

# HEINL RADIO BUSINESS LETTER

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## LONE JUDGE SIZZLES HOLDING THE FCC FORT

The members of the Federal Communications Commission have left their veteran colleague, Judge E. O. Sykes, holding the bag during the dog-days. Out of the seven members of the Commission, Judge Sykes is the only one now in Washington. With it being possible to fry eggs on Pennsylvania Avenue during the hottest Summer the Capital has experienced in twenty years, it is perhaps fortunate that Judge Sykes was chosen to hold the fort because he hails from Mississippi where it is supposed to be really hot.

Judge Sykes is the sole surviving member of the original Radio Commission. When he first came to Washington, he didn't know a thing about radio, and as he tells it himself, President Coolidge appointed him "because he thought the Commission ought to have a lawyer to keep it straight in legal matters".

Chairman Frank McNinch, who has been recuperating from his recent illness, at a New Jersey beach, is expected to be back at his office Monday, August 22nd.

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## AMERICAN DELEGATES TO VENICE RADIO CONFERENCE CHOSEN

The following delegation has been appointed to attend the General Assembly of the International Scientific Radio Union to be held in Venice September 4-14th:

A. S. Kirby, of the National Bureau of Standards; Gerald C. Gross, Chief of the International Section of the Federal Communications Commission; Prof. E. L. Chaffee, Professor of Electrical Engineering at Harvard University; George H. Lewis, Vice-President of the International Telephone and Telegraph Company, and Dr. O. R. Wulf, of the Department of Agriculture.

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## ARMY OFFICER PRESENTS NEW THEORY ON RADIO WAVES REFLECTION

Introducing a theory in the reflection of radio waves which he says is entirely new, Capt. J. J. Downing of the U. S. Army Signal Corps nevertheless approaches the subject with some caution.

"My idea of it seems to be entirely new and those to whom I have set it forth in conversation either think it splendid or give me a calculating look accompanied by raised eye-brows", Captain Downing writes in the Signal Corps Bulletin. "I hold no brief for the theory because my technical knowledge is not sufficient to adequately prove or defend it and, then, such things are principally of academic interest and do not warrant too much neck extension.

"Lt. Col. Leland H. Stanford, to whom I explained the theory some months ago, writes me: 'Have at the American Institute of Electrical Engineers' meetings and Signal Association meetings presented your theory, 'Downing Screen'; it is received with interest and none here have found any good reason why it is not sound.' Thus directed and assured I go off the deep end with it.

"As a point of departure we know, first, that the earth is surrounded by a magnetic field, and second, that an electric current set up in an antenna system creates a similar magnetic field about the antenna. If we vary the electric current rapidly there is caused to be radiated from the antenna a series of electro-magnetic and electro-static waves. We now have occupying the space we call the ether two forces of a similar nature, the earth's magnetic field and the magnetic field set up by our radio impulse. That these two should have some effect one upon the other seems logical, and it is therefore assumed that they do. Before the use of high frequency radio transmissions became general the reaction between these forces was of no particular interest, but with the advent of short waves and the noted vagaries thereof, some explanation became desirable to account for their erratic behavior.

"We must now consider the earth's magnetic field. Our normal concept of this is good enough if we continue it a bit further and imagine the field to increase in intensity as we go aloft. This checks with what we have all observed in performing elementary laboratory experiments. If we explore the field of a bar magnet we find the field at the center of the bar extends out quite a distance from it. Near the center of the bar the field is comparatively weak; progressing perpendicularly from the bar we find the field increasing and then, finally, diminishing in strength. Further experiment with our laboratory magnets discloses the fact that the field of one magnet cannot cross that of another; they will be deflected and shear off one from the other, the stronger pushing the weaker back. These facts we

have all observed. Is it not reasonable therefore to assume that some such reaction must take place between our radiated magnetic wave and the earth's magnetic field?

"Having now made the grand assumption that the earth's magnetic field is the shield that reflects our radio waves, let us consider how this fits in with our observed phenomena.

"1. First to account for greater radio reception distance at night than during day we must look for some force to alter the height of the reflecting magnetic screen - lowering it in the daytime and permitting it to lift at night. Two things suggest themselves to me on this point, either one or both of which may be operative. First, the magnetic field of the sun itself may act to collapse the relatively weaker earth's magnetic field on the earth's illuminated hemisphere, or, second, the radiation pressure of the sun may act to bring about the same result. If our reflecting screen is thus forced down during the daytime, it accounts for the lesser distance the radio wave will skip during this period.

"2. The eccentric movements of the reflected wave during twilight and dawn are likewise accounted for when we consider the displacement of the magnetic screen along the margin of light and dark. The screen along this marginal area is distorted in merging the collapsed field on the one side with the normal or perhaps expanded field on the opposite side.

"3. We have recently come to think that sun spots are severe magnetic storms on the sun's surface and if this is true then it is not stretching our imagination too far to believe that they have a disturbing effect upon the magnetic screen surrounding the earth. If the otherwise calm surface of this screen is caused to become turbulent by some outside force then it is impossible to get a true or regular reflection therefrom. A radio wave encountering this moving surface may be reflected to almost any point or be not reflected at all.

"4. The observation that in general there is better radio communication in winter than in summer might be explained by the fact that during the winter the sun is in the southern hemisphere and therefore leaves the magnetic screen of the northern hemisphere less influenced as a result. If the magnetic screen was not disturbed at all then radio transmission and reception would be the same during day and night, from day to day, and from season to season, with only local disturbances in the nature of thunder storms, man-made interference, etc., causing interruptions. During the months of March and September the sun is passing directly over the equator thus creating an equal collapse of the earth's field in both the northern and southern hemispheres which is our nearest approach to perfect conditions from this source.

"5. In explaining the greater ease of transmitting from north to south in the northern hemisphere and the opposite in the southern hemisphere we must consider the angle at which our magnetic screen is inclined with reference to the earth's

surface over the particular spot in question. The screen, of course, reaches its greatest altitude over the equator from which point it curves down toward and finally enters the earth at the magnetic poles. If we consider the angle of reflection of our radio wave to be the same as the angle of incidence then it will be readily seen why greater distances will be covered in our reflecting to the south than to the north - in the northern hemisphere.

"6. 'Dead areas', or those portions of the earth's surface to and from which radio communication is difficult have been found, so I understand, to be located in general over deposits of iron ore or other metals which offer a path of less reluctance to the earth's magnetic field. If this is true, then over these areas we can expect to find the magnetic screen dipping down closer to the earth's surface with a consequent blanketing effect upon radio transmissions therefrom and only the strongest signals able to enter or depart."

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#### CLAIMS 25 MILE RANGE FOR BRITISH TELEVISION CABLE

The news that the television cable to Birmingham is now in working order and that the British Broadcasting Corporation proposes soon to open a station there beings the new means of communication a step nearer to the millions who live in the midlands, a clipping from the Manchester (England) Guardian reports. The range of 25 miles claimed for the Alexandria Palace projector in London has in fact been considerably exceeded under favorable conditions, but it cannot be relief upon behind that limit. A relay to Birmingham should serve "viewers" within a similar radius of that city, and Manchester and Newcastle extensions are being prepared.

Meanwhile the entertainment world begins to look eagerly at television's attractions. Mr. Mark Ostrer, Chairman of the Gaumont-British Picture Corporation, has just urged at the company's annual meeting that the time is ripe for the Government to permit those cinemas that are willing and able to do so to show the televised programs. Apparatus for the showing of large-screen television is available. Mr. Ostrer states that his company could proceed at once to present it and that picture-house audiences would welcome it. It may be doubted whether, when the novelty had worn off, studio programs televised would compete with those of normal picture-houses; but for witnessing in the picture-houses of the country, the chief ceremonial and sporting events of the day as they occur there will from the start be a great and a growing public. Much remains to be done both on the technical side and in the adjustment of copyright before large-screen picture-house television will be generally possible.

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## U.S. STATION POWER BOOST TO FIGHT CUBAN INTERFERENCE

In order to overcome interference caused by Station CMQ, at Havana, Cuba, the Federal Communications Commission has granted special temporary authority for Station WREC at Memphis, Tenn., to operate with an increased power of 5 KW at night for a limited period. It is stated that this shall not be construed as a finding in any wise with respect to the application of WREC for an increase in power now pending before the Commission. The authorized power of Station WREC is only 1 KW.

Stations WCAO, Baltimore; WNT, Cedar Rapids, Iowa, and WICC, Bridgeport, Conn., also broadcast on practically the same frequency as the Memphis and Havana stations.

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## EVERY FIFTH PERSON IN SWEDEN NOW HAS OWN RADIO

A further increase in the number of radio licenses in Sweden was recorded during the second quarter of 1938, when 21,453 new licenses were issued, according to a report of the American Commercial Attache at Stockholm.

On June 30, 1938, the number of persons in Sweden holding radio licenses numbered 1,156,781 or 184.1 per thousand inhabitants. The number of radio license holders in the capital city of Stockholm stood at 247.2 licenses per thousand inhabitants, according to the report.

Exchange broadcasts between Sweden and the United States will be made this Fall, according to announcements made by K. Hugo, of Stockholm, Director of Educational Programs for the Swedish Radiotjanst, and Peter T. Reinholm, Director of Scandinavian programs for the World Wide Broadcasting Foundation, following a conference in New York City. In 1935, Mr. Reinholm arranged the first program from America to be rebroadcast in Scandinavia, and this Summer will visit Scandinavian capitals to arrange further radio exchanges.

Through these good-will programs to Scandinavian countries, short-wave station WLXAL makes it possible for many Scandinavians in this country to maintain closer contact with their mother country. The station operates on a frequency of 11.79 megacycles, or 25.4 meters for the Scandinavian broadcast, and can be heard by nearly every short-wave set owner in North America and Scandinavia, as well as by listeners in all parts of the world.

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## SAYS AMERICANS WILL NOT PERMIT GOVT. RADIO DICTATOR

Neville Miller, new President of the National Association of Broadcasters, told the graduating class at Peabody Teachers' College today (Friday) that the American People would join the broadcasting industry in resisting any governmental invasion of "freedom of the air".

In his first public address, broadcast by the National Broadcasting Company, Mr. Miller added that the industry "welcomes" and "needs" government regulation to prevent "utter confusion in the air", and to see that individual stations operated "in the public interest, convenience and necessity".

"Should any station, large or small, fail to so operate, it deserves to lose the privilege to operate", he said. "This is the present law. This is the position of the National Association of Broadcasters: every American station must be worthy of its franchise or else lose that franchise.

"But if an agency of government seeks to dictate what shall and what shall not be broadcast, then that is another matter.

"For that agency is abandoning the democratic pattern and is assuming the technique of the totalitarian state which determines what people shall hear; what they shall say; what they shall read and think - a technique which in a certain nation descended to the ridiculous and revolting position of prescribing that the people of that nation could hear the operas of but one composer for one whole year!

"I can imagine, as you can imagine, what would happen in this country should such a thing run headlong into that American independence of spirit which demands both the right to listen and the right to be heard. \* \* \* \* \*

"American radio has never been locked to the goose-step of a dictator. Here radio has never stooped to sell hatred; to merchandise prejudice of race or religion, and with your help it never shall!

"American radio has been free to present advocates of both sides of conflicting issues; it has been free to render listeners the greatest enjoyment and the greatest service because it is free to bring them what they want. \* \* \* \*

"Please do not think that I am here to place a blanket of approval on all aspects of radio in this country. Certainly there are areas in programming which must be strengthened to improve radio's contribution to American life, and this is particularly true in the field of education.

"But paramount to programs is this basic relation of radio to our democracy. As long as radio is kept free as an avenue for the communication of thought, then it will contribute to, enrich and enlarge the character of American life."

Mr. Miller started off his address by saying that it was not his intention to "bless all in American broadcasting" and that he did not believe that we have even approached the fullest measure of usefulness to which radio is capable. He declared he was one "who believes that a sound body of critical thought exercises a wholesome stimulant to all creative endeavors inspired by the arts - and this is particularly true of radio".

Mr. Miller particularly stressed the point of the function of radio in its relation to the American democracy, and went on to say that "any threat to gather the freedom of radio unto the bosom of a government, of a bureaucracy, or of a monopoly must be resisted. For if a government or a bureaucracy or a monopoly invade, by the slightest degree, into the completely free American radio as we know it today, we are placing into the hands of the invader the beginnings of control of the greatest means of mass communication of thoughts and ideas the world has ever known. A free people can never tolerate this! That is why any invasion of our free, competitive system of American broadcasting from any quarter whatsoever will meet with all the resistance at my command, and I believe as well, with the determined resistance of the people who own and use the thirty million radio sets operative throughout America!

"I believe there is ample evidence about us of the political and the social consequences of government-dominated, government-operated radio. We have seen to what abuse this marvelous medium of mass communication can be put. We have seen it used to sell hatred; to split people apart because of religion, or race, or conviction. We have seen it used to keep people in ignorance, uninformed as to the facts, so that a whole nation might be moulded to the will of a government and not the government moulded to the will of the people! We have indeed witnessed the presumption of employing the globe-circling swiftness of radio to incite rebellion in neighboring nations; to foment trouble between friendly nations; yes, even to attempt to sow the seeds of suspicion and break the ties of friendship between peoples of whole continents! \* \* \* \* \*

"Radio is lifting the level of informed intelligence among the masses of our people. It is placing them in touch with the greatest thoughts and the greatest minds of our age. \* \* \* Radio is, after all, a mirror of the genius, of the talent and the thought of the American people. Its level can be no higher than the general level of education and culture in the country. Radio will continue to do its part to elevate the level of American taste, but radio cannot do the job alone."

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The Board of Education of New York City has been granted a construction permit for a new non-commercial educational broadcast station to be erected in Brooklyn. The frequency of the station will be 41,000 kc., and the power 500 watts.

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Station WMCA, New York announces a new scale of its evening rates from \$550 to \$650 an hour, effective October 1st. The daytime hour will go from \$275 to \$325.

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The City of New Orleans has been authorized to construct two new mobile municipal police units to operate in the emergency frequency of 31,780 kc.

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The New York City News Association, a cooperative local news-gathering organization, composed of the Associated Press and New York newspapers, is offering to sell networks and local broadcasting stations with New York City primary news September 20th and election news November 8th.

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Station W3XAU, the short-wave outlet of WCAU of Philadelphia, affiliated with the Columbia Broadcasting System, has applied for an additional frequency of 11,830 kc., and a hearing will be held covering this request.

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The Accounting, Statistical and Tariff Department of the Federal Communications Commission has just issued Section B of the Telegraph, Cable and Radio Telegraph Carriers for the year ended December 31, 1937. This contains, electrical, financial and operating data from annual reports.

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NBC GRANTED NEW EXPERIMENTAL INTERNATIONAL FREQUENCY

The National Broadcasting Company has been granted a construction permit and license covering same for a new international broadcast station on a frequency of 17,780 kc. with 35 KW power, upon condition that the grant is subject to change or cancellation by the Commission at any time without advance notice or hearing if, in its discretion, the need for such action arises.

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## BOB JENNINGS RESIGNS FROM CROSLEY CORPORATION

Robert G. Jennings has resigned as Vice-President of the Crosley Radio Corporation and General Sales Manager of WLW and WSAI, effective immediately, according to announcement made by officials of the Crosley Radio Corporation.

Mr. Jennings, who is a son-in-law of Powel Crosley, Jr., stated that his plans were not definite at the present time. He has received several offers, one of which he plans to accept. Mr. Jennings stated that he would be in a position to announce this in the near future. No successor has been named.

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## RCA HEATS WORLD'S FAIR RIVET BY RADIO

A demonstration of the future possibilities of radio was given at the World's Fair Grounds yesterday morning when radio waves were used to heat the last rivet driven into place on the steel framework of the Radio Corporation of America's exhibit building.

The rivet became white-hot in a little more than a minute, as Robert Shannon, Vice-President and General Manager of the RCA Manufacturing Company of Camden, N.J., held it suspended in a concentrated field of radio waves. Then H. C. Bonfig, Vice President (Commercial) of the Company drove it into place.

To carry out the operation, the oscillator unit of a regular radio transmitter was set up on the framework of the RCA exhibit building. Usually, it was explained by company engineers, the output of an oscillator is directed into an antenna, but in this case it was directed into a coil of wire. Thus, instead of being broadcast over a wide area, the radio waves were concentrated at the center of the coil, generating intense heat.

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## CLAIMS NEW STATIC CURB

The static which endangers airplane operation by obliterating communication between the pilot and ground stations may soon be a thing of the past, a New York commercial research laboratory announced, the Associated Press reports.

Flight tests of a new ultra-high frequency apparatus show the system is virtually free of interference in bad weather. Heretofore snow, rain and other adverse conditions usually have set up a crackling on airplane communications channels.

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ROOSEVELT TEXAS NETWORK JOINS MUTUAL

That the newly formed Texas State Network, Inc., consisting of twenty-three stations, operated by Elliott Roosevelt will become affiliated with the Mutual Broadcasting System on September 15 next, has been announced by WOR.

With the addition of these twenty-three stations, the Mutual Broadcasting System now has affiliations with one hundred and seven stations from coast-to-coast in the United States and Hawaii, marking the most rapid expansion in American broadcasting history. The Mutual system, a cooperative network, was organized on September 15, 1934.

The new Texas regional network lists Elliott Roosevelt as President, Neal Barrett, Executive Vice President, and H. A. Hutchinson, General Manager. The headquarters of the network will be in Fort Worth, where elaborate studios and offices will be in readiness by September 1st.

Principal stations of the Texas network, which will become the largest independent regional radio chain, include KFJZ, Forth Worth; KXYZ, Houston; KLUF, Galveston; WRR, Dallas; WACO, Waco, and KABC, San Antonio.

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NBC-RCA TO RESUME TELEVISION TESTS

Resumption of experimental television broadcasts in the New York City area, beginning next Tuesday (August 23) and extending over a four-week period, was announced jointly by the National Broadcasting Company and the Radio Corporation of America. The weekly schedule will comprise six one-hour transmission.

As in the previous test period concluded this Spring, the broadcasts will be divided into two series. Film and live entertainment programs will be broadcast twice weekly, on Tuesdays and Fridays from 8 to approximately 9 P.M., from the NBC experimental studios at Radio City. Test charts and still pictures, of no entertainment value but of great assistance to experimenters, will be transmitted on four afternoons a week, Tuesdays through Fridays between 3 and 4 o'clock. All broadcasts will be made over the NBC transmitter, W2XBS, in the Empire State Tower, operating on 46.5 megacycles for picture signals and 49.75 megacycles for associated sound.

O. B. Hanson, NBC Vice-President and Chief Engineer, pointed out that considerable improvement had been made in picture definition and that an increase in the power of the transmitter had been effected through the installation of new exciter stages. The range of the station will remain the same, approximately 50 miles. Satisfactory images in the past have been received as far distant as Hartford, Conn.

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