

MY 24 '29
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APR 24 1929
Perkins Co. via Alshweg 1/15/29
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Vol. 1 - 2
Apr. 1929 -
Jan. 1930

Broadcast Advertising

WHEN YOU USE SPOT RADIO ADVERTISING
—WRITE, WIRE OR PHONE



THE NATIONAL BROADCAST AUTHORITY
BUREAU OF BROADCASTING,
RADIO DIGEST

E. C. RAYNER, President

The Pioneer National Radio Advertising Representatives
Established 1926

WE ANSWER ALL QUESTIONS

Owners of the
AUDITONE BROADCASTING SYSTEM
Electrical Transcription
THE PERFECT PROGRAM — ALL BROADWAY TALENT

We Handle Everything in Broadcasting

Seven years of personal contacts with broadcasting in a national way. Complete and authoritative information about Radio Stations, Programs, Personnel, etc. Experienced continuity writers, radio merchandisers and advertisers.

A Complete National Organization

Chicago

E. C. Rayner, 510 North Dearborn Street

New York

A. T. Sears & Son, 122 South Michigan Avenue

Cincinnati

Ingraham & Walker, 33 West 42nd Street, Penn 2210

St. Louis

H. A. Braunstein, 304 Provident Bank Building

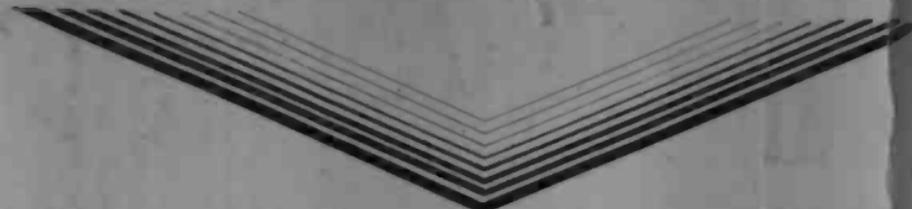
Kansas City

J. A. McCullom, 1411 Syndicate Trust Building

Los Angeles

J. H. Miller, 307 Interstate Building

Jack Miller, 656 Subway Terminal Building



Specialists in Spot Advertising

THE pioneers in Spot Advertising—those who are using skillfully individual stations—have brought to light some startling advertising values.

However the use of a few or fifty stations to meet the exact requirements of sales and distribution requires a wealth of supplementary information.

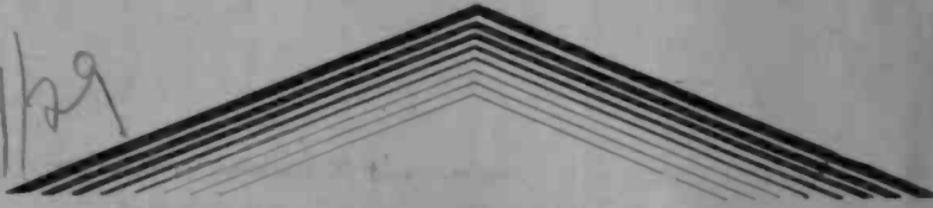
We are Eastern Representatives for a long list of important broadcast stations, covering the country from Coast to Coast, and from Canada to the Gulf of Mexico.

Our service to advertisers and recognized advertising agencies (to whom regular commissions are allowed) includes ideas and methods, when desired, for profitable use of these station facilities—also the convenience of negotiating and handling through one channel any combination of individual broadcast stations to meet any individual advertiser's needs and problems—one order—one billing.

Write, wire or 'phone for details on any specific problem.

SCOTT HOWE BOWEN, Inc.

274 Madison Avenue, New York



4/29

The FAVORITE

OF THE

GREAT NORTHWEST



KSTP

National advertisers look to KSTP as the medium through which to sell their products *because*:

This station serves a region of almost limitless buying power.

Its coverage begins with more than a million people in the Twin Cities area—adding five millions more as it extends throughout the rural and urban districts of the rich Northwest states.

Its audience is held by the unusual combination of the best National Broadcasting Company programs on both Red and Blue networks and the finest radio entertainment and most comprehensive service features offered in this territory.

We will be pleased to tell you how KSTP is producing for its advertisers who seek the Great Northwest market.

KSTP
10,000 Watts

The National Battery Broadcasting Company

Saint Paul, Minnesota

Saint Paul Hotel
Saint Paul

Hotel Radisson
Minneapolis

Advertising Agency Survey Shows

WLS

Farmers' Favorite Station 2 TO 1!

HERE is the result of a survey made by a prominent advertising agency among 9,600 farm families in Illinois and Indiana. W L S was voted first choice two and a half times more than next nearest station. Full details of this investigation, as well as information on available time, talent, etc., furnished on request.

How Illinois and Indiana Farmers Voted

STATION	First Choice	Second Choice	Third Choice	Total Mention
WLS	581	174	72	827
Second	204	189	73	466
Third	36	150	89	275
Fourth	5	39	71	115
Fifth	19	37	40	96
Sixth	16	46	31	93
Seventh	6	17	27	50
TOTALS	867	652	403	1,922

WLS

The Prairie Farmer Station

BURRIDGE D. BUTLER, Publisher

Chicago

THE NEW YORK
PUBLIC LIBRARY
517390 A
ASTOR, LENOX AND
TILDEN FOUNDATION
R 1931 L

Broadcast Advertising *Magazine.*

440 South Dearborn Street, Chicago, Ill.

Subscription \$1.00 a year. Single copies 10c. Published monthly by Stamm & McIlvain; L. E. McIlvain, President; G. W. Stamm, General Manager. New York Representative: C. A. Larson, 254 West 31st St.

Volume 1

APRIL, 1929

Number 1

Keeping Broadcast Copy Within Bounds

*Most Newspaper Copy Fails When
Applied to Radio Broadcasting*

By R. S. Kinkead

THE direct adoption of newspaper advertising copy for radio broadcasting is responsible for a large number of failures in broadcast advertising campaigns, and it has been generally recognized that with few exceptions the usual printed display copy cannot advantageously be broadcast over the radio. Three classes of copy have been used successfully by radio advertisers. They are:

1. A sponsored program linked up with the name of a product.
2. Commercial announcements with news value.
3. "Press Agent" copy.

In its effect to stimulate sales, the sponsored program resembles outdoor advertising—consumer demand follows with the public's familiarity with the name of a product or service because the name is favorably impressed upon the radio audience. However, the sponsored program differs from outdoor advertising in

that it has two additional components: it has dignity and it has the power to imbue the public mind with gratitude toward the sponsor.

The abuse of announcements with sponsored programs lies in the advertisers' eagerness to inject sales talk, thus both destroying the dignity and nullifying the public's good will.

Straight commercial announcements are perhaps the most misused of all forms of radio advertising. As a class they are widely resented by the radio audience, and often they engender a feeling of hostility toward the advertisers. Their persistent malapplication quickly divests a station of listener interest. As most of them do not fall within the category of "Public Interest, Convenience, or Necessity," they are looked upon with marked disfavor by the Federal Radio Commission.

This does not imply that the

broadcasting of commercial announcements should be abandoned, but rather that they should be of such nature or be so prepared that they have news value.

The line of demarkation between news material and straight advertising is difficult to draw. In general, any items that would appear as news in a daily paper can be broadcast without offending the radio audience.

To these, should be added department store advertising, and any advertising of commodities of wide-spread use where price constitutes the principal buying motive.

If an automobile manufacturer is about to bring out a new model of a well known car, an announcement of its general design, performance and price has news value. Yet if this information has already been imparted to the public, such announcement is devoid of listener interest.

A broadcast to a farm audience telling the price of alfalfa for sale by the advertiser has news value.

An announcement that a certain make of storage battery can be obtained at the radio advertiser's retail establishment has little or no news value, unless the battery differs radically from those in general use, or the price is uncommonly low.

Such copy should either be sustained by music or accompanied by a short talk on the interesting points of storage batteries in general.

If silk stockings or dresses are offered for sale at reduced prices,

the item is news to women even though they do not intend to buy.

It would appear that those best fitted to prepare or judge listener interest in radio announcements are those who have had experience in the editorial, and not necessarily in the advertising departments of daily newspapers.

The heads of the commercial departments of radio stations are well aware of the shortcomings

of the advertising broadcast over their stations. Albeit, advertisers who are not attuned to radio broadcasting often enjoin station executives to follow copy appearing in the daily press.

People are prone to believe that things of intimate concern to them are also of interest to others. Although advertisers in the radio audience will tune out colorless announcements of other companies, they will affirm that their own similar sales talks are accorded grateful acceptance.

The most subtle form of radio advertising is akin to the propaganda injected into the columns of newspapers by press agents. It appears as instructive talks on cooking, household management, aids to beauty, etc. The advertisers' names are often mentioned only incidentally. The talks are carefully prepared, and have real educational value.

An example of a successful campaign of this kind is that of Georgia O. George, manufacturers of "Hair-A-Gain," hair shampoo, and "Mask-O-Youth," a liquid facial mask.

The company has been on the air about two years. In the beginning, full hours were used,

(Continued on Page 32)

*NEWS value determines
the listener interest of
announcements.*

Why the Government Regulates Radio

*Limited Number of Channels
Makes Restrictions Imperative*

By Dr. J. H. Dellinger
Chief Engineer, Federal Radio Commission

THERE is one basic principle whose implications face us at every turn in governmental regulation of radio. This is the simple fact that the number of communication channels is definitely and severely limited.

If stations are permitted to operate in excess of the capacity of these channels extensive interference develops and radio operation becomes unsatisfactory.

World's Radio Traffic

In the present state of radio technique the number of radio channels is as follows: In the low frequencies (15 to 550 kilocycles), there are approximately 1,000 channels; in the broadcast band of frequencies (550 to 1500 kilocycles), there are 96 channels, of which 90 are available for the use of the United States; and in the high frequencies (from 1500 to 23,000 kilocycles), there are about 2,000 channels. Thus we have a total of about 3,000 channels available for the radio traffic of the entire world. On some of these fre-



J. H. Dellinger

quencies, particularly the very low and the very high, it is not feasible to have more than one station operating at any given time in the whole world. On many of the others a large number of stations can operate simultaneously.

The fact that the number of channels is limited and the number of stations assignable to any one channel is again limited, imposes upon the Government the necessity of choice among applicants for the radio channels. This is indeed the underlying reason why a Federal Radio Commission came to be created—to provide for choice among those who aspire to construct and use radio stations. Congress created not only the Commission as its instrument to make the choice, but also a judicial principle to be the basis of choice, viz., the principle of public convenience, interest, or necessity.

Channels All Allotted

It was the congestion in the

broadcast band which spurred Congress to this legislation. Only in that band of frequencies did the number of applicants for licenses exceed the supply of channels, in early 1927, when the law was passed. The condition has extended, however, and the demand now exceeds the supply in the high-frequency band as well as in the broadcast band.

The number of stations which can be in simultaneous operation without destructive interference depends on a number of factors. First of these is the

width of channel occupied by the intelligence transmitted. That is to say, every message or signal actually pre-empts certain frequencies on either side of that of the radio wave which carries it.

Speech or music thus takes up a wider channel than telegraphic dots and dashes. The channel widths required for the various classes of intelligence transmitted by radio are about as follows: For telegraphy, even at very high speed, a few tenths kilocycle or less. For telephony, 10 kilocycles. The same for photograph transmissions at maximum commercial speeds. For television of fair quality, 100 kilocycles.

The use of damped waves, produced by spark transmitters, involves even wider channels than any of the foregoing. In fact it is so nearly impossible to conduct radio communication on damped waves without interference that their use has become steadily more objectionable. The International Radio Convention of 1927 forbids their use in new stations at frequencies below 375

kilocycles after 1929, and forbids their use entirely (except for ships and aircraft stations of less than 300 watts) after 1939. The Radio Commission, by its recent General Order No. 51, has forbidden their use entirely (except for ship stations) after January 1, 1929.

Another important factor limiting the number of stations that can be on the air simultaneously is the selectivity of receiving apparatus. This, taken together with geographical and frequency separation of transmitting

stations, their power, and the location of the receiver with respect to interfering station, largely determine the separation high frequencies (above 1500 kilocycles) these factors are at present such that a separation of about 0.2 per cent in frequency is required, i. e., the channels are approximately 0.2 per cent wide.

As the design of receivers improves, giving greater selectivity, and as the constancy with which stations maintain their frequency also improves, the channels may be narrowed. The channel width may perhaps be reduced to approximately 0.1 per cent, allowing twice as many stations to be licensed, as early as 1930. Those are highly important political consequences of this purely engineering circumstance. Frequencies above 6,000 kilocycles are world-wide in their effects, and they are thus subject to division among the nations. The greater the number of available channels, the less is the likelihood of serious international conflict over their exploitation.

(Continued on Page 30)

*WITH present facilities,
the use of television is
restricted.*

Figures Show Remarkable Growth in Radio Audience

By G. W. Stamm

FROM nothing to an audience of forty millions, in less than ten years, is the record of radio broadcasting. Never before has an advertising medium grown with such remarkable rapidity. And yet the figures tell only part of the story.

The increase in the number of receiving sets in use January 1, 1929, over the previous year was 1,500,000 or 20 per cent. But the number of receiving sets sold last year including radio-phonograph combinations was 2,631,000. In other words more than 1,200,000 obsolete sets were replaced. Hence the increase in the number of listeners with more perfect reception amounted to more than 35 per cent.

In addition to a wider dissemination of better radio sets during 1928, two even more important factors have enabled radio stations to further captivate their audience. These are better programs, and the activities of the Federal Radio Commission in clearing the air of interference.

The increased purchasing power of the radio audience is indicated in the tabulation showing

the year-to-year sales of sets, parts, and accessories. The sales of sets, with the exception of a slump in 1927, have shown a substantial yearly increase, while the sales of parts have been rapidly diminishing since their peak year in 1924. Boys, with their low purchasing power, are ceasing to build radio sets. The radio instead of a plaything has become an instrument for the enjoyment of adults.

The average retail price per radio set in 1927 was \$123.00, less tubes and accessory loud speakers. In 1928, the price was \$130.00—an increase of \$7.00 per set in spite of a substantial drop in retail prices.

The conclusions to be drawn from these facts as they affect radio broadcast advertising are far reaching. To an advertiser the value of a magazine or newspaper depends upon three vital elements: its circulation, its reader interest, and the purchasing power of its subscribers. The counterparts of these elements are present in the medium of radio broadcasting. In all three radio has made tremendous advances in the past year.

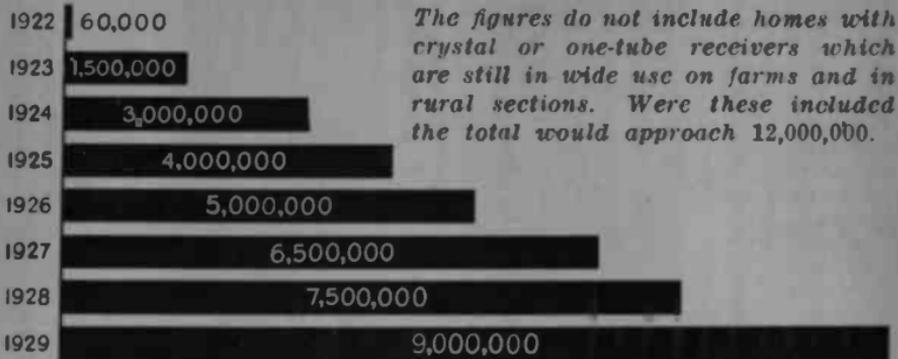
SALES OF RADIO SETS, PARTS AND ACCESSORIES.

(At retail, in dollars)

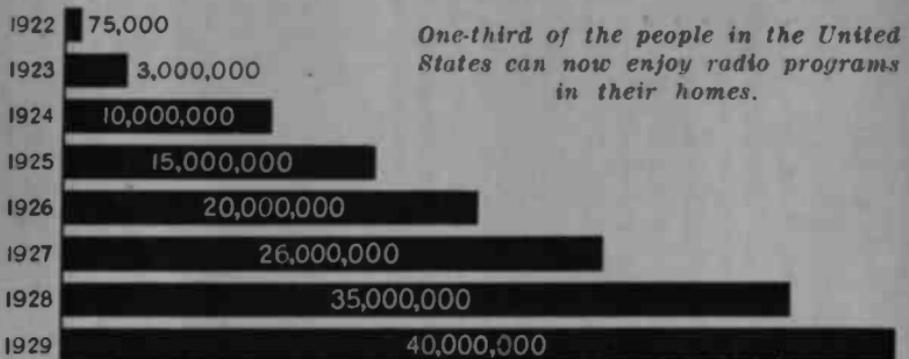
	Sets	Parts	Accessories*	Totals
1922.....	\$ 5,000,000	\$ 40,000,000	\$ 15,000,000	\$ 60,000,000
1923.....	15,000,000	75,000,000	46,000,000	136,000,000
1924.....	100,000,000	100,000,000	158,000,000	358,000,000
1925.....	165,000,000	65,000,000	200,000,000	430,000,000
1926.....	200,000,000	50,000,000	256,000,000	506,000,000
1927.....	168,750,000	21,000,000	235,850,000	425,600,000
1928.....	306,000,000	12,000,000	332,550,000	650,550,000

*Includes tubes, batteries, and loud speakers.

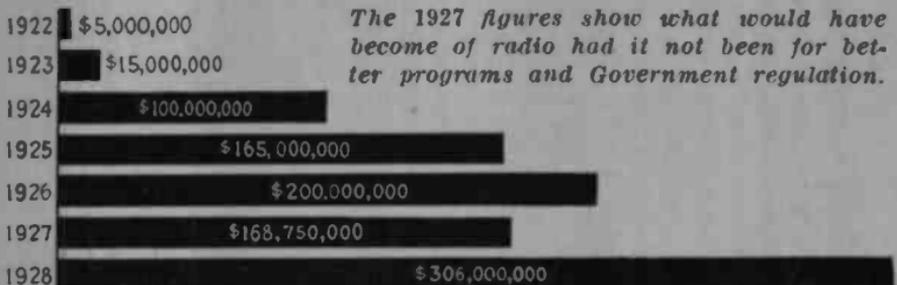
Number of Homes With Sets



Radio Audience



Sales of Radio Sets



The statistical data used in this article was supplied through the courtesy of the Market Analysis Department of "Radio Retailing," a McGraw-Hill Publication.

State Populations and Numbers of Sets

	(Estimated) Population, 1928	Number of Homes with Radio Sets Jan. 1, 1928	Number of Homes with Radio Sets Jan. 1, 1929
Alabama (33.9)	2,573,000	71,000	87,480
Arizona (37.9)	474,000	13,500	18,000
Arkansas (50.9)	1,944,000	80,500	99,000
California (141.9)	4,556,000	536,000	646,650
Colorado (72.6)	1,090,000	64,000	79,200
Connecticut (90.4)	1,667,000	123,100	150,750
Delaware (51.6)	244,000	10,500	12,600
D. C. (92.9)	552,000	40,700	51,300
Florida (106.3)	1,411,000	122,100	150,030
Georgia (36.8)	3,203,000	96,500	118,080
Idaho (27.6)	546,000	12,600	15,120
Illinois (94.4)	7,396,000	578,000	698,220
Indiana (72.7)	3,176,000	190,000	231,030
Iowa (88.8)	2,428,000	177,000	215,730
Kansas (77.4)	1,835,000	114,500	142,200
Kentucky (42.4)	2,553,000	88,000	108,450
Louisiana (44.0)	1,950,000	69,500	85,950
Maine (66.5)	798,000	42,500	53,100
Maryland (92.1)	1,616,000	122,000	148,950
Massachusetts (86.5)	4,290,000	307,000	371,250
Michigan (84.6)	4,591,000	321,000	388,800
Minnesota (79.4)	2,722,000	178,000	216,180
Mississippi (31.2)	1,790,000	44,500	55,980
Missouri (75.8)	3,523,000	221,000	267,300
Montana (35.2)	548,889	14,000	19,350
Nebraska (13.7)	1,408,000	93,500	114,480
Nevada (40.6)	77,407	2,600	3,150
New Hampshire (46.3)	456,000	15,600	21,150
New Jersey (93.2)	3,821,000	295,000	356,400
New Mexico (40.9)	396,000	13,000	16,200
New York (99.4)	11,550,000	853,000	1,149,120
North Carolina (40.2)	2,938,000	104,500	128,250
North Dakota (65.2)	641,192	32,900	41,850
Ohio (81.9)	6,826,000	463,000	559,350
Oklahoma (61.9)	2,426,000	123,000	150,300
Oregon (84.0)	902,000	62,200	75,780
Pennsylvania (74.8)	9,854,000	613,000	738,000
Rhode Island (56.5)	716,000	31,800	40,500
South Carolina (36.9)	1,864,000	55,500	68,850
South Dakota (59.7)	704,000	33,000	42,030
Tennessee (41.7)	2,502,000	85,000	104,580
Texas (58.6)	5,487,000	266,000	321,480
Utah (43.5)	531,000	17,200	23,130
Vermont (42.6)	352,428	12,000	15,030
Virginia (45.6)	2,575,000	95,500	117,450
Washington (99.6)	1,587,000	129,200	158,130
West Virginia (47.3)	1,724,000	66,000	81,630
Wisconsin (79.7)	2,953,000	194,000	235,530
Wyoming (28.0)	247,000	5,800	6,930
Approximate totals	120,013,000	7,500,300	9,000,000

"You're Not Quite Ready for That as Yet!"

By M. O. Hastings

FROM its inception, radio advertising has had to fight its way for recognition among advertising agencies, and the opposition is still quite pronounced. In some instances the radio stations have themselves to blame. They have failed to render service, have ignored requests for advertising rates, and have been unable to formulate effective broadcast advertising campaigns.

Aside from this however, many advertising agencies are still opposing radio advertising for selfish reasons, in no way considering the interests of their clients. They have opposed it and are still opposing it because their profits are greater when their clients' appropriations are spent for other forms of advertising.

For those who are not familiar with the situation a word of explanation is necessary: When an advertising agency places copy in newspapers or magazines, the publishers allow a 15% commission on the full amount expended. With rare exceptions, radio stations allow 15% commission on the cost of the time on the air *only*. No commissions or cash discounts are allowed on the cost of the talent, wire charges, etc.

For example, if an agency has an appropriation of \$50,000 at its disposal and spends it for other than radio advertising, its gross profit will be \$7,500. If the money is spent for radio advertising and the charges for musical pro-

grams are \$10,000, the agency is allowed commissions on \$40,000 only. The difference in commissions in this case amounts to \$1,500.

Agencies cannot be blamed for choosing to place advertising in media that is most profitable to them, but by withholding facts they often renounce the standards of their profession. If a client suggests that he would like to try radio advertising he is often told: "I don't think you are quite ready for that as yet," or, "You have a product that can't be advertised by radio," or, "Let's wait until radio has stood the test of time," or better still, "Name me a single commodity that has been 'put over' by the use of radio."

Another reason why radio has not been generally accepted by agencies is because some of the older account executives are in a rut. To become familiar with the intricacies of radio broadcasting requires time and study. Why bother with it?

Salesmen of broadcast advertising have had to fight their way all along the line but fortunately within recent months the advertisers themselves have awakened to the potency of the new medium. In several cases agencies have lost large accounts because the clients were not sufficiently impressed with the argument, "You're not quite ready for that yet."



William S. Hedges
President



L. S. Baker
Managing Director

Association of Broadcasters Adopts Code of Ethics

*Recommend Policies to Be Followed—
Reaffirm Recommendations to Congress*

TO adopt a code of ethics for further protection of the public against harmful advertising and to pass resolutions for the general uplift of radio broadcasting, the National Association of Broadcasters met in Chicago, March 25th. Those in attendance were:

H. E. Sidles, KFAB; Eugene P. O'Fallon, KFEL; J. Lorin Fox, KFH; Henry Field, J. A. Reinemund, KFNF; Dudley Shaw, KFJF; E. V. Haserodt, Erwin Umbach, KFVO; Arthur B. Church, KMBC; Stanley E. Hubbard, KSTP; Ira M. Nelson, WAAM; F. P. Manchester, WAAW; C. C. Hollenback, WAIU; Leon Levy, WCAO and WABC; John D. Thomas, WCBD; H. A. Bellows, WCCO; W. W. Kideney, WEBR; W. A. Wentworth, Mr. Fetzer, WEMC; Morgan L. Eastman, B. K. Pratt, WENR; C. W. Burton, WEEL; Blythe Q. Hendricks, WFBM; J. Delos Owen, V. G.

Pribble, WGN; Martin Campbell, WHAS; H. Howlett, WHK; Wm. H. Heinz, WHO; Jos. F. Wright, WILL; H. J. Brennen, WJAS; Leo Fitzpatrick, John F. Patt, WJR; Edgar L. Bill, J. O. Maland, WLS; F. Clifford Estey, WLW; Wm. S. Hedges, WMAQ; Henry C. Crowell, W. P. Loveless, WMBI; M. K. Gilliam, WMCA; Harry Shaw, WMT; R. L. Harlow, WNAC; J. C. Gurney, E. R. Gurney, WNAX; W. I. Griffith, WOI; Orson Stiles, WOW; C. R. Durbin, WOWO; H. K. Carpenter, WPTF; Troy S. Miller, WRHM; G. W. Goode, C. A. Lucy, WRVA; John J. Storey, WTAG; W. J. Damm, WTMJ; Robert D. Boniel, KYW; Mr. Cosden, Thos. A. Edison Co.; L. S. Baker, Managing Director, National Association of Broadcasters; Niles Trammell, National Broadcasting Co.; Scott Howe Bowen, New York City; Harold D. Hayes, Federal Supervisor of Radio; Louis G. Caldwell, former General Counsel, Federal Radio Commission; Paul Morency, Field Representative of the National Association.

CODE OF ETHICS

THE following code of ethics was adopted by the Association:

1. Recognizing that the Radio Audience includes persons of all ages and all types of political, social and religious belief, every broadcaster will endeavor to prevent the broadcasting of any matter which would commonly be regarded as offensive.

2. When the facilities of a broadcaster are used by others than the owner, the broadcaster shall ascertain the financial responsibility and character of such client, that no dishonest, fraudulent or dangerous person, firm or organization may gain access to the Radio Audience.

3. Matter which is barred from the mails as fraudulent, deceptive or obscene shall not be broadcast.

4. Every broadcaster shall exercise great caution in accepting any advertising matter regarding products or services which may be injurious to health.

5. No broadcaster shall permit the broadcasting of advertising statements or claims which he knows or believes to be false, deceptive or grossly exaggerated.

6. Every broadcaster shall strictly follow the provisions of the radio law of 1927 regarding the clear identification of sponsored or paid-for material.

7. Care shall be taken to prevent the broadcasting of statements derogatory to other stations, to individuals, or to competing products or services, except where the law especially provides that the station has no right of censorship.

8. When charges of violation of any article of the code of ethics of the National Association of Broadcasters are filed in writing with the managing director, the Board of Directors shall investigate such charges and notify the station of its findings.

Confectioners Voice Protest

Charles S. Clark, director of advertising and education of the National Confectioners' Association, appeared before the meeting to protest against the Lucky Strike broadcast advertising, and the use of unfair testimonials was also discussed.

Address on Radio Law

Louis G. Caldwell, former General Counsel of the Federal Radio Commission, addressed the organization on radio law, dwelling lucidly upon various decisions rendered by the Supreme Court. The important rulings cited in his talk will be reviewed in the May issue of *Broadcast Advertising*.

COMMERCIAL STANDARDS

RECOMMENDATIONS by the Commercial Broadcasting Committee were read by H. K.



J. W. Laughlin
Second Vice-President



Alfred J. McCosker
Treasurer

Carpenter, chairman, and, after a few minor changes, were adopted by the Association.

The recommendations which follow are to be construed merely as a guide for members and are not mandatory:

Program Content and Presentation—There is a decided difference between what may be broadcast before and after 6:00 p. m. Time before 6:00 p. m. is included in the business day and, therefore, may be devoted in part, at least, to broadcasting programs of a business nature, while time after 6:00 p. m. is for recreation and relaxation, and commercial programs should be of the good-will type.

Commercial announcements, as the term is generally understood, should not be broadcast between 7:00 and 11:00 p. m.

A client's business and his product should be mentioned sufficiently to insure him an adequate return on his investment, but never to the extent that it loses listeners to the station.

Use of Records—The use of records should be governed by the following:

The order of the Commission with reference to identifying "Phonograph Records," and other means of mechanical reproduction, should be completely carried out.

Phonograph records (those for sale to the public) should not be broadcast between 6:00 and 11:00 p. m. except in the case of pre-release records used in programs sponsored either by the manufacturer or the local distributor.

When mechanical reproductions prepared for radio use only are not for public sale and are of such quality to recommend their being broadcast, no limitation should be placed on their use, except as individual station policy may determine.

Salesmen and Representatives—Salesmen on commission or salary should have: (1) Definite responsibility to the station for which they solicit; (2) some means of identification.

Furthermore, contracts should state specifically that they will not be considered as acceptable until signed by an officer of the station; that no agreements, verbal or understood, can be considered as part of the contract. The salesmen's conference with the client should always be confirmed by an officer of the station.

The standard commission allowed by all advertising media to recognized agencies should be allowed by broadcasting stations. If selling representatives are maintained by stations in cities where they otherwise have no representation, the station itself should make its own arrange-

ments as to payment for such representation.

Blanket time should not be sold to clients—to be resold by them as they see fit.

Agencies—Agencies have three functions in broadcasting: Credit responsibility; account service and contract; program supervision in the interest of the client.

Commissions should be allowed only to agencies of recognized standing.

Sales Data—The best sales data is result data.

Rate Cards—There should be no deviation whatsoever from rates quoted on a rate card or cards.

Wherever practicable, the standard rate card form recommended by this Association should be used.

Clients—Client standards of credit should be maintained similar to those established in other fields of advertising.

In deciding what accounts or

classes of business are acceptable for broadcast advertising, member stations should be governed by the code of ethics adopted by this Association.

Co-operation Between Members—Following the adoption of the above, the Committee recommended to the Board of Directors that the central office of the Association be instructed to proceed immediately with plans looking toward a reciprocal arrangement between member stations whereby each station would act as the agent of all other member stations in placing commercial contracts.

RECOMMENDATIONS TO CONGRESS

THE Legislative Committee, with H. A. Bellows, former member of the Federal Radio Commission, as chairman, made the following report:

1. The National Association of Broadcasters hereby reaffirms the



Henry A. Bellows
Chairman, Legislative Committee



H. K. Carpenter
Chairman, Commercial Committee

recommendations made to Congress in January by its Board of Directors, and includes these recommendations as a part of this present report.

2. The National Association of Broadcasters, believing that the present division of the country into five zones for the purpose of administration of Federal regulation of radio communication is responsible for the great majority of the evils which have developed since the passage of the Radio Law of 1927, urgently recommends that the Congress, in any future radio legislation, so amend the present law as to eliminate entirely the division of the country into zones. The Association believes that this would greatly facilitate the administration of the Act in such a manner as to provide the maximum utilization of all the available channels of radio communication in the public interest.

3. The National Association of Broadcasters is not opposed to the establishment of a system of Federal license fees, provided that such license fees are required from all radio stations licensed to transmit radio communications, and provided that the term of any license for which a fee is paid is not less than one year. It recommends, however, that the Congress shall by law establish the basis on which such fee is to be charged, and shall do so only after public hearings have been held for the purpose of determining such basis in an equitable manner.

4. The National Association of Broadcasters hereby reaffirms its belief that the welfare of the radio industry, and the orderly and successful development of

the art of radio communication, require that the Congress shall designate a single governmental authority for the permanent administration of radio regulation, and that this should be done with the least possible delay.

How Association Was Formed

The National Association of Broadcasters was formed in 1923 with E. F. McDonald, Jr., of the old Zenith Radio Company, as first president, and started working to get broadcasting on a sound basis. In 1926 the National Radio Coordinating Committee was formed by the association with Walter A. Strong publisher of the Chicago Daily News as chairman, to draw up a plan for regulating the industry. This committee represented broadcasters, newspapers owning radio stations, amateur radio operators, dealers and manufacturers.

An agreement was formed and presented to congress, asking it to regulate the industry. The agreement developed into the Radio Act of 1927 by which the Federal Radio Commission was formed. L. S. Baker was the secretary in charge of the work attendant to composing this agreement.

Following this a reorganization of the association was undertaken and it is now a Delaware corporation. Its membership is composed of the larger stations throughout the United States.

The present officers of the association are: William S. Hedges, WMAQ, president; Joseph B. Groce, WEEL, first vice-president; J. W. Laughlin, KPO, second vice-president; Alfred J. McCosker, WOR, treasurer; L. S. Baker, managing director.



29-2762

Members of the National Association of Broadcasters at a



Luncheon Held at the Palmer House, Chicago, March 25

April, 1929

What's Coming in Radio Broadcasting

Trends That Point to Ultimate Stabilization of the Industry

By L. W. Capser

THE Columbia Broadcasting System raised its advertising rates January 1; another increase will become effective April 15. The rising costs of chain advertising merely reflect the rate increases of the associated stations. It is safe to predict that the average rate for time on the air will be nearly doubled by January, 1930.

Rate increases in radio are links in an endless chain.

Heretofore perhaps 90% of the radio stations have been operated at a loss but with increased volume of business and higher rates, the stations will be on a paying basis and will offer the radio audience better programs. Greater service to the public will reflect in the sale of receiving sets and the increased circulation will again enable the stations to raise their rates.

One advantage that radio broadcasting has over other media is that operating costs do not increase with circulation. Whether five persons or a million are listening in, the power required for broadcasting remains the same.

Effect on the Press

Within the past month two companies have been launched to publish radio programs as paid advertising in daily papers. The advertising will contain the

names of the program sponsors.

In the long run the daily newspapers will profit by radio advertising. In the past they have suffered direct losses but these have been offset by indirect gains. If it were not for sponsored programs, the sale of receiving sets would fall off and radio advertising in the daily papers would suffer accordingly.

Stations Will Specialize

The radio stations of the future will have greater individuality, many stations appealing to a well defined class of listeners. While there are a number of stations catering to farmers from an occupational standpoint, and one station in the Southland might be compared with Cap'n Billie's "Whiz-Bang," there are no stations which correspond to a Vogue or an Atlantic Monthly.

The time is not far distant when more stations will specialize their appeals and endeavor to confine their listeners to definite classes of individuals. Some will go in for jazz and humor and others will be principally instructive with sustaining programs of classical music. Lessons in languages and lectures in science will be syndicated on phonograph records.

Radio listeners, in keeping with their sex, moods and inclinations, will know just what

WBBM

A Pioneer
in
Commercial
Broadcasting

1st

in Chicago radio advertising, 1928.
to establish division for agency cooperation.
to originate Coast-to-Coast commercial broadcasts from
Chicago.
in program facilities and nationally popular talent.
commercial station in Chicago—established 1923.

An organization devoted to building good-will by presenting
the outstanding programs of the air.

“Right
in the
Center
of the
Dial”

The WBBM Air Theatre
Wrigley Bldg. *Chicago*

types of programs to expect over certain stations.

The effects of specialization will be many. Although nearly all people enjoy music, they do not want music all the time. Listener interest will be increased with wider varieties of programs. No doubt the low powered stations will become the "high brows." Their class appeal and lower program costs will enable them to compete for advertising among a restricted clientele. As in case of the class magazines however, they will be enabled to get a higher rate per thousand listeners.

Specialization will curtail waste circulation. No longer will rubber boots be advertised to an audience composed largely of stenographers, nor lingerie to college professors.

A company recently organized



SWEETHEARTS
OF THE AIR Musical Aristocrats

Another Good Reason
Sponsored Programs "CLICK"
over

K M O X

"The Voice of St. Louis, Inc."
Hotel Mayfair, St. Louis, Mo.

in New Jersey will be ready to distribute complete half-hour and hour programs on single phonograph records by next fall.

A non-recording channel will occur every fifteen minutes for sponsorship, call letter and wave length announcements. If this idea is well carried out it will enable the stations outside of the chains to compete in quality of sustaining programs.

The radio chains have been largely instrumental in saving the radio industry from comparative oblivion. No doubt their leadership will continue, but in the future it will not be as great as heretofore.

Chain advertising is not as profitable to the stations as local or spot advertising. With increasing demand for time available, some of the larger stations are using chain advertising largely as a "filler." If this tendency continues, the chains will be forced to use lower powered stations and these in turn will be built up to positions of prominence.

Early automobiles were patterned after buggies but they were not successful until a new steering gear was devised and the engine was removed from under the back seat. Motion pictures were silent imitations of the legitimate stage but public approval lagged until the industry developed a technique of its own. The methods of radio have been adopted principally from the publishing business, the theater and the opera. Many ideas from these kindred industries have been tried, some retained and others discarded.

The industry is teeming with activity. Rapidly it is developing a technique of its own.

A Complete Radio Advertising Service *fitted to your needs*

Looking ahead, and alert to the great possibilities of radio advertising as a vital factor in sales development, Olson & Enzinger has added a complete Radio Advertising Department.

This department, under the direction of Ralph H. Shankland, well-known authority and one of the pioneers in radio advertising, offers a highly specialized service to advertisers—flexible in its application to your market, and complete to the final details.

Whether your distribution is national or in a concentrated area, our radio department will plan your programs to meet your special needs—submitting recommendations only after a careful analysis of your market and your present advertising.

OLSON and ENZINGER Inc.

Milwaukee

Broadcast Advertising--Its Possibilities and Limitations

Mass Psychology Plays Important Part in Radio Advertising

By L. Ames Brown,

President, Lord & Thomas and Logan

RADIO has taken its place with the newspaper as a common necessity of modern life. That the radio transmitter would take its place with the printing press as a great carrier of advertising, as well as news, education and

ALTHOUGH this article was published in pamphlet form, it is new to the majority of readers.

entertaining, was inevitable from the beginning. The only question I have ever had in my own mind about it has been the extent to which it could be used profitably. We have had to feel our way, but we have gone a long way in a short time. And I think we are going a good deal farther.

The idea once held by many that the public didn't want the air used for advertising was found to be based on an erroneous conception of public psychology. All advertising is constantly in a state of change. What couldn't be done some years ago is now accepted practice. You all have heard of the struggle made by the late J. Walter Thompson to get magazines to sell their back covers. One prominent publisher told him he would never allow "tradespeople to degrade his book" by putting advertisements on the covers. There was another long fight to persuade publishers to make up periodicals so that advertising could appear next to reading

matter. One of our great railroads for years refused to sell car card space in its suburban coaches, and I think most American railroads still decline to sell space in their through coaches. And you will recall the agitation about "defacing" the walls of the New York subways with advertising posters.

I could cite many more instances of this resistance to the use of various media for advertising purposes. In the early days of broadcasting owners of important stations believed that if advertising were put on the air their listeners would tune out. It certainly is a tribute to the advertising profession, and especially to the agencies that have been foremost in the development of advertising on the air, that the most popular broadcast programs today are those sponsored by national advertisers. Four out of five radio listeners throughout the country frankly say that they prefer these programs. I think the truth probably is that nine out of ten prefer them.

Advertising, when it is truthful, interesting and informative, is a public service. The American people spend something like 100 billion dollars a year. Advertising is their daily guide to the

most profitable expenditure of this money. Our short experience in the use of broadcasting as an advertising medium has clearly demonstrated that the right kind of advertising on the air, done in the right way—in the way that fits this new medium—is just as acceptable to the public as advertising in newspapers, in magazines, on billboards, or elsewhere.

Good taste and a knowledge of American psychology must be the guides to the right use of broadcasting for advertising, just as they are in the use of all other media.

The National Broadcasting Company has made an important contribution to a better understanding of the possibilities of radio as a carrier of advertising. I refer to the nation-wide inquiry conducted by Dr. Daniel Starch of Harvard. The field work was carried on last spring between March 15 and April 15. Personal interviews were made at the homes of 17,099 families in 24 states east of the Rockies. These homes were located in 11 large cities, 21 medium-sized cities, 73 small towns, and 68 farming counties. Because of the extent of the investigation, and the scientific manner in which it was planned and carried out, Dr. Starch believes that the national statistical data obtained can be accepted with the same confidence as though a hundred thousand or a million homes were visited.

Farm Field Offers Vast Possibilities.

This is an admirable beginning in radio research, but we shall need much more like it with the development of broadcasting. The farm field, for example, of-

fers great possibilities. The Starch report gives valuable information regarding the place of radio in farm life, but a more detailed study of this field will be well worth making. Radio provides the only means of quickly reaching farm homes, because radio now performs the function of a daily newspaper in hundreds of thousands of farm families. The news of the world is now flashed to the most remote farm houses, oftentimes before it appears in the newspaper extras in the world's capitals. Radio is of even greater utility and service on the farms than in the cities, and the American farmer has been quick to realize this. The number of farm people that are daily listening in is now close to 10,000,000. This is a highly receptive audience.

The Starch survey has statistically confirmed many facts about radio that broadcasting stations and advertising agencies had learned by experience, but it gives accurate data in place of generalizations.

For example, several years' experience with non-commercial programs clearly indicated the high public preference for music. Nearly all popular programs sponsored by advertisers are made up exclusively of music or use a musical background. We are reminded of Henry Ford's classic remark that he didn't care what color they painted his Model "T" so long as it was black. So the national advertiser, when he goes on the air, usually leaves it to the agency to devise the program, but he insists there must be music in it. And the Starch survey shows that the advertiser

can make no mistake in building his program around a musical setting. The use of music on the air is akin to the use of color on the printed page.

Musical Programs Most Successful.

The Starch investigators found that in communities of all sizes, from farms to big cities, the highest vote was first, for orchestral music, and second, for popular entertainers. The relative popularity of other types of programs varied considerably to the size of the community, but on the combined vote over the country, the third and fourth most popular types were dance music and musical programs generally. In other words, the public today is most interested in radio as a means of getting musical entertainment out of the air.

The Starch report also shows that the larger the community, the greater the popularity of classical music and grand opera. The smaller the community, the greater the interest in broadcasts of religious services, crop and market reports and children's programs. Of course, it did not need the Starch survey to show these relative preferences. They were a matter of common knowledge, but the survey now gives us the exact relative value of these different types of programs, according to the size of the community.

An all-musical program, a full hour every week on the air, corresponds to the 52-time, four-color double truck. It is bound to command a great audience if intelligently planned.

But any advertiser or agency planning advertising on the air on the assumption that music is

the whole and final answer to the broadcasting problem fails to get the true perspective of the possibilities of radio as an advertising medium.

"Words Without Music."

If you will study the Starch report, you will find that in the tabulation of eighteen types of programs, in the order of popularity, the fifth in rank is "short talks on interesting subjects." Forty per cent of the radio homes gave this as one of the best liked types of program on the air. Forty per cent is the average for the entire country, with 46 per cent among farm families, 43 per cent in villages, 34 per cent in small cities, and 36 per cent in large cities.

Here again the Starch survey has given us statistical proof of what we had learned by experience. Radio listeners will tune in on short talks if they are really interesting and are well done. But they must be both. Several of the most popular programs on the air today carry no music or only an incidental musical background. One careful survey covering a large section of the country in communities of all sizes proved that one of three best liked features on the air is a program made up of talk and very little music. The popularity of this program is apparently due entirely to its non-musical features.

It takes much more ingenuity to plan a successful non-musical program, but when such a program is a success, it is likely to be a big success. When letters and inquiries came in by the thousands and tens of thousands in response to a program of talk, you certainly have assurance

Very Well Said, Mr. Sherwood!

"We believe that broadcast advertising is a subject unto itself, and that it really merits the treatment of a competent magazine."—Alexander Sherwood, Westinghouse Radio Stations (KDKA, KYW, KFKX, WBZ, WBZA).

NO magazines devoted to advertising by printed word point out the effectiveness of Radio Broadcast Advertising; none dwell upon its methods. They dare not for fear of antagonizing the publishers from whom they derive a large portion of their advertising revenue.

Let's face the facts. Although some national advertisers have reasoned that radio offers a new and additional appeal and hence warrants additional advertising expenditures, hundreds of advertisers, large and small, have split their appropriations to include radio.

Quite naturally, only those publishers who also own radio stations have encouraged the growth of this new medium.

Articles of singular merit will appear in forthcoming issues of *Broadcast Advertising*. Its editorial force will dig deep into the industry for valuable information. The outstanding ideas of the few will become the property of all.

Broadcast Advertising magazine is here to stay. It is going to tell the truth about radio advertising.

BROADCAST ADVERTISING

440 South Dearborn Street, Chicago

that there are possibilities in the use of radio as an advertising medium, far beyond the furnishing of musical entertainment.

While we know that orchestral programs are highest in public favor, and are attracting today the largest national audiences, our own experience has shown that a musical program of the very highest quality can be made still more effective by the right use of the spoken word.

Success of the Damrosch Talks.

We have had a striking example of this in the Damrosch musical program sponsored by the Radio Corporation of America. When the Damrosch concerts were put on the air, some of us thought there was no use trying to gild the lily, and that a straight program of Damrosch music was the last word in the effective use of broadcasting. But in planning these programs with Mr. Damrosch, we saw the possibilities of featuring this great artist as a teacher and critic of music as well as a conductor. The public response was amazing.

To what extent time on the air can be given over successfully to talks about products or services of national advertisers, and to what extent radio advertising can be made to resemble printed advertising, are problems that can only be solved by trial and experience. We are going much further now than was thought possible several years ago—or a year ago, for that matter—and in my opinion we have only begun to learn of the possibilities of the use of the air. We started out with the assumption that many of the things that could be done on the printed page could not possibly be done on the air. Now

we are beginning to believe that nearly everything possible in printed advertising will eventually be duplicated with radio.

The Example of Lucy Strike.

Take Lucky Strike, for example. We have found a way, which I believe is entirely acceptable to the radio audience, of broadcasting Lucky Strike printed advertising—testimonials and all—as an incidental feature of a very popular dance program. This to my mind, is one of the most significant developments of the year in testing the possibilities of broadcast advertising. It answers, for this product at least, the question so many of you have had in your mind—how to make broadcasting an integral part of a newspaper and magazine advertising campaign. The Lucky Strike broadcasting has proved itself a powerful stimulus to the sale of Lucky Strike cigarettes. On this point I have the personal assurance of Mr. George W. Hill, president of The American Tobacco Company, who tells me that the test of broadcasting was all the more effective from his standpoint, because it was made at a period when his advertising in other mediums had either been halted entirely for the time being, or reduced to an absolute minimum.

Radio Homes Have High Buying Power.

Because of the cost of installing and maintaining radio in the home, it is logical to assume that the ten million families now enjoying radio broadcasting have more than average buying power. This has been conclusively shown by the Starch report. Taking rental value of homes as an index, the Starch report shows that in the country as a whole the

economic status of radio families is 40 per cent higher than that of non-radio families. This differential is 24 per cent in the large cities, 34 per cent in the smaller cities, and 78 per cent in smaller communities.

Another important fact disclosed is that the areas of high radio saturation are areas of high buying power. This again is a conclusion one would naturally reach without a nation-wide investigation. But the Starch report gives accurate data. In the New England and the Middle Atlantic States 44 per cent of the homes had radio as of April 1, 1928. In the Middle West, east of the Mississippi, the proportion was 39 per cent; and in the Middle West beyond the Mississippi, it was 36 per cent. The South Atlantic was only 24 per cent and the South Central States only 20 per cent. These percentages check closely with results of similar investigations in other fields.

Considering that radio broadcasting is only eight years old, it is an amazing fact that more than 35 per cent of the homes in the country are now radio receiving stations. This winter this figure will reach 40 per cent, and there is every indication that it will steadily rise during the next few years, until every home that is now reached by newspapers and magazines will also be reached by radio. Dr. Starch estimates the total radio audience at the end of this year at more than 47 million listeners.

Testing Audience Response.

Every advertiser on the air should make regular tests of the size of his audience, but I believe it is a mistake to make these tests too frequently. Experience

has shown that there is a limit to the total number of letters or inquiries that can be obtained from the audience of any station, regardless of the number of advertisers who seek such responses. In other words, too intense competition among advertisers for listener returns simply defeats its purpose.

We believe that restriction of the number of these tests is to the advantage of all advertisers on the air. In the early days of broadcasting, all stations were nightly appealing for applause cards and on all programs but that is a thing of the past. Whether you ask for them or not, brickbats and bouquets come pouring into the big stations day after day by mail, telegraph and telephone—ample evidence that the vast radio audience pictured by Dr. Starch is dally searching for the best things on the air, and is very emphatic in its likes and dislikes.

One night last winter a New York station cancelled a popular feature on the air, but neglected to broadcast an announcement of this fact. The result was that telephone calls to this station from all over the metropolitan area piled up within the next half hour to an extent before experienced by the telephone company. Thousands of radio listeners were informed by their local telephone exchanges that it was impossible to put their calls through.

280,000 Letters in 27 Months.

The sponsors of a program, that is broadcast by a single New York station only, recently asked its radio audience if it desired to have the program continued. The response was 20,000 letters.

During one of the Ipana Troubadour concerts, it was announced that copies of the music of one of the numbers would be sent to listeners who asked for it. The response to this was 55,000. The Metropolitan Life Insurance Company broadcasting before-breakfast setting-up exercises received 280,000 letters in 27 months.

When the Graf Zeppelin was here, the makers of Veedol put on a one-time program featuring a talk by the American officer who crossed on the airship. As a souvenir of the occasion the manufacturers offered to send radio listeners a small bottle of Veedol that crossed the Atlantic in the Zeppelin. The response was 23,000 requests, including a large batch of telegrams. This test of the responsiveness of the radio audience is of particular interest because Veedol is not regularly on the air, and therefore has no established following among radio listeners. The broadcast was made on one of the most popular New York stations, and the response is in line with Dr. Starch's finding that four out of five radio listeners habitually listen in on two or three big stations carrying daily programs of recognized merit.

Size of Audience Depends on Program Popularity.

Several inquiries have been made in different parts of the country to determine what, if any, are the most popular nights for broadcasting. One investigation covering a large number of communities in all sections of the country seemed to indicate that the national radio audience is a little larger on Saturday and Sunday than on other days of the week. An investigation that we

recently made in Chicago showed a very even use of radio during the week except on nights when program features of special interest were announced. For example, on two nights of one week in October, when the Presidential candidates spoke over the radio, the audience was larger than on the other nights. But even on these nights the increase in the size of the audience was relatively small. Our investigations lead us to the conclusion that the size of radio audience from night to night is chiefly determined by the popularity of the program on the air.

Testing audience response is not always a simple matter. Sometimes a change in method produces a startling change in result. Showmanship is just as essential to success on the air as in the theatre. On the stage it is frequently found that a slight change in the manner in which a scene is handled transforms it from a failure to a success. The same is true in radio. One night during the production of a popular broadcast program, it was announced that a photograph of one of the artists was available for distribution to listeners. Only 500 requests came in. That plainly was a failure as a test of audience response. Several weeks later, during this same program, there was staged over the radio the taking of a flashlight picture of the artists. There were 11,000 requests for copies of this. A sampling announcement made by one of the characters in another program was a flat failure. But when this test was made by the program announcer, the response was big. All of you who have been engaged in broadcasting have no doubt had similar experi-

ences. I merely cite these to show that the technique of broadcasting demands painstaking study.

Daylight broadcasting is going to play a much more important part in radio advertising. The great improvement in radio set design, as well as in transmitting apparatus, has brought daylight reception nearly to the effectiveness of night reception. In fact, except for long-distance work, the modern multiple-tubed radio set, with all-electric operation, gives about as good results during the day as at night.

The Starch survey, as well as the experience of broadcasting stations and national advertisers, shows that there is a vast audience in the homes of the country using radio as a means of entertainment, information and instruction all during the day. A daylight sampling test on one of the

small broadcasting chains recently brought 59,000 inquiries in the course of two weeks. A regular morning feature on another net work is receiving over 6,000 inquiries a month. Sampling tests on a breakfast hour, featured on a single New York station, brought 75,000 inquiries in 30 weeks. Another early morning program feature on a single station recently received 19,000 inquiries in two weeks. Many other tests clearly indicate that national advertisers, with products appealing to the housewife, can profitably use the daylight hours, and reach vast audiences of women through the big chains.

Limitations on Number of Broadcast Advertisers.

I believe that all of the evening hours on the leading chains will soon be spoken for by national advertisers, and that we will then have a waiting list. You can easily figure how many advertisers can go on the air with weekly programs of an hour or half hour. After these evening hours have all been preempted, the rest of the daylight periods will be taken up by advertisers who find they can use them to better advantage than the evening hours. There are not more than 16 hours of the day that can be regularly used for broadcast advertising, and there are only six days in the week, if we exclude Sunday. One doesn't need any higher mathematics to figure out what is going to happen as the number of advertisers on the air increases.

Address delivered before the American Association of Advertising Agencies of which Mr. Brown is Chairman of the Committee on Radio Broadcasting.

Orders - Inquiries

60
pages

Send
for
FREE



Can be
Secured
by
MAIL

POLK'S REFERENCE BOOK and Mailing List Catalog

Gives counts and prices on over 8,000 different lines of business. No matter what your business, in this book you will find the number of your prospective customers listed.

Valuable information is also given as to how you can use the mails to secure orders and inquiries for your products or services.

Write for Your **FREE** Copy

R. L. POLK & CO., Detroit, Mich.

Largest City Directory Publishers in the World
Mailing List Compilers—Business Statistics
Producers of Direct Mail Advertising

WHY THE GOVERNMENT REGULATES RADIO

(Continued from Page 6)

The broadcasting band, which has hitherto occupied the chief attention of the Commission, exhibits a number of very special engineering problems. Here the width of each channel is 10 kilocycles, which is necessary to carry satisfactory speech or music. With only 90 channels, and more than 600 stations on them, there was naturally very great interference.

To remedy this the Commission had to choose among various alternatives. It decided as a matter of policy not to reduce radically the total number of stations. It was then necessary to (a) limit the simultaneous operation of an excessive number of stations by making many of them divide time; (b) assign frequencies carefully selected with regard to geographical separation of stations, to reduce inter-channel interference (i. e., disturbance of reception of a station on one frequency by other stations on adjacent frequencies); and (c) limit the power of stations so they would not cause interference to other stations on the same frequency.

The accomplishing of this constituted the new allocation of broadcasting stations which the Commission put into effect on November 11th. For a detailed description of the allocation from the engineering viewpoint, see my article, "Analysis of Broadcasting Station Allocation," in Proceedings of the Institute of Radio Engineers, pp. 1477-1485; November, 1928. The most striking of the problems involved in the new allocation was the carrying out of requirement (c) just

mentioned. Stations assigned to the same frequency have not, up to the present, been able to maintain their frequencies with sufficient accuracy to prevent the existence of a slight difference or beat frequency, producing what is commonly known as heterodyne interference or whistles.

Unfortunately the heterodyne interference reaches out to much greater distances from a station than the program. Consequently the operation of two or more stations on a channel results in an area of destructive interference far in excess of the area in which program service is provided. For instance, a 5-kilowatt station's program can be heard with fair intensity under good conditions at 100 miles while the heterodyne interference from two such stations is heard at 3,000 miles. Two stations of 5 kilowatts or more therefore can not be assigned the same frequency in the United States. It is possible, on the average, to put two or more one-kilowatt stations on the same frequency if they are at least 1800 miles apart, and two or more one-half kilowatt stations if they are at least 1200 miles apart.

Assignment of Exclusive Channels.

All stations subject to those restrictions have only a small service area, and give no service to remote rural areas. Such distant service is given only by stations having exclusive use of the channels to which they are assigned. In order to provide rural service the Commission designated 40 channels each to be used by one station exclusively.

The stations on the exclusive channels not only serve very great areas but deliver a more

satisfactory intensity at every point within those areas. Their service is better for all concerned, the greater the power they use. This fact is not commonly understood by others than radio engineers. It is clear when the distinction between the exclusive and the other channels is comprehended. Service on the non-exclusive channels would be utterly ruined if the power limits fixed by the facts of heterodyne interference should be exceeded, and in consequence such stations can not in general use more than 1 kilowatt. But on the exclusive channels the service is better the higher the power level, and indeed such stations will not be serving the public most effectively until the level reaches hundreds of kilowatts.

There is some hope that the limitation of power and service on the non-exclusive channels may be overcome. If the frequencies of stations on the same channel are maintained to a certain very high accuracy, the heterodyne or whistle becomes inaudible. The technique of frequency control is fast approaching this goal and success has been attained in isolated instances. The satisfactory service area of such "synchronized" stations is not yet known, but it is believed that it will be substantially greater than when heterodyne interference exists. The significance of this is that the present power limits on the "regional" and "local" stations can be raised, better service given, and wider areas served. Synchronization is therefore looked for as the next great advance in broadcasting.

Day and Night Broadcasting.

This discussion of broadcasting has been made with night condi-

tions in view. Broadcast transmission is entirely different in the day-time. Transmission distances are much less, and somewhat greater power can be allowed the stations. While the problems are not as acute as are those of night-time transmission, they are being handled with care so that daytime broadcasting may be developed as a valuable service.

The difference between day and night transmission conditions has raised one technical problem of considerable moment, viz., determination of the time when day ends and night begins. Certain stations are allowed to operate during daytime only, and the Commission had to specify at what hour such stations should close. Investigation has revealed that the change from day to night radio conditions extends over a period of something more than an hour and a half, beginning about a half hour before sunset and closing an hour after sunset. The most reasonable time to choose as the transition point is the moment of sunset, and this was done in the Commission's General Order No. 41.

Other regulations of the Commission also involve engineering problems. Recent examples include the General Orders on chain program limitation, visual broadcasting (television), increased power in daytime, and prohibition of damped waves. There are now in progress studies which will lead to new regulations. Some of the subjects are: the requirement of a dummy antenna in broadcasting stations for use during warming-up periods, etc.; the location of high-power stations with respect to populous areas; requirement

of highly accurate frequency control; allowable ratio of day to night power; permissible intensity of harmonics; percentage modulation; and fidelity of transmission.

The Vagaries of Broadcasting.

All of the engineering work involved in federal radio regulation had the peculiar difficulty that the facts dealt with are extremely complex. They are indeed rapidly shifting. Not only must allowance be constantly made for the flux of changes inherent in a rapidly developing art, but radio waves themselves exhibit extraordinary vagaries. Orderly radio regulation must proceed on a consideration of the distances at which the waves are received. But distances vary enormously between day and night, from season to season, even from night to night, and are different over different kinds of terrain.

Knowing this is not to counsel despair. These vagaries have, after all, certain discernible laws, becoming more and more calculable as the results of scientific investigations accumulate. It is not necessary to throw up our hands and say that the whole situation is chaotic. Least of all is it necessary to base regulation on the haphazard observations of untrained listeners. In spite of their vagaries, radio phenomena are subject to known engineering principles. An engineering principle is nothing but an organized body of facts affecting a practical situation. Violation of such engineering principles in radio would sooner or later reduce the the service of radio to the public.

Summary.

Summarizing, the federal regulation of radio involves extensive and difficult engineering prob-

lems. These are characterized by certain outstanding principles. First is the basic fact, that, at any given stage of radio technique, the available number of communication channels is definitely limited. Another controlling principle, as the art stands today, is that heterodyne interference sharply limits the power that may be permitted any two or more broadcasting stations on the same channel. Finally, radio wave transmission is characterized by extreme vagaries.

BROADCAST COPY

(Continued from Page 4)

time is devoted to lectures on the care of the hair and scalp. The campaign started in Los Angeles, the home office of the company, and is now nation wide.

The talks were at first made by Georgia O. George (Mrs. Huntley) alone, but as more stations were added, assistants were carefully trained to give the lectures.

When broadcasting was started in the Pacific Northwest, sales doubled in less than six weeks. In extending its coverage eastward, the company was unable to get distribution in Chicago. After one week of broadcasting, the Walgreen drug store chain stocked "Hair-A-Gain" in response to urgent public demand and at the end of two weeks distribution was secured through virtually every drug store in Chicago and environs.

In forthcoming issues of Broadcast Advertising Mr. Kinkead will discuss radio broadcast copy more in detail. Numerous specimens of copy will be analyzed, telling the readers why they were successful, or pointing out the reasons for their failure and offering suggestions for their improvement.—Editor.

Broadcast Advertising