HEINL RADIO BUSINESS LETTER

2400 CALIFORNIA STREET WASHINGTON, D. C.

CONFIDENTIAL — Not for Publication

INDEX TO ISSUE OF MAY 12, 1936

Automatic Radio Phone Devised For Aid Of Motorists.....2

Rayburn Offers Communications Act Amendments.....5

Radio Device Used In Weather Balloon 16 Miles Up.....6
Radio Represented At Presidential Dinner.....6

Sinclair Lewis Changes His Mind About Radio.....7

Oscillator Opens New Areas In Spectrum.....8

Early Naming Of NAB Copyright Director Seen.....9

Harris Failed To Offer Press-Radio Plan.....10
Brief Talks Best, CBS Analyst Finds.....10

Six Months' Celebration To Mark NBC Anniversary.....11
Mutual April Billing Is $139,934.34.....11

Public Interest Great In German Television.....12
Robot Pilot Follows Radio Curve To Ground.....12

No. 927

May 12, 1936.

AUTOMATIC RADIO PHONE DEVISED FOR AID OF MOTORISTS

The day when a busy executive, or housewife, for that matter, can save time by making telephone calls while riding downtown in automobiles is not far off.

While the two-telephone, operating on short-waves, is already being used in police patrol cars in this country, it has not yet been adapted for connection with telephone exchanges. Such a phone, called an "Automatic Radio-Telephone", has been developed in Rome, Italy, however, and is proving its practicability. A description of it has just reached the Department of Commerce from Trade Commissioner Malcolm P. Hooper, stationed in Rome.

"The 'Automatic Radio-telephone'", he reports, "undertakes to provide a portable communication plant of the size and weight practical for simple installation in conveyances such as automobiles, trains and boats. It is even claimed that the system may ultimately be adopted on a much reduced scale to a 'pocket-edition' though this is beyond our ken.

"Dr. Domenico Mastini, the inventor of this radio-telephone, points out that his machine will at this stage of perfection, within certain limits, serve in the same capacity as the usual automatic telephone apparatus - but with the additional facility of overcoming the latter's limitations, which as he expresses it 'can only be moved within the confines of a few meters of cord or always within the confines of the building by means of additional plugs'. Dr. Mastini has demonstrated to others that his machine can be carried by the user to his automobile and by substituting wireless-waves for the connecting cords, produce a two-way communication up to a present maximum distance of 100 kilometers.

"It is stated that Dr. Mastini has solved the problem of maintaining a radioelectrical connection between a portable automatic telephone and a fixed plant - making it possible 'to be called' while traveling in an automobile or any other conveyance, and in turn 'to call' home or office at a distance up to 100 kilometers.

"The system, as described by Dr. Mastini, consists of a fixed station, as in the home, and a traveling station in the automobile, between which a 2-way conversation may be readily established from either end.

"Before speaking with another subscriber, who may also be in an automobile, a certain amount of maneuvering will be necessary in order to obtain the required connection; and more

precisely, the fixed apparatus at home must automatically perform what the subscriber would do if he were there. Hence the necessity of a bilateral control by means of wireless waves: the portable apparatus must be able to control the fixed one in such a way, for example, as to be able to make it form the required number; the fixed apparatus must be able to call the portable one when another subscriber wishes to have the communication. The technical requirements to be attained present two specially delicate points: In the first place, whoever is using his telephone in the automobile must be able to do so as easily as if he were at home, avoiding special and complicated contrivances, which could not be acceptable to the public; in the second place, the working of the fixed apparatus with the telephone exchange must not differ from an ordinary automatic telephone, and therefore not require any alterations to be made to the exchange, this being of vital importance to ensure the rapid application and spreading of the portable wireless telephone.

"In these essentials, the problem has been resolved for the first time by Dr. Mastini, while all previous foreign systems demanded certain modifications to be made, which were precisely those necessary to avoid. The Mastini combined wireless telephone utilises perfectly normal radiotechnical means in general use transmitting and receiving station. To these is added a number of relays, which make it possible for conversations to pass automatically from the wireless to the ordinary telephone and vice versa. The novelty of Mastini's system consists essentially in the original and irreplaceable coupling of these relays with their respective wireless contrivances.

"The cost of the future portable automatic telephone apparatus can therefore be easily estimated: it will be that of the ordinary bilateral radiotelephonic apparatus, to which must be added a few dollars for the relays and some slight adjustments. The wireless waves used are very short, so that within a given scale, a good number of subscribers can find room. It will be understood that the use of the automatic radiotelephone will not be limited to subscribers only, as the apparatus can also be applied to trams and motorbuses. This application has already been foreseen immediately after the excellent results obtained with experimental models at the recent Exhibition of Inventions. Great advantages from this will accrue also to inland navigation and to isolated localities very distant from populated centres, where only one house or refuge may exist, and connection with which by means of ordinary telephone lines to the nearest exchange would mean heavy expenditure, while this can be avoided by the use of directed wireless waves.

"To sum up, the Mastine combination of fixed and movable telephone apparatus makes it possible to (1) carry on a normal conversation with any person connected with the town or country telephone exchange; (2) Receive any telephone call whatsoever when in one's automobile; (3) Call another telephone subscriber at will, following exactly the same instructions when moving as when stationary (lifting the receiver and forming the number); (4) and converse from one's automobile with house or office.

"Finally, to describe the working of this system. A subscriber calls the owner of the movable automatic apparatus by dialing in the usual way. Soon, the fixed apparatus at the house of the person called, by means of a thermal relay, puts into action the respective radio-transmitting station and sends the call of the town line to the modulating current of the one transmitting. If for any reason whatsoever, the call is disconnected, everything returns to normal.

"The radio-station receiving the moving call, by means of the modulated wave, sounds the calling signal; the user in the automobile lifts the receiver, thus putting in function the movable transmitter; his own wireless wave puts in action a special relay of the stationary apparatus thus occupying the line (in this way the town signal is blocked) and keeps in function the fixed transmitter, which otherwise would have stopped with the ending of the call. Afterward, the conversation can continue in the usual way.

"As soon as the user in the automobile replaces the receiver, the movable transmitter becomes disconnected; thereupon ceases the emission of the wireless wave and with it the working of the fixed transmitter. Inversely, if the proprietor of the portable automatic telephone, wishes to call any subscriber on the town line, he must, as already explained, go through the same process as in the case of an ordinary apparatus; that is: to lift the receiver, form the number on the dial, after which everything proceeds in the ordinary way; he will hear the signal of engaged or free, and in the latter case, directly the person called lifts his own receiver, conversation can be carried on in the usual way.

"It is understood that the system can also be applied in the case of exchanges worked by hand and not automatic; further, it is possible to unite in one combination only, the special apparatus for radio telephoning and the ordinary wireless set; this would apply equally to the automobile, the house and the office.

"The Mastini automatic radio-telephone is a brilliant example of the most recent progress in telephonic communication, that is, the liberation from the drawbacks of a fixed installation. The portable automatic apparatus, whether in the automobile or in the pocket, will play a large part in the life of the up-to-date man, perhaps equal in importance to the introduction of the ordinary fixed telephone in the past."

X X X X X X X X X X

RAYBURN OFFERS COMMUNICATIONS ACT AMENDMENTS

Amendments to the Communications Act of 1934 were introduced late last week in the House of Representatives by Chairman Rayburn, of the House Interstate and Foreign Commerce Committee, and immediately referred to his Committee.

The first measure makes certain exemptions from the provision in Section 318 that the actual operation of all transmitting apparatus in any radio stations shall be carried on only by the holder of an operator's license.

The proviso authorizes the Federal Communications Commission to waive this requirement for any station except: (1) stations for which licensed operators are required by international agreement; (2) stations for which licensed operators are required for safety purposes; (3) stations engaged in broadcasting; and (4) stations operated on frequencies below 30,000 kc.

The second bill seeks to amend Sections 210 and 602(b) relating to the issuing of franks and the rendering of free service by carriers.

Under the first paragraph of the amendment it is declared unlawful for any carrier "to issue or honor any frank or to render any free interstate or foreign service, whether performed through physical connection or otherwise except in connection with situations involving the safety of life or property" et cetera.

The second paragraph states that "nothing in this Act . . . shall be construed to prohibit common carriers from rendering to any agency of the government free service in connection with the preparation for the national defense."

Section 602 (b) is amended so as to repeal the provisions of the Interstate Commerce Act, as amended, insofar as they relate to communications by wire or wireless, or to telegraph, telephone, or cable companies operating by wire or wireless".

X X X X X X X X

Some years ago broadcasting engineers in Germany announced that they had solved the problem of disseminating smells by wireless. On the day of the first transmission, German listeners raised their noses before their loudspeakers in pleasurable anticipation. They smelt in vain. The day for the inaugural transmission had been fixed as April 1st last.

X X X X X X X X X

RADIO DEVICE USED IN WEATHER BALLOON 16 MILES UP

Radio will soon enable meteorological experts to make weather forecasts several days in advance. A balloon devised by Bureau of Standards scientists recently ascended 16 miles above the earth and automatically radioed back data on temperature, pressure, and humidity.

"Today's experience with the sounding balloon soon may become an everyday practice which will greatly improve the accuracy of weather forecasts", Willis R. Gregg, Chief of the Weather Bureau, Washington, D. C., said.

"It is within reason to hope that in the future we may be able to forecast weather conditions three or four days in advance of actual occurrence instead of from one and a half days as at present."

The upper air data obtained by such sounding balloons may make it possible to evacuate homes in advance of hurricanes and tornadoes which have frequently taken heavy toll of life because residents could not be warned promptly enough, it was said.

X X X X X X X X X

RADIO REPRESENTED AT PRESIDENTIAL DINNER

There was quite a sprinkling of those representing the radio industry at the dinner given to President Roosevelt at the National Press Club in Washington last Saturday night. These included:

Kenneth H. Berkeley, Manager Station WRC, Washington; Harry C. Butcher, Vice-President, Columbia Broadcasting System, Washington; Louis G. Caldwell, former General Counsel, Federal Radio Commission; Vincent F. Callahan, Vice-President, NBC, Washington; Senator Arthur Capper, of Kansas, owner of Station WIBW at Topeka; Bond P. Geddes, Executive Vice-President, Radio Manufacturers' Association, Washington; F. P. Guthrie, Manager, R.C.A. Communications, Inc., Washington; L. M. Lamm, radio writer; Horace L. Lohnes, radio counsel; George Henry Payne, Federal Communications Commissioner; Frank M. Russell, Vice-President, NBC, Washington; Oswald F. Schuette, and Sol Taishoff, editor, Broadcasting magazine.

X X X X X X X X X

SINCLAIR LEWIS CHANGES HIS MIND ABOUT RADIO

Sinclair Lewis apparently has changed his mind about radio and its effect upon the sale of books. This week in New York, in an address to the American Booksellers' Association, he declared that no form of radio broadcasting, or television, will ever threaten the demand for good books.

Only last Winter, writing in the Yale Literary Magazine, he blamed radio for the slump in book sales.

"Many novels which 15 years ago would have sold 50,000 copies sold only 10,000 copies in 1935", he wrote at that time. "One might almost declare that books do not sell any more in this country. The movie, automobile, road-house, and most of all, the radio, are enemies of magazine-reading, book-reading, and of book-buying."

Speaking to the American Book-sellers'Association, he was quoted as saying:

"I do not believe that anything will altogether supplant the old-fashioned printed book, which has changed so very little since Gutenberg finished printing the first book, a Bible, back in 1455. I do not believe that any nimble television apparatus, any series of phonograph records, any ingenious microscopic gadget whereby you can carry the entire works of Balzac, in your cigarette case, will ever take the place of books, just as we know them.

"It is obvious that people listen to the radio and go to the motion pictures instead of reading books, but there are plenty of other Cossacks on our trail, the automobile, the bridge table and night clubs.

"I do not believe that the public will always be completely satisfied with the glaring screen, or that they will forever prefer the unctuous verbal caresses of radio announcers to the many-colored pages of Dickens. I do not think that Hollywood can remain forever the New Jerusalem. There may be new gods, but I think most of you will say with me, 'as for me and my house, we shall serve the Lord in books.'"

It is recalled that Booth Tarkington, an older novelist than Lewis, recently stated in an interview that radio will soon end the habit of reading and the writing of novels.

X X X X X X X X

OSCILLATOR OPENS NEW AREAS IN SPECTRUM

A radically new type of radio oscillator which produces powerful radio waves of meter length and opens new areas of the radio spectrum for practical services was described and demonstrated in Cleveland May 11th before the convention of the Institute of Radio Engineers by P. D. Zottu of the RCA Tube Research and Development Laboratory at Harrison, N. J.

With a laboratory model of the new "multitube" oscillator, Mr. Zottu produced 80 watts of power on a wavelength of 120 centimeters with eight commercially available tubes. It was pointed out that this device did not take advantage of all the possibilities of the new method, but rather demonstrated how power might be increased by simply adding radio tubes until the amount of power required for a given purpose had been reached. Although eight tubes were employed in the equipment shown, the design is such that twenty or more might be used if desired.

The chief novelty of the new oscillator is in that it permits the use of tubes in parallel without "adding up" their internal capacity, which to now has been the limiting factor in generating power on such short waves. In microwave circuits, the internal capacity of the tube, governed by the size of the tube's elements, is a definite part of the tuning circuit. The smaller the elements can be kept, therefore, the shorter the wavelengths on which the tube may be effectively employed. But the proglem has been complicated by the fact that production of greater power necessitated large tube elements to dissipate the increased heat. Engineers have been experimenting for some time, in search of the tube design which would best reconcile the two opposing factors. Up to now efforts to employ tubes in multiple have met the same difficulty that beset attempts to increase the power of a single tube and also have faced additional difficulties. Additional tubes meant more internal capacity, and increased capacity lessened the efficiency of the tube on the desired wavelength.

The new multiple oscillator employs standard tubes of conventional design. The tuning circuit between the grid and plate of each tube is like a miniature horseshoe. The eight tubes used are disposed radially around a common "tank" circuit, and connected to it by electrical means which permits each tube to contribute its utmost power without appreciably influencing the tuning of the main circuit. Thus, if one tube will produce ten watts, ten will generate 100 watts, and so on in arithmetical progression. It is believed that this is the first time that more than two tubes have been used together as oscillators at such short wavelengths with directly proportional increase in power. Moreover the separate units can be replaced without shutting down the oscillator.

Quite as striking as the simplicity of the arrangement is the feature of "electrical policing" by which the community of tubes keeps each individual member in exact tune with all the others. If one tube should have a tendency to stray from the wave to which it has been tuned, all the others, acting through the common "tank" circuit, pull it back. This is regarded as an important advantage in any possible commercial application as a transmitter, since crystal control, which is so effective on short waves and in the broadcast band, does not lend itself readily to micro-wave work. Hence, as engineering goes further down into the "cellar" of radio wavelengths, keeping those waves steady is a definite problem in the research. The "policing" characteristic of the multitube oscillator will, it is believed, measurably assist this phase of the work.

X X X X X X X X X X

EARLY NAMING OF NAB COPYRIGHT DIRECTOR SEEN

Announcement of the selection of a Director of the Copyright Bureau being organized by the National Association of Broadcasters is expected momentarily. James W. Baldwin, Managing Director of the NAB, has been in New York City for the last few days interviewing prospects and arranging for the formation of the bureau.

While the building up of the Bureau will take several years, work will start at once on the preparation of the contemplated title index.

One of the first steps will be to put a crew of clerks at work compiling a catalogue of all musical numbers used by network key stations in 1935. A research staff shortly will be assigned to the offices of the American Society of Authors, Composers and Publishers to gather information necessary for the founding of the Bureau.

X X X X X X X X X X

The Federal Communications Commission this week issued a list of alterations and corrections to the FCC roster of radio broadcast stations of the United States as of January 1, 1936. The corrections cover the changes for the month of April.

X X X X X X X X X X

HARRIS FAILED TO OFFER PRESS-RADIO PLAN

The following editorial appeared in the current issue of Newsdom, publishers' organ:

"The Press-Radio Bureau will be continued for another year without any apparent change in its method of operation.

"At the recent convention of the American Newspaper Publishers' Association, E. H. Harris, Chairman of the organization's Radio Committee, failed to mention any new plan to achieve a more satisfactory handling of news on the air.

"A few months ago Mr. Harris predicted that a new plan was being considered. At that time we suggested that the only feasible plan would be to junk the moribund Press-Radio Bureau. Apparently the time is not ripe for junking it.

"Mr. Harris did make it a point, however, to utter his disapproval of independent news agencies which sell news items to advertisers for broadcasting purposes. He toned down his attack somewhat by omitting any mention of boycotting these agencies.

"We can only repeat that the sale of news by independent news agencies can in no way retard the growth of that hardy perennial, the freedom of the press. It may hurt one particular group which cannot take advantage of such a sale, but it will never force the independent agencies into the arms of the government or the advertisers, as Mr. Harris suggests."

X X X X X X X X X X

BRIEF TALKS BEST, CBS ANALYST FINDS

To catch and hold the greatest number of listeners, a radio talk should be worded simply, phrased clearly and delivered intimately, says E. R. Murrow, Director of Talks of the Columbia Broadcasting System.

"After all", he reminds us, "every radio speaker is a guest in somebody's house." Therefore, he concludes, microphone talks should be conversational, not oratorical, and should come from the quiet intimacy of a broadcasting studio rather than from a public hall.

Mr. Murrow believes the most frequent mistakes of novices are (1) their desire to be heard from noisy public gatherings, and (2) a tendency to talk too long. He came to this conclusion after surveying the audience response to a record number of talks, on a wide variety of topics, broadcast by CBS in 1936 to date.

X X X X X X X X

SIX MONTHS' CELEBRATION TO MARK NBC ANNIVERSARY

The Tenth Anniversary of the National Broadcasting Company will be celebrated over NBC Red and Blue networks this Summer and Fall with a six months' period of special broadcasts, it was announced May 11th by Lenox R. Lohr, President of NBC.

Programs from every corner of the globe, prepared with the cooperation of foreign broadcasting companies as well as by NBC's own personnel from coast to coast and the 97 affiliated NBC stations, will be presented weekly throughout the anniversary celebration. The period of celebration will commence on May 18 and will reach its climax on November 15, just ten years after NBC's first program on November 15, 1926.

Famous artists, many of them stars of opera, stage and screen, conductors of world famous symphony orchestras and dance bands and a host of other celebrities who have "grown up" with the world's oldest radio network will participate in these anniversary programs. Marvels of radio engineering will be demonstrated by NBC's engineering department.

The National Broadcasting Company was incorporated on November 1, 1926. Its first broadcast, over a network of 23 stations reaching from Boston to Kansas City, lasted four hours.

X X X X X X X X X X

MUTUAL APRIL BILLING IS $139,934.34

The Mutual Broadcasting System's total billings for the month of April, 1936, were $139,934.34, it was announced this week. This billing includes the billing of basic and associated stations. Formerly Mutual only announced the billings of the basic stations.

Mutual's March billing for basic and associated stations totalled $191,482.73. The figure released totalling only the basic stations was $173,117.73. Hereafter, Mutual will announce a combined figure for basic and associated stations' billing each month.

X X X X X X X X X X

William B. Gellatly was appointed Sales Manager of WOR, Newark, on May 11th. Engaged as a member of the WOR sales staff last September, Gellatly has been in the advertising business for the past 16 years serving in various capacities. Before joining WOR he was a member of the sales staff of the Columbia Broadcasting System and has been advertising sales representative for the New York American, the Herald-Examiner of Chicago and the New York Herald Tribune.

X X X X X X X X X

PUBLIC INTEREST GREAT IN GERMAN TELEVISION

The German Post Office's two-way telephone-television service between Berlin and Leipzig (roughly 100 miles) is attracting considerable public interest, according to a report to the U. S. Department of Commerce. This is the first service of its kind in the world. It will remain open during the Leipzig Spring Fair.

At present, seeing by telephone in Germany is limited to persons who go to public offices, two of which have been opened in each town. In Berlin these are situated at the Potsdamerplatz and at a busy corner in the West End. In Leipzig one is at the Fair and the other in the central Post Office. A three-minutes communication costs 3 marks 50 pfennigs, which includes notification of a specified person in the town at the other end of the line.

The quality of the picture is remarkable; the 180-line definition and 25 frames a second are ample to produce the head-and-shoulder image of a person in all details, and the effect is comparable to a small-size projection of a sub-standard film. The cabins have been fitted with comfortable armchairs, and it is of importance for each person to be exactly in focus. This is obtained by comfortably leaning back in the chair and resting one's head on the cushion; the attendant can then lower or raise the chair at will to bring the person's head into line with the scanning apparatus. The image of the correspondent in the other town appears above the bright light of the scanner, but this is not disturbing. The hands of a wrist-watch can be recognized, and even the ring on the hand holding the telephone receiver.

Mechanical scanning is used throughout. The apparatus employed in Berlin was constructed by the German Post Office Laboratory, and that used in Leipzig was supplied by the Fernseh-Aktiengesellschaft, of which Baird Television, Ltd. in London hold a quarter of the shares.

X X X X X X X X X X X

ROBOT PILOT FOLLOWS RADIO CURVE TO GROUND

Development of a robot pilot, which not only stabilizes airplanes in flight but lands them without the aid of a human operator, was announced in Chicago last week by J. R. Cunningham, Superintendent of Communications for United States Air Lines. The landing is done by means of a curved radio "glide path" beam which guides the planes in safe and precise descents regardless of clouds or fogs.

X X X X X X X X X