



Radio Department

Radio Industry Sounds Call to Arms to Clear the Air

Courts May Soon Be Crowded With Actions by Stations Defending Rights to Allotted Wave Channels—Chicago Case Jolts Congress

By ROBERT D. HEINL

THE decision of Judge Francis Wilson of Chicago ordering a local station to keep off the wave length of station WGN, of the Chicago Tribune, the subsequent declaration by the national radio co-ordinating committee, representing the entire radio industry, that action by Congress is highly essential and pending that time urging broadcasters to protect their interests by following WGN's suit, and finally Secretary Hoover's flat declaration that chaos now prevails in the air, may prove a lucky break for listeners, inasmuch as it all comes at the time Congress is about to convene and when legislators were throwing up their hands in despair and declaring that insurmountable differences would probably prevent the passage of a radio control bill for another year or more.

Just why Congress should have gotten into such a slump of despondency when it would seem they should really begin to get busy, no one seems to know, especially since the House and Senate have each already passed a bill and legislation is farther advanced than in all the years they have been trying to frame a workable act to succeed the hoary old law of 1912, which is about as useful for present-day radio control as Rip Van Winkle would be as a traffic cop on Broadway.

Hoover Foresees More Suits

In justifying his assertion that things were in bad shape on the air, Secretary Hoover said that since July 1, including new stations, no less than 150 changes had taken place which might be calculated to disturb an orderly system of broadcasting. Mr. Hoover ventured the opinion that more state court suits would follow WGN's action and where interference assumed interstate status that the matter might come before federal courts.

Almost immediately thereafter a report reached Washington that station WMAQ, of the Chicago Daily News, contemplated proceeding against another local station alleging that the station was within 30 kilocycles of its own wave length, which is 10 kilocycles less than in the WGN case where the two stations were 10 kilocycles apart. Judge Wilson further expressed the opinion there should be at least 50 kilocycles separation when stations are in the same city and, based upon this, WMAQ is said to feel that it has a strong case.

Industry Sounds Call to Arms

Howsoever overshadowing any single action is the declaration of the national radio co-ordinating committee, following its recent meeting at Washington, and which practically invites everybody "to get into it." The chairman of this committee is Walter A. Strong of Chicago, representing the radio section of the American Newspaper Publishers' association, and its members are Paul R. Klugh of New York, executive chairman, National Association of Broadcasters; A. T. Haugh of Buffalo, president of the Radio Manufacturers' association; R. W. De Motte, president of the Radio Magazine Publishers' association; Charles H. Stewart of Washington, D. C., American Radio Relay League, and Harold J. Wrapp of St. Louis, president of the Federated Radio Trade association. Their call for action follows:—

"Pending the time that Congress meets and is able to give consideration to radio legislation, the co-ordinating committee urges broadcasters who had been rendering effective services to the radio public prior to the breakdown of authority to protect their interests, and hence the interests of the public, by recourse to state courts in the event of interference from stations in the same locality where the conditions are identical or favorable.

"The decision of the Chicago courts in the case of WGN against WGES sheds a ray of hope. The local court held that a separation of 50 kilocycles is necessary between stations in the same community. Confirmation of the Chicago decision in other state courts will do much to check the invasion of the ether channels, which are being planned by more than 70 stations which are now under construction.

Urges Immediate Action

"Radio legislation which will establish federal control over broadcasting is highly essential. If it is impossible to secure the enactment of permanent legislation in the immediate future Congress should pass an emergency measure which will

Arctic Explorer Will Talk at WBZ Tonight

Donald B. MacMillan, explorer, who has spent the greater part of the last 18 years within the Arctic circle, will tell of the adventures, hardships and accomplishments of Arctic explorations when he makes his debut from the station WBZ this evening at 7 o'clock.

Numerous and thrilling have been MacMillan's adventures, and his word pictures of the customs and life of the Eskimos, inland expeditions by dog sled over vast wastes and swales hunting promise a delightful half hour to his audience. On his first trip to the Arctic MacMillan was a member of Peary's expedition. Since then he has headed his own expeditions. His last trip was undertaken for the Field museum of Chicago.

prevent further confusion in the ether.

"In the enactment of legislation it is the recommendation of the committee that whatever authority is placed over broadcasting should be required to make determination of who shall broadcast by giving consideration to the length of time stations have operated, the character of service rendered by them, and the requirements of their states and communities for radio service. This principle is not intended in any way to create a vested right as against the United States, but asserts that there is a distinction between vested rights and the rights of individuals against each other.

"The co-ordinating committee of the radio industry is not taking the part of proponents of either bill, but instead is insistent that the bills be regarded from the standpoint of public service, which in the final analysis will redound to the greatest benefit not only to the public, but to the manufacturer, dealer and broadcaster.

"It is the belief of the committee that the administration of radio can be adequately handled by either the department of commerce or a separate radio commission. The determination of which authority shall administer radio is exclusively a matter for Congress; a compromise of the proposed methods may offer the most satisfactory solution."

Getting Ready for Fray

Regardless of any momentum the Chicago decision may add to popular interest in congressional relief, it is doubtful if any congressional action may be expected until after Congress convenes December 6. Representative Wallace White, Jr., Republican, of Maine, and Senator C. C. Dill, Democrat, of Washington, authors of the two radio bills to be considered, have conferred together informally and may meet again before Congress opens, but have each decided to work out their own plans for presentation to the full conference committee. Senator Dill said that Representative White agreed that it would be well to press the resolution passed by both houses, but yet to be signed, which provides that hereafter before being given a broadcasting license applicants would have to sign a waiver relinquishing any claim to a permanent wave length.

CRYSTALS OVERSEAS HEARD YOUNG TALK

Afternoon Event from Schenectady Reached England at Convenient Time

English listeners on crystal and tube sets distinctly heard the congratulatory address of Owen D. Young, chairman of the board of the Radio Corporation, to the British Broadcasting company on its fourth birthday. It was broadcast over a short wave station at Schenectady at 3 o'clock in the afternoon and received in England at 8 o'clock in the evening, their time.

"Radio not only recognizes no nationality of birth," said Mr. Young, "but it admits no national limitation of performance. It brings us together through all parts of entry; it pays no customs duties; it defies fortresses and frontiers. Only the barriers of language prevent its universal application."

"True it is that the physical agencies of transmission must be physically located and therefore they are subject to national control. Like light-bolts, these transmitting antennae lift their heads in every land, and their business truly is to enlighten and make more easy the ways of the people whom they serve. They throw out ideas and information for education. They scatter music and sports for entertainment. Like all instruments of great power, they must be wisely and responsibly used. If turned then to wrong purposes would make them engines of destruction."

Mr. Young predicted the time would soon be here when programs of international cooperation between English-speaking peoples, would be broadcast internationally.

Chinese Engineer makes RADIO a PATRIOTIC STUDY



Wei Yoh Wu, brilliant Chinese electrical engineer, is making of radio a patriotic study. While he is performing the duties of his profession for a power company in Brooklyn, N. Y., Mr. Wu—with the assistance of a compatriot, Pin Ling Shen—is pursuing exhaustive research in the field of radio, with the goal of giving to his country the fruits of his discoveries, as an objective. In a small laboratory in Astoria, N. Y., Mr. Wu and his colleague are delving into the technical meshes of the newest of the sciences, and while so engaged they are demonstrating their knowledge of their subject in the construction of many beautiful and really novel radio sets for receiving purposes. They have at least one set for every known type of reception, and by throwing switches they can compare reception by regenerative, autodyne, tuned radio frequency, etc., receivers.

Photograph No 1 shows Wei Yoh Wu with the loop of his compact seven-tube superheterodyne receiver. He has brought in practically every

Wave Piracy Checked By Chicago Action

Protection Granted by Courts Not Believed to Extend Over 50 Miles and Increased Power May Neutralize This

WASHINGTON—After the establishment of its ether rights in Chicago by broadcasting station WGN, of the Tribune, station WMAQ, owned by the Chicago Daily News, will seek an injunction to prevent station WJBT, owned by John S. Boyd of Chicago, from interfering with the News station in the same city.

Judge Wilson of the circuit court of Illinois held that station WGES must broadcast on a wave length which would not materially interfere with the programs of WBN. This victory was the first step in the establishment of ether rights in a state. Station WGN had been using the 302.8 meter, or 990-kilocycle channel in Illinois for some time and went to court to prevent station WGES from changing its wave of 315.6 meters or 950 kilocycles, separated from WGN's wave by 40 kilocycles, the use of which caused material interference when they were both operating.

FANS CARE NOT WHO CONTROLS RADIO

Legislators Should Be Written to, However, to Effect Something at Early Date

Chicago, Nov. 26.—Unless Congress acts without further delay to regulate radio broadcasting there will be more than 1,000 stations on the air, most of them claiming "squatter rights," to harass and annoy the listener who wants good programs and wants them without interference.

CHICAGO CASE FAVORS PRIORITY

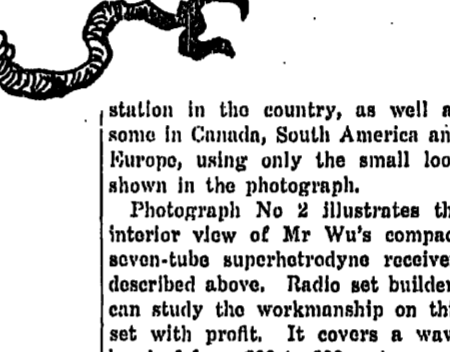
Decision Upholds Power of Congress to Regulate Radio Situation, Says Judge Davis

Washington, D. C., Nov. 27.—In response to many questions regarding the government's attitude toward the WGN decision, Judge S. B. Davis, acting secretary of commerce, said:—

"The decision of the Illinois court in the Tribune case does not hold that there is any vested right in wavelengths. Judge Wilson points out that the case before him was entirely a contest between individuals, one attempting to enforce a civil right against the other under common law rules. Neither party claimed any right as against the United States, and none is recognized in the opinion. On the contrary, Judge Wilson upholds the power of Congress to regulate the situation fully and completely when it chooses to do so.

"This decision, if it is followed by the higher courts and in other jurisdictions, means that stations with efficient and established services may protect themselves and their listeners against unreasonable disturbance by stations in the same locality and subsequent in time. Judge Wilson applies the 'rule of priority in time greater than right,' and in doing so he blazes a new trail so far as radio is concerned, for this is the first case in the United States, and probably in the world, in which the rule has been thus invoked.

"Judge Wilson points out, however, that he has merely adapted an old and well recognized principle to a new condition, for it has been applied over and over again in other



station in the country, as well as some in Canada, South America and Europe, using only the small loop shown in the photograph.

Photograph No 2 illustrates the interior view of Mr. Wu's compact seven-tube superheterodyne receiver, described above. Radio set builders can study the workmanship on this set with profit. It covers a wave band of from 200 to 600 meters, and uses resistance coupling in its three-tube audio amplifier.

The third picture shows Wei Yoh Wu (seated) and his assistant, Pin Ling Shen, at work in their Astoria, N. Y., laboratory. It is interesting to note that both of these young Chinamen came from Nanyang, but met in this country entirely by accident.

Solve Problem of Bell Broadcast

In broadcasting the carillon of the Park-avenue Baptist church at 7 o'clock Sunday night, the engineers of station WJZ will use what they call "a remote microphone." Remote control is an old phrase in broadcasting circles, but "remote microphone" seems to be a new phrase coined by the engineers to solve a problem which has troubled them for some time.

In testing for the pick-up of the carillon, it was found that the sound made by the bells was so intense that if the microphone was placed within 50 feet of the carillon, each time the clapper struck one of the bells the microphone would buzz. On the other hand, when the microphone was placed far enough away from the bells to avoid the blasting factor, noises from the street entered the microphone. The problem seemed to be without solution until someone conceived of the idea of "reflected sound waves."

WHY CHEAP TUBES FAIL TO LIVE LONG

Filaments Made of Thin Platinum Which Soon Loses Power of Electron Emission

Our modern radio amateur, while conversant with all sorts of radio receivers and "hookups," is sadly lacking in knowledge when it comes to the subject of radio tubes. This is undoubtedly due to the fact that the making of a radio tube is far beyond the skill and resources, and not being able to build the tube at home, he has lost interest in the details of its construction.

AERIAL GOLF IN NEW GUISSE

Among the many games devised having the radio receiver as the central figure, the most interesting is the game of "Radio Golf." With a good radio set at hand, and with a number of self-experts in attendance, the game is certain to provide a highly interesting and exciting evening's entertainment.

Each of the most interesting features, and certainly the noisiest, is the wild debate and post-mortems that take place at the 19th hole. If the host is at all a sensitive man, or proud of his radio set, he will be startled out on the back porch while the shortcomings of the set are being discussed with considerable heat by the losing side.

In its original form, radio golf was simply a contest to determine who could tune in the greatest number of stations in a given time, regardless of their distance. There was no inducement, therefore, for the contestants to get real distance or difficult stations, and the game fell rather flat and was not particularly interesting.

Finally, however, some genius arose who conceived the idea of scoring the total mileage of the stations obtained from a map, so that the person who ran up the greatest mileage in a given period was declared the winner.

It was this last touch that added the necessary pep to the game and elevated it to a highly interesting and exciting contest. Distance now became a necessary part of the game, and it was necessary for it to be quickly learned that one station at 100 miles counted as much as 10 stations at 10 miles, and that less time was lost in waiting for the station's signature or letters. Each person takes his turn at tuning in, the length of time allowed depending upon the number of persons in the party. Prices can be awarded to the largest individual score or to the winning team when the guests are divided up into sides. It is easy to see that the latter is likely to provide the most amusement if the teams are well matched in regard to tuning ability. With three five-minute chances per station, teams have often exceeded 100 miles. Waiting for the station signature at the end of a number introduces the element of luck into the game, and unluckily he who cannot identify tunes in a station just as a series of nice long orchestral numbers are being started.

Superpower Far Worse Than Crowded Ether

Wattage Has Increased So That Pacific Transmitters Now Heterodyne With East Coast Units and Canada With the Gulf

[By CARL H. BUTTMAN]

ONE of the most interesting developments in the radio broadcasting industry during the past five years is gradual increase in power. A 500-watt was a big station a few years ago, whereas today even 5000-watt stations are not considered as powerful; only the 50-kilowatt stations are termed superstations these days. Not all our stations are of high power of course; many of them are tiny local affairs, but the average power today is 840 watts a station, a gain of 619 watts over the average power in 1922 and 136 watts over last year.

The average power has increased as follows: June, 1922, 149.4 watts; 1923, 159.1 watts; 1924, 190.5 watts; 1925, 312.4 watts; 1926, 715.8 watts, and today it is 840 watts, or a total of 510,000 watts for 615 stations. This is a great increase in the past two years, or since the event of a few very high-powered transmitters and an increase to 1000 watts and over by many stations.

It is truly said that the increase in power has been more of a nuisance by causing interference than the increased number of stations and the wave shifters. The reason for this is because, with high power, stations separated by considerable distances now begin to interfere; that is, if they are not separated by a number of radio channels, technically by about 20 kilocycles. Pacific coast stations and Atlantic coast stations, originally operating on the same channel without interference, now heterodyne each other, and those separated by only a few kilocycles also interfere. Gulf stations interfere with the reception of some Canadian stations since higher power is used. The limitation of power, it may be recalled, was also held to be beyond the jurisdiction of the department of commerce at the same time assignment of wave lengths was denied by the acting attorney-general.

High lights of Commission of Navigation Carson's annual report reveal that of the 528 active broadcasters on June 30, two were rated at 50 kilowatts, one at 20 kilowatts and 16 at 5000 watts. The others were listed with varying power, from four stations with only five watts each to 78 of 1000 watts or more. The largest number of stations on a single rating was 139 with 500 watts each, the old reliable power rating which many think is high enough, except for very long distance transmission.

Sees Transoceanic Radiophone

Total appropriations for the radio section in 1927 amounted to \$336,000, against \$220,526 last year, the increases having been made to enable the supervisors to secure better testing apparatus and instruments, as well as a few radio testing trucks, and for increased travel and inspection. The salary increase amounted to about \$66,000, but included a number of new employes.

Predictions as to the operation of transoceanic radio telephone services are made by Commissioner Carson, who anticipates the first such commercial service between Great Britain and the United States at an early date. Already commercial radio picture circuits are operating between New York and London, and between San Francisco and Hawaii. Radio compasses for use in aiding navigation at sea are now operated on 230 American flag vessels, he points out, against only 88 a year ago.

In general, the commissioner believes that the use of radio in many commercial applications as well as for entertainment is growing rapidly in public favor, but he adds that there is urgent need for adequate radio laws, without which it is difficult to forecast the actual conditions even during the next few months.

Our modern radio amateur, while conversant with all sorts of radio receivers and "hookups," is sadly lacking in knowledge when it comes to the subject of radio tubes. This is undoubtedly due to the fact that the making of a radio tube is far beyond the skill and resources, and not being able to build the tube at home, he has lost interest in the details of its construction.

Further, the reason is such that the tubes are very poor radio frequency amplifiers or detectors so that it is impossible to get distant stations or even local stations with the proper volume. From the instant that the cheap tubes are used, the receiver's sensitivity starts to drop off and within a relatively few hours they are useless for distance reception.

An honestly built tube employs the costly tungsten wire for the filament which is several times more expensive than platinum, and then this tungsten wire is "thoriated" or impregnated with the thorium, which tremendously increases the electron emission with a given amount of battery current.

And at Two Dollars

Tungsten is an extremely hard and refractory metal which can be held at incandescence for hundreds of hours with but little loss by evaporation so that it is by far the most economical tube for the owner. The efficiency of the high grade tube and its length of life is still further increased by the proper degree of evacuation or vacuum within the tube, and evacuation is also an expensive process that is treated lightly by the manufacturer of the cheap tube. Under present conditions of manufacture it is impossible