rayethon Production Corp.; James T. Buckley, Philadelphia Storage Battery Co.; Ernest Alschuler, Electric Research Laboratories, Inc.; W. R. G. Baker, General Electric Co.; Roy Burlew, Ken-Rad Tube & Lamp Corp.; A. H. Gardner, Colonial Radio Corp.; A. S. Wells, Wells-Gardner & Co.
 Honorary Directors: Hebert H. Frost, A. Atwater Kent, Paul B. Klugh.

Radio Manufacturers Association of Canada

159 Bay St., Toronto, Ont., Canada
 Adelaide 1531

OFFICERS

President G. A. Holmes
 (Sparton of Canada Ltd.)
 Vice-President E. C. Grimley
 (RCA Victor Co.)
 Executive Secretary K. H. Smith
 Chairman of Engineering Committee Allan B. Oxley
 (RCA-Victor Company)

FUNCTIONS

This association is a non-profit and cooperative organization founded in 1926 to promote all interests of radio industry.

ORGANIZATIONS

The Radio Writers' Guild of the Authors' League of America, Inc.

6 E. 39th Street, New York, N. Y.
MURray Hill 5-6930
1655 N. Cherokee Ave., Hollywood, Calif.
Gladstone 4131

OFFICERS

National President.....Forrest Barnes
Vice-President, Eastern Region.....Katharine Seymour
Vice-President, Middle Western Region.....

Courtney Savage

Vice-President, Western Region.....Paul Franklin
Executive Secretary, Eastern Region.....Luise Sillcox
Assistant Secretary, Eastern Region.....

Margaret Scheuerman

Assistant Secretary, Western Region.....Pauline Lauber

FUNCTIONS

The Guild is one of the Guilds of The Authors' League of America, Inc. The Guild is primarily a protective organization for writers in the radio field.

Society of European Stage Authors and Composers, Inc. (SESAC)

113 W. 42nd St., New York, N. Y.
BRyant 9-3223

OFFICERS

President.....Paul Heinecke

FUNCTIONS

Licensing use of copyrighted music.

Society of Jewish Composers, Publishers and Song Writers

152 W. 42nd St., New York, N. Y.
LONGacre 5-9124

OFFICERS

President.....Sholom Secunda
Vice-President.....Rev. Pinchus Jassinowsky
Treasurer.....Alexander Olshanetsky
Secretary.....Henry Lefkovich

FUNCTIONS

This association licenses public performance rights of music copyrighted by its members and on which they collect royalties. Association owns approximately 95 percent of the Jewish compositions.

Society of Motion Picture Engineers

Hotel Pennsylvania, New York, N. Y.
PENnsylvania 6-0620

OFFICERS

President.....Emery Huse
Past President.....E. A. Williford
Executive Vice-President.....H. Griffin
Engineering Vice-President.....D. E. Hyndman
Editorial Vice-President.....A. C. Downes
Financial Vice-President.....A. S. Dickinson
Convention Vice-President.....W. C. Kunzmann
Secretary.....P. J. Larsen
Treasurer.....G. Friedl, Jr.

GOVERNORS

M. C. Batsel, A. C. Hardy, A. N. Goldsmith, L. L. Ryder, T. E. Shea, R. O. Stroock, J. G. Frayne.

BRANCH OFFICE

928 Equitable Bldg., Los Angeles, Calif.
Executive In Charge.....Walter R. Greene

FUNCTIONS

In addition to its motion picture activities, this association is actively interested in television. It publishes a monthly organ in which various subjects are discussed by men in the industry.

Song Writers' Protective Association (SPA)

1250 Sixth Ave., New York, N. Y.
COLumbus 5-3758

OFFICERS

President.....Irving Caesar
Vice-President.....L. Wolfe Gilbert

Second Vice-President.....Otto Harbach
Secretary.....Fred E. Ahlert
Treasurer.....Charles Tobias
Chairman of Council.....Oscar Hammerstein, 2nd
Executive Secretary.....Lillian Lange

BRANCH OFFICE

6912 Hollywood, Calif.
West Coast Representative.....L. Wolfe Gilbert

FUNCTIONS

Song Writers' Protective Association aims to foster the interests of all persons engaged in writing musical compositions. By cooperative effort it seeks to eliminate inequitable conditions and harmful practices and to assist members when disputes arise over enforcement of contracts or the collection of royalties.

Texas Inter-Collegiate Broadcasters' Council

c-o Texas State Network, 1201 W. Lancaster Ave., Fort Worth, Texas

OFFICERS

President-Coordinating Chairman.....Forrest W. Clough

VICE-CHAIRMEN

Sara Lowrey, Baylor University; Dr. A. L. Boeck, Texas Christian University; Dr. S. D. Myres, Southern Methodist University.

FUNCTIONS

The chief purpose of the Texas Inter-Collegiate Broadcasters' Council is to arrange an extensive series of Texas State Network Broadcasts for adult listeners.

Western Association of Broadcasters

c-o Radio Station CJOR, 846 Howe St., Vancouver, B. C., Canada

OFFICERS

President.....G. C. Chandler
(CJOR, Vancouver, B. C.)

DIRECTORS

H. C. Bunchanan, CHAB, Moose Jaw, Sask.; R. A. White, CFJC, Kamloops, B. C.; V. F. Neilsen, CFAC, Calgary, Alberta; G. R. A. Rice, CFRN, Edmonton, Alberta.

CANADIAN ASSOCIATION OF BROADCASTERS

DELEGATES

H. G. Love, CFCN, Calgary, Alberta; H. R. Carson, CFAC, Calgary, Alberta; G. C. Chandler, CJOR, Vancouver, B. C.

FUNCTIONS

Western Association of Broadcasters is a regional trade association of broadcasting stations in Manitoba, Saskatchewan, Alberta and British Columbia, closely affiliated with the Canadian Association of Broadcasters. It is virtually a western division of the latter organization, as all members are in both associations.

Woman's National Radio Committee

113 West 57th St., New York, N. Y.
Circle 7-4110

OFFICERS

Chairman.....Mme. Yolanda Mero-Irion
Vice-Chairman.....Mrs. Marion M. Miller
Second Vice-Chairman.....Miss Edith Lowry
Secretary.....Miss Helen Havener
Treasurer.....Mrs. D. Leigh Colvin
Executive Secretary.....Miss Ruth Rich
Chairman, Publications Committee.....Mrs. M. D. Jackson
Members-at-Large.....Mrs. Benjamin Spitzer
Mrs. E. C. Lewis, Mrs. Samuel Kubie, Mrs. Sidonie Gruenberg

FUNCTIONS

This committee has for its purpose to raise the standard of radio programs for adults, young people and children by: (1) retaining on the air the finer type of program; (2) removing objectionable features; (3) improving advertising content of broadcasts; (4) encouraging the production and presentation of more fine programs, worthwhile from the educational, cultural and entertainment viewpoint.



THE LEGAL SIDE



**Seventy-Sixth Congress
Legislative Digest—1940**

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**Federal Communications
Bar Association**

LEGISLATIVE DIGEST

Digest of Radio Legislation Introduced Into The Senate and House of Representatives During The Seventy-Sixth Congress, from September 21, 1939, to September 30, 1940.

SENATE

- S. 547. Mr. Lodge; January 12, 1939 (Patents).
As passed by Senate June 13, 1939:
Approved March 15, 1940: Public Law No. 434.
Permits an author who has contributed to a periodical, a cyclopedic or other composite work, whether such contribution was separately registered or not, to obtain a renewal copyright for 28 years. (Under present law [U. S. C. 17:23] such contribution must have been separately registered.)
- S. 915. Mr. Logan; January 24, 1939 (Judiciary).
As passed by Senate, November 27, 1940.
See House of Representatives Bill No. 6234.
- S. 2611. Mr. Wheeler; June 15, 1939 (Interstate Commerce).
As passed by Senate July 18, 1939:
Approved June 24, 1940: Public Law No. 649.
Authorizes the Federal Communications Commission to purchase land, etc., in Massachusetts and to erect thereon a radio-monitoring station.
- S. 2689. Mr. Bone; June 23, 1939 (Patents).
As passed by Senate August 1, 1939:
Approved April 11, 1940: Public Law No. 450.
Requires the Secretary of the Treasury and the Postmaster General individually or jointly (at present, jointly) to make and enforce rules, etc., to prevent importation (at present, limited to the mails) of articles in violation of the copyright act.
- S. 3018. Mr. Walsh; November 3, 1939 (Naval Affairs).
Approved June 25, 1940; Public Law No. 659.
Amends Sec. 210 of the Communications Act of 1934 (U. S. C. 47: 210), so as to permit communication utilities to contribute free services to any agency of the Government in preparation for the national defense.
- S. 3043. Mr. Thomas of Utah; January 8, 1940 (Patents).
This is a general revision and consolidation of the copyright laws bringing them into conformity with the International Copyright Convention of June 2, 1928. A few of the more important provisions follow: (1) Copyright protection is based on creation of a literary or artistic work while registration and deposit are made permissive; (2) duration shall be for the life of the author and 50 years after his death; (3) grantees of rights in copyrighted works are protected from infringement and may sue therefor in their own names; (4) provides for recodation of grants to use a copyrighted work; and (5) secures the author's reversionary interest in cases of grants not on the basis of continuing royalties.
- S. 3512. Mr. Pepper; March 4, 1940 (Interstate Commerce).
Requires notice of an application for a radio station license under the Communications Act of 1934 [U. S. C. 47: 309] to be published once a week for four consecutive weeks in a newspaper of general circulation in the locality of the proposed station. During such publication period a public hearing will be held if requested.
- S. 3515. Mr. Bailey; March 5, 1940 (Interstate Commerce).
Amends the Communications Act of 1934 [U. S. C. 47: ch. 5, title III] mainly as follows: to provide for the protection of persons from governmental abridgment or interference with liberty of expression; to prohibit the President assigning a frequency to a government station which will cause objectionable interference with a licensed station; to grant licenses to broadcasting stations for not less than 3 years nor more than 10 years; to place the burden of proving the truth of its charges in revoking a license on the Commission; and to prohibit the revocation of a license, because of the character or contents of the program.
- S. 3745. Mr. Barbour; April 10, 1940 (Interstate Commerce).
Prohibits the Federal Communications Commission from regulating radio experimentation, research, or development, or the manufacture, sale, or use of radio apparatus for transmission or reception, or the business policies of radio broadcasters [amending U. S. C. 47: 326].

HOUSE OF REPRESENTATIVES

H. R. 926. Mr. Daly; January 3, 1939 (Patents). (See H. R. 6160.)

1. Miscellaneous amendments to the copyright provisions of the code (act of Mar. 4, 1909; U. S. C. title 17), so that the law will conform more closely to the pending international convention for protection of literary and artistic works, and protect more fully literary and artistic efforts disseminated by recent scientific inventions—motion pictures, radio, telegraphy, television, and other means of transmission. Some of the more important provisions to this end:

(a) Protect dramatico-musical works, artistic models and designs, geographical charts, and architectural designs, as well as composite works or periodicals (as though each part or contribution were individually copyrighted in the author's or owner's name).

(b) Extend the copyright protection now accorded nationals of the United States to authors within the jurisdiction of any country a party to the Convention for Protection of Literary and Artistic Works and to no other alien authors unless such persons are domiciled in United States at time their works are produced or unless they are nationals of a country granting reciprocal privileges to American authors.

(c) Permit the author of unpublished writings, drawings, designs, etc., by depositing copies, models, or prints of such work to acquire copyright privileges.

(d) Provide that copyrighted material in the English language, if distributed in the United States, shall be printed from type set, plates made, or process performed within the limits of the United States, except books with raised characters for the use of the blind.

(e) Define what shall constitute adequate copyright notice.

(f) Allow maximum liquidated damages of \$20,000 (now \$5,000) to prevent continued infringement but limit such recovery against newspapers to \$200.

(g) Prohibit importation of piratical copies of works copyrighted in United States, of falsely copyrighted material not copyrighted in United States, or of foreign editions of works in the English language when there has been an authorized American edition already published or in the process of being published.

(h) Establish more specific regulations governing assignment, divisibility, mortgage, license, and ownership of copyright privileges and retention of claims of authorship after assignment with right of author to object to mutilation or prejudicial changes in his works except for necessary editing, arranging, or adapting of such works for use on the radio, motion-picture screen, etc.

2. Requests President to take necessary steps to make United States a member of the Union for Protection of Literary and Artistic Works.

H. R. 6160. Mr. McGranery; May 4, 1939 (Patents).

General amendments to the copyright law—mainly similar to H. R. 926, except that section 1 (e) of the law is amended to eliminate the compulsory license and royalty provisions thereof in regard to the reproduction of musical works, and except that a new subsection is added to provide copyright protection of an artist's rendition of a musical work.

H. R. 6324. In Senate, read twice and placed on calendar April 22, 1940.

Requires all administrative rules and regulations issued by a government department or agency, which implement or fill in the details of a statute affecting the rights of persons or property, to be published in the Federal Register and such rules and regulations shall not become effective until so published. Persons affected by existing rules may petition the head of the agency for a reconsideration thereof, and such head, after notice and hearing, shall determine whether such rules shall be continued in force, modified or rescinded. Persons committing acts in good faith in conformity with a rule which has been rescinded shall not be penalized therefor unless such act was committed more than 30 days after the recession of the rule was published in the Federal Register. Restricts the hearing by an agency of a controversy seeking affirmative relief against the United States which arose more than 1 year prior to the filing of a request for such hearing.

Authorizes the United States Court of Appeals for the District of Columbia, on petition within 30 days after publication of rules in the Federal Register, to determine whether such rule is in conflict with the United States Constitution or statutes. The court shall have no power except to render a declaratory judgment holding the rule valid or invalid. This shall not affect the determination of the validity of any rule involved in any suit or review of an administrative decision or order in any United States court.

Sets up intradepartment or agency boards composed of three employees to hear the claims of persons aggrieved by decisions, acts, or failures to act. Persons having a substantial interest in the controversy shall have the right to intervene. The Board shall render its decision within 30 days after the hearing, and such decision shall be subject to the written approval, disapproval, or modification of the agency or department head. Where the delay of a hearing is contrary to the public interest, and action or inaction takes place which results in damage to the aggrieved person, the Board shall in its decision, state the amount of pecuniary damage, which, if approved by the department or agency head and the person aggrieved, shall be certified to the Congress for an appropriation with which to pay the same. It may be provided that matters arising out of the activities of any independent agency may be heard and determined in the first instance by a trial examiner; rehearing before the agency members or a board may be demanded.

Parties aggrieved by the final decision of the department or agency may petition the Circuit Courts of Appeals (or the Court of Claims if the cause is one within its jurisdiction) for a review thereof, and such decision shall be set aside if it appears: (1) that the findings of fact were clearly erroneous or not supported by substantial evidence; (2) that the decision was not supported by the findings of fact, was issued without due notice and hearing, was beyond the jurisdiction of the department or agency, infringed the Constitution or statutes, or was otherwise contrary to law. Judgments of such courts shall be final but may be reviewed on certiorari, or certification to the Supreme Court under U. S. C. 28, 346, 347. Damages may be assessed where the decision of the department or agency is affirmed and it appears that the petition was filed merely for delay.

The right of any person to have his controversy with the United States determined by the district or circuit courts, as now provided by law, shall not be repealed or modified by this act, nor shall this act affect matters relating to the conduct of the military or naval establishments, various government departments or agencies and trademark, copyright, etc.

H. R. 7863. Mr. Bland; January 12, 1940 (Merchant Marine and Fisheries).

Approved March 18, 1940: Public Law No. 441.

Extends from December 31, 1939, to January 1, 1941, the time within which the Federal Communications Commission shall report to Congress upon the radio requirements for ships on the Great Lakes and inland waters.

H. R. 8263. Mr. O'Brien; February 1, 1940 (Patents).

The amount of damages recoverable for infringement of copyright of musical compositions played in hotels or restaurants not charging an entrance or cover fee is limited to \$10 except where greater damages are shown.

H. R. 8509. Mr. Ditter; February 16, 1940 (Interstate and Foreign Commerce).

See Senate Bill No. 3515.

H. R. 9665. Mr. Clason; May 6, 1940 (Patents).

The amount of damages recoverable for infringement of copyright of musical compositions played in hotels or restaurants not charging an entrance or cover fee is limited to \$10 except where greater damages are shown.

H. R. 10205. Mr. Bland; July 11, 1940.

Passed by House, August 19, 1940.

Amends § 4 (f) of the Communications Act of 1934 so as to provide overtime compensation for inspectors in charge and radio inspectors of the Field Division of the Engineering Department of the Federal Communications Commission.

H. R. 10446. Mr. Izac; September 3, 1940 (Interstate and Foreign Commerce).

Amends the Communications Act of 1934 [48 Stat. 1064], by prohibiting the issuance of radio licenses to operators of any station on any ship of the United States who are or have been members of the Communist Party, the German-American Bund, or an organization subject to foreign control which engages in political activity, i.e., its aim is the establishment, control, conduct, seizure, or overthrow of the Government, its membership is limited to non-citizens or a majority thereof, it accepts financial support directly or indirectly from a foreign government, and its policies are determined by or in collaboration with a foreign government.

H. J. Resolution 585. Mr. Dingell; July 25, 1940 (Judiciary).

Designates August 26, annually, as National Radio Day.

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- WALKER, RALPH L.**
F.C.C.
Washington, D. C.
- WALLACE, HOWARD E.**
Judge Building
Salt Lake City, Utah
- WARNER, HARRY P.**
Woodward Building
Washington, D. C.
- WATTAWA, JOHN**
1317 F St.
Washington, D. C.
- WAYLAND, CHARLES V.**
Earle Building
Washington, D. C.
- WEBSTER, BETHUEL M.**
15 Broad St.
New York, N. Y.
- WEEKES, JOHN WESLEY**
140 Sycamore St.
Decatur, Georgia
- WELCH, FRANCIS X.**
Munsey Bldg.
Washington, D. C.
- WHARTON, JOHN H.**
67 Broad St.
New York, N. Y.
- WHEAT, CARL I.**
Shoreham Bldg.
Washington, D. C.
- WHISSELL, GEORGE B.**
Telephone Bldg.
St. Louis, Mo.
- WIGGIN, CHESTER H.**
30 Rockefeller Plaza
New York, N. Y.
- WILLEBRANDT, MRS. M. W.**
Shoreham Building
Washington, D. C.
- WILLIAMS, A. RAE**
Investment Bldg.
Washington, D. C.
- WILSON, THOMAS WINFIELD**
923 Munsey Bldg.
Washington, D. C.
- WING, JOHN E.**
72 West Adams St.
Chicago, Ill.
- WOZENCRAFT, FRANK W.**
66 Broad St.
New York, N. Y.
- WRIGHT, J. WARREN**
Bureau of Ships, Navy Dept.
Washington, D. C.
- ZAGON, SAMUEL S.**
6253 Hollywood Blvd.
Los Angeles, Calif.



THE
EDUCATIONAL
AND
CULTURAL
SIDE



*National Association
of
Educational Broadcasters*

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*Colleges and Universities
Offering Courses in Radio*

•

Non-Commercial Stations

•

F.C.C. Regulations

NATIONAL ASSOCIATION OF EDUCATIONAL BROADCASTERS

As of January 1, 1941

<i>Call Letters</i>	<i>Institutions</i>	<i>Address</i>	<i>Director</i>
KFDY	S. Dak. State College	Brookings, S. D.	S. W. Jones
KFJM	Univ. of N. Dakota	Grand Forks, N. D.	D. R. Jenkins
KFKU	Univ. of Kansas	Lawrence, Kansas	Harold G. Ingham
KOAC	Oregon State College	Corvallis, Oregon	Luke L. Roberts
KUSD	Univ. of S. Dakota	Vermillion, S. D.	G. R. Bauer
KWSC	State College of Wash.	Pullman, Wash.	Kenneth E. Yeend
WBAA	Purdue University	Lafayette, Ind.	Gilbert D. Williams
WCAL	St. Olaf College	Northfield, Minn.	M. C. Jensen
WCAT	S. Dakota School of Mines	Rapid City, S. D.	C. M. Rowe
WESG	Cornell University	Ithaca, N. Y.	Wilmer S. Phillip
WHA	Univ. of Wisconsin	Madison, Wis.	H. B. McCarty
WHAZ	Rensselaer Poly.	Troy, New York	W. J. Williams
WILL	Univ. of Illinois	Urbana, Ill.	Jos. F. Wright
WNAD	Oklahoma University	Norman, Okla.	Homer Heck
WNYC	City of New York, Municipal Broadcasting System	New York, N. Y.	M. S. Novik
WOI	Iowa State College	Ames, Iowa	W. I. Griffith
WOSU	Ohio State University	Columbus, Ohio	R. C. Higgy
WRUF	Univ. of Florida	Gainesville, Fla.	Garland Powell
WSAJ	Grove City College	Grove City, Pa.	H. W. Harmon
WSUI	State Univ. of Iowa	Iowa City, Iowa	Carl Menzer
WRUL & WRUW	World Wide Broadcasting Foundation	Boston, Mass.	Walter S. Lemmon
	Cleveland College	Cleveland, Ohio	Gazella P. Shepherd (Mrs.)
	University of Kentucky	Lexington, Ky.	Elmer G. Sulzer
	University of Michigan	Ann Arbor, Mich.	Waldo Abbot
	Western State Teachers College	Kalamazoo, Mich.	W. G. Marburger
	Indiana University	Bloomington, Ind.	Robert Allen
	Chicago Radio Council	Chicago, Ill.	Harold W. Kent
	University Broadcasting Council	Chicago, Ill.	Allen Miller
	Oklahoma Baptist University	Shawnee, Okla.	Ralph E. Matthews



EDUCATIONAL BROADCASTING DURING 1940

By

W. D. Boutwell

*Chief, Division of Radio, -
Publications and Exhibits
of U. S. Office of Education,
Department of Interior*

PROGRESS of educational broadcasting in radio during the past year may be resolved into four divisions:

1. Technical developments of special advantage to education;
2. Work of the Federal Radio Education Committee, the Educational Radio Script Exchange, and U. S. Office of Educational Radio Division;
3. Network contributions to education;
4. Noteworthy achievements of states, universities or other independent organizations.

Rise of FM

What will probably become the most significant development of educational radio in 1940 was the popular debut of FM. On May 20, two months after its public hearings, the Federal Communications Commission opened the ultra high frequencies from 43 to 50 megacycles for commercial FM broadcasting.

Education, intent on protecting the exclusive 41-42 megacycle band it had been allotted in 1938, was well represented at the March hearings. U. S. Commissioner of Education, John W. Studebaker, had written educational organizations before the hearings explaining the potential threat to the educational band, and the high percentage of response did much to

convince the industry that education would fight for its channels. Many persons in commercial radio also felt that a separate education broadcasting band was desirable if only because it would relieve them of some pressure from education groups who strove to secure broadcast of programs of non-commercial character.

The FCC in its decision on FM, therefore, continued the exclusive band, moving it up to 42-43 megacycles to adjoin the commercial channels.

This is not to say that commercial broadcasters want to get away from educational programs. But there is another broad field in educational broadcasting which the commercial stations cannot be expected to serve.

Educational Outlets

In broadcasting classroom subjects or carrying on other teaching functions, schools need their own broadcast stations. As a teaching aid radio has proved its value.

"Broadcasts from schools to homes greatly enhance facilities for adult education," Commissioner Studebaker says. "Persons over school age, shut-ins, and, to some extent, the blind, have at their radio dial an opportunity to study in common with pupils in classrooms. In times of extremely bad weather, epidemics or other such emergencies which might temporarily close schools, classes may be carried on by radio without interruption.

"Still another advantage, especially important today, lies in helping to establish a closer bond of understanding between schools and the public. The American people have a right to know what subjects schools are teaching today and how they are taught. Schools can report on education's part in the national defense program and can show how schools are promoting the ideals of democracy and contributing to the preservation of the American way of life."

FM is going ahead. It is up to the schools to see that they are progressive enough to make full use of this new medium of education.

High Frequency

Cleveland's pioneer high frequency educational radio broadcast station, WBOE, operated by the Cleveland Board of Education, has completed its second year of broadcasts direct to the 156 receivers in Cleveland schools. In September, 1940, it was authorized by the Federal Communications Commission to change its type of transmission from amplitude to frequency modulation. San Francisco's Board of Education has received a construction permit for its proposed FM station, KALW. San Mateo, California, Junior College and Chicago's Board of Education have indicated that they will file applications soon. New York's school system, like Cleveland, has been operating a high frequency AM station and has applied for permission to change to FM.

The University of Kentucky is ready to begin regular broadcasts on WBKY, an AM high frequency station, which intends to broadcast educational programs to schools and community listening centers in rural Kentucky areas. WBKY is the only educational station planned or proposed which does not expect to use FM. Kentucky had built and installed more than 50 high frequency AM receivers in listening centers throughout rural areas on several counties just before the FM hearings and a change in the near future is improbable because of the expense.

Rensselaer Polytechnic Institute, Troy, N. Y., is reported to be building an FM station. The Universities of Illinois and Wyoming, and New River State College, Montgomery, W. Va., are collecting equipment, and an alumnus has offered the University of Michigan equipment for an FM station. Nearly a score more educational institutions and school systems are developing plans for a station in the educational band.

Script Exchange

Educational radio is able to take advantage of FM's popular debut because it has prepared for production of radio programs since 1936. The Educational Radio Script Exchange, founded in June

1936 as a division of the Federal Radio Education Committee, has issued its 4th edition catalog and supplement listing 746 scripts which are available on loan and which greatly reduce the difficulties of getting adequate broadcast material.

The Exchange has endeavored to meet needs related to the production and broadcast of educational programs with bulletins of advice on production and sound effects, a radio glossary, radio bibliography, and electrical transcriptions. It also has prepared a mimeographed list of 348 colleges and universities offering courses in radio.

During 1940 more than 1200 producing groups were known to have used the services of the Exchange—an increase of more than 400 per cent since the first year, 1936, when 300 groups used its facilities.

Helping schools share their responsibility of training and teaching for defense is a catalog of 97 scripts especially selected because of their timeliness in the defense emergency.

The Exchange has also pioneered in making available transcriptions of educational programs. Just at the close of the year it arranged with the Public Relations Division of the Council of National Defense to distribute transcriptions of "How We Build Airplanes," broadcast over Mutual December 14, 1940. This was the first of a "Defense in Action" series of on-the-spot broadcasts showing the steps entering into production of an essential defense need.

Also under preparation were plans to distribute a transcription series on our civil liberties to highlight heritages of democratic life.

The first series in the Exchange's transcription library was "Americans All—Immigrants All," 24 half-hour transcriptions originally presented over the Columbia Broadcasting System by the U. S. Office of Education with the cooperation of the Service Bureau for Intercultural Education. "Help Yourself To Health," six programs recorded in cooperation with the Public Health Service, and several individual broadcasts are also available through the Exchange.

Radio Division

Since 1936 the U. S. Office of Education had been operating a radio project which wrote and produced a series of factual broadcasts over the major networks. Among the programs were "Brave New World," an appreciation of the history and culture of Latin America and fore-runner to today's emphasis on Western Hemisphere cultural relationships; "Let Freedom Ring," a series on our civil rights; "Democracy in Action," the story of our Federal Government and how it works; "Gallant American Women," telling of women's contributions to our national life, and "Americans All—Immigrants All," 26 episodes about the peoples who have joined to make America, which won four major awards in educational radio.

The radio project had been made possible through allocation of W.P.A. funds; the value of its contributions to radio is evidenced by the number of stations in the major networks which voluntarily carried the programs. "Democracy in Action," for instance, was regularly carried each Sunday afternoon by 104 outlets of the CBS chain. "Gallant American Women" was broadcast by 90 stations on NBC-Blue.

Of this group of outstanding programs only one series remains. It is "The World is Yours," which has brought research and discoveries of the Smithsonian Institution to the nation via NBC-Red for four years. When Congress wrote in a general limitation on the use of W.P.A. funds for radio and motion pictures the Smithsonian and NBC took over backing of "The World is Yours," with the Office of Education administering the programs. In November 1940 the time of this 4-year old program was changed from 4:30 p.m. Sunday to 5 p.m. Saturday. For the past two years scripts have been written by Irve Tunick from information provided by Smithsonian Institution specialists.

Library of Congress

The Rockefeller Foundation placed at the disposal of the Library of Congress the services of two Fellows in Radio Research whose first duty was to survey those resources of the Library which might be of service to educational broadcasting groups. They are Philip Cohen, former production manager of the U. S. Office of Education's radio project and associate director of the New York University Radio Workshop, and Charles T. Harrell, on leave as Program Director of University of Minnesota's radio station WLB. Jerome Wiesner, formerly engi-

neer of the University of Michigan radio studios, is engineering consultant through a grant of the Carnegie Corporation of New York.

Archibald MacLeish, progressive Librarian of Congress, has used them as a nucleus to form a Radio Research project in the Library. University broadcasting stations and other educational stations or groups throughout the country may apply to the Radio Research project for assistance in planning programs, in requesting background material and bibliographic and other supplementary information. The project should be of particular use in connection with programs drawing upon the rich resources of the Library of Congress in the fields of American history and of American folk music and folk tales.

Other chiefs in the project are Joseph Liss, Script Editor, and Alan Lomax, Consultant in Folk Lore. A studio to produce recordings and broadcasts has just been constructed in the Congressional library under Mr. Wiesner's supervision.

Education Committee

Much valuable research work of the FREC was coordinated during the year by Dr. Leonard Power, Director of FREC research. Among most important projects were study of cooperation among educators and broadcasters and of the preparation of teacher training courses in radio. Fruits of these and other research projects are shown in publications named follow.

Director of this project, centered at Columbia University, is Dr. Paul S. Lazarsfeld, who is accepted by educators and commercial broadcasters alike as a first-line authority on evaluating effectiveness of radio presentations. Dr. Lazarsfeld's findings in the operation of this project are set forth in a recently published book, "Radio and the Printed Page," summarized below.

Listening Groups

This project, directed by Frank Hill and sponsored by the National Advisory Council on Radio in Education, is surveying extent and influence of listening groups, many of which precede or follow "public service" broadcasts with forum discussions. A lateral study has been made in England by W. E. Williams of the British Institute of Adult Education, London. Reports by Mr. Williams and Mr. Hill are to be published soon by the Columbia University Press.

To determine the degree of effectiveness of the use of radio in the classroom and to help teachers become more familiar with educational uses of radio by

helping to point out desirable programs and by conveying to broadcasters, for their information and guidance, the reaction of pupils and teachers to specific educational broadcasts, are the two major divisions of the project being carried on at Ohio State University under direction of I. Keith Tyler.

The project is also examining out of school listening by high school children and the effects of such listening. It is hoped that data from this project may be helpful to broadcasters in planning in the future more effective programs for education, especially for children.

The separate studies fall into three broad classifications: First is the community study in progress in Zanesville, Ohio, selected as a typical American community. Another classification covers an investigation of the application of radio to specific courses in certain high schools—the teaching of English in Rochester, of music in Cleveland, and of science in Chicago; the third is an analysis in the use of electrical transcriptions available to schools.

Summer Conferences

Among significant factors contributing to radio's march toward fuller development as an educational instrument were the 13 conferences held during the summer in colleges and universities throughout the country under auspices of the FREC.

Approximately 3,000 educators, broadcasters and laymen attended the conferences, and a summary report prepared by Dr. Leonard Power, Coordinator of Research, reveals current trends in educational radio.

Besides Dr. Power, conferences were attended by Dr. I. Keith Tyler, Dr. Norman Woelfel, and Dr. R. R. Lowdermilk, of the Evaluation of School Broadcasts research project and by Dr. Paul S. Lazarsfeld of the Office of Radio Research project.

The conferences afforded opportunity for school educators and others concerned with radio education to meet with experts who conducted research projects and to explore with them various aspects of research activities which were of special interest. Informal discussion of such work and conclusions reached through them afforded an opportunity for the researchers to amplify and qualify their conclusions. In the light of the rather turbulent history of educational radio prior to the last four or five years, the spirit of cooperation which dominated the conferences and the joint striving of broadcasters and educators toward common goals constitutes one of the notable achievements of the FREC.

Conclusions

Overall conclusions reached by conferees:

1. Effective use of radio in education depends on proper utilization. A few programs, well planned, properly organized and correlated, and produced with a high degree of professional skill are far more effective in enriching instruction than a much larger number of programs not reflecting intensive planning and effort.

2. Teachers are coming to realize importance of out-of-school listening. Many make it their business to know every available educational program of merit, and they assume responsibility for guiding student selection by taking school time to develop standards of appreciation and discrimination.

3. Adults who have had to forego formal education but who would like to broaden their cultural background should have guidance in discriminating among radio programs. School children who have had such guidance show better discrimination than most adults.

Radio is the best medium to help out of school adults find cultural training because costs of concerts, lectures and books may be beyond means of many. To develop an audience among these adults, conferees suggested a plan for pooling interests of broadcasters and educators to merchandise programs designed for serious listening. Educators indicated they realize the necessity for including those elements of mass appeal which will induce acceptance of such programs by untrained adult listeners.

Several centers have requested that the conferences be held again this summer and indications now are that they will be.

FREC Publications

The FREC Bulletin, launched in November 1939, has been issued each month during 1940 and has provided information on research achievements and educational broadcasting in general. Included in its mailing list of 6,000 are all radio stations, colleges and universities offering courses in radio, State and city superintendents of schools, libraries, trade and educational journals, and individuals interested in educational broadcasting.

Local Cooperative Broadcasting—Emphasizes constructive solution of problems of cooperation between education and the broadcast industry through description of examples of local, State, regional and national cooperation.

Teacher Training Syllabus—An aid to teachers of college radio courses. Drawn

up by a committee of FREC field research experts, under direction of Dr. Leonard Power, director of FREC research.

The Groups Tune In—Examines organization and motivation behind listening groups, their educational value, and how to establish and promote such groups. Written by Frank Hill.

College Radio Workshops—Study of four typical workshops at Syracuse University, Indiana State Teacher's College, University of Kentucky, and Drake University.

Forums on the Air—When, where, why, and how of radio forums from the educational viewpoint.

Local Station Policies—Examination of outstanding example of effective serving of a community by its radio station, together with a general survey of cooperative broadcasting.

Radio and the Printed Page—Paul F. Lazarsfeld, director of the Columbia University FREC radio project, pointing out that individuals and groups in American society tend to listen rather than to read. Evaluates radio broadcasts as a substitute for reading. Results of Dr. Lazarsfeld's research, much of which has been incorporated into this book, have been valuable to broadcasters in discovering what makes a broadcast effective.

NAB

The National Association of Broadcasters' Code of ethical and progressive broadcasting practices was drawn up and approved at the 17th Annual Convention of the NAB in July 1939 and went into effect in January 1940.

Included in the code is the following paragraph on educational broadcasting:

"While all radio programs possess some educative values, broadcasters nevertheless desire to be of assistance in helping toward more specific educational efforts, and will continue to use their time and facilities to that end, and, in cooperation with appropriate groups, will continue their search for improving applications of radio as an educational adjunct."

CBS School of the Air

Columbia Broadcasting System's leading educational radio program, American School of the Air, was extended during 1940 to cover Latin America as well.

CBS itself reports on this event:

"During 1940, 64 radio stations in Latin American nations were added to

the Columbia Broadcasting System. Sixteen American nations and the Philippine Commonwealth either officially or through broadcast channels joined the School of the Air of the Americas—a new international, cultural institution which is geographically the world's largest educational organization. Many of the nations have appointed official committees which are already contributing material for inclusion in the broadcast.

After the programs are written, they are translated and supplied, without charge, to the participating nations.

NBC's Educational Programs

NBC appointed Dr. James R. Angell, formerly president of Yale University, as public service counsellor which, NBC reported, was a step toward a more thorough educational broadcasting program during 1940. Among presentations of educational value reported by NBC are:

University of Chicago "Round Table," American Education Committee's "Education Forum," "Man and the World," sponsored by American Museum of Natural History and Chicago Museum of Science and Industry; "Music and American Youth," by National Music Educator's Conference, "Town Meeting of the Air," Town Hall, Inc.; National Vocational Guidance Association's "On Your Job," and "The World Is Yours," sponsored by the Smithsonian Institution and U. S. Office of Education.

Experiments with recordings of educational broadcasts were conducted last spring by schools of Philadelphia, Pa., Elizabeth, N. J., and Greenwich, Conn., with NBC cooperation.

University Programs

State University of Iowa's radio station, WSUI, under direction of H. Clay Harshbarger, is housed in a new four-story radio building at Iowa City. Building has complete broadcasting and station management facilities, including five studios.

One of the few full time educational stations, WSUI was among the first to own and operate its own station and has been a pioneer in broadcasting radio courses.

Following the lead of New York University, first higher institution to establish a four-year radio course, is the University of Alabama, which has established a complete radio curriculum. Director is John Carlisle, formerly in charge of production for CBS.



COLLEGES AND UNIVERSITIES IN THE UNITED STATES OFFERING COURSES IN BROADCASTING

The alphabetical list that follows is the result of a project, executed by the Federal Radio Education Committee with the cooperation of the U. S. Office of Education, and intended to answer certain fundamental questions regarding colleges offering courses for training teachers in the preparation and utilization of radio programs and for giving training to persons who plan to choose broadcasting as a vocation. No attempt is made to evaluate the courses. The following code should be used to interpret the listings in this survey, the courses being indicated by letters as follows: (A) General Course in Radio, (B) Radio Program Planning and Production, (C) Education by Radio, (D) Radio Script Writing, (E) Radio Announcing (F) Radio Speech, (G) Radio Dramatics, (H) Radio Music, (I) Radio Station Management, (J) Radio Advertising, (K) Technical Courses in Radio. (L) Television, and (M) Radio Law.

Whenever credit hours were reported for any course, the number of hours will be found bracketed with the identifying letter of that particular course. For example, (D-2) (E) indicates a course in Radio Script Writing for which 2 credit hours are given and a course in Radio Announcing for which no credit hours were reported. The symbol (F and G-4) signifies that a course involving both Radio Speech and Radio Dramatics is offered with 4 hours of credit given. The symbol (K-varies) means that technical courses in radio are available for which credit hours vary. Included with each listing will be found the name of an instructor who is in charge of radio instruction. These persons should be consulted for further information. The asterisk before the name of the institution indicates that the school has its own broadcasting station and equipment.

College	In Charge of Radio
Abilene Christian College, Abilene, Tex. (D & F-3)	Mrs. A. B. Morris
Akron, University of, Akron, Ohio. (F-3)	O. A. Hitchcock
Alabama University of, University, Ala. (A) (D) (E) (F) (K)	Clyde B. Crawley
Alabama College, Montevallo, Ala. (A-2)	Nora Landmark
Alabama Polytechnic Institute, Auburn, Ala. (A-2) (K-varies)	Woodrow Darling
Adelphi College, Garden City, N. Y. (B-3)	(not known)
Alliance Technical Institute, Cambridge Springs, Pa. (A-3)	F. Kowalko
Alma College, Alma, Mich. (K-3)	Raymond C. Ditto
American International College, Springfield, Mass. (K-12)	Robert W. Cobb
Antioch College, Yellow Springs, Ohio. (K-12)	C. D. Barbulesco
Arizona, University of, Tucson, Ariz. (K-3)	R. G. Picard
Arkansas, University of, Fayetteville, Ark. (K-3)	C. W. Janes
Armour Institute, 3300 Federal Street, Chicago, Ill. (K-4) (L-4)	A. W. Sear
Asbury College, Wilmore, Ky. (F-2)	Daisy D. Gray
Asheville Normal and Teachers College, Asheville, N. C. (C-2)	Hazel Gebbany
Augustana College, Rock Island, Ill. (A-2) (G)	Theodor Le Vander
Augustana College, Sioux Falls, S. Dak. (F) (G) (E) (H)	Hugo A. Carlson
Aurora College, Aurora, Ill. (B-2)	J. Floyd Morris
Baker University, Baldwin, Kans. (E-3)	Floyd K. Riley
Bard College, Annandale-on-Hudson, N. Y. (K & L-8) (A-8)	Harold Hughes
Bates College, Lewiston, Me. (K-3)	Karl S. Woodcock
Baylor University, Waco, Tex. (A-3 1/3)	Sara Lowrey
Berry College, Mt. Berry, Ga. (K-2) (A-6)	L. E. McAllister
Birmingham Southern College, Birmingham, Ala. (A-3)	M. F. Evans
Blue Ridge College, New Windsor, Md. (G)	M. S. Reifsnnyder
Bob Jones College, Cleveland, Tenn. (B-2)	Elizabeth Adams
Boston College, Chestnut Hill, Mass. (K-8)	Rev. John A. Tobin
Boston University College of Business Administration, Boston, Mass., (B-2) (D-2) (F-2) (G-2) (J-2)	Ralph L. Rogers
Bradley Polytechnic Institute, Peoria, Ill. (A-2) (K-3)	F. E. Dace
Briar Cliff College, Sioux City, Ia. (F-2)	Sister Jean Marie
Brigham Young University, Provo, Utah. (A-2) (D-2) (G) (H) (I) (J)	T. Earl Pardoe

Bucknell University, Lewisburg, Pa. (K-3).....	George A. Irland
Butler University, Indianapolis, Ind. (F-3) (K-6).....	L. Gray Burdin
California, University of, Extension Division, Los Angeles, Calif. (B) (D) (G).....	Margaret Wotten
California, Institute of Technology, Pasadena, Calif. (K-18).....	S. S. Mackeown
California Polytechnic Junior College, San Luis Obispo, Calif. (A-3) (H-2) (K-6).....	B. G. Eaton
Capital University, Columbus, Ohio. (B-3).....	Prof. W. C. Craig
Carnegie Institute of Technology, Pittsburgh, Pa. (K).....	Charles Williamson
Carroll College, Waukesha, Wis. (F-2) (K).....	V. P. Batha
Carson Newman College, Jefferson City, Tenn. (A-3).....	Alex Chavis
Case School of Applied Science, Cleveland, Ohio. (K-12).....	J. R. Martin
Catholic University, Washington, D. C. (D-2) (E-2) (G-2) (K-varies).....	Rev. G. V. Hartke
C. C. N. Y. School of Technology, New York, N. Y. (A-3) (K-3).....	Alexander H. Wing, Jr.
Centenary Junior College, Hackettstown, N. J. (A-2).....	Ellen C. Crouch
Chicago, University of, Chicago, Ill. (A-3 1/3) (D-7) (F-3 1/3).....	Sherman Dryer
Chicago Musical College, Chicago, Ill. (D) (E) (G) (H).....	(not known)
Chicago School of Expression and Dramatic Art, Chicago, Ill. (A) (B) (D) (E) (G).....	Helen C. Espie
Chicago Teachers College, Chicago, Ill. (B) (C-1) (D-3).....	Luella Hoskins
Cincinnati, University of, Cincinnati, Ohio. (D-4) (J-2) (K-varies) (L-14) (M-4).....	W. C. Osterbrock
Cincinnati College of Music, Cincinnati, Ohio. (B-4).....	Uberto Neely
Cincinnati Conservatory of Music, Cincinnati, Ohio. (A) (D) (G).....	Hubert Kockritz
Citadel, The, Charleston, S. C. (A-6).....	N. F. Smith
Clark College, Dubuque, Ia. (A-2).....	(not known)
Clarkson College, Potsdam, N. Y. (K-varies).....	J. L. Stiles
Clemson College, Clemson, S. C. (K-4).....	Prof. A. B. Credle
Coe College, Cedar Rapids, Iowa. (A-4) (F).....	J. Dale Welsch
College of St. Scholastica, Duluth, Minn. (A-2).....	Sister Bernard
College of St. Theresa, Winona, Minn. (B) (G) (H).....	Sister M. Marcelline
College of Wooster, Wooster, Ohio. (A-8).....	Earl W. Ford
Colorado College, Colorado Springs, Colo. (K-8).....	Howard Olson
Colorado School of Mines, Golden, Colo. (K-12).....	Myron G. Pawley, Raymond Dickinson
Colorado State College, Fort Collins, Colo. (A-3).....	Frank P. Goeder
Colorado State College of Education, Greeley, Colo. (A-4).....	F. L. Herman
Colorado, University of, Boulder, Colo. (K-2 1/2).....	Herbert S. Evans
Colorado Woman's College, Denver, Colo. (K-2).....	Helen R. Robinson
Columbia College of Drama and Radio, Chicago, Ill. (B-2) (C) (D-2) (E-2) (F-2) (G-4).....	Norman Alexandroff
Columbia University, New York, N. Y. (A-2) (D-3).....	James C. Egbert
Compton Junior College, Compton, Calif. (K-5) (G).....	Jesse E. Hathaway
Concordia College, Moorhead, Minn. (A-2) (B-2) (K-3).....	Howard Nelson
(A) (B) (D) (E) (F) (G) (I) (J) (M).....	Donald MacLean
Connecticut State College, Storrs, Conn. (K-6).....	R. B. Corbett
Cornell College, Mount Vernon, Iowa. (A-3) (B-3) (D-3) (E-3) (G-3) (H-3).....	Albert Johnson
Cornell University, Ithaca, N. Y. (A-2) (K-4).....	Chas. A. Taylor
Cornish School, The, Seattle, Wash. (A) (B) (D) (E) (F) (G) (I) (J) (M).....	Donald MacLean
Creighton University, Omaha, Nebr. (B-3) (D-3).....	Edwin Puls
Cummock Junior College, Los Angeles, Calif. (F).....	Josephine Dillon
Curry School, 251 Commonwealth Ave., Boston, Mass. (F-2) (G-2).....	(not known)
Davidson College, Davidson, N. C. (K-4).....	F. L. Jackson
Dayton, University of, Dayton, Ohio. (G) (K-3).....	Prof. Louis Rose
Denison University, Granville, Ohio. (A-3).....	Richard H. Howe
Denver, University of, Denver, Colo. (B-2 1/2) (D-2 1/2) (F-2 1/2).....	Roscoe K. Stockton
Detroit, University of, Detroit, Mich. (A-2) (F).....	E. A. McFaul
Doane College, Crete, Nebr. (A-4) (B) (G).....	Dr. E. Russell Wightman
Dodd College, Shreveport, La. (A-3).....	(not known)
Drake University, Des Moines, Iowa, (A-2) (B-2) (D-4) (E) (G-2) (I-3) (J-2).....	Edwin G. Barrett
Note: Drake offers a major in radio.	
Drexel Institute of Technology, Philadelphia, Pa. (K).....	R. T. Zern
Dubuque, University of, Dubuque, Iowa. (A-4) (K-4).....	R. G. Wilson
Duke University, Durham, N. C. (K-7).....	W. J. Seeley
Duquesne University, Duquesne, Pa. (B-6) (G-6).....	Madeleine S. Foust
East Central Teachers College, Ada, Okla. (A-2).....	D. J. Nabors
Eastern Washington College of Education, Cheney, Wash. (K-2).....	James S. Lane
Elmira College, Elmira, N. Y. (F).....	Geraldine Quinlon
Emerson College, Boston, Mass. (A-3) (D-2) (E-2) (G-2).....	Arthur F. Edes

Emory University, Emory University, Ga. (A-5) (K)	J. B. Peebles
Emporia, College of, Emporia, Kans. (A-4)	R. F. Miller
Fenn College, Cleveland, Ohio (A-3)	William A. Millson
Florida, University of, Gainesville, Fla. (F-3) (K-varies)	Garland Powell
Florida Agricultural and Mechanical, Tallahassee, Fla. (A-2) (K-4)	H. R. Orr
Florida Southern College, Lakeland, Fla. (A-2)	Miss Alma Johnson
Fort Hays Kansas State College, Hays, Kans. (A-3)	Harvey A. Zinszer
Frances Shimer College, Mount Carroll, Ill. (D-2) (G-3)	George E. Hoffman
Franklin University, YMCA, Columbus, Ohio. (A-12)	E. E. Dysart
Friends University, Wichita, Kans. (B-1) (E-1) (G) (K-5) (D-2) (H-1/2)	Irene Vickers Baker
George Peabody Teachers College, Nashville, Tenn. (E-2)	A. L. Crabb
George Washington University, Washington, D. C. (A-2) (K-10)	Prof. W. Hayes Yeager
Georgetown University, Washington, D. C. (M-2)	P. J. Donovan
Georgia, University of, Athens, Ga. (D & E-5)	Prof. Edward C. Crouse
Georgia School of Technology, Atlanta, Ga. (A-3) (D & F-3) (K-3)	Irving H. Gerks
Gila Junior College, Thatcher, Ariz. (A-3) (G-2) (H-2)	William C. Kauffman
Glendale Junior College, Glendale, Calif. (A-3) (F-2)	B. L. Griffing
Gonzaga University, Spokane, Wash. (K-5)	Richard A. Brown
Grays Harbor Junior College, Aberdeen, Wash. (A)	(Not Known)
Grove City College, Grove City, Pa. (A-4) (G) (H) (K-4)	R. A. Walters
Harding College, Searcy, Ark. (A-5) (E-4) (A) (B) (D) (E) (G) (H)	Leonard Kirk
Hardin-Simmons University, Abilene, Tex. (G-3) (A-3)	Katherine Boyd
Harvard University, Cambridge, Mass. (K)	Dr. R. W. Hickman
Hastings College, Hastings, Nebr. (A-2) (F)	Charles J. Thurman
Haverford College, Haverford, Pa. (A-3) (K-3)	J. D. Elder
Houston, University of, Houston, Tex. (K-3 1/2)	Harvey W. Harris
Howard College, Birmingham, Ala. (K-2)	Paul D. Bales
Idaho, University of, Moscow, Idaho. (D) (E) (F) (H)	Dr. C. W. McIntosh, Jr.
Illinois College, Jacksonville, Ill. (K-varies)	F. W. Cooke
Illinois, University of, Urbana, Ill. (K)	Josef F. Wright
Illinois State Normal University, Normal, Ill. (F-2)	Mrs. Laura H. Pricer
Illinois Wesleyan University, Bloomington, Ill. (A-4)	Wilson B. Paul
Indiana State Teachers College, Terre Haute, Ind. (A-4) (B-4) (C-4) (D-4) (E-4)	Dr. Clarence M. Morgan
Indiana University, Bloomington, Ind. (A-3) (D-3) (E)	Dr. Lee Norvelle
Iowa, State University of, Iowa City, Iowa. (A-3) (B-2) (D-3) (F-3) (G-3) (J-3) (K-2)	Bruce E. Mahan
Iowa State College, Ames, Iowa. (D-3) (F-3) (K-4) (L-4)	W. I. Griffith
Iowa Wesleyan College, Mount Pleasant, Iowa. (A-3)	Roger M. Morrow
Itasca College, Coleraine, Minn. (A-2)	Delwin B. Dusenbury
Ithaca College, Ithaca, N. Y. (D) (E-4) (G-4)	Dr. Winn F. Zeller
John B. Stetson University, DeLand, Fla. (G-6) (H-6) (K-6)	Dr. Robert I. Allen
John Brown University, Siloam Springs, Ark. (A-3) (B-3) (I-3) (K-varies) (M-2)	Harold Fristoe
John Carroll University, Cleveland, Ohio. (B-3) (D-3) (E-3)	Wm. A. Millson
Johns Hopkins University, Homewood, Baltimore, Md. (K-4)	Ferdinand Hamburger, Jr.
Juilliard School of Music, 130 Claremont Avenue, New York, N. Y. (A)	Robert A. Simon
Kansas City Baptist Theological Seminary, Kansas City, Kans. (A-2) (C-2) (D-2) (G-2) (H-2)	Alvin J. Lee
Kansas, University of, Lawrence, Kans. (G-2)	Harold G. Ingham
Kansas State College, Manhattan, Kans. (A-8) (B-2) (D-2) (E-2) (F-3) (H-2) (J-3) (K-4)	(not known)
Kansas State Teachers College, Emporia, Kans. (A-2) (D) (E) (F) (G)	S. Winston Cram
Kent State University, Kent, Ohio. (A-3)	G. Harry Wright
Kentucky, University of, Lexington, Ky. (C-3) (K-3)	Elmer G. Sulzer
Knox College, Galesburg, Ill. (A-4)	Paul A. Foley
Lafayette College, Easton, Pa. (A-3) (K & L-6)	C. H. Page
La Grange College, La Grange, Ga. (B) (D-2) (G-3)	Mae Kirkland
La Sierra College, Arlington, Calif. (A-2) (K-3)	L. H. Cushman
Lawrence Institute of Technology, Highland Park, Mich. (K-5)	(not known)
Lehigh University, Bethlehem, Pa. (K-varies)	H. C. Knutson
Lenoir Rhyne College, Hickory, N. C. (A-3)	Karl Z. Morgan
Lincoln University, Jefferson City, Mo. (A)	Albert A. Kildare
Little Rock Junior College, Little Rock, Ark. (G)	Dell Park McDermott
Long Beach Junior College, Long Beach, Calif. (F-6)	Miss Edith Hitchcock
Louisiana Polytechnic Institute, Ruston, La. (C) (K)	D. G. Armstrong

Louisiana State University, University, La. (A-3) (D-3) (F-3) (I-3) (K-3)	Ralph W. Steelt
Louisville Municipal College, Louisville, Ky. (K-4)	Donald A. Edwards
Louisville, University of, Louisville, Ky. (K-10)	Samuel T. Fife
Loyola University, Los Angeles, Calif. (A-2) (D-2) (E-1) (G-1) (J-1)	Martin H. Work
Luther College, Decorah, Ia. (A-3)	F. C. Gamelin
Lynchburg College, Lynchburg, Va. (A)	K. K. Hodges
McMurray College, Abilene, Tex. (B-3)	Harold G. Burman
Mac Phail School of Music, Minneapolis, Minn. (A-4) (H-4)	Don Tuttle
Macalester College, St. Paul, Miss. (K-4)	R. B. Hastings
Madison College, Madison College, Tenn. (A-4) (K-4)	Bayard D. Goodge
Maine, University of, Orono, Me. (A-2) (B-2) (K-3)	W. J. Creamer
Manhattan College, New York, N. Y. (K-4)	J. Francis Reintjes
Marin Junior College, Kentfield, Calif. (K-2)	C. E. Chery
Marjorie Webster School, The, Rock Creek Park, Washington, D. C. (B-3) (D-3) (G-3)	Miss Florence McCracken
Marquette University, Milwaukee, Wis. (A-2) (F-2) (K-3)	Wm. R. Duffey
Marshall College, Huntington, W. Va. (A-3)	Dr. Frank A. Gilbert
Maryland, University of, College Park, Md. (A-2)	Dr. Ray Ehrensberger
Massachusetts Institute of Technology, Cambridge, Mass. (K-varies)	Prof. Edward L. Bowles
Massachusetts State College, Amherst, Mass. (K-6)	Francis C. Pray
Miami University, Oxford, Ohio. (D-3) (F) (G)	A. Loren Gates
Michigan, University of, Ann Arbor, Mich. (A-2) (C-2) (D-2) (E) (G-2) (J-4) (K-12) (L-2)	Prof. Waldo Abbott
Michigan College of Mining and Technology, Houghton, Mich. (K-3) (I-2)	G. W. Swenson
Michigan State College, East Lansing, Mich. (D-2) (E-3) (F-5) (G-3) (K-2)	Robert J. Coleman
Milton College, Milton, Wis. (A-8) (B-2) (C) (D) (E) (G) (H) (K)	C. F. Oakley
Minnesota, University of, Minneapolis, Minn. (C-3) (D-3) (E-3) (G)	E. W. Ziebarth
Mississippi College, Clinton, Miss. (A-3) (K-6) (M-3)	Henry A. Carlock
Mississippi State College, State College, Miss. (A-3) (M-3) (K-6)	Horace M. Trent
Missouri, University of, Columbia, Mo. (A-4) (K-8)	Prof. C. M. Wallis
Missouri Valley College, Marshall, Mo. (K-3)	Dwight M. Pasek
Modesto Junior College, Modesto, Calif. (A-2)	Leonard I. Bartlett
Montana State College, Bozeman, Mont. (K-6)	Prof. C. F. Bowman
Moravian College, Bethlehem, Pa. (A-3) (K-3)	Cyril N. Hoyler
Morehead State Teachers College, Morehead, Ky. (K-3)	J. G. Black
Morehouse College, Atlanta, Ga. (A-3)	H. V. Eagleson
Morris Harvey College, Charleston, W. Va. (G-2)	Richard C. Brand
Mt. Holyoke College, South Hadley, Mass. (K-7) (L-3)	Rogers D. Rusk
Mount Mercy College, Pittsburgh, Pa. (A-3)	Anna Marie McConnell
Mount St. Joseph College, Maple Mount, Ky. (G) (H)	Nora Mary Hallesey
Muhlenburg College, Allentown, Pa. (A-4) (C-4) (K-6)	Dr. Carl W. Boyer
Mundelein College, Chicago, Ill. (D-2)	Miss Louise Litten
Murray State Teachers College, Murray, Ky. (K-4)	Charles Hire
Muskingum College, New Concord, Ohio. (A-2)	C. R. Layton
National Park College, Forest Glen, Md. (A-2)	Helen Hughes
National University, Washington, D. C. (M-4)	Howard S. LeRoy
Nebraska, University of, Lincoln, Nebr. (K-4)	Ferris W. Norris
Nebraska State Teachers College, Wayne, Nebr. (A-4)	Prof. J. E. Brock
Nebraska Wesleyan University, Lincoln, Nebr. (A-3) (B-3) (D-2)	J. C. Jensen
Nevada, University of, Reno, Nev. (K-3)	I. J. Sandorf
New Mexico, University of, Albuquerque, N. Mex. (B-3) (D) (K-8)	Dr. Herbert L. Jones
New River State College, Montgomery, W. Va. (A-3) (L-3) (M-3)	Ritter F. Maxwell
New Rochelle, College of, New Rochelle, N. Y. (D-4)	Margaret C. Richard
N. Y. State School of Agriculture, Alfred, N. Y. (K-6)	G. F. Craig
New York University, New York, N. Y. (A-3) (B-2) (D-2) (J)	Robert S. Emerson, Paul A. McGhee
North Dakota State School of Science, Wahpeton, N. Dak. (K)	Wm. J. Duvall
Northern Illinois State Teachers College, DeKalb, Ill. (B-1) (K-1)	H. W. Gould
North Texas State Teachers College, Denton, Tex. (A-3)	Mrs. Olive M. Johnson
Northwestern University, Evanston, Ill. (A-2) (B & G-2) (D & E-2) (F-2) (J-2)	Albert R. Crews
Norwich University, Northfield, Vt. (K-3)	D. E. Howes
Notre Dame, University of, Notre Dame, Ind. (B) (C) (D-3) (E) (G) (H) (I) (K-3)	Rev. Eugene Burke
Ohio, University of, Athens, Ohio. (A-3) (B-3) (D-3) (G) (F-2) (K-4)	Vincent Jukes
Ohio State University, Columbus, Ohio (A-3) (B-2) (C-2) (D) (E-5) (H-3) (I-2) (J-3) (K-4)	W. L. Everitt
Ohio Wesleyan University, Delaware, Ohio. (A-2)	R. C. Hunter

Oklahoma, University of, Norman, Okla. (B-2) (D-2) (F-1) (G-3) (J-2) (K-varies)	H. H. Leake
Oklahoma College for Women, Chickasha, Okla. (F)	B. H. Mayall
Oklahoma Agricultural and Mechanical College, Stillwater, Okla. (K-varies)	Benj. A. Fisher
Omaha, University of, Omaha, Nebr. (E-1) (J-1)	Russell Baker
Oregon, University of, Eugene, Ore. (B-2)	Mr. Luke Roberts
Oregon Inst. of Technology, Portland, Ore. (A) (E-2) (K-varies) (M)	C. D. Newman
Oregon State Agricultural College, Corvallis, Ore. (F) (G-2)	C. B. Mitchell
Pacific Union College, Angwin, Calif. (B-2)	Charles E. Weniger
Pasadena Junior College, Pasadena, Calif. (A-3) (B-3)	N. Vincent Parsons
Paterson, The College of, Paterson, N. J. (D-3)	Carl N. Walton
Phillips University, Enid, Okla. (A-2)	Wilford Christopher
Phoenix Junior College, Phoenix, Ariz. (B-3) (D-3) (G-2) (H) (K-7) (M-2)	Donald F. Stone
Penn College, Cleveland, Ohio. (A-3)	William A. Willson
Pennsylvania, University of, Moore School of Electrical Engineering, Philadelphia, Pa. (B-2) (D-4) (F-4) (K-3)	Knox McIlwain
Pittsburgh, University of, Pittsburgh, Pa. (K-5)	Prof. H. E. Dyche
Polytechnic Institute of Brooklyn, 99 Livingston Street, Brooklyn, N. Y. (K-varies)	Frank E. Canavacioli
Presbyterian College, Clinton, S. C. (B-4) (D-3) (E-3) (J-3)	Hugh Holman
Principia College, Elsau, Ill. (K-3)	G. M. Harp
Purdue University, Lafayette, Ind. (A-3) (B-3) (L)	Dr. C. F. Harding
Queens College, Charlotte, N. C. (C-3)	G. M. Godard
Redlands, University of, Redlands, Calif. (A-2) (K-4)	Prof. Lynn W. Jones
Reed College, Portland, Ore. (A) (D) (E) (G)	Laurence C. Rodgers
Rensselaer Polytechnic Institute, Troy, N. Y. (K-3)	Wynant J. Williams
Rhode Island State College, Kingston, R. I. (K-3)	Wesley B. Hall
Rice, Institute, Houston, Tex. (K-8)	S. H. Van Wambeek
Robert E. Lee Institute, Goose Creek, Tex. (K)	E. L. Langston
Rockhurst College, Kansas City, Mo. (A-3)	William C. Doyle
Rollins College, Winter Park, Fla. (E) (G)	Prof. Harry H. Pierce
Rosary College, River Forest, Ill. (A-2) (D-2) (E-1) (G-1)	Sister Mary Peter
Rutgers University, New Brunswick, N. J. (A-3) (K-6)	P. L. Hoover
St. Catherine, College of, St. Paul, Minn. (B-1) (C-1) (D-1)	Thomas Rishworth
St. Lawrence University, Canton, N. Y. (A-3)	Ruth F. Williard
St. Louis, University of, St. Louis, Mo. (K-3)	Rev. James I. Shannon
St. Mary's College, Notre Dame, Ind. (A-4)	Suzanne Martin
St. Mary's College, South Bend, Ind. (B) (F)	Winifred Hanley
St. Mary-of-the-Woods College, St. Mary-of-the-Woods, Ind. (F-2)	Charlotte I. Lee
Sacramento Junior College, Sacramento, Calif. (B-2) (D-2)	Vernon Mickelson
San Francisco Junior College, San Francisco, Calif. (A-10)	L. Hollingsworth
San Francisco State College, San Francisco, Calif. (K-2) (F-3)	Carlos S. Mundt
San Jose State College, San Jose, Calif. (K-4) (A-1) (D-2) (E-2) (I-1) (Radio Telegraph Code-1)	Harry Engwight
Santa Monica Junior College, Santa Monica, Calif. (E) (G)	S. M. Hayden
San Mateo Junior College, San Mateo, Calif. (A & I-3) (E) (G)	Harry E. Redeker
Santa Barbara State College, Santa Barbara, Calif. (G-3) (D) (A-3) (B-3)	Frederick Hile
Scranton, University of, Scranton, Pa. (A-1) (D-4) (F-1)	Dr. Austin J. App
Seventh-day Adventist Theological Seminary, Washington, D. C. (F-1)	Prof. C. E. Weniger
Sherwood Music School, 410 So. Michigan Ave., Chicago, Ill. (D) (G) (H)	Walter A. Erley
Shorter College, North Little Rock, Ark. (B) (E) (H)	G. A. Gregg
Simpson College, Indianola, Iowa. (K-2)	Lester Spring
Sienna College, St. Joseph, Mo. (D-2) (G-2) (Radio Technique-2)	Sister Leonilla, O. P.
Smith College, Northampton, Mass. (K-3)	James F. Koehler
South Carolina, University of, Columbia, S. C. (A-6) (K)	A. C. Carlson
South Dakota State School of Mines, Rapid City, S. Dak. (A-2) (K-3)	E. E. Clark
Southeastern University, Washington, D. C. (M-2)	Joseph E. Keller
Southern California, University of, Los Angeles, Calif. (A-2) (B-2) (I-2) (K-2)	Richard E. Huddleston
Southern Junior College, Collegedale, Tenn. (K-4)	R. W. Woods
Southwestern College, Winfield, Kans. (K-16)	W. B. Plum
Spring Hill College, Spring Hill, Ala. (K)	Frank E. Benedetto
Stanford University, Palo Alto, Calif. (F-2)	Miss E. L. Buckingham
State College of Washington, Pullman, Wash. (B-1) (C-1) (D-3) (E-1) (H-1) (J-3) (K-varies)	Kenneth Yeend
State Teachers College, Bloomsburg, Pa. (B) (C) (E) (F) (G) (H)	John C. Koch
State Teacher's College, Buffalo, N. Y. (C-3)	Ben H. Darrow
State Teachers College, Indiana, Pa. (A-2)	Edna Lee Sprowls

State Teachers College, Kearney, Nebr. (C-3)	C. G. Ryan
State Teachers College, La Cross, Wis. (A-4)	Ross D. Spangler
State Teachers College, Memphis, Tenn. (G-3)	John Noldham
State Teachers College, Paterson, N. J. (A-3) (K-3)	Dr. Lawrence E. Loveridge
State Teachers College, Peru, Nebr. (A-2) (E)	C. R. Lindstrom
State Teachers College, Superior, Wis. (A-3)	E. H. Schriber
Stephens College, Columbia, Mo. (A-4) (B-3) (D-3)	Sherman P. Lawton
Syracuse University, Syracuse, N. Y. (A-3) (B-3) (C-3) (D-3) (J)	Kenneth Bartlett
Temple University, Philadelphia, Pa. (K-3½)	J. Lloyd Bohn
Texas, University of, Austin, Tex. (A-3)	A. L. Chapman
Texas Christian University, Fort Worth, Tex. (B-3) (F & G-3) (K-var.es)	Dr. Newton Gaines
Texas Dental College, Houston, Tex. (G)	McKinley Rhodes
Texas Technological College, Lubbock, Tex. (A-2)	Richard Flowers
Toledo, University of, Toledo, Ohio. (K-4)	C. G. Brennecke
Trinity College, Hartford, Conn. (A-3)	H. D. Doolittle
Trinity University, Waxahachie, Tex. (A-3)	Miss Yetta Mitchell
Tri-State College, Angola, Ind. (K-varies)	Wm. A. Pfeifer
Tufts College of Engineering, Medford, Mass. (K-3)	Edwin B. Rollins
Tulsa, University of, Tulsa, Okla. (A-2) (D) (E)	Ben G. Henneke
Tuskegee Institute, Tuskegee Institute, Ala. (A-5) (K-5)	W. C. Curtis
U. S. Naval Academy, Annapolis, Md. (K)	E. T. Woolridge
Utah, University of, Salt Lake City, Utah. (A-3) (B-3) (D-3) (G-3) (K-6)	Dr. I. O. Horsfall
Utah State Agricultural College, Logan, Utah. (A-5) (B-3) (D-3) (E-3) (K-16)	Prof. S. R. Stock
Vassar College, Poughkeepsie, N. Y. (F-1)	Mrs. Henry Lyman
Ventura Junior College, Ventura, Calif. (A-6) (G-6) (K-8)	Burt Richardson
Vermont University of, Burlington, Vt. (K-3)	E. R. Mckee
Villanova College, Villanova, Pa. (A-4)	H. S. Bueche
Virginia Junior College, Virginia, Minn. (A-2) (C) (D) (G)	Mary E. Asseltynne
Virginia Polytechnic Institute, Blackburg, Va. (K-3)	R. D. Michael
Wake Forest College, Wake Forest, N. C. (K-4)	Dr. Sherwood Githens, Jr.
Waldorf College, Forest City, Ia. (B-1)	Rev. J. M. Mason
Walla Walla College, College Place, Wash. (E-2) (F-2) (G-2) (K-3)	M. L. Neff
Wartburg College, Waverly, Iowa. (K-3)	A. A. Aardal
Wartburg Seminary, Dubuque, Iowa. (E) (H)	E. H. Schalkhauser
Washington, University of, Seattle, Wash. (B-6) (C-3) (D-3) (E-2) (G-2) (K-varies)	Professor L. V. Cochran
Washington College, Chesterton, Md. (K-4)	J. J. Coop
Wayne University, Detroit, Mich. (A-2) (B-2) (C-2) (D-2) (F-2) (G-2) (K-2) (L-2)	Garnet Garrison
Weber College, Ogden, Utah. (C-3)	Dr. H. A. Dixon
Webster College, Webster Groves, Mo. (B-1) (D)	Anna McClain Sankey
Wellesley College, Wellesley, Mass. (A-3)	Louise S. McDowell
Wesleyan University, Middleton, Conn. (E) (K-varies)	Karl S. Van Dyke
West Liberty State Teachers College, West Liberty, W. Va. (A-2) (K-3)	Dr. Paul N. Elbin
West Virginia State College, Institute, Va. (A-3)	J. C. Evans
West Virginia University, Morgantown, W. Va. (A-3) (F-1) (G-3) (K-3)	A. W. Friend
Western Illinois State Teachers College, Macomb, Ill. (A-4)	W. H. Eller
Western Reserve University, Cleveland, Ohio. (C-2) (E-2)	Grazella P. Sherherd
Western State Teachers College, Kalamazoo, Mich. (K-4)	W. G. Marburger
Westminster College, Fulton, Mo. (K-4)	Albert C. Kreuger
Westminster College, New Wilmington, Pa. (D-1)	Wallace R. Biggs
Wheaton College, Wheaton, Ill. (A-3)	C. L. Nystrom
Whitman College, Walla Walla, Wash. (A-2)	John W. Ackley
Whittier College, Whittier, Calif. (A-3) (B-2) (D-2)	W. Theron Ashby
Wichita, University of, Wichita, Kans. (A-2)	K. V. Manning
Willamette University, Salem, Ore. (B) (H)	(Not Known)
William & Mary College, Williamsburg, Va. (G & E-3)	Althea Hunt
Williams College, Williamstown, Mass. (K-3)	H. P. Stabler
Winona State Teachers College, Winona, Minn. (B) (G) (H)	Dr. Ella Murphy
Wisconsin, University of, Madison, Wis. (A-2) (C-2) (E-4) (H-2)	H. B. McCarty
Woman's College of University of N. C., Greensboro, N. C. (K-3)	Calvin N. Warfield
Worcester Polytechnic Institute, Worcester, Mass. (K-2)	Prof. H. H. Newell
Wyoming, University of, Laramie, Wyo. (C-3) (D-3) (F-2) (K-3)	Louis A. Mallory
Xavier Downtown College, Cincinnati, Ohio. (F-2)	James P. Glenn
York College, York, Nebr. (A) (B) (D) (E) (G) (J) (K)	H. W. Haugan

F. C. C. Non-Commercial Educational Broadcast Stations

(As of January 1, 1941)

The term "non-commercial educational broadcast station" means a station licensed to an organized non-profit educational agency for the advancement of its educational work and for the transmission of educational and entertainment programs.

Licensee and Location	Call Letters	Frequency (Kc)	Power
Board of Education of San Francisco, Unified School District, San Francisco, Calif.	KALW	42100	1000 w (C. P. only)
University of Kentucky, Beattyville, Ky.	WBKY	41900	100 w (C. P. only)
Board of Education, City of New York, Brooklyn, N. Y.	WNYE	41100	100 w
Cleveland City Board of Education, (Charles H. Lake, Superintendent) Cleveland, Ohio	WBOE	41500	500 w

F. C. C. Regulations Regarding Non-Commercial Broadcast Stations

Operation and Service

The operation of, and the service furnished by, non-commercial educational broadcast stations shall be governed by the following regulations:

(a) A non-commercial educational broadcast station will be licensed only to an organized non-profit educational agency and upon a showing that the station will be used for the advancement of the agency's educational program particularly with regard to use in an educational system consisting of several units.

(b) Each station may transmit programs directed to specific schools in the system for use in connection with the regular courses as well as routine and administrative material pertaining to the school system and may transmit educational and entertainment programs to the general public.

(c) Each station shall furnish a non-profit and non-commercial broadcast service. No sponsored or commercial program shall be transmitted nor shall commercial announcements of any character be made. A station shall not transmit the programs of other classes of broadcast stations unless all commercial announcements and commercial references in the continuity are eliminated.

Power Requirements

The operating power of non-commercial education broadcast stations shall

be not less than 100 watts or greater than 1000 watts unless a definite need for greater power is shown.

The transmitter of each non-commercial educational broadcast station shall be equipped with automatic frequency control apparatus so designed and constructed that it is capable of maintaining the operating frequency within plus or minus 0.01 percent of the assigned frequency.

Non-commercial educational broadcast stations are not required to operate on any definite schedule or minimum hours.

The transmitting equipment, installation, and operation as well as the location of the transmitter shall be in conformity with the requirements of good engineering practice as released from time to time by the Commission.

Frequencies Allotted

The following frequencies are allotted for assignment to non-commercial educational broadcast stations:

42,100 kc.	42,300 kc.
42,500	42,700
42,900	

Stations serving the same area will not be assigned adjacent frequencies.

Frequency modulation shall be employed exclusively unless it is shown that there is a special need for the use of amplitude modulation.

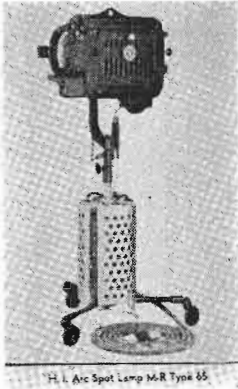
Only one frequency will be assigned to a station.



THE TECHNICAL SIDE



1940 ————— 1941



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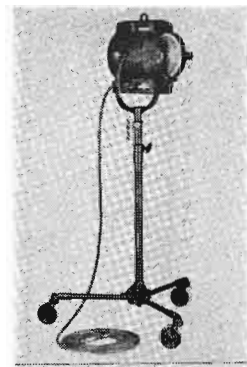


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RCA REVIEWS THE TECHNICAL PROGRESS OF RADIO IN 1940

OUT of the ultra-high frequency field, once regarded as the "graveyard of wireless," came 1940's outstanding technical advance in radio.

Late in January, 1940, the Radio Corporation of America announced the development of the radio relay method of transmitting television to the point where it was ready for the first application as a public service. The development is designed to make possible the establishment of inter-city television networks similar in effect to the wire networks of sound broadcasting. It is expected that in the future relay stations, located approximately 30 miles apart, the actual distance depending on terrain, will carry television signals across country in a narrow beam.

Today there are no "useless" waves in radio; the engineer confesses that "the surface has not been scratched." In search of technical advantages of ultra-high frequencies, two methods of transmission are under test: amplitude modulation as used in standard broadcasting and frequency modulation, popularly abbreviated "FM."

To meet the requirements of "FM," as well as of sound channel broadcasting for television, complete lines of standard transmitters of 250 watts to 50,000 watts were designed by several manufacturing companies. The requirements of these transmitters necessitated development of new tubes. Among them are a forced air-cooled triode, two types of which will produce a 3 kilowatt carrier; a forced air-cooled tetrode, of approximately the same rating, which may be operated on frequencies up to 108 megacycles; and a water-cooled tube having a capability of 25 kilowatts in the range of frequency modulated wavelengths.

Of major importance to the "FM"

field were exhaustive measurements made during the year, notably those by engineers of the National Broadcasting Company, to determine how much of the theoretical advantage of "FM" could be obtained in practice. A detailed account of the NBC engineers' findings was published in the RCA Review, October, 1940.

Spurred on by the call of national defense, development of transmission and reception devices operating on frequencies in the 100-150 megacycle band reached a new high in 1940. Expansion occurred chiefly in the aviation services and covered special instruments for direction finding, "blind" landing, and general air traffic control communications over short distances in and around airports.

Engineers report that the importance of technical advances in the application of ultra-high frequencies cannot be over-emphasized. It is pointed out that these tiny wave channels are usually free of static and other forms of extraneous interference. They require a minimum of power, thereby permitting the construction of light weight, compact apparatus. Also, antennas may be quite small, yet highly efficient. Moreover, there are fields of application other than aviation, such as police and fire department activities, and military services. Engineers explain that ultra-high frequency devices are particularly well adapted to these latter fields because of a marked degree of mobility.

Technical progress on other radio fronts was reported under the following headings:

Television

Technical development of television continued throughout the year. Among items that attracted wide-spread attention was the demonstration by RCA of large-screen, projection-type television reception for theaters. NBC, with the cooperation of the New York Telephone Company, demonstrated the feasibility of adapting ordinary telephone wire circuits to relay television programs over short distances.

With the advice of the Federal Communications Commission, the Radio Manufacturers Association appointed a National Television Systems Committee, which was charged with investigating special aspects of the television technical standards problem. This committee, organized in August, had not filed its report by the end of the year.

Re-allocation of frequency assignments by the FCC necessitated the rebuilding of the National Broadcasting Company's television transmitter, W2XBS, in New York. While this work was in progress, a number of refinements were incor-

porated in the installation which led to sharpening of the television image.

Another factor regarded as important by engineers was the development of a television camera tube for amateurs, which permits building of complete television systems at relatively low cost.

Facsimile and Radiophoto

Models of a new broadcast facsimile receiver were demonstrated at the New York World's Fair by RCA, and later in the year the same company exhibited a facsimile tape-recorder of radical new design and capability.

The facsimile broadcast receiver included such improvements as double speed, self-synchronization, frequency shift modulation of the subcarrier instead of amplitude modulation, and visible printing. It also combined a three-band radio receiver and loudspeaker with an unique circuit which permitted the distant facsimile transmitting station to automatically turn on the facsimile recorder at any desired time and, similarly, to turn it off. This eliminated the need for a time clock, which allowed facsimile reception only at a few pre-set periods of the day.

The tape facsimile system was exhibited in a production model capable of printing at the rate of 60 to 70 words a minute. Typewritten words are reproduced on narrow paper tape, which can be glued to radiogram blanks. The principal feature of the system is the extremely small size of the recorder, which occupies no more space than half the glove compartment of an automobile. The unit is particularly adaptable to use in mobile vehicles, such as airplanes, police cars, and various military motor carriers.

The tape recorder also makes use of the self-synchronizing and frequency shift modulation circuits developed for the broadcast equipment. Self-synchronization permits the receivers and the transmitters to operate on different sources of power.

Still another significant development in the facsimile field was the application of the frequency shift method of transmitting photographs and other graphic material overseas in the radiophoto service of the R.C.A. Communications, Inc. This method produced pictures of greater clarity and increased speed of transmission.

Standard Broadcasting

No radical changes in standard broadcast transmitter design occurred in 1940, although there were many minor improvements contributing to safety, convenience and efficiency. Air-fin cooled tubes experienced an increased demand.

Several equipment manufacturers began building 50-kilowatt transmitters using air-cooling throughout. Improved transmitter performance and simpler adjustments were attained through the increased use of feed-back. Styling and mechanical construction of transmitters were materially improved, facilitating easy accessibility to all parts.

In the broadcasting field, the year also was marked by the large number of applications for increased power. Many such requests were granted by the FCC with the proviso that the interference with other stations would be prevented by the use of directive aerials.

Prominent among the new and ultra-modern streamlined stations is WEFB of the National Broadcasting Company, completely rebuilt at Port Washington, Long Island, from which site the lofty towers direct the programs over a "salt water route" to the New York audience. Reaching a high degree of engineering perfection, this transmitter has eliminated "shadows" in reception that might be caused by New York's steel structures, especially the skyscrapers. The broadcast power is distributed where it does the most good. The very important "ground system" consists of 120,000 feet of copper ribbon radiating in strips of about 500 feet in all directions from the base of the aerial towers.

Outstanding in the development of broadcast receivers was the introduction by RCA of the "personal" or "camera-type" receiver, weighing less than five pounds. In the larger receivers, the general adoption of loop antennas contained in the cabinet made unnecessary the erection of an outside antenna for local reception. Push-button tuning and short-wave bands came into general use on automobile receivers.

Short-Wave Broadcasting

The NBC's International Division completed the work of increasing the power of its two international short-wave stations, WNBI and WRCA, at Bound Brook, N. J., from 25,000 to 50,000 watts, and of installing more efficient directive aerial systems.

Research Extends Radio's Influence

Radio research continued to spread its influence and usefulness into other fields of industry and science. Described as one of the most important developments of the year, in this connection, was the introduction by RCA of the electron microscope, an instrument capable of magnifying bacteria and other minute particles of matter far beyond any size heretofore obtainable with the most powerful optical microscopes.



Institute of RADIO ENGINEERS

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330 WEST 42nd STREET

NEW YORK CITY

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History

On May, 13, 1912, the Institute of Radio Engineers was formed through the merging of two organizations active in the technical radio field. One of these was the Wireless Institute, the headquarters of which was in New York City and the other which was located in Boston was known as the Society of Wireless Telegraph Engineers. The former organization had a membership of fourteen at the start of 1909 and twenty-seven on January 1, 1912. The Society of Wireless Telegraph Engineers had eleven members on the first day of 1907 and forty-three on January 1, 1912. At the time of its foundation, the Institute of Radio Engineers had fewer than fifty members.

Prominent in the early work of the Society of Wireless Telegraph Engineers were John Stone Stone, Lee de Forest, and Fritz Lowenstein. Those identified with the initial work of the Wireless Institute included John S. Murphy, R. A. Somerville, Joseph D.

Fountain, R. B. Respress, R. A. Cleva, John Gregg, E. Barnwell, Philip Farnsworth, Sidney L. Williams, R. H. Marriott, G. W. Pickard, Harry Shoemaker, and Eugene Thurston. The consolidation of these two societies and the initial work of organizing the Institute of Radio Engineers were done by Alfred N. Goldsmith, J. V. L. Hogan, and R. H. Marriott.

General

The Institute of Radio Engineers functions solely to advance the art and science of radio communication. It includes among its members those who have played prominent parts in the development of radio in the United States as well as many noted radio engineers and scientists in other countries.

Membership in the Institute is strictly personal and several grades have been established. The requirements for admission to these grades is contained in the Institute's Constitution and the eligibility of the applicant is passed on by the Board of Directors.

CHIEF ENGINEERS

OF STATIONS IN UNITED STATES AND CANADA

Alabama

Anniston, WMHA.....Vernon Story
Birmingham,
WAPI.....N. S. Hurley
WBRC.....J. C. Bell
WSGN.....P. B. Cram
Decatur, WMSL.....Hudie Brown
Dothan, WAGF.....John T. Hubbard
Mobile, WALA.....R. M. Cole
Montgomery,
WCOV.....James Breer
WSFA.....Paul B. Duncan
Muscle Shoals, WMSD.....Maurice McKinney
Opelika, WJHO.....R. B. Wilds
Selma, WHBB.....Sidney Spencer
Tuscaloosa, WJRD.....Fred James

Arizona

Globe, KWJB.....Arthur Turnrose
Jerome, KCRJ.....D. E. Towne
Lowell-Bisbee-Douglas, KSUN.....John G. Gould
Phoenix,
KPHO.....F. Belcher
KOY.....Robert Thompson
KTAR.....A. C. Anderson
Prescott, KYCA.....Norman H. Dewes
Safford, KGLU.....August Brieske
Tucson,
KTUC.....Clifford Livingston
KVOA.....Leonard L. Nalley
Yuma, KYUM.....L. B. Shaw

Arkansas

Blytheville, KLCN.....Joe Harrington
El Dorado, KELD.....John Riley
Fort Smith, KFPW.....D. W. Hoisington
Hot Springs,
KWFC.....James Beall Eschwege
KTHS.....J. Clinton Norman
Jonesboro, KBTM.....J. C. Warren
Little Rock,
KARK.....Dann Winn
KLRA.....K. F. Tracy
Pine Bluff, KOTN.....J. R. Whitworth
Siloam Springs, KUOA.....J. L. Miller

California

Bakersfield,
KERN.....Verne Shatto
KPMC.....L. P. Jarvis
Beverly Hills, KMPC.....Roger Love
Chico, KHSL.....Emory P. Milburn
Eureka, KIEM.....Alvar Olson, Charles Baker
Fresno, KARM.....John F. Scales
Long Beach,
KFOX.....Lawrence W. McDowell
KGER.....Jay Tapp
Los Angeles,
KECA.....H. L. Blatterman, Curtis Mason
KFAC.....H. W. Anderson
KFI.....H. L. Blatterman, Curtis Mason
KFSG.....Myron Kluge
KFVD.....Jack Smithson
KFWB.....Harry Myers
KHJ.....Frank Kennedy
KMTR.....Carroll Hauser
KNX.....Lester H. Bowman
KRKD.....Willis Freitag
Marysville, KMYC.....Leon Stauffer
Merced, KYOS.....Ed Dold
Modesto, KTRB.....Wayne Berthold
Monterey, KDON.....Omer Wright
Oakland,
KLS.....R. C. Butler
KROW.....C. E. Downey

Pasadena, KPCC.....N. V. Parsons
Redding, KVCV.....John E. Boren
Sacramento,
KFBK.....Norman D. Webster
KROY.....Milton Cooper
San Bernardino, KFXM.....Richard T. Sampson
San Diego, KGB.....Verne Milton
San Francisco,
KFRC.....Ernest G. Underwood
KGO.....Curtis D. Peck
KPO.....Curtis D. Peck
KSAN.....Mel Williams
KSFO.....Royal V. Howard
KYA.....Paul C. Schulz
San Jose, KQW.....C. V. Davey
San Luis Obispo, KVEC.....Earl Travis
Santa Ana, KVOE.....Wallace S. Wiggins
Santa Barbara, KDB.....Walter Radtke
Stockton, KWG.....Russell Bennett
Visalia, KTRC.....Bert Williamson
Watsonville, KHUB.....Farrel Buckley

Colorado

Colorado Springs,
KVOR.....Cozine Strang
KLZ.....T. A. McClelland
Denver,
KOA.....Robert H. Owen
KVOD.....D. Garretson
Durango, KIUP.....G. L. Schmehl
Grand Junction, KFXJ.....Fred Mendenhall

Connecticut

Bridgeport, WICC.....Garo Ray
Hartford,
WDRS.....I. A. Martino
WHTT.....Richard K. Blackburn
WTIC.....J. C. Randall
New Britain, Hartford, WNBC.....Rogers B. Holt
New Haven, WELI.....J. Gordon Keyworth
New London, WNLC.....Francis C. Garufy
Waterbury, WATR.....John Burke
Waterbury-New Haven, WBRY.....Frank B. Hales

District of Columbia

Washington,
WINX.....Ralph E. Cannon, Jr.
WJSV.....Clyde Hunt
WMAZ.....A. E. Johnson
WOL.....H. H. Lyon
WRC.....A. E. Johnson

Florida

Daytona Beach, WMFJ.....W. K. Ellenwood
Fort Lauderdale, WFTL.....Francis G. Carroll
Fort Meyers, WFTM.....Lewis Shea
Gainesville, WRUF.....Dean Joseph Weil
Jacksonville,
WJHP.....B. Hayford
WMBR.....H. B. Greene
Lakeland, WLAK.....W. Powell Hunter
Miami, WQAM.....Engene Rider
Miami Beach, WKAT.....Walter Kinney, Tom Magee
and Arthur Smith, co-eng.
Ocala, WTMC.....Bradley Overton
Orlando,
WBBO.....James E. Yarbrough
WLOF.....W. Dod Daniel
Panama City, WDLP.....Eddie Pierce
Pensacola, WCOA.....Bert Mead
St. Augustine, WFOY.....Pat Bernhard
St. Petersburg,
WSUN.....Tom Herrin
WTSP.....Garvin Combs

Tallahassee, WTAL.....William A. Snowden, Jr.
 Tampa,
 WDAE.....William Pharr Moore
 WFLA.....Joe Mitchell

Georgia

Albany, WGPC.....O. E. Johnson
 Atlanta,
 WAGA.....Clifford Hanson
 WATL.....J. M. Comer, Jr.
 WGST.....Ben Akerman
 WSB.....C. F. Daugherty
 Augusta,
 WGAC.....William Nungesser
 WRDW.....Harvey Aderhold
 Cordelle, WMJM.....Noel Martin
 Dalton, WBLJ.....W. Roberts
 Macon,
 WMBL.....David Bain
 WMAZ.....George P. Rankin, Jr.
 Moultrie, WMGA.....James W. Stewart
 Rome, WRGA.....R. J. Starr
 Savannah,
 WSAV.....Meredith Thompson
 WTOC.....James Reynolds Donovan
 Valdosta, WGOV.....David S. Traer
 Waycross, WAYX.....John J. Tobola
 West Point, WDAK.....James L. Williams

Idaho

Boise, KIDO.....H. W. Toedtemeier
 Idaho Falls, KID.....W. J. Provis
 Lewiston, KRLL.....Milton MacLafferty
 Nampa, KFSD.....Edward Hurt
 Pocatello, KSEI.....James E. Mitchell
 Twin Falls, KTFI.....Franklin V. Cox
 Wallace, KWAL.....William M. Bruner

Illinois

Aurora, WMRO.....Leo S. Burch
 Bloomington, WJBC.....Ted Bailey
 Chicago,
 WAAF.....Carl Ulrich
 WBBM.....Frank B. Falknor
 WCBD.....Edward J. Jacker
 WCFL.....Maynard Marquardt
 WEDC.....Caled K. Frisk
 WENR.....Howard C. Luttgens
 WGN.....Carl J. Meyers
 KGES.....George Bush
 WJJD.....Walter Myers
 WLS.....Thomas L. Rowe
 WMAQ.....Howard C. Luttgens
 WMBI.....A. P. Frye
 WSBC.....Ed Jacker
 Cicero, WHFC.....E. P. Hayes
 Danville, WDAN.....Ted Magin
 Decatur, WSOY.....M. H. Stuckwish
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 Galesburg, WGIL.....Gerald Foster
 Harrisburg, WEBQ.....Joseph R. Tate
 Herrin, WJPF.....Lynton Lemond
 Joliet, WCLS.....David Maltby
 Peoria, WMBD.....Ted Giles
 Quincy, WTAD.....Francis Wentura
 Rockford, WROK.....Thomas C. Cameron
 Rock Island, WHBF.....R. J. Sinnett
 Springfield,
 WCBS.....Richard L. Ashenfelter
 WTAX.....Edward Ring
 Tuscola, WDZ.....Mark Spies
 Urbana, WILL.....A. James Ebel

Indiana

Anderson, WHBU.....Wayne Reeves
 Elkhart, WTRC.....Kenneth Singleton
 Evansville,
 WEOA.....John B. Caraway, Jr.
 WGBF.....Fay Gehres
 Fort Wayne,
 WGL.....Robert G. Duffield, Jr.
 WQWO.....Robert G. Duffield, Jr.
 Gary, WIND.....Ken Shirk
 Hammond,
 WHIP.....H. V. Fitzcharles

WJOB.....John Felthouse
 Indianapolis,
 WFBM.....Harold Holland
 WIBC.....Lester Huff
 WIRE.....Earl W. Lewis
 Muncie, WLBC.....Maurice Crain
 New Albany (Louisville, Ky.), WRRR
 H. W. Hathaway
 South Bend,
 WFAM.....H. Cole
 WSBT.....H. Cole
 Terre Haute, WBOV.....Stokes Gresham, Jr.
 Vincennes, WAOV.....Claude Harris
 West Lafayette, WBAA.....Ralph Townsley

Iowa

Ames, WOI.....Louie L. Lewis
 Cedar Rapids, Waterloo, WMT.....Charles F. Quentin
 Davenport, WOC.....Allen Richter
 Decorah, KWLC.....O. M. Eittrheim
 Des Moines,
 KRNT.....Paul Huntsinger
 KSO.....Paul Huntsinger
 WHO.....(Technical Director) Paul A. Loyel
 Dubuque, WKBB.....Leonard Carlson
 Fort Dodge, KVFD.....Jack Duncan
 Iowa City, WSUI.....S. J. Ebert
 Marshalltown, KFJB.....Wayne Peak
 Mason City, KGLO.....Leon Born
 Ottumwa, KBIZ.....Wayne Hatchett
 Shenandoah, KMA.....Ray Schroeder
 Sioux City,
 KSCJ.....Stephen C. Dier
 KTRJ.....Carleton Gray

Kansas

Coffeyville, KGGF.....J. S. Jaminet
 Dodge City, KGNO.....Ralph Hickma
 Emporia, KTSW.....Paul H. Daniels
 Garden City, KIUL.....Virgil E. Creig
 Great Bend, KVGB.....Leo Legleiter
 Kansas City, KCKN.....C. E. Salzer, Jr.
 Lawrence, WREN.....Carl Biesner
 Pittsburg, KOAM.....W. L. Brown
 Salina, KSAL.....N. E. Vance, Jr.
 Topeka, WIBW.....Karl Troeglen
 Wichita,
 KANS.....L. F. Heithecker
 KFBI.....G. H. Johnstone
 KFH.....Amos C. Dadisman

Kentucky

Bowling Green, WLBJ.....Earl Jaego
 Hopkinsville, WHOP.....Benson Arwood Smith
 Lexington, WLAP.....Sanford Helt
 Louisville,
 WAVE.....Wilbur E. Hudson
 WHAS.....Orrin W. Towner
 WINN.....Al Rutherford
 Owensboro, WOMI.....W. W. Binford
 Paducah, WPAD.....C. G. Sims

Louisiana

Alexandria, KALB.....Jesse R. Sexton
 Baton Rouge, WJBO.....Wilbur T. Golson
 Lafayette, KVOL.....Clovie L. Bailey
 Monroe, KMLB.....O. L. Morgan
 New Orleans,
 WNOE.....C. E. Davidson
 WSMB.....M. Sandi
 WWL.....J. D. Bloom, Jr.
 Shreveport,
 KRMD.....R. M. Dean
 KTBS.....C. H. Maddox
 KWKH.....W. E. Antony

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 Bangor, WABI.....Neldon Lawson
 Lewiston, WCOC.....Leslie R. Hall
 Portland,
 WCSH.....G. Fred Craudon
 WGAN.....Roger W. Hodgkins
 Presque Isle, WAGM.....L. E. Hughes

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Baltimore,
WBAL.....Gerald W. Cooke
WCAO.....Martin L. Jones
WCMB.....G. Porter Houston
WFBR.....William Q. Ranft
Cumberland, WTBO.....Charles Ray Sine
Frederick, WFMD.....John A. Fels
Hagerstown, WJEJ.....Harold Brewer

Massachusetts

Boston,
WAAB.....Irving B. Robinson
WCOP.....Whitman N. Hall
WEEL.....P. K. Baldwin
WHDH.....Donald Wise
WMEX.....William M. Smith
WNAC.....Irving B. Robinson
WORL.....Molvin Stickles
WSAR.....John C. Pavao
Greenfield, WHAI.....James L. Spates
Cape Cod, WOCB.....Ralph L. Lawton
Lawrence, WLAW.....George A. Hinkley
Lowell-Lawrence, WLLH.....Anthony Michaels
New Bedford, WNBH.....Clyde Pierce
Salem, WESX.....Richard Hammond
Springfield,
WMAS.....Earl G. Hewinson
WSPR.....A. R. Bradley
Worcester,
WORC.....A. F. Kleindienst
WTAG.....Hobart Newell

Michigan

Battle Creek, WELL.....R. B. Roof
Detroit,
WJBK.....Paul Frinke
WJR.....M. R. Mitchell
WMBC.....Edward Clark
WWJ.....Walter Hoffman
WXYZ.....Roy Gardner
East Lansing, WKAR.....Norris E. Grover
Flint, WFDF.....Frank D. Fallain
Grand Rapids, WLAV.....Lauren Bergeron
Ironwood, WMJS.....R. L. Johnson
Jackson, WIBM.....C. W. Wirtanen
Lapeer, WMPC.....H. F. Hayes
Muskegon, WKBZ.....George Krivitsky
Pontiac, WCAR.....Wiley Wenger
Port Huron, WHLS.....Wayne McDonnel
Royal Oak, WEXL.....Joseph L. McFarland
Saginaw, WSAM.....Harold McCullen
Traverse City, WTCM.....Drew McClay

Minnesota

Albert Lea, KATE.....George Church
Duluth,
KDAL.....Robert Dettman
WEBC.....Charles Persons
Mankato, KYSM.....H. D. Kimberly
Minneapolis-St. Paul,
KSTP.....H. R. Skifter
WCCO.....Hugh S. McCartney
WDGY.....George K. Jacobson
WLB.....Frank J. Blitz
WLOL.....Ozden Prestholdt
WMIN.....Warren Fritze
WTCN.....John M. Sherman
Northfield, WCAL.....Amos Dicke
Rochester, KROC.....Fred C. Clark
Virginia, WAML.....Charles Persons
Willmar, KWLM.....Verne Baumgartner
Winona, KWNO.....Maurice Reutter

Mississippi

Columbus, WCB.....Robert Montgomery
Greenville, WJPR.....Millard Perry and Ray Dickson
Greenwood, WGRM.....George Wilson
Gulfport, WGM.....Kenneth Ervin
Jackson, WSLI.....Tommie Hubbard
Laurel, WAML.....A. A. Touchstone
McComb, WSKB.....Robert Louis Sanders
Vicksburg, WQBC.....C. E. Drake

Missouri

Clayton (St. Louis), KFUD.....Carl H. Meyer
Columbia, KFRU.....Robert Haigh
Jefferson City, KWOS.....J. C. Haynes
Joplin, WMBH.....Baxter Burriss
Kansas City,
KCMO.....L. C. Sigmon
KMBC.....Ray Moler
WDAF.....Joseph A. Flaherty
Poplar Bluff, KWOC.....Don Lidenton
St. Joseph, KFEQ.....J. Wesley Koch
St. Louis,
KMOX.....L. McComas Young
KSD.....Robert L. Coe
KWK.....James Burke
KXOK.....Arthur F. Rekart
WEW.....George E. Rueppel
WIL.....Chal H. Stoup
Sedalia, KDRO.....Thomas L. Yount
Springfield,
KGBX.....Fritz Bauer
KWTO.....Fritz Bauer

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Butte, KGIR.....Fred Heister
Great Falls, KFBB.....Wilbur Myhre
Missoula, KGVO.....George Allison
Wolf Point, KGCS.....Harold Klimpel

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Norfolk, WJAG.....Frank Weidenbach
North Platte, KGNP.....J. B. Eaves
Omaha,
KOIL.....Mark Bullock
WOW.....William Kotera
Scottsbluff, KGKY.....Harland Morrison

Nevada

Reno, KOH.....Hewitt Kees

New Hampshire

Keene, KWNE.....Willis F. Moore
Laconia, WLNH.....Wilfred Ledoux
Manchester, WFEA.....Irving Mower
Portsmouth, WHEB.....Donald R. Stevens

New Jersey

Asbury Park, WCAP.....Augustus McAllister
Atlantic City,
WBAB.....Earle Godfrey
WPPG.....Blair K. Thron
Bridgeton, WSNJ.....Russel Ely
Camden, WCAM.....Marvin Seimes
Jersey City, WHOM.....Allison W. Burnham
Newark, WOR.....J. R. Poppele
Red Bank, WBRB.....B. T. Marshall
Zarephath, WAWZ.....Nathaniel Wilson

New Mexico

Albuquerque,
KGGM.....Leonard Dobbs
KOB.....George S. Johnson
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PRODUCTS: Transmitting and Receiving Equipment, Transmitting Tubes, Direction

Finders, Marine Radio Equipment, Broadcast and Communications Transmitters.

Federal Recorder Co., Inc.

630 S. Wabash Ave., Chicago, Ill.
Contact.....Mr. Charles Greenleaf

Finch Telecommunications, Inc.

4th and Virginia Sts., Passaic, N. J.
Phone PA 2-3440

Contact.....W. G. H. Finch
BRANCH OFFICES: 1819 Broadway, N. Y. C.; 811-15th St., Wash., D. C.; Airport Lab., Bendix, N. J. PRODUCTS: Facsimile for broadcasting, aviation, marine, radio applications and general industrial applications, wire and radio. Telepicture Equipment for wire and radio operation. Special Communications Equipment.

Fonda Corp.

29 W. 57th St., New York, N. Y.
Phone PLaza 3-2692

Contact.....David S. Vogels
PRODUCTS: Tape Recording Machines, Reel type for radio broadcast, Recorder and Playback Machine for home use, machine for speech recording.

Gates Companies

Quincy, Ill.

Contact.....P. S. Gates
PRODUCTS: Radio Broadcast and Communications Transmitters, Phasing and Antenna Equipment, Frequency Control and Remote Control Apparatus, Speech Equipment, Sound Effects Tables, Limiting Amplifiers.

General Electric

1825 Boston Ave., Bridgeport, Conn.
President.....C. E. Wilson
Mgr. Radio & Televisn. Dept...W. R. G. Baker
Designing Engineer.....I. J. Kaar
Advt. & Sales Promotion Mgr.,

Harry J. Deines
Mgr., Radio & Television Receiver Sales Div.,
P. F. Hadlock

PRODUCTS: Electric Sets, Battery Sets, Radio and Phonograph Combinations, Television Sets, F M Sets, Tube Test Equipment, Tubes.

General Radio Co.

30 State St., Cambridge, Mass.
Phone TRObridge 4400

Contact.....H. B. Richmond
BRANCH OFFICES: 90 West St., N. Y. C.; 1000 N. Seward St., Los Angeles, Cal.; PRODUCTS: Broadcast Station Frequency and Modulation Monitors, Volume Controls, Test Equipment, Sound Measuring and Analyzing Equipment.

Geo. H. Hardner Corp.

602 Hamilton St., Allentown, Penna.
Phone Allentown 9549

Contact.....T. E. Spickall
PRODUCTS: Towers, Radials, Studios and Transmitter Buildings.

Hardwick, Hindle, Inc.

40 Hermon St., Newark, N. J.

Phone Market 2-8200

Contact.....A. H. Hardwick
PRODUCTS: Fixed and Adjustable Resistors, Rheostats.**D. H. Harrell**

1527 E. 74th Pl., Chicago, Ill.

Contact.....D. H. Harrell
PRODUCTS: Tubular Vertical Antennae, Supports for UHF Antennae.**Hartenstine Zane Co., Inc.**

225 Broadway, New York, N. Y.

Phone BA 7-8390

Contact.....Chas. J. Hartenstine
BRANCH OFFICE: 571 Springdale Ave., East Orange, N. J. PRODUCTS: Antennae Installation including all field work for foundations, erection, painting, lighting, and servicing radio towers. Installing ground systems and coaxial cable.**Hollister Crystal Co.**

Wichita, Kansas

Phone Wichita 5-2464

Contact.....Herb Hollister
PRODUCTS: "A" Cut Quartz Crystals.**Ideal Commutator Dresser Co.**

Sycamore, Ill.

Phone Sycamore 77

Contact.....J. Walter Becker
BRANCH OFFICES: 320 S. Jefferson, Chicago, Ill.; 61 E. 11th St., N. Y. C.; 1015 Fulton Bldg., Pittsburgh, Pa. PRODUCTS: Electric Soldering Irons and Tools and Portable Cleaners, Wire Strippers, Fuse Pullers, Test-Lite and Fuse Pullers, Commutator and Motor Maintenance Equipment.**Insuline Corp. of America**

30-30 Northern Blvd., L. I. City, New York

Contact.....S. J. Spector
PRODUCTS: Radio Receiving-Transmitting Parts and Accessories.**International-Stacey Corp.**

875 Michigan Ave., Columbus, O.

Phone University 2123

Contact.....O. M. Havekotte
BRANCH OFFICES: 21 West St., N. Y. C.; P. O. Box 3350, Beaumont, Texas. PRODUCTS: Antenna, Airway Beacon, Radio Directional Beacon Towers; Patented Ground Screen; Transmission and Radio Towers.**Isolanite, Inc.**

Belleville, N. J.

Phone Belleville 2-1316

SALES OFFICE: 233 Broadway, New York, N. Y. Phone Rector 2-9275. Contact, H. G. Beebe. PRODUCTS: High Frequency Radio Insulators, Coaxial Transmission Line and Accessory Equipment, Special Antenna Equipment.

Johns-Manville Corp.

22 East 40th St., New York, N. Y.

Phone LEXington 2-7600

PRODUCTS: Sound-control; Materials and Acoustical-Engineering Service.

E. F. Johnson Co.

Waseca, Minn.

Contact.....E. F. Johnson
BRANCH OFFICE: 259 W. 14th St., N. Y. C. PRODUCTS: Phasing Equipment, Antenna Tuning Units, Inductors, Variable Condensers, Tube Sockets, Insulators, Plugs and Jacks, Copperweld Wire.**Kenyon Transformer Co., Inc.**

840 Barry St., New York, N. Y.

Phone DAYton 9-0100

Contact.....F. P. Kenyon
PRODUCTS: Transformers, Reactors, Filters.**"King Brand" Music Papers**

1595 Broadway, New York, N. Y.

Phone CI 6-0488

Contact....."Wes" Cowen
BRANCH OFFICE: 1605 Caluenga Blvd., Hollywood. PRODUCTS: Music-Manuscript Paper, Score Paper, Ink, Fountain Pens, Carrying Cases and Covers; Batons, Duplicating Papers, Music Tapes.**Lapp Insulator Co., Inc.**

Le Roy, N. Y.

Phone Le Roy 385

PRODUCTS: Tower Footing and Guy Insulators, Stand-Off, Entrance and Antenna Insulators, Porcelain Water Coils, Radio Frequency High Voltage Condensers.

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.**Lektra Labs., Inc.**

30 E. 10th St., New York, N. Y.

Phone AL 4-0239

Contact.....Ben Eisenberg
PRODUCTS: Dynamic Bullet Microphones and Bullet-Phone Inter-Communicating System.**The Lifetime Corp.**

1825 Adams St., Toledo, O.

Phone Main 5643

Contact.....Win. H. Manoff
PRODUCTS: Microphones: Carbon, Dynamic, Velocity; Trumpets, Reflex Trumpets, P. M. Trumpet Units, Aluminum Baffles.

John E. Lingo and Son, Inc.

28th St. and Buren Ave., Camden, N. J.
Phone Camden 487

Contact.....J. E. Lingo
PRODUCTS: Vertical Radiators: Guyed
Tubular Steel and Portable Dural; Turn-
stile and UHF Antennae, Tubular Steel
Supporting Poles (for UHF Antennae).

Littelfuse, Inc.

4757 Ravenswood, Chicago, Ill.
Phone Long. 7778

Contact.....E. V. Sundt
PRODUCTS: Fuses: Radio Transmitter,
Radio and Television, and Aircraft Trans-
mitter; Neon Modulation Indicators.

Miles Reproducer Co., Inc.

812 Broadway, New York, N. Y.
Phone GRamercy 5-9466

Contact.....J. M. Kuhlik
PRODUCTS: Filmgraph—Instantaneous,
Continuous Recording Devices; Permanent
Play-Back.

Miller Broadcasting System, Inc.

113 W. 57th St., New York, N. Y.
Phone Circle 6-0141

Contact.....James A. Miller
PRODUCTS: Millertape Transmission
Equipment, Automatic Station Announcement
Equipment.

Mirror Record Corp.

58 W. 25th St., New York, N. Y.
Phone CH 3-2222

Contact.....P. K. Trautwein
PRODUCTS: No Transmitters.

Nash Radio Products Co.

6267 Gravois Ave., St. Louis, Mo.
Phone Rlverside 7060

Contact.....R. S. Nash
BRANCH OFFICE: 600 W. Jackson Blvd.,
Chicago, Ill. PRODUCTS: Recording and
Playback Equipment; High Fidelity Pre-
Amplifiers and Mixers; Record Lube, Clean-
er, Permertiser and Polish; Turntable Lubri-
cant.

Pacent Engineering Corp.

79 Madison Ave., New York, N. Y.
Phone AShland 4-1586

Contact.....R. L. Lewis
PRODUCTS: Theatre Sound Equipment,
P. A. Apparatus, Intercommunicating Equip-
ment, High Fidelity Radios.

Pacific Sound Equipment Co., Inc.

7373 Melrose Ave., Hollywood, Calif.
Phone WY 6937

Contact.....Robt. G. Metzner
BRANCH OFFICES: 712—11th St., N. W.,
Wash., D. C.; 1100 Pine St., St. Louis, Mo.;

1900 Euclid Ave., Cleveland, O.; 1930 Mari-
posa St., Fresno, Calif.; 4762 Woodward
Ave., Detroit, Mich.; 1609—19th St., Bakers-
field, Calif.; 153 Kearney St., San Francisco,
Calif.; 30 Rockefeller Plaza, N. Y. C. PROD-
UCTS: Transcription Playbacks, Recording
Machines and Turntables.

Par-Metal Products Corp.

3262—49th St., Long Island City, N. Y.
Phone AStoria 8-8905

Contact.....A. A. Parmet
PRODUCTS: Racks—relay and cabinet
type—Panels, Metal Equipment.

Poinsettia, Inc.

96 Cedar Ave., Pitman, N. J.
Phone Pitman 511

Contact.....E. Poinsett
BRANCH OFFICES: 4447 W. Irving Park
Rd., Chicago, Ill.; 705 S. First St., Louis-
ville, Ky. PRODUCTS: Phonograph Rec-
ord Manufacturing Equipment.

Presto Recording Corp.

242 W. 55th St., New York, N. Y.
Phone CI 5-7760

Contact.....George V. Saliba
PRODUCTS: Sound Recording Equipment,
Discs and Needles, Transcription Turntables,
Recording Amplifiers and Accessory Record-
ing Equipment.

B. A. Proctor Co., Inc.

230 Park Ave., New York, N. Y.
Phone MU 6-7542

Contact.....Ferd. C. W. Thiede
PRODUCTS: Crystal Pickups and Record-
ing Heads, Transcription Turntables and Re-
cording Machines.

RCA Manufacturing Co., Inc.

Camden, New Jersey
Phone Camden 8000

President.....G. K. Throckmorton
Exec. V. P.....Robt. Shannon
Commercial V. P.....H. C. Bonfig
Financial V. P. & Secy.....F. H. Corregan
V. P. in charge of Engineering Products, RCA
Photophone & Intl. Div.....F. R. Deakins
V. P. & Adv. Director.....T. F. Joyce
Adv. Mgr.....D. J. Finn
V. P. of Purchasing.....N. A. Mears
V. P. & Genl. Attorney.....L. B. Morris
V. P. in charge of Mfg. & Prod. Engineer-
ing.....E. W. Ritter
Asst. V. P.....M. F. Burns
Asst. V. P.....R. B. Austrian

BRANCH OFFICES: 530 Citizens & South-
ern Bank Bldg., Atlanta, Ga.—J. W. Cocke,
Manager; 589 E. Illinois St., Chicago, Ill.—
R. A. Graver, Manager; 616-618 Keith Bldg.,
Cleveland, O.—J. K. West, Manager; 1002
Santa Fe Bldg., Dallas, Tex.—G. Malsed,

Manager; 213 West 18th St., Kansas City, Mo.—H. M. Winters, Manager; 411 Fifth Ave., New York, N. Y.—M. F. Blakeslee, Manager; 170 Ninth St., San Francisco, Cal.—E. J. Rising, Manager. **PRODUCTS:** Broadcast Station Transmitters, Microphones and Associated Equipment, Electric and Radio Broadcast Transcriptions, Instantaneous Disc Recording Equipment, Facsimile Equipment, Television Transmitters, F. M. Transmitters.

Radio City Products Co., Inc.

88 Park Pl., New York, N. Y.
Phone COrtlandt 7-5654

Contact.....Milton Reiner
PRODUCTS: Radio and Electrical Testing Instruments.

Radio Engineering Labs., Inc.

35-54—36th St., Long Island City, N. Y.
Phone RAvenswood 8-2340

Contact.....Charles M. Srebroff
PRODUCTS: Frequency Modulation — Broadcast Transmitters, Receiver and Loud Speaker Units, Portable Transmitters and Receivers for speech frequencies, Hi-Fidelity Broadcast Relay Transmitters, Portable Transmitters for broadcast pickup service, Transmitters and Receivers for fixed stations on speech frequencies and Speech Equipment; Aircraft Transmitters and Receivers; Military and Municipal Transmitters and Receivers.

Ralston Record Co.

96 Cedar Ave., Pitman, N. J.
Phone Pitman 511

Contact.....F. L. Pedrick
PRODUCTS: Phonograph Records.

Rangertone, Inc.

201 Verona Ave., Newark, N. J.
Phone HU 2-0123

Contact.....R. H. Ranger
PRODUCTS: Electric and Signature Chimes, Electric Organs, Recording Needles and Blanks.

Rek-O-Kut Corp.

173 Lafayette St., New York, N. Y.
Phone CA 6-3835

Contact.....George Silber
PRODUCTS: Recording Mechanisms, Motors, Cutting Heads, Feedscrews, Transformers and Meters.

Remler Co., Ltd.

2101 Bryant St., San Francisco, Cal.
Phone Valencia 3435

Contact.....E. G. Danielson
PRODUCT: Attenuators.

The Chas. E. Schuler Engineering Co.

109 Cambria St., Newark, Oo.
Phone Newark 4319

Contact.....Charles E. Schuler
PRODUCTS: Steel Vertical Radiators for antenna systems.

Scientific Radio Service

124 Jackson Ave., University Park, Md.
Contact.....H. D. Eisenhauer
PRODUCTS: Piezo Electric Crystals and Holders, Calibrating Radio Frequency Monitors.

Seattle Radio Supply Co., Inc.

2117—2nd Ave., Seattle, Wash.
Contact.....R. C. James, Sr.
PRODUCTS: Radio Parts and Tubes.

Shure Bros.

225 W. Huron St., Chicago, Ill.
Phone Del 8381

Contact.....S. N. Shure
BRANCH OFFICES: 136 Liberty St., N. Y. C.; 908 W. Venice Blvd., Los Angeles; 415 Peachtree St., N. E., Atlanta, Ga.; 2411 First Ave., Seattle, Wash. **PRODUCTS:** Microphones, Phonograph Pickups, Magnetic Cutters, Microphone Stands, Vibration Pickups and Acoustic Devices.

Speak-O-Phone Record & Equip. Co.

23 West 60th St., New York, N. Y.
Phone CO 5-1350

Contact.....C. A. Austin
BRANCH OFFICES: 235 Pine St., Gardner, Mass.; 912 Commerce St., Dallas, Texas; 180 Fern St., Collingswood, N. J.; 601 Cedar Lake Rd., Minneapolis, Minn.; Box 428, Greeley, Colo.

Standard Transformer Corp.

1500 N. Halsted St., Chicago, Ill.
Phone Mohawk 5300

Contact.....J. J. Kahn
PRODUCTS: Transformers, Transmitter Kits, Packs, Pin Game Equipment.

Stromberg-Carlson Telephone Mfg. Co.

100 Carlson Rd., Rochester, N. Y.
Contact.....Ray H. Manson
PRODUCTS: Electric, Combination, Television and FM Sets; Paging Systems, Antenna Kits.

Taylor Tubes, Inc.

Chicago, Ill.
Phone Armitage 1730
Contact.....Frank Hajek
PRODUCTS: Transmitting Tubes — Triodes and Rectifiers.

The Triplett Electrical Instrument Co.

Bluffton, Ohio

Contact.....R. L. Triplett
BRANCH Offices: All principal U. S. cities. PRODUCTS: Electrical Measuring Instruments, Industrial, Laboratory and Radio Test Equipment.

Truscon Steel Co.

Youngstown, Ohio
Phone Youngstown 32171

Contact.....K. D. Mann
BRANCH OFFICES: All principal U. S. cities. PRODUCTS: Vertical Radiators, uniform cross section guyed or narrow base self supporting type; Pure Copper Mesh for ground screens.

The Turner Co.

Cedar Rapids, Iowa
Phone Cedar Rapids 32607

Contact.....H. W. Johnson
PRODUCTS: Microphones and Microphone Accessories.

United Transformer Corp.

150 Varick St., New York, N. Y.
Phone Canal 6-1080

Contact.....I. A. Mitchell
PRODUCTS: Transformers, Reactors, Automatic Regulators, Voltage Control Units, Filters; Universal Broadcast Equalizers, Recording and Line Equalizers.

Universal Battery Co.

3410 S. La Salle St., Chicago, Ill.
Phone Blvd. 6065

Contact.....Robert Mowry
PRODUCTS: 2 and 6 Volt Batteries, Wet Storage Batteries.

Universal Microphone Co., Ltd.

Inglewood, Calif.
Phone Orchard 74216

Contact.....James R. Fouch
BRANCH OFFICE: 540 No. Michigan Ave., Chicago. PRODUCTS: Microphones, Stands and Accessories, Recording Machines and Supplies.

Waveland Company

4744 W. Rice St., Chicago, Ill.
Phone Mansfield 1437

Contact.....G. W. Strong
BRANCH OFFICE: 375 Mitchell Ave., Elmhurst, Ill. PRODUCTS: Radio Tower Erection and Maintenance Service.

Webster-Chicago Corp.

5622 Bloomingdale, Chicago, Ill.
Phone: Mer. 3100

Contact.....R. F. Blash
PRODUCTS: Microphones, Amplifiers, Record Changers.

Western Electric Co., Inc.

(Specialty Products Division)
300 Central Ave., Kearney, New Jersey
Phone Mitchell 2-7700

Manager.....F. R. Lack
Asst. Sales Mgr.....H. N. Willets
Sales Promotion.....E. W. Thurston
Radio Broadcasting Sales.....L. F. Bockoven
Sound Systems Sales.....C. W. Reynolds
Aviation and Marine Radio Sales,
F. C. McMullen
Govt. Sales Engineer.....J. A. Merquelin

PRODUCTS: Hearing Aids and Hearing Measuring Equipment; Aviation, Marine, Police Radio Transmitters and Receivers; Radio Broadcasting Equipment; Sound Distribution Systems; Vacuum Tubes; Azimuth Indicating Radio Receivers; Radio Altimeters; Acoustic Measuring Equipment; Microphones, Loudspeakers, and allied items; Telephone Apparatus and Cable; Carrier Telephone Equipment and Train Dispatching Apparatus.

Westinghouse Elec. & Mfg. Co.

2519 Wilkens Ave., Baltimore, Md.
Phone Gilmor 7320

Manager.....W. C. Evans
Manager Sales.....C. J. Burnside
Asst. Mgr. Sales.....E. T. Morris
Mgr. Engineer.....J. A. Hutcheson

BRANCH OFFICES: In all principal cities. PRODUCTS: Radio Transmitting Apparatus for broadcast use; Antenna Phasing, Tuning and Lighting Equipment; Special Control Items and Operating Consoles; Power Equipment, Generators, Motors, De-ion Circuit Breakers, Relays, Instruments, Meters, Indicating Lights, Supervisory Apparatus, Insulating Material, etc.

Weston Electrical Instrument Corp.

614 Frelinghuysen Ave., Newark, N. J.
Phone Bigelow 3-4700

Contact.....E. F. Weston
BRANCH OFFICES: All principal U. S. cities and Canada. PRODUCTS: Tubecheckers, Vacuum Tube Voltmeters, Power Level Indicators, Volume Indicators, Switchboard Voltmeters and Ammeters, Portable Voltmeters, Ammeters and Ohmmeters, Portable Capacity Testers, Portable Combination Volt-Ohm-Milliammeters.

Herbert L. Wilson

260 E. 161st St., New York, N. Y.
Phone MELrose 5-0021

Contact.....Herbert L. Wilson

Wincharger Corp.

E. Seventh and Division Sts., Sioux City, Iowa
Phone Sioux City 8-6513
Contact.....R. F. Weinig
PRODUCTS: Vertical Radiators, Antenna Towers and Accessories.

Radio Manufacturers Ass'n

Officers and Executive Personnel—1940-41

Headquarters: 1317 F. St., N.W., Washington, D. C.

President

J. S. Knowlson, Stewart-Warner Corporation, Chicago, Illinois.

Executive Vice-Pres.-General Mgr.

Bond Geddes, 1317 F St., N. W., Washington, D. C.

Vice-Presidents

Paul V. Galvin, Galvin Manufacturing Corporation, Chicago, Illinois.

Roy Burlew, Ken-Rad Tube & Lamp Co., Owensboro, Kentucky.

H. E. Osmun, Centralab, Milwaukee, Wisconsin.

Donald MacGregor, Webster-Chicago Corp., Chicago, Illinois.

Treasurer

Leslie F. Muter The Muter Company, Chicago, Illinois.

Secretary

Bond Geddes, 1317 F Street, N. W., Washington, D. C.

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John W. Van Allen, Liberty Bank Building, Buffalo, New York.

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Ray H. Manson, Stromberg-Carlson Telephone Manufacturing Co., Rochester, New York.

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David Sarnoff, RCA Manufacturing Company, Inc., New York, N. Y.

Ernest Searing, International Resistance Co., Philadelphia, Pennsylvania.

Ray F. Sparrow, P. R. Mallory & Co., Indianapolis, Indiana.

A. S. Wells, Wells-Gardner & Company, Chicago, Illinois.

Term Expiring 1942

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Term Expiring 1943

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James T. Buckley, Philadelphia Storage Battery Co., Philadelphia, Pa.

Paul V. Galvin, Galvin Manufacturing Corporation, Chicago, Illinois.

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1939-1940

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Victor Mucher, Vice Chairman, Clarostat Mfg. Co., Inc.

Western Division:

S. J. Storm, Vice-Chairman, Chicago Transformer Corp.

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Virgil M. Graham, Assistant-Director & Chairman of General Standards Committee, Hygrade Sylvania Corp.

N. P. Case, Chairman, Receiver Section, Hazeltine Service Corp.

Dorman D. Israel, Chairman, Broadcast Receivers Committee, Emerson Radio & Phonograph Corp.

- W. M. Angus, Chairman, Frequency Modulation Receivers Committee, General Electric Co.
- S. W. Seeley, Chairman, Television Receivers Committee, RCA License Laboratory.
- R. M. Wise, Chairman, Vacuum Tube Section, Hygrade Sylvania Corp.
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- I. R. Weir, Chairman, Frequency Modulation Transmitters Committee, General Electric Co.
- D. E. Hartnett, Chairman, Frequency Modulation Systems Committee, Hazeltine Service Corp.
- E. W. Engstrom, Chairman, Facsimile Systems Committee, RCA Manufacturing Co.
- H. C. Sheve, Chairman, Safety Committee, Stromberg-Carlson Telephone Mfg. Co.
- L. C. F. Horle, Manager, RMA Data Bureau.

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Legislative Committee

- A. H. Gardner, Chairman, Colonial Radio Corporation

Membership Committee

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Traffic Committee

- O. J. Davies, Chairman, RCA Manufacturing Company, Inc.
- T. P. Scanlan, Traffic Auditor, 1608 Milwaukee Avenue

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Industry Promotion Committee

- H. C. Bonfig, Chairman, RCA Manufacturing Co.

National Defense Procedure Committee

- Paul V. Galvin, Chairman, Galvin Manufacturing Corp.

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- Octave Blake, Chairman, Cornell-Dublier Electric Corp.

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- Adrain Murphy, Columbia Broadcasting System, Inc.
- Harry R. Lubcke, Don Lee Broadcasting System
- Allen B. DuMont, Allen B. DuMont Laboratories, Inc.
- B. Ray Cummings, Farnsworth Television & Radio Corp.
- Dr. E. F. W. Alexanderson, General Electric Co.
- Daniel E. Harnett, Hazeltine Service Corp.
- Albert I. Lodwick, Hughes Tool Co.
- Dr. Alfred N. Goldsmith, Institute of Radio Engineers
- J. V. L. Hogan, National Association of Broadcasters
- David B. Smith, Philco Corp.
- E. W. Engstrom, RCA Manufacturing Co.
- Dr. R. H. Manson, Stromberg-Carlson Telephone Mfg. Co.
- Paul Raibourn, Television Productions, Inc.
- John R. Howland, Zenith Radio Corp.

Panel Organizations

- L. C. F. Horle, Secretary

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- Dr. P. C. Goldmark, Chairman, Columbia Broadcasting System, Inc.

Panel No. 2—Subjective Aspects

- Dr. Alfred N. Goldsmith, Chairman, Institute of Radio Engineers

Panel No. 3—Television Spectra

- J. E. Brown, Chairman, Zenith Radio Corp.

Panel No. 4—Transmitter Power

- E. W. Engstrom, Chairman, RCA Manufacturing Co.

Panel No. 5—Transmitter Characteristics

- B. Ray Cummings, Chairman, Farnsworth Television & Radio Corp.

Panel No. 6—Transmitter-Receiver Coordination

- I. J. Kaar, Chairman, General Electric Co.

Panel No. 7—Picture Resolution

- D. E. Harnett, Chairman, Hazeltine Service Corp.

Panel No. 8—Synchronization

- Dr. T. T. Goldsmith, Chairman, Allen B. DuMont Laboratories, Inc.

Panel No. 9—Radiation Polarization

- David B. Smith, Chairman, Philco Corp.



INTERNATIONAL



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***International
Broadcast
Stations***

HOW THE DEP'T OF COMMERCE HELPS RADIO

By

John H. Payne

*Chief, Electrical Division
Washington, D. C.*

THE Radio Section of the Electrical Division in the U. S. Department of Commerce has as its principal function the provision of fundamental information with respect to many commercial phases of the radio industry. Economic and statistical surveys and studies are conducted to determine various facts influencing situations which the industry is attempting to cover.

The central objective of the Electrical Division is that of providing specific information in regard to applications and opportunities within the electrical and radio industries in this and all other countries. In order to accomplish this, every effort is made to establish and maintain close contact with such branches of the industry as are regularly using or might advantageously use these services.

The Bureau serves industry through three rather distinct organizations—first, its 33 domestic field offices located throughout the United States, which provides facilities for intimate contact with all American individuals or businesses wishing to avail themselves of its services; second, through 300 Foreign Offices located in the capitals and principal cities of practically all countries of the world, making close foreign contacts on behalf of American industry; third, a specialized headquarters organization in Washington, providing experienced contacts for industry and other commercial services.

In addition to supplying information of value to exporters (e.g. lists of markets for American goods, tariff conditions, etc.) the Division recently took over the

responsibility of reporting on world wide communications from a public utility standpoint covering radio, telephone, telegraph and cable services.

The Foreign Offices are a vital factor for the Bureau's service. They constantly provide data on all the significant economic, commercial, and financial developments of the various countries. They report on the general business situation in a specific foreign market—the competition between American goods and the products of other countries—the import duties and restrictions that may be imposed—sales methods and credit terms—and the foreign-exchange situation, when pertinent. They conduct surveys covering specific commodities in definite foreign markets, and provide a variety of other current special data.

Because of the multiphase character of radio, the Electrical Division is not the only division of the Bureau interested in radio subjects. Whether the Electrical Division or the Bureau generally is addressed is unimportant, since reference and collaboration methods assure that all informed individuals will have contributed when the reply is prepared. For instance, radio advertising methods comes under the Specialties Division, which handles advertising methods and media in general. Through their cooperation, the Electrical Division is enabled to answer any inquiry within the scope of the Bureau's activities.

While the 12 Industrial Divisions in Washington, such as the Electrical Division, render specialized services to specific industries, there are in the Bureau seven divisions giving intensive study to various distinctive phases of foreign business characteristics. In response to inquiries from industry, these Divisions can supply information not otherwise obtainable with respect to some of the highly specialized aspects of foreign trade.

These Divisions include:

Commercial Intelligence—compiles lists of foreign buyers or sellers. There are 32,000 such lists now available to American business. The Division maintains a "World Trade Directory" report giving commercial information on approximately 650,000 foreign buyers or sellers. Information on credit and collection conditions, and credit payment terms in foreign countries, through the "Credit Situation Abroad" service.

Commercial Laws—distributes information on the laws of all countries which relate to commerce and industry, including laws for transacting business, organization, commercial acts, and taxation, property problems (trade-marks, patents, copyrights, unfair competition, etc.), foreign insurance, factory, labor, and social-security laws affecting the cost of doing business abroad.

Finance—collects information regarding foreign banks and banking affairs, foreign monetary and exchange conditions, foreign trade financing in general, and related subjects. Is a prime source of statistics on (a) the balance of international payments of the United States; (b) foreign securities publicly offered in the United States; (c) American investments abroad; (d) foreign investments in the United States; and (e) data on related subjects such as war debts, etc.

Foreign Tariffs—current detailed records of customs tariffs, quotas, trade regulations, and commercial policy of all foreign countries, reports to American firms changes in this important field. Information on trade agreements concluded with foreign countries, and on all other phases of foreign customs requirements.

Foreign Trade Statistics—gathers, compiles, and disseminates statistics on American imports and exports. Also contributes to numerous general statistical studies sponsored by the Industrial Divisions to meet the indicated requirements of individual industries.

Regional Information—furnishes general information about economic conditions abroad. A high degree of specialization is attained in this Division through placing the work under the supervision of regional specialists in charge of the European, Far Eastern, Latin American, and Russian Sections.

Transportation—collects and analyzes data from both foreign and domestic sources on such subjects as ocean shipping, packing and packaging, tourism, materials handling, inland waterways, railway and motor transport, warehousing, bills of lading, industrial traffic management, etc.

The Bureau maintains twelve Industrial Divisions, staffed by experts conversant with the details of each industry. These divisions bring the Bureau into direct touch with producers and exporters, making possible the establishment of mutually helpful relationships. For each

industry, there is provided a specialized service, satisfying some of its peculiar and characteristic needs for statistical and other information. Essential information and data are collected under competent supervision, and is disseminated to the many trades in the most efficient ways that can be devised. Most of the material is provided by representatives of the Foreign Offices; the information covers a wide field of industrial and trade activities and is released to business in periodical and special bulletins.

The Electrical Division, one of the twelve similar industrial divisions, renders broad commercial services to the American electrical and radio industries. Its Radio Section serves the manufacturers of broadcasting and receiving equipment, as well as the broadcasting operators. Wide distribution of U. S. A. short wave programs has been established in cooperation with the Radio Manufacturers Association, whereby a compilation of all beamed American short wave programs is made available to publishers throughout the world.

The Division concentrates on obtaining and offering data which industry lacks the means of securing through its own endeavors. With respect to radio, the Division collects information regarding the widely varying conditions in other nations, in order to be able to inform American industry of world developments, prospective markets, needed adaptations, and other related matters. It also reports on the services of the broadcasting and communication operating companies whether serving by radio, telephone, telegraph or cable. Current information is published in 10 Statistical Statements, the "Survey of Current Business" (issued monthly with weekly supplements), "Foreign Commerce Weekly," "Domestic Commerce" (issued weekly) and in the Bureau of Foreign and Domestic Commerce looseleaf Industrial Reference Service.

Radio surveys have been made to develop the effectiveness of American short wave broadcasting throughout the world. Both its good qualities and its limitations as brought out in these surveys are passed on to the American short wave operations for their guidance.

Criticism from the radio or other electrical industries is solicited by the Division, in order that it may improve and make its services more useful.



STATIONS OF CUBA

Call Letters	Station Name	Owner and/or Operator	Frequency Kilocycles	Power Watts
Stations in Havana				
CMW	La Voz del Radio Philco	Troncoso & Gil	550	200
CMCY	Autran & Carbo, Ltd.	Autran & Carbo, Ltd.	590	15000
CMCD	La Voz del Aire	La Voz del Aire, S. A.	630	15000
CMOA		Juan F. Duran	660	200
CMBC	El Progreso Cubano	Domingo Fernandez Cruz	690	2500
CMK	Radiodifusion O'Shea	Fausto Montiel	720	200
CMBL	Radio Cadena Suaritos	Radio-Cadena Suaritos, S. A.	750	200
CMQ	Jabon Candado	Cambo & Gabriel, S. A.	780	25000
CMCF	Cadena Azul de Radio	Amado Trinidad	810	5000
CMCM	Transradio Columbia	Cia. Transradio Columbia, S. A.	850	200
CMX	Casin Lavin & Pasta Gravi	Francisco A. Lavin	880	20000
CMBQ	Ideas Pazos	Rufinos Pazos Hernandez	910	5000
CMBZ	Radio Salas	Manuel & Guillermo Salas	940	200
CMCK		Luis Casas Romero	970	5000
CMCU	Garcia Serra	Jorge Garcia Serra	1010	200
CMCH	Radio-Popular, S. A.	Radio-Popular, S. A.	1050	200
CMBX	A. Alvarez		1080	200
CMCJ	Rodriguez & Hermano	Rodriguez & Bro.	1100	200
CMBG	Voz de Oro	Miguel Montero	1140	200
CMBS	Calzada Y D	Compania Licorera de Cuba	1170	200
CMCO	Oficios 598		1200	200
CMCB	La Metropolitana	Metropolitan Radio de Cuba	1230	200
CMBD		Luis Perez Garcia	1260	200
CMCG	La Balear	Angel G. Anido	1290	200
CMCR	Bodegas Morera	Aurelio Hernandez	1320	200
CMCA		Augusto Testar & Jose M. Gonzalez	1350	200
CMCW	Muebleria La Predilecta	Vilarino & Cia.	1380	200
CMCQ	La Voz de Cuba	Andres Martinez	1410	200
CMBY	De la Casa de las Medias	Pages & Co.	1440	200
CMCX	La Onda Popular	Marti & Irisarri	1470	200
CMOX	E de Apartamentos	Perez & Chisholm	1500	200
CMC	La Voz del Transporte	Rafael Valdes	1530	200
CMBF	Radio Emisora Nacional	Compania Cubana de Radio & Television, S. A.	1560	5000
COL2	Policia Nacional		1712	...
Short Wave Stations in Havana				
COCD	La Voz del Aire	La Voz del Aire, S. A.	6130	1000
COCW	La Voz del Radio Philco	Troncoso & Gil	6330	...
COCO	Apartado 98	Luis Casas Romero	8700	5000

CUBA STATIONS

Call Letters	Location	Owner and/or Operator	Frequency Kilocycles	Power Watts
COCQ	Colgate & Palmolive	Cambo & Gabriel	8830	5000
COBZ	Radio Salas	Manuel & Guillermo Salas	9030	...
COBX	Laboratorios Alvarez		9100	...
COBC	El Progreso Cubano	Domingo Fernandez Cruz	9363	...
COCH	Cadena Azul de Radio	Amado Trinidad Velasco	9437	5000
COCA	Galiano No. 102		9700	...
COCM	Radio-Cadena Suaritos	Radio-Cadena Suaritos, S. A.	9985	1000
COCX	Casa Lavin	Francisco A. Lavin	11435	1000
COCE	La Voz del Transporte	Rafael Valdes	12230	...

Stations in the Interior

CMHW	Santa Clara	Guillermo Domenech	680	200
CMKS	Guantanamo	Candido Savon Suarez	710	200
CMJX	Camaguey	Rodolfo Gonzalez Solis	740	200
CMKW	Santiago de Cuba	Claudio Alvarez Soriano	770	1000
CMGH	Matanzas	M. Garcia Alvarez	790	200
CMHI	Santa Clara	Amado Trinidad	830	10000
CMJA	Camaguey	Rafael Valdes Jimenez	860	200
CMHO	Sagua La Grande		870	200
CMKD	Santiago de Cuba	Emisora CMKD	910	1000
CMJF	Camaguey	Gertrudis de la Cruz Perez	930	200
CMKL	Bayamo	Alberto Alvarez	950	200
CMJW	Camaguey	Andres Moran Cisneros	1070	200
CMKM	Manzanillo	Raimundo Comas Soler	1080	200
CMHA	Sagua La Grande	Abelardo Menocal	1090	200
CMGF	Matanzas	Barnabe R. de la Torre	1120	200
CMJI	Ciego de Avila	Gilberto Gessa	1130	200
CMKG	Santiago de Cuba	Emilio Grau Medina	1150	200
CMHJ	Cienfuegos	Romualdo Ugalde	1160	200
CMKX	Santiago de Cuba	Oscar Vidal Benitez	1190	200
CMHK	Cruces	Virgilio Villanueva	1210	200
CMJE	Camaguey	Primo A. Casales	1230	200
CMAB	Pinar de Rio	Francisco Martinez	1240	200
CMHB	Sancti-Spiritus	V. E. Weis & O. Ramirez	1240	200
CMKC	Santiago de Cuba	Roberti Miguel Gonzales	1250	200
CMJO	Ciego de Avila	Bonifacio Ildefonso	1260	200
CMHD	Caibarien	Manuel Alvarez	1270	200
CMKO	Holguin	Manuel Angola Farran	1280	200
CMJK	Camaguey	Jones Castrillon & Cia.	1290	500
CMJH	Ciego de Avila	Luis Marauri	1360	200
CMGE	Cardenas	Gebaro Sabater	1370	200
CMJC	Ciego de Avila	Fernando Terron Bolanos	1390	200
CMKR	Santiago de Cuba	Jaime Nadal	1400	200
CMKZ	Palma Soriano	Joaquin Venero Obregon	1420	200
CMJP	Moron		1420	200
CMHM	Cienfuegos	Jose R. Femenias	1450	200
CMKF	Holguin	M. J. de Gongora	1460	200
CMHX	Cienfuegos	Francisco Chavarry	1480	200
CMKQ	Santiago de Cuba	Angela Viciedo Quintero	1490	1000

Short Wave Stations in the Interior

COKG	Santiago de Cuba	Emilio Grau Medina	6280	1200
COHE	Sancti-Spiritus		6280	200
COGF	Matanzas	Bernabe R. de la Torre	11880	1000

STATIONS OF MEXICO

Call Letters	Owner	Location	Frequency Kilocycles	Power Watts Actual
XEMU	....Cia. Radiodifusora de P. Negras....	Piedras Negras, Coahuila....	580	250
XEZ	.....Jorge L. Palomeque.....	Merida, Yucatan	630	2000
XEBX	.....Benito Garza Ortegón.....	Sabinas, Coahuila	640	250
XEAO	.....Chavez y Castro Sucs.....	Mexicala, Baja California....	660	250
XELO	....Cia. Radiodifusora de P. Negras....	Tijuana, Baja California....	670	10000
				(Auth.: 50000)
XET	.....El Pregonero del Norte S. A.....	Monterrey, Nuevo Leon.....	690	5000
XEWE**	..Jesus Gonzalez A.....	Silao, Guanajuato	720	20
XEQ	.....Radio Panamericana S. A.....	Mexico City, Distrito Federal	730	50000
XEH	.....Radio Tarnava S. de R. L.....	Monterrey, Nuevo Leon.....	740	100
				(Auth.: 250)
XEAA	.....Alberto Gonzalez	Mexicali, Baja California....	750	200
XEAM	....Manuel L. Salinas.....	Matamoros, Tamaulipas	750	250
XEON	....Cia. Radiodifusora Mexicana.....	Tijuanan Baja, California....	750	2000
XEN	.....Guillermina P. de del Conde.....	Mexico City, Distrito Federal	780	1000
XERJ	.....Oscar Perez E.....	Mazatlan, Sinaloa	790	600
XEBZ	....Refugio Esparza Vda. doe Valezzi..	Mexico City, Distrito Federal	800	100
XEFW	....Floreá y Martínez.....	Tampico, Tampico	810	300
XEBG	....Angel B. Fernandez.....	Tijuana, Baja California....	820	1000
XERC	.....Radio Popular de Mexico, S. A....	Mexico City, Distrito Federal	830	500
XELA	....Radio Metropolitana, S. A.....	Mexico City, Distrito Federal	850	1000
XEMO	....Fernando Federico Ferreira	Tijuana, Baja California....	860	5000
XEFB	.....Jesus Quintanilla	Monterrey, Nuevo Leon.....	870	200
XEW	.....Cadena Radiodifusora Mexicana..	Mexico City, Distrito Federal	910	100000
XEBH	.....Carlos Balderrama	Hermosillo, Sonora	930	500
XEFE	.....Rafael T. Carranza.....	Nuevo Laredo, Tamaulipas..	930	250
XEFO	.....Partido Revolucion Mexicana.....	Mexico City, Distrito Federal	940	5000
XERA	....Cia. Mex. Radiodifusora Fronteriza.	Villa Acuna, Coahuilla.....	960	500000
XEJ	.....Pedro Meneses, Jr.....	Juarez Chihuahua	970	1000
XEAC	.....Jorge I. Rivera.....	Tijuana, Baja California....	980	5000
XES	.....Difusora Portena, S. de R. L.....	Tampico, Tamaulipas	990	100
				(Auth.: 250)
XENT	....Cia. Industrial Universal S. A.....	Mexico City, Distrito Federal	990	50000
				(Auth.: 150000)
XEK	.....Arturo Martinez	Mexico City, Distrito Federal	1000	200
XEAF	.....Francisco G. Elias.....	Nogales, Sonora	1000	750
XEBI	.....Pedro C. Rivas.....	Aguascalientes, Aguascalientes	1000	250
XEU	.....Fernando Pazos y Cia.....	Vera Cruz, Vera Cruz.....	1010	500
XEFQ	.....Pedro L. Diaz.....	Cananea, Sonora	1010	500
XEAW	....Cia. Internacional Dif. de Reynosa..	Reynosam, Tamaulipas	1020	100000

• • • **MEXICO STATIONS** • • •

Call Letters	Owner	Location	Power	
			Frequency Kilocycles	Watts Actual
XEB	El Buen Tono S. A.	Mexico City, Distrito Federal	1030	20000 (Auth.: 100000)
XEG	Rudolfo Junco de la Vega	Monterrey, Nuevo Leon	1050	500 (Auth.: 50000)
XEBA	Javier Velasco	Ciudad Guzman, Jalisco	1080	20
XEBK	C. Guajardo and J. M. Cortes	Nuevo Laredo, Tamaulipas	1080	100
XEDP***	Radio Gobernacion	Mexico City, Distrito Federal	1080	500
XERB	Radiodifusora Internacional S. A.	Tijuana, Baja California	1090	50000
XECL	Alfonso A. Lacarra	Mexicali, Baja California	1110	1000
XEJP	Delia Cubillas de Fernandez	Mexico City, Distrito Federal	1130	100
XEC	Luis E. Enciso	Tijuana, Baja California	1150	100
XEL	Ramon Ferreiro R.	Mexico City, Distrito Federal	1150	250
XEBP	Alejandro Stevenson, Jr.	Pte. Torreon, Coahuila	1150	250
XEDW	Hector Silva Canto	Minatitlan, Vera Cruz	1150	300
XEFM	Sucs. R. Ortiz Gonzalez	Leon, Guanajuato	1160	20
XED	Cia. Radiofonografica S. A.	Guadalajara, Jalisco	1160	1000
XEP	Esteban Parra	Juarez, Chihuahua	1160	500
XEXX***	Universidad Nacional de Mexico	Mexico City, Distrito Federal	1170	1000
XEE	Alejandro Stevenson, Jr.	Durango, Durango	1210	50
XEFV	Dario Cordoba	Juarez, Chihuahua	1210	50
XEAT	David G. Cervantes	Hidalgo del Parral, Chihuahua	1210	250
XRBL*	Ignacio L. Sais	Mazatlan, Sinaloa	1220	500
XEDA	Pedro Riestra Diaz	Anaya, Distrito Federal	1220	200
XETF	Jose Rodriguez Lopez	Vera Cruz, Vera Cruz	1220	500
XEHK	Carmen Villasenor	Guadalajara, Jalisco	1230	125
XECA	Nicolas M. Picot	Tampico, Tamaulipas	1230	250
XEHR	Manuel R. Canale	Puebla, Puebla	1230	250
XEOX	Felipe G. de Leon	Mochis, Sinaloa	1230	250
XELK	Jesus Macias G. (J. M. Acevedo)	Zacatecas, Zac	1230	100
XEJS	Francisco Lopez Balcarzar	Cananea, Son	1230	100
XEBM	Benjamin Briones	San Luis Potosi, San Luis Potosi	1230	150
XEJK	Manuel Armenderiz	Chihuahua, Chih.	1230	100
XEBU	Feliciano Lopez Islas	Chihuahua, Chihuahua	1240	50
XEBC	Fernando Corona	Morelia, Michoacan	1240	100
XEME	Perfecto Villamil Cisero	Merida, Yucatan	1240	400
XECW	Juan Cedas M.	Cordoba, Vera Cruz	1240	250
XEDL	Francisco Vidal	Navojoa, Sonora	1240	500
XEKS	J. Antonio de la Torre	Saltillo, Coahuila	1240	100
XEXT***	Gobierno del Estado de Nayarit	Tepic, Nay.	1240	1000
XEDF	Ruperto Villarreal	Nuevo Laredo, Tamaulipa	1240	250
XERL	J. Roberto Levy	Colima, Col.	1240	400
XEAI	Carmen Gutierrez	Mexico City, Distrito Federal	1250	500
XEXE***	H. Ayuntamiento de Texcoco	Texcoco, Mex.	1270	17
XEAD*	Alejandro A. Dias	Guadalajara, Jalisco	1270	500
XEMX	Alfonso Traslosheros Avalos	Mexico City, Distrito Federal	1280	100
XEAG	Diodoro Zuniga	Cordoba, Vera Cruz	1280	250
XEX	El Heraldo del Comercio S. A.	Monterrey, Nuevo Leon	1310	500
XEQK	Angel H. Ferreiro	Mexico City, Distrito Federal	1310	400
XECF	Francisco Perez H.	Los Mochia, Sinaloa	1310	150
XETB	Aurelio G. Zaragoza	Torreon, Coahuila	1310	500
XEBO	Alfonso Martinez	Irapuato, Guanajuato	1330	600
XEAP	Emilio Manzanilla	Ciudad Obregon, Sonora	1340	50
XEBW	Radio Emisora del Norte, S. de R. L.	Chihuahua, Chihuahua	1340	250
XEBS	Maria Remedios Delgado	Mexico City, Distrito Federal	1340	200

MEXICO STATIONS

Call Letters	Owner	Location	Frequency	Power
			Kilocycles	Watts Actual
XEDH	Vicente Hernandez	Villa Acuna, Coahuila	1340	200
XEFC	Julio Molina Pont	Merida, Yucatan	1340	100
XELW	Salvador Galinda de la Torre	Guadalajara, Jalisco	1340	250
XEBJ	Fernando Elizalde	Victoria, Tamaulipas	1340	100
XECD	Ricardo Vazquez	Pueblo, Pueblo	1340	350
XEZ	Pedro E. Rocher	Coarzacalcos, Vera Cruz	1340	300
XEMA	Jose M. Acevado Moya	Fresnillo, Zac.	1340	100
XEXS***	Instituto Cientifico y Literario	Teluca, Mex.	1340	75
XEI	Tiburcio Ponce	Morelia, Michoacan	1370	250
XEZ	Zeferino Z. Jimenez	San Luis Potosi, San Luis Potosi	1370	100
XELZ	Maria Cardona de Zetina	Mexico City, Distrito Federal	1370	250
XEM	Pedro Meneses, Jr.	Chihuahua, Chihuahua	1390	500
XESM	Salvador Sanmartin	Mexico City, Distrito Federal	1400	500
XEAJ	Emilio Manzanilla	Navojoa, Sonora	1400	100
XEA	Luis A. Maury	Campeche, Cam.	1400	250
XEDS	Alejandro A. Schober	Mazatlan, Sinaloa	1400	500
XEAU	Manuel Acuna Varela	Tijuana, Baja California	1400	250
XEPP	Hector Sotomayer	Orizaba, Vera Cruz	1400	150
XEMR	Frances Garcia de K.	Monterrey, Nueva Leon	1400	250
XEHV	Juan A. Palavicini	Vera Cruz, Vera Cruz	1420	1000
XERH	Gabriel Hernandez Llergo	Mexico City, Distrito Federal	1430	400
XEFI	Ramiro G. Uranga	Chihuahua, Chihuahua	1440	1000
XEF	Gilberto Gil	Ciudad Jurez, Chihuahua	1450	100
XERK	Dario Mondragon	Tepic, Nay.	1450	100
XEGC	Guillermo Calzada	Zamora, Michoacan	1450	100
XEDJ	Enrique Zaralegui	Magdalena, Sonora	1450	100
XEY	Lucinda Arenas de Meza Millan	San Luis Rio Col., Sonora	1450	250
XEFK	Manuel Zapata Espinosa	Merida, Yucatan	1450	100
XEDR	Modesto Ortega	Guaymas, Sonora	1490	100
XECH	Rodolfo Llamas	Toluca, Mex.	1490	250
XEJR	Anastasio Gomez Gallardo	Hidalgo del Parral, Chihuahua	1490	100
XEAZ	Carlos V. Rodriguez	Reynosa, Tamaulipas	1490	250
XEDK	Salvador Vazquez	Guadalajara, Jalisco	1490	250

Short Wave Stations (Cultural and Official)

XEBT	El Buen Tono, S. A.	Mexico City, Distrito Federal	6000	500
XEWI**	Institucion Mundial de la V. I.	Mexico City, Distrito Federal	6015	400
XEUW	Fernado Pazos Sosa	Vera Cruz, Vera Cruz	6020	250
XEKW	Jose Martinez Ramirez	Morelia, Michoacan	6030	500
XETW	Flore y Matinez	Tampico, Tamaulipas	6045	100
XEBF	Pedro Coronel Aburto	Jalapa, Vera Cruz	6090	100
XEUZ	Partido Revolucion Mexicana	Mexico City, Distrito Federal	6130	100
	Cia. Radiofonografica S. A.	Guadalajara, Jalisco	6155	100
XEXA***	Radio Gobernacion	Mexico City, Distrito Federal	6175	100
XECR***	Sria. de Relaciones Exteriores	Mexico City, Distrito Federal	7380	20000
XEWW	Cadena Radiodifusora Mexicana	Mexico City, Distrito Federal	9500	10000
XEFT	Jose Rodriguez Lopez	Vera Cruz, Vera Cruz	9550	12
XEYU***	Universidad Nacional de Mexico	Mexico City, Distrito Federal	9600	250
XEQQ	Radio Panamericana S. A.	Mexico City, Distrito Federal	9680	1000
XEBR	Carlos Balderrama	Hermosillo, Sonora	11820	150
XEUZ	Partido Revolucion Mexicana	Mexico City, Distrito Federal	11880	100
XEWW	Cadena Radiodifusora Mexicana	Mexico City, Distrito Federal	15160	10000

- * Temporarily Suspended
 ** Cultural Station
 *** Official Station

STATIONS OF _____ _____ SOUTH AMERICA

ARGENTINA

<i>Call Letters</i>	<i>Station Name and Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
LU2	Bahia Blanca, Bahia Blanca.....	900	2500
LU7	General San Martin, Bahia Blanca.....	1240	2500
LR1	El Mundo, Buenos Aires.....	1070	50000
LR2	Argentina, Buenos Aires.....	910	10000
LR3	Belgrano, Buenos Aires.....	950	50000
LR4	Splendid, Buenos Aires.....	900	16000
LR5	Excelsior, Buenos Aires.....	830	29250
LR6	Mitre, Buenos Aires.....	870	25000
LR8	Paris, Buenos Aires.....	1150	6500
LR9	Fenix, Buenos Aires.....	1030	5000
LR10	Cultura, Buenos Aires.....	790	11500
LRA	del Estado, Buenos Aires.....	750	10000
LS1	Municipal, Buenos Aires.....	710	50000
LS2	Prieto, Buenos Aires.....	1190	30000
LS3	Ultra, Buenos Aires.....	630	50000
LS4	Portena, Buenos Aires.....	670	10000
LS5	Rivadavia, Buenos Aires.....	1110	5000
LS6	del Pueblo, Buenos Aires.....	1350	6000
LS8	Stentor, Buenos Aires.....	1230	15000
LS9	Voz del Aire, Buenos Aires.....	1270	6000
LS10	Callao, Buenos Aires.....	590	6000
LU4	Comodoro Rivadavia, Comodora Rivadavia...	640	1000
LV2	Central, Cordoba.....	950	5000
LV3	Cordoba, Cordoba.....	620	25000
LT7	Provincia Corrientes, Corrientes.....	1340	500
LV10	de Cuyo, Mendoza.....	1210	5000
LU6	Atlantica, Mar del Plata.....	1300	500
LR11	Universidad Nacional de La Plata, La Plata...	1390	500
LS11	Provincia de Buenos Aires, La Plata.....	1310	30000
LT5	Chaco, Resistencia.....	1080	1500
LV9	Provincia de Salta, Salta.....	970	1000
LU12	Rio Gallegos, Santa Cruz.....	680	1000
LT1	del Litoral, Rosario.....	780	20000
LT3	Sociedad Rural de Cerealistas, Rosario.....	1160	5100
LT8	Rosario, Rosario.....	840	1000
LV1	Graffigna, San Juan.....	730	1000
LV5	Los Andes, San Juan.....	1090	1500
LV4	San Rafael, Mendoza.....	690	500
LT9	Roca Soler, Santa Fe.....	1200	1000
LT10	del Instituto Social de la Universidad Litoral, Rosario.....	1320	500

• • • SOUTH AMERICAN STATIONS • • •

<i>Call Letters</i>	<i>Station Name—Executive in Charge—Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
LV11 . . .	del Norte, Santiago del Estero	1170	1500
LV7 . . .	Tucuman, Tucuman	820	2500
LV12 . . .	Aconwuija, Tucuman	580	5000

Short Wave Stations

LRA . . .	del Estado, Buenos Aires	6180	1000
LRX . . .	El Mundo, Buenos Aires	9660	7000
LRA1 . . .	del Estado, Buenos Aires	9660	10000
LRA3 . . .	del Estado, Buenos Aires	11730	1000
LRU . . .	El Mundo, Buenos Aires	15290	7000

BOLIVIA

<i>Call Letters</i>	<i>Station Name</i>	<i>Location</i>	<i>Owner</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
CP44	Radio Popular	Cochabamba	Victor Veltze	580	50
CP32	Radio Bolivia	La Paz	J. C. Salinas	620	150
CP34	Radio Sucre	La Paz	Guillermo Teran	680	150
CP46	Radio Fenix	La Paz	Mario Hurtado	770	50
CP20	Radio Condor	La Paz	Ramon Pelaez	900	250
CP19	Radio Cultura	La Paz	Hugo Aspiazu	950	50
CP31	Radio Patria	La Paz	Lizardo Suarez	975	50
CP4	Radio Illimani	La Paz	Estado	1040	10000
CP10	Radio La Paz	La Paz	Gonzalo Munoz A.	1090	50
CP45	Radio Rural	Cochabamba	Raul Montecinos	1090	50
CP16	Radio Paris	La Paz	Abel Maldonado	1200	50
CP14	Radio La Noche	La Paz	Javier Romero	1250	50
CP13	Radio El Oriente	Santa Cruz	L. Canedo Reyes	1250	50
CP18	Radio Kosmos	La Paz	Luis Cortadellas	1300	50
CP29	Radio Fides	La Paz	C. S. Calixto	1350	100
CP28	Radio Central	Cochabamba	Gottret & Co.	1360	150
CP3	Radio National	La Paz	Costas Bros.	1390	5000
CP27	Radio Pilot	Sucre	Carlos Torres R.	1420	50
CP36	Radio Mercurio	Oruro	Enrique Wanting	1420	50
CP8	Radio America	La Paz	Luis Medina	1450	50
CP17	Radio Cultural	Potosi	Alfredo Ossio L.	1600	50
CP41	Radio Chuquisaca	Sucre	Jose Camacho	6020	250
CP11	Radio Oruro	Oruro	Estado	6100	250
CP2	Radio National	La Paz	Costas Bros.	6110	5000
CP15	Radio Condor	La Paz	Ramon Pelaez	6120	250
CP22	Radio International	Potosi	Luis Camacho A.	6130	250
CP30	Radio El Oriente	Santa Cruz	L. Canedo Reyes	6135	250
CP12	Radio Fides	La Paz	C. S. Calixto	6150	250
CP39	Radio Continental	Cochabamba	Remberto Zapata	6160	250
CP37	Radio Pagador	Oruro	Mariaca & Co.	6190	250
CP5	Radio Illimani	La Paz	Estado	6200	1000
CP1	Radio Chuquisaca	Sucre	Jose Camacho B.	9500	1000
CP38	Radio National	La Paz	Costas Bros.	9505	5000
CP40	Radio Central	Cochabamba	Gottret & Co.	9570	250
CP25	Radio Sucre	La Paz	Guillermo Teran	9700	250
CP7	Radio Illimani	La Paz	Estado	15300	1000

• • • SOUTH AMERICAN STATIONS • • •

BRITISH GUIANA

<i>Call Letters</i>	<i>Station Name and Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
VP3BG*	British Guiana United Broadcasting Co., Georgetown	6130	650

* Operated on an experimental license and considered amateur station.

CHILE

<i>Call Letters</i>	<i>Station Name</i>	<i>Location</i>	<i>Owner</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
CA63	Radio Tarapaca	Iquique	Antonio Cajiao	630	250
CA90		Tocopilla	Hilda Cueller	900	100
CA127	La Voz del Norte	Antofagasta	Raquel Palma de Pedreni	1270	100
CA141	Radio Antofagasta	Antofagasta	Angel Garcia & Co.	141	1000
CB57	Soc. Nac. de Agriculture	Santiago	Soc. Nac. de Agriculture	570	10000
CB62	Radio Chilena	Santiago	International Machinery Co.	620	1000
CB64	La Union de Recreo	Vina Del Mar	Adriano Iz	640	1000
CB68	Radio Metro	Vina Del Mar	Renard & Garcia Tello	680	1000
CB76	Cooperative Vitalicia	Valparaiso	Soc. Cooperative Vitalicia	760	10000
CB78	Cooperative Vitalicia	Santiago	Soc. Cooperative Vitalicia	780	1000
CB73				730	
CB84	Radio del Pacifico	Valparaiso	Angel Prieto	840	1000
CB89	Otto Becker	Santiago	Otto Backer, Ltd.	890	2000
CB93	Radio Hucke	Santiago	Orlandini & Raggio, Ltd.	930	8000
CB90	El Mercurio	Valparaiso	Empresa Periodistica El Mercurio	900	1000
CB96	Voz del Norte	Coquimbo	Puerta Bros.	960	200
CB97	Radio Siam	Santiago	Soc. Industrial de Maquinaria	970	1000
CB101	Radio Mayo	Santiago	Heriberto Bewais	1010	1000
CB103	Univ. Tecnica Sta. Maria	Valparaiso	Fundacion Santa Maria	1030	400
CB106	Sud America	Santiago	Manuel Casablanca	1060	5000
CB111	Radio Los Castanos	Vina del Mar	Joaquin Venegas	1110	1000
CB113	Abdon Salinas	Quillote	Abdon Salinas	1130	100
CB114	Radio del Pacifico	Santiago	Ricardo Vivado	1140	5000
CB116	Radio Valparaiso	Valparaiso	Oscar Cornejo Harker	1160	1000
CB118	Radio Nacional	Santiago	Jiles & Co., Ltd.	1180	10000
CB120	Diario La Union	Valparaiso	Angel Prieto	1200	1000
CB124	Radio Espana	Valparaiso	Ramon & Fernando Garcia & Co.	1240	250
CB126	Radio Espana	Santiago	Felix Vasquez	1260	1000
CB130	Seguros "La Americana"	Santiago	Lehman & Becker	1300	2500
CB132	Radio "Wallace"	Valparaiso	David Wallace	1320	1000
CB134	Radio "El Hogar"	Santiago	German Holtehuer	1340	1000
CB138	"El Mercurio"	Santiago	Emp. Periodistica "El Mercurio"	1380	5000
CB140	Onda Azul	San Antonio	Soc. Radiodifusora Onda Azul, Ltd.	1400	100
CB144-B	Spitz & Co.	Santiago	Spitz & Co.	1440	100

SOUTH AMERICAN STATIONS

<i>Call Letters</i>	<i>Station Name</i>	<i>Location</i>	<i>Owner</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
CB144-C	Oscar Moraga	Santiago	Oscar Moraga	1440	100
CB147	Radio Zenith	Valparaiso	Calcagno & Widow	1470	1000
CB150	RCA Victor Chilena	Santiago	RCA Victor Chilena	1500	10000
CB960	Seguros "La Americana"	Santiago	Enrique Becker	9600	1200
CB970	Cooperative Vitalicia	Valparaiso	Soc. Cooperative Vitalicia	9700	10000
CB1170	Otto Becker, Ltd.	Santiago	Otto Becker, Ltd.	11700	300
CB1174	Radio Hucke	Santiago	Orlandini & Raggio	11740	4000
CB1180	Soc. Nac. de Agriculture	Santiago	Soc. Nac. de Agricultura	11800	1000
CC63	Radio Central	Rancagua	Manuel Massoni	630	1000
CC64	Diario El Sur	Concepcion	Hucke & Co., Ltd.	640	100
CC67		Talca	Raul Grez	670	100
CC84	Radio Cultura	Talcahuano	Francisco Morales	840	100
CC96	Radio Curico	Curico	Alberto Guerra	960	100
CC109	Radio Rencagua	Rancagua	Jorge Romero	1090	100
CC117	Radio Zenith	Concepcion	Federico Sanchez	1170	100
CC125	Radio Temuco	Temuco	Carlos Kaehler	1250	100
CC127	Radio Aliviol	Chillan	Rafael Barrios	1270	100
CC133	Radio La Discusion	Chillan	Miguel Arrau	1330	100
CC141	Radio "Patria"	Concepcion	Pedro Lopez de Heredia	1410	100
CC143	Radio Atlantida	Talca	Enrique Garcia	1430	100
CC145	Radio La Colmena	Rancagua	Ramon Caceres	1450	100
CC90	La Frontera	Temuco	Daniel de Mayo	900	100
CD69	Radio Sur	Valdivia	Soc. Radio-Emisoras "Sur de Chile"	690	1000
CD84		Osorno	Soc. Agricola & Ganadera de Osorno	840	1500
CD101	Radio Puerto Montt	Puerto Montt	Soc. Radio-Emisoras "Sur de Chile"	1010	1000
CD103	Radio Magallanes	Magallanes	Ramon Verde Ramos	1030	100
CD111	Radio Austral	Magallanes	Emilio Turina	1110	100
CD112	Radio Osorno	Osorno	Soc. Agricola & Ganadera de Osorno	1120	100
CD132	Radio Valdivia	Valdivia	Carlos Cockbaine	1320	100
CD136	La Voz del Sur	Magallanes	Ines Diez Paz	1360	100
CD147	Radio Aliviol	Puerto Montt	Ernesto Riedel	1470	100
CD1190	Radio Sur	Valdivia	Soc. Radio-Emisoras "Sur de Chile"	11900	250
CD113		Magallanes	Julio Femenias	1130	1000

BRAZIL

<i>Call Letters</i>	<i>Station Name and Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
PRD4	Club de Araraquara, Araraquara, Sao Paulo	1570	500
PRA4	Sociedade de Baia S. A., Sao Salvador, Bahia	740	10000
PRG8	Bauru Radio Club, Bauru, Sao Paulo	1210	250
PRG5	Club do Para, Belem, Para	670	2000
PRC7	Sociedade Radio Mineira, Belo Horizonte, Minas Geraes	690	3000
PRH6	Sociedade Radio Guarany, Belo Horizonte, Minas Geraes	1340	3000
PRI3	Inconfidencia, Belo Herozinte, Minas Geraes	880	22800

• • • SOUTH AMERICAN STATIONS • • •

<i>Call Letters</i>	<i>Station Name—Executive in Charge—Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
PRC4 . . .	Club de Blumenau, Blumenau, Santa Catharina	1330	250
PRC9 . . .	Sociedade Radio, E. de Campinas, Campinas, Sao Paulo	1170	500
PRF7 . . .	Club de Campos, Campos, Rio De Janeiro	1330	2000
PRG6 . . .	Sociedade Mantiqueira, Cruzeiro, Sao Paulo	640	500
PRB2 . . .	Club Paranaense, Curityba, Parana	1420	2000
PRE9 . . .	Ceara Radio Club, Fortaleza, Ceara	1320	2000
PRB5 . . .	Club Hertz, Franca, Sao Paulo	1240	250
PRG4 . . .	Club de Jaboticabal, Jaboticabal, Sao Paulo	1250	250
PRG7 . . .	Sociedade Jahuense, Jahu, Sao Paulo	1010	250
PR14 . . .	Governo de Estado de Parahyba, Joao Pesson, Parahyba	1110	10000
PRB3 . . .	Juiz de Fora	620	500
PR12 . . .	Club de Marilia, Marilia, Sao Paulo	1090	500
PRD8 . . .	Club Fluminense, Nictheroy, Rio de Janeiro	1320	1000
PRE6 . . .	Sociedade Fluminense, Nictheroy, Rio de Janeiro	1470	1000
PRH4 . . .	Sociedade Difusora Radio Culture, Pelotas, Rio Grande do Sul	1320	500
PRD3 . . .	Petropolis Radiodifusora S. A., Petropolis, Rio de Janeiro	1480	1000
PRD6 . . .	Club de Piracicaba, Piracicaba, Sao Paulo	820	250
PRH5 . . .	Cultura Pecos de Caldas, Pecos de Caldas, Minas Geraes	1160	250
PRC2 . . .	Sociedade Gaucha, Porto Alegre, Rio Grande do Sul	680	5000
PRF9 . . .	Emp. Radiodifusora Alegrense, Porto Alegre, Rio Grande do Sul	640	3000
PRH2 . . .	Sociedade Radio Farroupilha, Porto Alegre, Rio Grande do Sul	600	20000
PRA8 . . .	Sociedade Radio Guararapes, Recife, Pernambuco	720	25500
PRA7 . . .	Club de Ribeirao Preto, Ribeirao Preto, Sao Paulo	730	500
PRF2 . . .	Club de Rio Clara, Rio Clara, Sao Paulo	1460	250
PRA2 . . .	Ministerio Educacao e Saude Publica, Rio de Janeiro, Federal District	800	1500
PRA3 . . .	Club do Brasil, Rio de Janeiro, Federal District	860	10000
PRA9 . . .	Sociedade Mayrink Veiga, Rio de Janeiro, Federal District	1220	22000
PRB7 . . .	Sociedade Radio Educadora do Brasil, Rio de Janeiro, Federal District	900	5000
PRC8 . . .	Sociedade Guanabara, Rio de Janeiro, Federal District	1360	5000
PRD2 . . .	Sociedade Radio Cruzeiro do Sul, Rio de Janeiro, Federal District	1060	5000
PRD5 . . .	Instituto Educacao do Distrito Federal, Rio de Janeiro, Federal District	1400	5000
PRE2 . . .	Sociedade Vera Cruz, Rio de Janeiro, Federal District	1430	5000
PRE3 . . .	Transmissora Brasileira, Rio de Janeiro, Federal District	1180	10000
PRE8 . . .	Sociedade Radio Nacional, Rio de Janeiro, Federal District	980	22000

SOUTH AMERICAN STATIONS

<i>Call Letters</i>	<i>Station Name and Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
PRF4 . . .	Jornal do Brasil S. A., Rio de Janeiro, Federal District	940	10000
PRG3 . . .	Tupy S. A., Rio de Janeiro, Federal District	1280	10000
PRH8 . . .	Ipanema S. A., Rio de Janeiro, Federal District	1130	5000
PRB8 . . .	Rio Preto S. A., Rio Preto, Sao Paulo	640	250
PRB4 . . .	Club de Santos, Santos, Sao Paulo	1450	1000
PRG5 . . .	Sociedade Radio Atlantica, Santos, Sao Paulo	580	750
PRD7 . . .	Club de Sorocaban, Sorocaba, Sao Paulo	1080	500
PRD9 . . .	Sociedade de Sorocaba, Sorocaba, Sao Paulo	970	250
PRA5 . . .	Sao Paulo, Sao Paulo, Sao Paulo	1260	5000
PRA6 . . .	Sociedade Radio Educadora Paulista, Sao Paulo, Sao Paulo	760	10000
PRB6 . . .	Sociedade Radio Cruzeiro do Sul, Sao Paulo, Sao Paulo	1200	10000
PRB9 . . .	Sociedade Record, Sao Paulo, Sao Paulo	1000	20000
PRE4 . . .	Sociedade Cultura "Voz do Espaco," Sao Paulo, Sao Paulo	1300	5000
PRE7 . . .	Sociedade Radio Comos, Sao Paulo, Sao Paulo	1410	5000
PRF3 . . .	Difusoro Sao Paulo, Sao Paulo	960	5000
PRG2 . . .	Tupy S. A., Sa Paulo, Sao Paulo	1040	25000
PRG9 . . .	Excelsior, Sao Paulo, Sao Paulo	1100	25000
PRH3 . . .	Piratininga, Sao Paulo, Sao Paulo	620	5000
PRH9 . . .	Sociedade Bandeirante de Radiodifuaio, Sao Paulo, Sao Paulo	840	5000
PRE5 . . .	Sociedade Triangulo Mineiro Uberaba, Minas Geraes	1390	1000

Short Wave Stations

PRF5 . . .	Comp. Radio Internacional Brasil, Rio de Janeiro	9500	12000
PRA8 . . .	Club de Pernambuco, Recife, Pernambuco	6010	5000

COLOMBIA

<i>Call Letters</i>	<i>Location</i>	<i>Owner</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
HJ-FX . . .	Manizales	Antonio Pinzon H.	600	1000
HJ-CU . . .	Bogota	Cristobal Paez	720	5000
HJ-CI . . .	Bogota	Manuel J. Gaitan	810	2500
HJ-CC . . .	Bogota	Gustavo Uribe Th.	870	5000
HJ-CS . . .	Bogota	Cia. de Radiodifusion	920	50000
HJ-CM . . .	Bogota	Colombia Broadcasting	970	500
HJ-CZ . . .	Bogota	Cipriano Rios Hoyos	1040	2500
HJ-CC . . .	Bogota	Julio Bernal	1060	500
HJ-AH . . .	Barranquilla	Emisora Atlantico	1080	1000
HJ-EE . . .	Cali	Jose T. Calderon	1090	500
HJ-CB . . .	Bogota	Colombia Broadcasting	1105	1000
HJ-GE . . .	Bucaramanga	Gustavo Sorzano	1130	1000
HJ-BJ . . .	Santa Marta	Julio A. Sanchez	1140	500
HJ-DT . . .	Medellin	Joaquin Londono	1150	500
HJ-EB . . .	Cali	Eduardo Cordoba	1150	500
HJ-CO . . .	Bogota	Jesus M. Garcia	1160	1000

• • • SOUTH AMERICAN STATIONS • • •

<i>Call Letters</i>	<i>Location</i>	<i>Owner</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
HJ-FM	Armenia	Botero & Compania	1180	500
HJ-AN	Barranquilla	Paez, Reina & Bernal	1190	1000
HJ-CR	Bogota	Gobierno Nacional (Cultural)	1200	5000
HJ-CE	Bogota	Gustavo Uribe Th.	1220	1000
HJ-AF	Cartagena	Laboratorios Fuentes	1240	500
HJ-DK	Medellin	Cia. Colombia de Radio-difusion	1250	500
HJ-EL	Cali	Hernando Bueno	1260	500
HJ-BC	Cucuta	Pompilio Sanchez	1270	500
HJ-AT	Barranquilla	Delfina V. De Haayen	1275	1000
HJ-GK	Bucaramanga	Francisco A. Bueno	1280	500
HJ-CK	Bogota	Arez & Tobon Sierra	1290	500
HJ-EC	Cali	Rafael Angulo	1300	500
HJ-AK	Barranquilla	Vassallo E. Hijos	1310	500
HJ-DQ	Medellin	Cia. Ant. de Radiodifusion	1320	750
HJ-AA	Barranquilla	Alfonso Rosales Navarro	1330	500
HJ-CN	Bogota	Roberto Laignelet	1335	500
HJ-EF	Cali	Hernando Bueno	1340	250
HJ-FF	Pereira	Antonio Giraldo	1350	500
HJ-DC	Medellin	Francisco Guartas	1350	500
HJ-HA	Pasto	Sociedad Radio Nariro	1350	500
HJ-AI	Barranquilla	Julian Melendez	1370	500
HJ-EN	Cali	Alfonso Mesa Vargas	1370	500
HJ-DR	Medellin	Torres Toro	1380	500
HJ-CJ	Bogota	Manuel J. Gaitan	1380	500
HJ-FD	Manizales	Cia. Radio Manizales	1390	500
HJ-AR	Cartagena	Lequerica Hermanos	1400	500
HJ-BH	Santa Marta	Manuel C. Conde	1410	500
HJ-EI	Buga	Hernando Bueno	1410	100
HJ-EK	Tulua	Hernando Bueno	1430	100
HJ-FL	Ibague	Luis E. Martinez	1440	100
HJ-EG	Popayan	Mercedsm. De Valencia	1450	500
HJ-EJ	Palmira	Daniel Benitez	1460	500
HJ-BE	Cienaga	Elvira De Pereira	1460	250
HJ-FE	Pereira	Cesar & Mario Arango	1470	500
HJ-DL	Medellin	Alberto Estrada	1480	500
HJ-DU	Medellin	Universidad de Antioquia (Cultural)	1490	250
HJ-AS	Barranquilla	Miguel A. Ruiz	1500	250
HJ-FJ	Aguadas C.	Roberto Florez (Cultural)	1500	25
HJ-EM	Cali	Arturo Salazar	1510	500
HJ-DM	Medellin	Prospero Aguirre	1520	500
HJ-BF	Ocana	Luis Linero	1525	100
HJ-FI	Armenia	Angel & Jaramillo	1540	500
HJ-FB	Manizales	Cia. Radio Manizales	4765	500
HJ-GB	Bucaramanga	Francisco A. Bueno	4775	2500
HJ-AB	Barranquilla	Paez, Reina & Bernal	4785	2500
HJ-DX	Medellin	Francisco Guartas	4795	750
HJ-DG	Quibdo	Intend, Del Choco (Cultural)	4805	500
HJ-BB	Cucuta	Pompilio Sanchez	4815	750

• • • **SOUTH AMERICAN STATIONS** • • •

<i>Call Letters</i>	<i>Location</i>	<i>Owner</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
HJ-ED	...Cali	.....Eduardo Cordoba	4825	750
HJ-FH	...Armenia	.....Cotero & Compania	4875	500
HJ-DP	...Medellin	.....Cia. Ant. De Radiodifusion.	4885	1000
HJ-CH	...Bogota	.....Manuel J. Gaitan	4895	750
HJ-AG	...Barranquilla	.....Emisora Atlantico	4905	750
HJ-AP	...Cartagena	.....Lequerica Hermanos	4925	750
HJ-CW	...Bogota	.....Jesus M. Garcia	4935	750
HJ-AE	...Cartagena	.....Laboratorios Fuentes	4965	750
HJ-CX	...Bogota	.....Cipriano Rios Hoyos.	6018	750
HJ-FA	...Pereira	.....Cesar & Mariq Arango.	6054.3	750
HJ-CF	...Bogota	.....Gustavo Uribe Th.	6073	750
HJ-FK	...Pereira	.....Sociedad La Voz Amica.	6097	2500
HJ-DE	...Medellin	.....Cia. Colombia de Radio- difusion	6145	5000
HJ-CD	...Bogota	.....Colombia Broadcasting	6160	750
HJ-CT	...Bogota	.....Cobierno Nacional	9630	2500

ECUADOR

<i>Call Letters</i>	<i>Owner and Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
HC20DA	. . . Guayaquil	900	100
HC2AJ	. . . Guayaquil	1050	1000
HCJB	. . . C. W. Jones, Quito	1250	100
HC2RB	. . . Eric Williams, Guayaquil	1250	100
HC2JSB	. . . Juan S. Behr, Guayaquil	1100	200
HC2CW	. . . Alfonso Wilmot, Guayaquil	1350	50

Short Wave Stations

HCJB	. . . C. W. Jones, Quito	12460	10000
HCJB	. . . C. W. Jones, Portoviej	4005	200
HCLPM	. . . Leonardo Ponce, Quito	5725	500
HC2AK	. . . Guayaquil	9310	1000
HCETC	. . . M. Mantilla, Quito	9351	250
HC1GQ	. . . F. C. del Sur, Quito	9160	150
HC2CW	. . . Alfonso Wilmot, Guayaquil	9130	500
HC20DA	. . . O. de Garcia, Guayaquil	9447	200
HC1IM	. . . W. B. Heimann, Ibarra	4020	150
HC2ET	. . . J. S. Castillo, Guayaquil	9200	300
HCK	. . . Prop. del Estado, Quito	5920	250
HC2RL	. . . Dr. R. Levi, Guayaquil	6647	200

PARAGUAY

<i>Call Letters</i>	<i>Station Name--Owner and Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
ZP1	. . . Radio El Pais--Artaza Hnos., Asuncion	970	100
ZP4	. . . Radio Continental--Isern & Sacarello, Asuncion	730	100
ZP5	. . . Radio Paraguay--Alfonso Sa, Asuncion	1380	100
ZP6	. . . Radio Livieres--Livieres & Copi, Asuncion	1300	100

• • • **SOUTH AMERICAN STATIONS** • • •

<i>Call Letters</i>	<i>Station Name—Owner—Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
ZP11 . . .	Radio Charitas—Juventud Antoniana, Asuncion	1200	100
ZP13 . . .	La Voz del Aire—Julio Picozzi V., Asuncion . . .	1430	100
ZP3 . . .	La Voz del Aire—Julio Coriulot, Encarnacion.	900	100

Short Wave Stations

ZP8 . . .	Radio Continental—Iser & Sacarello, Asuncion	11850	500
ZP7 . . .	Encarnacion	11703	100
ZP14 . . .	Radio Continental—Friedmann Hnos., Villarrica	11725	1000

PERU

<i>Call Letters</i>	<i>Station Name—Operator—Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
OAX4A . . .	Peruvian Government, Radio Nacional, Lima.	854	12000
OAX4B . . .	Empresa Peruana Parlante Bolivar y Carcovich,, Lima	1200	250
OAX4E . . .	Ing. Juan P. Goicochea, Lima	960	200
OAX4J . . .	Radio Internacional, S. A., Lima	1320	250
OAX4L . . .	Radio Miraflores, S. A., Lima	1250	200
OAX5B . . .	J. Antonio Umbert F., Ica	1280	200
OAX6C . . .	Radio Continental, Arequipa	1370	350

Short Wave Stations

OAX4Z . . .	Peruvian Government, Radio Nacional, Lima.	6080	15000
OAX4T . . .	Peruvian Government, Radio Nacional, Lima.	9562	10000
OAX4G . . .	Empresa Peruana Parlante Bolivar y Carcovich, Lima	6230	250
OAX4I . . .	Radio Internacional, Lima	9520	200
OAX4P . . .	J. Antonio Umbert F., Huancayo	5968	250
OAX5C . . .	J. Antonio Umbert F., Ica	9590	150
OAX7A . . .	Carlos Lizarraga Fisher, Cuzco	6128	100
OAX1A . . .	J. Carlos Mountjoy D., Chiclayo	6150	200
OAX2A . . .	Rafael Larco Hoyle, Trujillo	6000	250
OAX6B . . .	Maximo J. Landa, Arequipa	11710	150
OAX6D . . .	Radio Continental, Arequipa	9500	350
OAX6E . . .	Radio Continental, Arequipa	6175	1000

URUGUAY

<i>Call Letters</i>	<i>Owner and Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
CW47 . . .	Julio J. Rabassa, Canelones	1470	300
CW37 . . .	R. Bernotti, Colonia	550	4500
CW25 . . .	Artola, Evangelista & Co., Durazno	1430	500
CW33 . . .	O. F. Barreiro, Florida	1200	75
CW29 . . .	Pedro Telesca, Mercedes	1080	50
CW43 . . .	Volante y Harispuru, Minas	1480	100
CX4 . . .	Direccion de Agronomia, Montevideo	610	5000
CX6 . . .	Government Station, Montevideo	650	10000
CX8 . . .	Ramon Puyal, Montevideo	690	500

• • • **SOUTH AMERICAN STATIONS** • • •

<i>Call Letters</i>	<i>Owner and Location</i>	<i>Frequency Kilocycles</i>	<i>Power Watts</i>
CX10 . . .	Ferrera, Gestoso & Cia., Montevideo.....	730	1000
CX12 . . .	Luis A. Artola, Montevideo.....	770	5000
CX14 . . .	El Espectador, Montevideo	810	5000
CX16 . . .	S.A.D.R.E.P., Montevideo	850	10000
CX18 . . .	El Espectador, Montevideo.....	890	5000
CX20 . . .	Carlos L. Romay, Montevideo	930	2000
CX22 . . .	Harispuru Hermanos, Montevideo.....	970	1500
CX24 . . .	S.A.D.R.E.P., Montevideo	1010	5000
CX26 . . .	Figuera, Canepa & Cia., Montevideo.....	1050	2000
CX28 . . .	L. A. Gori Salvo, Montevideo.....	1090	3000
CX30 . . .	Barlecce, Silva & Larrea, Montevideo.....	1130	1000
CX32 . . .	Bianchi & Patron, Montevideo.....	1170	500
CX34 . . .	Figuera, Canepa & Cia., Montevideo.....	1210	500
CX36 . . .	Vazquez & Walder, Montevideo	1250	250
CX38 . . .	S.O.D.R.E., Montevideo	1290	5000
CX40 . . .	Julio J. Rabassa, Montevideo	1330	500
CX42 . . .	Hector Vernazza, Montevideo.....	1370	500
CX44 . . .	S.A.D.R.E.P., Montevideo	1410	250
CX46 . . .	Vitale & Bertacchi, Montevideo.....	1450	1500
CX48 . . .	Vazquez & Cia., Montevideo	1490	1500
CX50 . . .	Dr. B. Ayala, Montevideo	1530	300
CW47A . .	Fassola Hnos. & Munoz, San Jose.....	1460	100
CW35 . . .	S.A.D.R.E.P., Paysandu	1240	250
CW39 . . .	Miguel Pena, Paysandu	1320	100
CW23 . . .	Domingo Giordana, Salto	820	250
CW27 . . .	Ernesto Popelka, Salto	680	250
CW31 . . .	Salvador E. Pera, Salto	1120	250

Short Wave Stations

CXA1 . . .	S.A.D.R.E.P., Montevideo	11945	2500
CXA2 . . .	Racine & Cassiols, Montevideo.....	9570	5000
CXA3 . . .	H. L. A. Landeira, Montevideo.....	6075	2500
CXA4 . . .	Government Station, Montevideo.....	6125	5000
CXA5 . . .	Figueira, Canepa & Cia., Montevideo.....	9485	2500
CXA6 . . .	S.O.D.R.E., Montevideo	9620	5000
CXA7 . . .	Figueira, Canepa & Cia., Montevideo.....	11735	2500
CXA8 . . .	Isaac Roisenvitz, Montevideo	9640	5000
CXA9 . . .	El Espectador, Montevideo	9440	2500
CXA10 . .	S.O.D.R.E., Montevideo	11895	2500
CXA11 . .	Francisco Gomez Ciblis, Montevideo.....	5920	2500
CXA12 . .	Francisco Gomez Ciblis, Montevideo.....	11945	2500
CXA13 . .	Jaime Yankelevich, Montevideo	6155	2500
CXA14 . .	Isaac Roisenvitz, Montevideo	11820	1000
CXA15 . .	Jaime Yankelevich, Montevideo.....	6155	2500
CXA16 . .	Figueira, Canepa & Cia., Montevideo.....	15380	2500
CXA17 . .	Figueira, Canepa & Cia., Montevideo.....	17800	2500
CXA18 . .	S.O.D.R.E., Montevideo	15300	2500
CXA19 . .	El Espectador, Montevideo	11695	2500
CXA20 . .	S.A.D.R.E.P., Montevideo	9700	2500
CXA21 . .	S.O.D.R.E., Montevideo	26500	2500

• • • SOUTH AMERICAN STATIONS • • •

Call Letters	Owner and Location	Frequency Kilocycles	Power Watts
CXA22	S.O.D.R.E., Montevideo	29500	2500
CXA23	S.O.D.R.E., Montevideo	43500	2500
CXA24	S.O.D.R.E., Montevideo	5800	2500

VENEZUELA

Call Letters	Station Name	Location	Owner and Director of Station	Frequency Kilocycles	Power Watts
YV5RI	Radio Continente	Caracas	Oscar Vicentelli Oscar Vicentelli	590	1000
YV5RB	Radiodifusora Venez.	Caracas	Degwitz & Siblesz H. Degwitz	790	10000
YV5RQ	Radio Libertador	Caracas	Jesusa Gonzalez A. Jose Gil Borges	882	1000
YV5RA	Radio Caracas	Caracas	Cia. Anonima Almacen Americano Ricardo Espina	960	10000
YV2RB	La Voz del Tachira	San Cristobal	Jesus Diaz Gonzalez Jesus Diaz Gonzalez	980	500
YV5RG	Emisoras Unidas	Caracas	Cia. Anonima Mario Garcia A.	1010	1000
YV5RZ	Emisora Vargas	La Guaira	Gonzalo Veloz Mancera Gonzalo Veloz Mancera	1050	300
YV6RE	Ondas del Neveri	Barcelona	L. J. Arreaza Almenar L. J. Arreaza Almenar	1080	250
YV1RF	Ondas del Lago	Maracaibo	N. Vale Quintero N. Vale Quintero	1120	350
YV1RD	Radiodifusora Maracaibo	Maracaibo	G. Govea & G. Nouel Guillermo Govea	1150	250
YV4RD	Radio Marconi	Maracay	Humberto Croquer O. Paz Castillo	1150	200
YV5RL	Radio Tropical	Caracas	Ponce & Viggiani Ponce & Viggiani	1160	1000
YV1RK	Radio Popular	Maracaibo	Jose Higuera M. Rafael Rivera P.	1250	350
YV3RA	Radio America	Barquisimeto	Arturo Ramos M. Arturo Ramos M.	1270	1500
YV1RA	Ecos del Zulia	Maracaibo	Luis Garcia Nebot Luis Garcia Nebot	1300	100
YV4RA	La Voz de Carabobo	Valencia	H. & G. Degwitz G. Degwitz	1350	830
YV1RW	Radio Coro	Coro	Roger Leyba Roger Leyba	1370	1000
YV4RE	Radio Valencia	Valencia	Miguel Ache Miguel Ache	1400	1000
YV1RC	La Voz de la Fe	Maracaibo	Pedro A. Bermudez V. Pedro A. Bermudez V.	1400	500
YV6RA	Ecos del Orinoco	Ciudad Bolivar	E. Torres Valencia E. Torres Valencia	1400	200
YV4RL	Radio Maracay	Maracay	Atilio Ormezzano Atilio Ormezzano	1430	300
YV3RE	Radio Barquisimeto	Barquisimeto	Amilcar Segura Amilcar Segura	1470	1500

• • • SOUTH AMERICAN STATIONS • • •

Call Letters	Station Name	Location	Owner and Director of Station	Frequency Kilocycles	Power Watts
YV4RR	Radio Puerto Cabello	Puerto Cabello	Rafael A. Segura	1490	750
YV1RJ	Radio Falcon	Coro	Rafael A. Segura Compania Anonima	3300	750
YV4RX	Radio Marconi	Maracay	Jesus Romero Humberto Croquer	3310	200
YV1RO	Radio Trujillo	Trujillo	O. Paz Castillo Pedro J. Torres	3340	1000
YV5RS	Radio Libertador	Caracas	Pedro J. Torres Jesusa Gonzalez A.	3350	5000
YV1RT	La Voz de la Fe	Maracaibo	Jose Gil Borges Pedro A. Bermudez V.	3370	700
YV5RY	Radio Continente	Caracas	Pedro A. Bermudez V. Oscar Vicentelli	3380	1000
YV5RW	Radio Tropical	Caracas	Oscar Vicentelli Ponce & Viggiani	3400	1000
YV3RX	Radio America	Barquisimeto	Ponce & Viggiani Arturo Ramos M.	3410	750
YV2RC	La Voz de la Sierra	Merida	Arturo Ramos M. Rafael A. Segura	3420	600
YV1RU	Radiodifusora Maracaibo	Maracaibo	Rafael A. Segura G. Govea & G. Nouel	3440	1000
YV4RP	Radio Valencia	Valencia	Guillermo Govea Miguel Ache	3460	1000
YV4RQ	Radio Puerto Cabello	Puerto Cabello	Miguel Ache Rafael A. Segura	3480	750
YV3RF	La Voz del Llano	Acarigua	R. Anzola Anzola Pausides Sigala	3490	1000
YV5RV	Emisora Vargas	La Guaira	Luis Barrios Gonzalo Veloz M.	3500	350
YV1RV	Ecos del Zulia	Maracaibo	Gonzalo Veloz M. L. Garcia Nebot	4750	300
YV4RO	La Voz de Carabobo	Valencia	L. Garcia Nebot H. & G. Degwitz	4760	300
YV1RY	Radio Coro	Coro	G. Degwitz Roger Leyba	4770	175
YV3RN	Radio Barquisimeto	Barquisimeto	Roger Leyba Amilcar Segura	4780	300
YV6RU	Ecos del Orinoco	Ciudad Bolivar	Amilcar Segura E. Torres Valencia	4790	300
YV1RX	Ondas del Lago	Maracaibo	E. Torres Valencia N. Vale Quintero	4800	2000
YV1RL	Radio Popular	Maracaibo	N. Vale Quintero J. A. Higuera M.	4810	300
YV2RN	La Voz del Tachira	San Cristobal	Rafael Rivera Parra Jesus Diaz Gonzalez	4830	2000
YV1RZ	Radio Valera	Valera	Jesus Diaz Gonzalez Pedro Flores Jelambi	4840	300
YV5RU	Emisora Unidas	Caracas	Pedro Flores Jelambi Mario Garcia A. & Gonzalo Veloz Mancera	4860	5000
YV5RM	Radiodifusora Venez.	Caracas	Mario Garcia A. Degwitz & Siblesz	4890	5000
YV5RN	Radio Caracas	Caracas	H. Degwitz Cia. Anonima Almacen Americano	4920	5000
			Ricardo Espina		

STATIONS OF CENTRAL AMERICA

BRITISH HONDURAS

Call Letters	Operated by and Location	Frequency Kilocycles	Power Watts
ZIK2 . . .	Government, Belize	10600	200

COSTA RICA

Call Letters	Owner and Location	Frequency Kilocycles	Power Watts
TI5CV . . .	Carlos Videche Aguilar, Alajuela	575	100
TI4NRH . .	Amando Cespedes M., Heredia	725	750
TIRH . . .	Rafael Hine Ch., San Jose	970	500
TIEP . . .	Eduardo Pinto H., San Jose	830	3000
TIFA . . .	Francisco Arie, San Jose	1000	250
TIGPH . . .	Gonzalo Pinto H., San Jose	1225	500
		650	1000
TISMG . . .	Guillermo Zuniga R., San Jose	1030	500
TILJ . . .	Lola Monge Peralta, San Jose	775	450
TILS . . .	Luis Saenz Mata, San Jose	880	5000
TING . . .	Narciso Garcia, San Jose	750	375
TIPG . . .	Perry Girton, San Jose	625	10000
TIRCC . . .	Carlos Borge, San Jose	1200	500
TIRS . . .	Rogelio Sotela B., San Jose	925	200
TIGQ . . .	Gonzalo Garcia Q., San Jose	690	2000
TIGP . . .	Gonzalo Pinto H., San Jose	605	250
TIXD . . .	Andrea Vinegas, San Jose	800	1000
TIAFB . . .	Mayid Barzuna, San Jose	900	150
TIOS . . .	Guillermo Castro Saenz, San Jose	940	500
TINBC . . .	Oscar Martinez Nussbaumer, San Jose	1070	5000
TIMC . . .	Jorge Mario Cardos M., Cartago	670	700

Short Wave Stations

TI4NRH . .	Amando Cespedes, Heredia	9692	750
TIEP . . .	Eduardo Pinto H., San Jose	6700	1000
TIGPH . . .	Gonzalo Pinto H., San Jose	5824	1000
TIPG . . .	Perry Girton, San Jose	9615	2000
TIRCC . . .	Carlos Borge, San Jose	6180	500
TIRH . . .	Rafael Hine Ch., San Jose	6150	250
TILS . . .	Luis Saenz Mata, San Jose	6165	2000
TIRVM . . .	Ruben Venegas Mora, Las Juntas de Abangarez	6035	500

GUATEMALA

Call Letters	Owner and Location	Frequency Kilocycles	Power Watts
TGW	Government, Guatemala City	1520	5000
TGI	Government, Guatemala City	1320	300
TGX	A. Mejicano Novales, Guatemala City	1400	30
TGQ	Government, Quezaltenango	1440	300

Short Wave Stations

TGWA . . .	Government, Guatemala City	9885, 11780, 15170, 17800	10000
TGWB . . .	Government, Guatemala City	6480	1000
TGWC . . .	Government, Guatemala City	2320	1000

• • • STATIONS OF CENTRAL AMERICA • • •

Call Letters	Owner and Location	Frequency Kilocycles	Power Watts
TG2 . . .	Government, Guatemala City	6180	300
TG2X . . .	Government, Guatemala City	5940	250
TGS . . .	Government, Guatemala City		150 or 300
TGQA . . .	Government, Quezaltenango	6400	300

HONDURAS

Short Wave Stations

Call Letters	Owner and Location	Frequency Kilocycles	Power Watts
HRN . . .	Rafael Ferrari & Paul John, Tegucigalpa	5875	750
HRD . . .	Miguel R. Moncado, La Ceiba	6235	100
HRP1 . . .	Filberto Diaz Zelaya, San Pedro Sula	6351	150

NICARAGUA

Call Letters	Station Name	Location	Owner	Frequency Kilocycles	Power Watts
YNOP . . .	Gilfillan	Managua	Ernesto Andrea	6850	800
YNOP . . .	Gilfillan	Managua	Ernesto Andrea	1230	800
YNLG . . .	Estacion Radio Emisora Nacional	Managua	Benjamin L. Guerra	6610	1000
YN1GG . . .	La Voz de los Lagos	Managua	Ernesto Gutierrez U	6535	400
YNPR . . .	Pilot	Managua	A. Majewsky & R. Sengelmann	8590	800
YNRS . . .	Radiodifusora Nicaraguense	Managua	R. Sengelmann	6760	1000
YN7AG . . .	Oriente & Mediodia	Masaya	Rafael T. Arjona	7870	50
YNJAT . . .	La Voz del Aire	Leon	J. A. Tijerino	5758	600
NCM	Ecos del Caribe	Bluefields		9660	100

PANAMA

Call Letters	Station Name—Owner—Location	Frequency Kilocycles	Power Watts
HP5C . . .	Miramar—Radio Panama, S. A., Panama City	730	100
HOC . . .	La Voz de la Victor—J. Jaen Jaen Cia., Panama City	1440	250

Short Wave Stations

HOA . . .	Ron Dalley—George Williams, Panama City	2310	500
HP5K . . .	La Voz de la Victor—J. Jaen Jaen Cia., Colon	6005	500
HP5B . . .	Miramar—Radio Panama, S. A., Panama City	6030	100
HP5F . . .	Colon	6050	500
HP5H . . .	La Voz del Pueblo—M. Lombardo Vega, Panama City	6122	400
HP5J . . .	La Voz de Panama—Cia. Servicio Publico de Radio, Panama City	9607	500
HP5A . . .	Teatro "Estrella de Panama"—J. Jaen Jaen Cia., Panama City	11700	300
HP5G . . .	Ron Dalley—George Williams, Panama City	11780	800
HOK . . .	Colon	640	250
HP6J . . .	Panama City	1358	250

EL SALVADOR

Call Letters	Owner and Location	Frequency Kilocycles	Power Watts
YSS . . .	Government, San Salvador	640	500
YSP . . .	Fernando Albayeros-Sosa, San Salvador	780	300

Short Wave Stations

YSD . . .	Government, San Salvador	7894	400
YSP-A . . .	Fernando Albayeros-Sosa, San Fernando	10400	300
YSP-B . . .	Fernando Albayeros-Sosa, San Salvaor	6575	300
HUB . . .	Government (Experimental), San Salvador	5556	300

WHEN MINUTES MEAN MONEY—



**SEND IMPORTANT MESSAGES
VIA POSTAL TELEGRAPH!**

WHEN PEOPLE ARE "TOO BUSY,"
remember this: A Postal Telegram is not kept waiting in an outer office. Postal messengers are trained to get a *signed receipt!*

WHEN A DEAL'S ALMOST CLOSED,
speed last-minute, important facts via Postal Telegraph. You can be sure they will be transmitted *accurately!*

WHEN THE UNEXPECTED HAPPENS,
notify all concerned by Postal Telegraph. It costs surprisingly little, thanks to new low Postal Telegraph rates!

WHENEVER SPEED IS ESSENTIAL,
count on the nation-wide Postal Telegraph system — for helpful, personal service. Just phone Postal Telegraph. Charges appear on your phone bill.

Postal Telegraph

"SWIFT...ACCURATE...ECONOMICAL"

IT REQUIRES
"Acceptance"
TO COMPLETE A PROPOSAL



THAT'S as true of a radio "engagement" as it is of any other. "Acceptance" is one important advantage which The Colonial Network definitely *has* . . . collectively . . . and for each of the 19 home town stations in New England.

It's the kind of acceptance built by consistent service of entertainment, information and education . . . by being a part of the community life . . . and by

meeting local radio needs and preferences in ways that no "stranger" station ever can.

The loyal listenership and friendliness resulting make every market a fertile field for radio promotion.

The Colonial Network's A.B.C. of more sales in New England is Acceptance . . . Buyability . . . and Coverage . . . at an investment cost which fits economical advertising budgets.

THE COLONIAL NETWORK

21 BROOKLINE AVENUE

BOSTON, MASSACHUSETTS

EDWARD PETRY & CO., INC., Exclusive National Sales Representatives



not
Strangers
... but friends



EACH one of The Yankee Network's 19 stations is a good New England neighbor, not a "stranger" begging hospitality. As a friend and neighbor, its programs are always welcome in the home, the place where buying impulses are created. Use the Yankee Network's "good neighbor" stations for complete coverage and the most effective introduction of your product in New England's consistently prosperous and responsive market.

THE YANKEE NETWORK

21 BROOKLINE AVENUE

BOSTON, MASSACHUSETTS

EDWARD PETRY & CO., INC., Exclusive National Sales Representatives



Symbol of the Radio Age

"The richest man cannot buy what
the poorest man gets free by radio"

Radio Corporation of America
RADIO CITY, NEW YORK

RCA Manufacturing Company, Inc. — National Broadcasting Company
RCA Laboratories — RCA Institutes, Inc.
R.C.A. Communications, Inc. — Radiomarine Corporation of America