

# HEINL RADIO BUSINESS LETTER

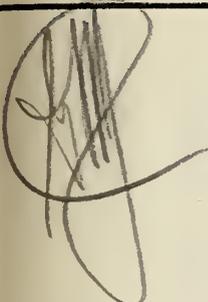
INSURANCE BUILDING

WASHINGTON, D. C.

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ISSUED TWICE A WEEK AND CONTAINING THE LATEST INFORMATION REGARDING THE RULINGS OF THE FEDERAL RADIO COMMISSION, RADIO LEGISLATION, DEPARTMENT OF COMMERCE REGULATIONS, CHANGES IN WAVELENGTH, CALL LETTERS AND POWER, PATENTS, EXPORTS, FEDERAL TRADE COMMISSION RULINGS AND OTHER MATTERS OF INTEREST TO BROADCASTERS AND MANUFACTURERS. :: :: CONFIDENTIAL—NOT FOR PUBLICATION. :: ::

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## INDEX TO ISSUE OF JUNE 15, 1931.

Special Bulletin On RCA Hearing Tomorrow.....	1
Radio Education Sought By Dill.....	2
Zenith Shows Loss Last Year.....	2
New RMA Head Not Discouraged.....	3
Radio Editors Elect New Officers.....	3
New Frequency Standards Announced.....	4
KTNT Off Air Pending Appeal.....	6
Radio Exports Gain In April.....	6
Business Good At Trade Show.....	7
Aylesworth Sees Dawn Of Television.....	7
Radio Sets For All Army Hospitals.....	8
International Station Is Planned.....	8
Business Letter Briefs.....	9
Applications Received By Federal Radio Commission.....	10

No. 443

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## RADIO EDUCATION SOUGHT BY DILL

Some scheme for making an educational program available to every classroom in the country will be advocated at the next session of Congress by Senator C. C. Dill, of Washington, co-author of the Radio Act, he announced upon returning from a European tour and study of radio conditions abroad.

While his plan is still somewhat hazy in his own mind, he suggested that the Federal Radio Commission might take the initiative in such an undertaking and have a proposal to submit to Congress next December. The Western Senator was particularly impressed by the English system, which is based on a powerful station capable of being heard over the nation.

The difficulty in building such a station in the United States, however, is that the English station is Government-owned, while in this country the cooperation of privately operated broadcasting stations would have to be obtained to make the plan effective, Senator Dill said.

The Washington legislator returned with a more firm belief in the superiority of the American system of broadcasting over the Government-operated stations of Europe.

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## ZENITH SHOWS LOSS LAST YEAR

Zenith Radio Corporation's annual report for the fiscal year ended April 30, 1931, issued last week, shows a net loss of \$482,740, after all charges, including depreciation and financing expenses. In the last preceding fiscal year, the company had a net loss of \$258,014.

The operating loss for the period ended with last April, the annual report reveals, amounted to \$307,362, all of which was sustained during the first nine months of the fiscal year. Final quarter operations were carried on without loss, which is unusual in the radio business for this period. For the fiscal year ended April 30, 1930, the company reported an operating income of \$2,258.

The balance sheet as of April 30 last, shows the company to be in strong financial position.

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## NEW RMA HEAD NOT DISCOURAGED

J. Clarke Coit, President of the United States Radio & Television Corporation, in accepting the presidency of the Radio Manufacturers' Association at Chicago last week said, among other things:

"I am not discouraged in the radio industry. All pioneer developments have to go through a period such as we are going through. If I fail, somebody else will succeed. A billion dollar industry cannot fail. The bigger you get, the harder it is to fail. The radio industry is too big to fail. If you and I cannot make a success out of it, gentlemen, somebody will develop it who can."

New Directors of the RMA, not included in the officers listed in the previous Business Letter, are:

W. J. Barkley, Passaic, N. J., Sales Manager, DeForest Radio Company; Harry A. Beach, Rochester, N. Y., Radio Sales Manager, Stromberg-Carlson Telephone Manufacturing Co.; N. P. Bloom, Louisville, Ky., President, Adler Manufacturing Co.; E. R. Farny, Chicago, Ill., President, All-American Mohawk Corp.; E. V. Hughes, Peru, Ind., Sales Manager, Wasmuth-Goodrich Co.; F. E. Johnston, Cincinnati, Ohio, Director of Engineering, The Crosley Radio Corp.; Arthur Moss, New York, N. Y., President, Electrad, Inc.; and A. S. Wells, Chicago, Ill., President, The Gulbransen Company. They were elected for three-year terms.

John W. Van Allen, General Counsel of RMA, spoke on recent decisions of the courts, acts of Congress, and legislatures, and the proceedings of the Federal Radio Commission which have been significant to the radio industry.

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## RADIO EDITORS ELECT NEW OFFICERS

E. L. Bragdon, Radio Editor of the New York Sun, was elected President of the Newspaper Radio Editors' Association for 1931-32 at the Chicago Trade Show. Other officers chosen are:

O. N. Taylor, Chicago Times, Vice-President; Darrell V. Martin, Pittsburgh Sun-Telegraph, Secretary-Treasurer; and Evans Plummer, Chicago Herald-Examiner, Ralph Worden, Cleveland News, and James Spencer, St. Louis Post-Dispatch, Directors.

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## NEW FREQUENCY STANDARDS ANNOUNCED

The Bureau of Standards today announced a new schedule of radio transmissions of standard frequencies. This service may be used by broadcasting and other stations in adjusting their transmitters to exact frequency, and by the public in calibrating frequency standards and transmitting and receiving apparatus. The signals are transmitted from the Bureau's station WWV, Washington, D. C., every Tuesday afternoon and evening. They can be heard and utilized by stations equipped for continuous-wave reception at distances up to about 1,000 miles from Washington, and some of them at all points in the United States. The time schedules are different from those used in transmissions prior to this July.

There are two classes of transmissions provided: one, transmission of the highest accuracy at 5000 kc for two hours afternoon and two hours evening on three Tuesdays in each month; the other, transmissions of a number of frequencies in two-hour periods in the afternoon and evening, one Tuesday a month. The transmissions are by continuous-wave radio telegraphy. The 5000 kc. transmissions consist mainly of a continuous CW transmission, giving a continuous whistle in the receiving phones. The first five minutes of this transmission consist of the general call (CQ de WWV) and announcement of the frequency. The frequency and the call letters of the station (WWV) are given every ten minutes thereafter.

The transmissions of the other type are also by continuous-wave radio telegraphy. A complete frequency transmission includes a "general call", "standard frequency signal", and "announcements." The general call is given at the beginning of each 18-minute period and continues for about two minutes. This includes a statement of the frequency. The standard frequency signal is a series of very long dashes with the call letters (WWV) intervening; this signal continues for about 8 minutes. The announcements follow, and contain a statement of the frequency being transmitted and of the next frequency to be transmitted. There is then a 6-minute interval while the transmitting set is adjusted for the next frequency.

Information on how to receive and utilize the signals is given in Bureau of Standards Letter Circular No. 280, which may be obtained by applying to the Bureau of Standards, Washington, D. C. Even though only a few frequencies are received (or even only a single one), persons can obtain as complete a frequency meter calibration as desired by the methods of generator harmonics.

The 5000-kc transmissions are from a transmitter of 1 kilowatt power; they occur every Tuesday except the first in each month. The other transmissions are from a transmitter of 1/2 kilowatt power; they are given on the first Tuesday of every month.

5000-Kilocycle Transmissions

2:00 to 4:00 P.M., and 10:-- P.M. to 12:00 midnight  
Eastern Standard Time

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<u>July</u>	<u>August</u>	<u>September</u>
14	11	8
21	18	15
28	25	29

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Multi-frequency Transmissions

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		<u>Frequencies in Kilocycles</u>		
<u>Eastern Standard Time</u>		<u>July 7</u>	<u>August 4</u>	<u>Sept. 1</u>
2:00 P.M.	10:00 P. M.	1600	3600	6400
2:18	10:18	1800	4000	7000
2:36	10:36	2000	4400	7600
2:54	10:54	2400	4800	8200
3:12	11:12	2800	5200	8800
3:30	11:30	3200	5800	9400
3:48	11:48	3600	6400	10000

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The frequencies in the 5000-kilocycle transmission are piezo controlled, and are accurate to much better than a part in a million. The frequencies in the multi-frequency transmissions are manually controlled, and are accurate to a part in a hundred thousand.

Since the start of the 5000-kc transmission, the Bureau of Standards has been receiving reports regarding the reception of these transmission and their use for frequency measurements from nearly all parts of the United States, including the Pacific coast and Alaska. The Bureau is desirous of receiving more reports on these transmission, especially because radio transmission phenomena change with the season of the year. The data thus far obtained cover the first six months of 1931, and give information regarding approximate field intensity, fading, and the suitability of the transmissions for frequency measurements.

It is suggested that in reporting upon the field intensity of these transmission, the following designations be used where field intensity measurement apparatus is not at hand: (1) hardly perceptible, unreadable; (2) weak, readable now and then; (3) fairly good, readable with difficulty; (4) good, readable; (5) very good, perfectly readable.

A statement as to whether fading is present or not is desired, and if so, its characteristics, such as whether slow or rapid and time between peaks of signal intensity. Statements as to type of receiving set used in reporting on the transmission and the type of antenna used are likewise desired. The Bureau would also appreciate reports on the use of the transmission for purposes of frequency measurement or control.

Reports on the reception of the transmissions should be addressed to Bureau of Standards, Washington, D. C.

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#### KTNT OFF AIR PENDING APPEAL

Immediate removal from the air of Station KTNT, of Muscatine, Iowa, operated by Norman Baker, was ordered June 12 by the Court of Appeals of the District of Columbia, in vacating a previous stay order it had granted.

The station, which last week was refused a renewal of license by the Federal Radio Commission, had obtained from the Court a stay order permitting it to continue operation during the pendency of its appeal. The Court still has before it the appeal of the Baker station from the Commission's adverse action.

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#### RADIO EXPORTS GAIN IN APRIL

Foreign shipments of electrical equipment from the United States during April, 1931, were valued at \$9,880,701, or a decrease of \$1,573,269, compared with the same month for 1930, according to the Department of Commerce. This figure, however, indicates a gain of \$1,609,691 as compared with the previous month of the present year. The value of exports for the four months ended April 30, registered a loss of \$15,274,071, from the like period of 1930. As in previous months, shipments of radio apparatus continue to show gains, especially complete receiving sets, which made an increase of \$444,136 for the month under review. Exports of radio receiving sets for the first four months of the year almost doubled over those of last year.

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## BUSINESS GOOD AT TRADE SHOW

Excellent business during the Fifth Annual Trade Show of the Radio Manufacturers' Association was reported by a large majority of exhibiting manufacturers, according to an official statement from the RMA.

Attendance was normal under existing conditions, it was stated by Bond Geddes, Executive Vice-President and Show Manager, and passed the 22,300 mark at noon on Friday, June 12th, a few hours before the show closed.

"While the attendance was smaller, as expected, than the peak radio year of 1929 and the Association's show last summer at Atlantic City, actual business transacted this week was reported generally to be better. The net result was a smaller attendance but better business. The trade show visitors this year came for business and not pleasure. Business was the keynote of the entire show week and actual orders totaling several millions of dollars were reported."

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## AYLEWSORTH SEES DAWN OF TELEVISION

Television in the home is likely to be a reality within a reasonably short time, M. H. Aylesworth, President of the National Broadcasting Company, predicted in a speech prepared for delivery at the closing session of the convention of the National Electric Light Association in Atlantic City, last Friday.

First general application of the art probably will be through the presentation of close-ups of radio artists, and even after being developed to a point where receivers are simple and dependable, sight will be utilized to supplement rather than to compete with sound broadcasting, Mr. Aylesworth prophesied.

The National Broadcasting Company and affiliates, he explained, had refrained from offering to the public a regular television service and would keep the art in the research laboratories until it attained more substantial proportions, in the belief that too early a presentation would retard rather than further its development.

Within a year, he said, a television transmitter would be installed by his company atop the RCA Building on Lexington Avenue, New York City, and another station would be established on the Pacific Coast.

"Of one thing we are now certain and that is that the era of television has definitely dawned", he declared.

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## RADIO SETS FOR ALL ARMY HOSPITALS

Patients in 105 Army hospitals are to have individual radio receiving equipment under a project announced Sunday by the War Department.

The plan is for each hospital to have a central receiving set, with electric cables to each bed. The occupants will be provided with head sets, arranged to permit of individual volume control.

The Chief Signal Officer was charged with preparation of the estimates and supervision of the installations, which will be made throughout the United States, Panama, Hawaii, Porto Rico, and the Philippines. They are to be completed in 1935.

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## INTERNATIONAL STATION IS PLANNED

Plans for an international short-wave broadcasting system, designed to carry good-will programs to foreign listeners and also to pave the way for greater acceptance of American products abroad, were announced in New York Sunday by Walter S. Lemmon, president of the newly organized Short-Wave Broadcasting Corporation of New York,

Mr. Lemmon said he had consulted with the Federal Radio Commission and expected to receive an increase in the power assignment of W2XAL, an existing New York short-wave transmitter, to 15,000 watts for the international work. The waves used will be 6040, 11800, 15250 and 21460 kilocycles.

If the Radio Commission grants a building permit, Mr. Lemmon and his associates will re-erect W2XAL at a more favorable location in the country for international broadcasting, he said. The new concern, he announced, represents a union of the short-wave interests of the Aviation Radio Station, Inc., which owns and operates WRNY, and the short-wave research laboratories of the Short-Wave and Television Corporation of Boston.

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: BUSINESS LETTER BRIEFS :  
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The merger of WISJ and WIBA, of Madison, Wis., to avoid wasteful competition has been approved by the Federal Radio Commission. The former was owned by the Wisconsin State Journal, while the latter was operated by the Capital Times. The new station will use the call letters WIBA and will be owned jointly by both papers.

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The Columbia (S.C.) State has dropped radio programs from its news columns as an experiment though it continues to publish the program of WIS, a local station.

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Out of 343,781 families in Nebraska on April 1, 1930, 47.8 per cent, or 164,324, reported possessing radio sets, according to the Census Bureau.

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The Radio Corporation is to go in for the manufacture of a complete line of electrical toys.

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A thyatron tube has been developed by the General Electric Company which will convert an alternating current into a direct current set. It is about 10 inches square and fits into the radio cabinet.

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Official figures are not yet available, but attendance at the Chicago Radio Show was below that of last year. One person declared it was off 10,000. There was decidedly less ballyhoo this year than last, and much less money being spent by exhibitors and attenders.

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An open competitive examination to fill the position of Assistant Inspector (Radio Enforcement) has been announced by the Civil Service Commission at Washington. Applications must be received not later than July 21, 1931. The entrance salary is \$2,400 a year.

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"Tuning by Telescoping" is an accomplished design fact in the new antenna about to be erected on the roof of the Short-wave and Television Corporation's building in Boston. This antenna instead of being composed of two towers which support wires reverses the idea and consists of a tower supported by wires. It is the first antenna of its kind to be erected in the United States for a commercial station, a new departure in antennas.

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Organization of the National Council on Freedom From Censorship by the American Civil Liberties Union has been announced in New York City.

"Three major considerations must be met by any program aimed at making radio free from censorship and firm in its rightful place as a constructive and educational medium", the pamphlet says.

"First, it must prevent a continuation of selective censorship of stations, now greatly in evidence. Secondly, it must prevent domination of the industry by two or three large groups. Thirdly, it must protect public interests in free speech against the discrimination in issuing licenses."

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#### APPLICATIONS RECEIVED BY FEDERAL RADIO COMMISSION

June 10 - William O. Omness & Herbert T. Graham, Muskegon, Michigan, C. P. amended to request 1310 kc., with 50 watts, instead of 1370 kc., with 15 watts; WQBC, Delta Broadcasting Co., Inc., Vicksburg, Miss., direct measurement of antenna input, also, license to cover C. P. granted 11/11/30 to rebuild station; WHBQ; Broadcasting Station WHBQ, Inc., Memphis, Tenn., license to cover C. P. granted 1/27/31 for changes in equipment; KRGV, KRGV, Inc., Harlingen, Texas, license to cover C. P. granted 1/13/31 changes in equipment; KMLB, J. C. Liner, Monroe, La., C. P. to make changes in equipment and increase power from 50 to 100 watts; WCOC, Mississippi Broadcasting Co., Inc., Meridian, Miss., modification of C. P. granted 4/24/31, as to authorized equipment; KGW, Oregonian Publishing Co., Portland, Oregon, modify C. P. granted 2/13/31, to extend the completion date to 9/16/31; KVOS, KVOS, Inc., Bellingham, Wash., C. P. to move transmitter locally and install new transmitter.

June 11 - WJTL, Oglethorpe University, Oglethorpe University, Ga., determine license power by direct measurement of antenna input; Bryan T. Cole, Norman, Okla., C. P. amended to request 940 kc., instead of 1370 kc., and daytime only instead of sharing with KGFG; C. F. Hardy, C. F. Johnson, and M. Snavely, d/b as Denison Radio Lab., Denison, Texas, C. P. amended to request 1310 kc instead of 620 kc., and share with KFPM, instead of daytime only;

KFI, Earle C. Anthony, Inc., Los Angeles, Calif., license to cover C. P. granted 4/28/31 to install new transmitter, move transmitter from Los Angeles, to Buena Park, Calif., and to increase power from 5 kilowatts to 50 kilowatts LP; (CORRECTION) Edward H. Bragg, Leslie F. Bragg, John C. Agnew, and Albert H. Marshall, d/b as Plattsburgh Broadcasting Co., Plattsburgh, N. Y., C. P. amended to request  $\frac{1}{2}$  daytime hours, facilities to be withdrawn from WBGF, in terms of units, on 1310 kc., instead of the request to change frequency as reported.

June 12 - WTAG, Worcester Telegram Publishing Co., Inc., Worcester, Mass., C. P. to install auxiliary transmitter at 20 Franklin St., Worcester, to operate on 580 kc., 150 watts; WCGU, United States Broadcasting Corp., Brooklyn, N. Y., modification of license to request 1300 kc., instead of 1400 kc., and to share time with Stations WHAP, WHAZ, and WBBR instead of with WFCX, WLTH, and WBBC (facilities of WEVD); WCAE, Kaufmann & Baer Co., Pittsburgh, Pa., voluntary assignment of license to WCAE, Inc.; The Community Broadcasting Co., Toledo, Ohio, C. P. to erect new station to use 1500 kc., 100 watts and unlimited time; WHIS, Daily Telegraph Printing Co., Bluefield, W. Va., license to cover C. P. granted 5/12/31 to change frequency, hours of operation, and to increase power; KCRC, Enid Radiophone Co., Enid, Okla., C. P. to move transmitter and studio locally, and to install new equipment and move studio locally; KCRC, Champlin Refining Co., Enid, Okla., voluntary assignment of license to Enid Radiophone Co.; KGFL, W. E. Whitmore, Raton, N. Mexico, voluntary assignment of license to KGFL, Inc.

#### Applications Other Than Broadcasting

June 10 - RCA Communications, Inc.: WQT, New Brunswick, N. J., renewal for 13885 kc., 80 kw., point-to-point; WEG, Rocky Point, N. Y., renewal for 7415 kc., 80 kw., point-to-point; WJN, Rocky Point, N. Y., renewal for 7370 kc., 80 kw., point-to-point; WEN, New Brunswick, N. J., renewal for 7407.5 kc., 80 kw., point-to-point; Radiomarine Corp. of America, WSC, Tuckerton, N. J., renewals for 143, 500, 5525, 11050, 16580, 22100, 11, 125, 133, 137, 170, 462, 6485, 8350, 8370, 12520, 12670, 12820, 13210, 16780, 21740, 21780, 21720, 21700, kc., and for seven transmitters with 3 kw., 5 kw., 500 w., 1.2 kw., 70 kw., 70 kw., 200 w., coastal (14 transmitters in all); W2XR, Radio Pictures, Inc., Long Island, N. Y., C. P. for new transmitter on 43-46 mc; 48.5-50.3 mc; 60.80 mc., 1 kw., experimental television.

June 11 - WIK, RCA Communications, Inc., renewal of public point-to-point license for 13930 kc., 80 KW; KGTD, Aeronautical Radio, Inc., Wichita, Kans., renewal of point-to-point aeronautical license for 2722, 2734, 4108, 6350, 8015, 12180 kc., 500 watts; Transcontinental & Western Air, Inc.: KHMGT, Plane NC-8411, KHDZA, NC-8413; KHDAZ, NC-9606, KHDBY, NC-9607, KHDVE, NC-9638, KHDWD, NC-9639, KHDXC, NC-9640, KHDYB, NC-9641, KHDGX, NC-9643, KHDDW, NC-9644, KHDEV, NC-9645m KHDFU, NC-9646, KHDGT, NC-9648, KHDHS, NC-9648; KHDJQ, NC-9650; KHDKP, NC-9651, KHDFU, NC-9686, modification of aircraft licenses for use of additional frequency 3106 kc.

June 12 - Cocolobo Cay Club, Cocolobo Cay, Fla., amendment to application, changing frequency to 4276 kc., private point-to-point service; Isle of Dreams Broadcasting Corp., Miami Beach, Fla., amendment to application, changing frequency to 4276 kc., private point-to-point service; KMT, Libby, McNeill & Libby, Libbyville, Alaska, license covering C. P. for 219, 256, 272, 500, 425 kc., 200 watts, coastal and point-to-point service; KLJ, Columbia River Packers' Association, Nushagak, Alaska, license covering C.P. for 262, 272, 460, 425, 500 kc., 200 watts, coastal and point-to-point service; W9XG, Purdue University, West Lafayette, Ind., modification of C. P. for extension of completion date to 10/1/31, visual broadcasting; WGT, RCA Communications, Inc., San Juan, Porto Rico, renewal of limited public license for 13705 kc., 80 KW; WAA, Radiomarine Corp. of America, Detour, Mich., renewal of marine relay license for 143, 410, 5525, 161, 167, 425, 4775, 8570 kc., 200 and 750 watts.

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FROM: HEINL NEWS SERVICE - JUNE 16, 1931.

## COMMISSION CONCLUDES RCA HEARING

The Federal Radio Commission now finds itself faced with one of the most important problems it ever has had to consider - is it the duty of the Federal body, under Section 13 of the Radio Act of 1927, to refuse renewal of the 1408 licenses held by the Radio Corporation of America and its subsidiaries, probably the largest communications system in the world, in view of the fact that the RCA has been finally adjudged guilty of violation of the anti-trust laws?

Section 13 forbids the issuance of a broadcasting communication license to any company found guilty of attempting unlawfully to monopolize radio communication, directly or indirectly, through the control of the manufacture or sale of radio apparatus.

The Supreme Court of the United States refused to review the decisions of the Lower Federal courts, which held the RCA had violated the Clayton anti-trust law by attempting to force the manufacturers of radio sets under its patents to purchase from the company all the tubes needed to equip the sets initially, thereby establishing guilt.

The chances that the Commission will lay themselves open to the severest sort of criticism by the foes of the Radio Corporation in Congress by renewing the licenses is considered slight. It is the first time the Commission has been required to make a ruling on the anti-monopoly provisions of the Radio Act of 1927, and it is not likely it will assume this great responsibility.

Immediately the Commission announces that it will not renew any RCA licenses, stay orders will be obtained in order that the services may not be crippled, and a long court fight will be started.

All five members of the Commission were present during the two days of hearings, with Vice-Chairman Eugene O. Sykes presiding because of his legal experience. Upon calling the hearing, Judge Sykes declared that the hearing was confined to one purpose only, "that the Commission might determine whether under the Radio Act of 1927, and particularly section 13 thereof, it is now precluded from granting renewals in view of the judgment in the Delaware court, in the case of Lord, receiver, against the Radio Corporation of America."

Fifteen licenses were specifically designated - among them broadcasting, commercial and experimental.

The Radio Corporation and its subsidiaries were Louis Titus, Col. Manton Davis, A. L. Ashby, and Frederick B. Leuschner.

The intervenors were E. N. Nockles, of the Chicago Federation of Labor, Hon. Frank E. Reid, member of Congress from Illinois, Oswald F. Schuette, of the Radio Protective Association, and Elisha Hanson, attorney for Station WTMJ, Milwaukee, Wis.

The main arguments advanced by the RCA and its subsidiary companies were that the Commission has no right to refuse to grant it licenses because, firstly, Section 13 of the Radio Act is unconstitutional, and secondly, because the language of the decree handed down in the case does not say that the RCA has been found guilty of monopolizing the tube industry but that the clause in question in the contract had tendency to lessen competition in the manufacture of radio tubes for broadcasting receiving sets.

Mr. Titus declared that Section 15 of the same law - which covers all laws of the United States relating to unlawful restraint of trade, including the Sherman-Clayton Act and the Federal Trade Commission - might have been used to revoke the licenses, but pointed out that Judge Morris in handing down the decision, made no such designation.

It was also the contention of Mr. Titus that the use of the word "guilty" in Section 13 means that a criminal judgment must have been placed against them before that section could be made to apply. He pointed out that the judgment showed a violation of the Clayton Act, meaning that the tube transactions were invalid but that the action was a long way from being a criminal one, that it was not even a misdemeanor.

Mr. Titus demanded of the Commission if it should be caused to lose ten thousand times \$10,000, the highest penalty imposed for guilt in such cases, because of this contract when its use was not a crime, nor a misdemeanor, and they were guilty of nothing they could be fined for, nothing for which they might be sent to jail.

Mainly making a plea for the granting of a cleared channel to the labor interests, E. N. Nockles told the Commission that they were bound to find the RCA guilty of monopoly and that the cleared channels occupied by the NBC were as good as back on the Commission's desk,

The Commission was told by Oswald F. Schuette that it should declare itself not satisfied that the Radio Corporation of America is serving public interest, convenience or necessity, thereby failing to renew the licenses and allowing the matter to pass into the courts. He pleaded for the disintegration of the Radio Corporation of America, as such, demanding that the companies owned by the RCA be operated independently.

The intervention of WTMJ was on the ground that it is an applicant for the channel occupied by WENR, if the Commission refuses to renew its license, and must make other disposition of 870 kilocycles,

The first hours of the hearing were given over to discussion of the economic condition of the applicant companies.

The declaration that the communications and broadcasting systems of the RCA would be totally wrecked if the Commission refuses to allow the company to use the 1408 licenses now held by it was made by the witnesses.

Frequencies licensed for international use by the Federal Radio Commission to the R.C.A. Communications, Inc., now number 112 for point to point service, 17 for experimental service and 1 for marine relay, W. A. Winterbottom, Vice-President, told the Commission.

"Three and four frequencies are often necessary to operate a circuit through the 24 hours of the day," he continues. "Practically all of these frequencies are world wide in range and in interference effect, and cannot be used by any other country. Many of them were assigned to, and used by Radio Corporation of America before the formation of the Federal Radio Commission. All of them are registered at the International Radio Telegraph Bureau at Berne, Switzerland, for the use by R.C.A. Communications, Inc., and the priority date of use by the Radio Corporation of America and R.C.A. Communications, Inc., has been well established and recognized by all the Governments of the world for years. And priority is most important in this matter. The frequencies R.C.A. Communications, Inc. is using and has long used with the consent of the Federal Radio Commission and the concurrence of every other Government in the world would likely be lost to the United States if our licenses were denied.

"There is a long waiting list now registered by other nations at the Berne Bureau. To cancel the frequencies used by R.C.A. Communications, Inc., would likely result in their transfer to foreign applicants to Russia, Mexico or any other country that could place transmitters on the frequencies formerly occupied by R.C.A. Communications, Inc. It has taken ten years to build the R.C.A. Communications, Inc. system. Its frequencies might be lost to itself and to America in a day if its licenses were cancelled. R.C.A. Communications, Inc. has now pending negotiations with five different and important foreign countries for international traffic communication contracts. It is ready to establish direct radio services between the United States and those foreign countries as soon as contracts can be signed and licenses obtained from the Federal Radio Commission. Without licenses this Corporation would not be in position to close such contracts and would likely forever lose to its competitors the opportunity to inaugurate such services.

"In recent years", Mr. Winterbottom adds, "R.C.A. Communications, Inc., has expended considerably over \$500,000 per annum in its experimental and research laboratories located at New York City, Rocky Point and Riverhead, Long Island, from which

work has come such important contributions as ultra short wave operation, directive transmission and associated antenna structures, diversity reception by which method short wave work has been made commercially reliable. Marked progress has been made in these laboratories in the new field of facsimile transmission of pictures, drawings, newspapers or any other written or printed matter. Without licenses all this work must cease and the large group of inventors and research men now conducting this work must be disbanded."

M. H. Aylesworth, President of the National Broadcasting Company, described the activities of the network and traced its history from its establishment in 1926. He has been President of the company since its organization. NBC, said Mr. Aylesworth, holds licenses for 19 stations, of which seven are broadcasting stations and the remaining 12 experimental licenses.

In the network there are 76 stations, and the stations owned and operated by the NBC are "necessary" to the continuation of the network, Mr. Aylesworth testified.

In 1930, he testified, \$20,000,000 represented the network's revenue, while contracts now are signed for \$17,000,000 in commercial programs, he said. There are more than 1,300 persons on the payroll of the company, not including talent.

"We hope to bring television into the practical field during the coming year as a result of experimental operations", said Mr. Aylesworth. The network is experimenting with ultra short waves for possible use in connecting network stations and replacing land lines now employed as the connection links, he said.

Experiments in synchronization designed to alleviate congestion in broadcasting and make room for additional transmitters by allowing high-powered stations to operate simultaneously on the same channel without interference also were described. This represents three years of experimentation and an investment of \$500,000, he asserted. "If these licenses are not renewed", concluded the witness, "our property will be almost totally lost. We have \$2,171,000 in fixed assets, such as studios."

Activities of the Radiomarine Corporation of America, engaged in ship-to-shore communications and coastal contacts were outlined by T. M. Stevens, General Superintendent of the company. Tangible assets of the company were said by the witness to be approximately \$2,900,000. He said that in 1930, the company had a gross revenue of \$1,536,544. In 1929, it was \$2,154,171, he said.

The company has 1,173 ship licenses, 31 coastal licenses, as well as 28 relay stations and 10 point-to-point stations in Alaska, and has approximately 1,700 operators aboard ships using its apparatus and approximately 225 ashore, he said.

Questioned by Commissioner Robinson, Mr. Stevens said that if the licenses of Radiomarine are revoked, it would take several

years before any other company would be enabled to equip ships in the same manner. He said that not more than 75 per cent of the American vessels are equipped with RCA apparatus and service. The RCA installs, maintains and operates the apparatus. The service takes care of approximately 1,200 American-flag vessels out of 2,000, he asserted.

E. E. Schumaker, President of the RCA Victor Co., was the final witness called by Mr. Titus. He said that television experimentation constitutes the main activity of his company in radio operations

Whereas a year ago television was a subject discussed only by technicians, he said that today it is a "matter of accomplishment, not of speculation."

"There is every prospect of the success of these experiments", continued Mr. Schumaker. "More than \$20,000,000 has been spent by the RCA in research and experimentation. The RCA Victor Co., has spent \$1,000,000 exclusively in television research", he contended.

"As a result of the work now in progress and of the expenditures which have been and are now being made", Mr. Schumaker declared, "it is expected that a new industry of sight transmission and reception will be created and that the RCA Victor Company will be in a favorable position to manufacture and market radio television broadcasting equipment and receiving sets thereby receiving compensation for the heavy investments which it has already made in this new art.

"Should the RCA Victor Company's experimental television licenses be denied, the moneys expended in previous experimentation and research will be largely lost, its experimental television broadcasting and receiving equipment will have only such value as it would bring at forced sale, less than one-fifth of its present real value and the public will lose the benefit of the experimental research and development work already done by this company and its associated companies in this field."

An attempt was made by Oswald F. Schuette to have all the contracts of the RCA and its subsidiaries covering the use of patents subpoenaed. The Commission denied this request.

The only witness for the Radio Commission was V. Ford Greaves, who was questioned about the relation of the vacuum tube to the radio industry.

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