HEINL RADIO BUSINESS LETTER

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No. 1148

STANDARDS BUREAU OFFERS MONTHLY RADIO FORECASTS

Disclosure that the U. S. Bureau of Standards is offering a service of monthly predictions of ionosphere and radio conditions was made in the annual report of the Radio Section released this week.

"Sufficient experience had accumulated so that this year a service of ionosphere predictions was begun", Dr. J. H. Dellinger, Chief of the Radio Section, stated.

Predictions three months in advance, he explained, are made on the basis of current observations of the changes from month to month, together with knowledge from past years of seasonal changes.

The introduction of the term "radio sonde" was another innovation of the year, the report revealed. This name is now applied to the device formerly known by several names, including "radio meteorigraph".

"A radio sonde is an assemblage of meteorological and radio apparatus carried aloft on a small balloon for the purpose of obtaining information regarding atmospheric conditions", the report explained. "In the form developed by the Bureau for the Navy Department, it transmits to the ground indications of temperature, pressure, and humidity, by means of a varying modulation frequency in an ultra high carrier frequency. At the receiving station on the ground an automatic recorder continuously draws a graph showing the three elements as the radio sonde ascends and descends.

"During this year it was put into extensive use by the aerological services of the Navy Department, Weather Bureau, and Coast Guard. Thus, the Weather Bureau made daily routine use of the system at six stations throughout the country, to replace the daily soundings hitherto made by airplane flights. The Navy Department used it at one ground station and two shipboard stations, and the Coast Guard used it on two ships of the International Ice Patrol. Some 3000 radio soundings were made during the year in the regular course of collecting upper-air weather data. The great improvement in the regularity and range of the upper-air observations obtained from supplanting the airplane method of sounding led to plans for increased use of the radio sonde system; the Weather Bureau and the Navy planned to use it at many more stations than they ever used airplane observations.

"The Bureau cooperated with each of the agencies which started to use radio sondes, and with the manufacturer supplying them. In supervising the initial processes of producing and using the device, the Bureau developed a number of detailed improvements indicated to be required by service experience. Thus, a new seal for the capillary electrolytic thermometer was developed which eliminated difficulties encountered in early service use from polarization, change in electrical characteristics, and breakage. The relation of the electrical resistance of the capillary thermometer to the controlling resistors in the radio-sonde transmitter was altered to provide for increased accuracy of temperature indication, particularly at stratosphere temperatures. The accuracy of the frequency indicating and recording system was improved by adoption of a standardized method of calibration; a feature of this method is the flexibility provided for interchange of component units.

"The regularity of operation was found to be materially better than when using airplanes, since practically no interruption to service was experienced during adverse weather conditions which would preclude the possibility of airplane soundings. The average limit of height of soundings was about 11 miles instead of the 3 miles obtained in airplane soundings.

"The accuracy of the observations obtained was determined by extensive testing in cooperation with the Navy Department and the Weather Bureau, and was found to be of the same order as in airplane soundings. The accuracy of pressure observation is within 15 millibars. The accuracy of temperature is within one-half degree Centigrade. The estimated accuracy of the humidity observations (with the hair-type hygrometer at temperatures above $0^{\circ}C$) is within 10 percent relative humidity."

Outlining other activities of the Radio Section, Dr. Dellinger said:

"The processes of radio wave transmission were investigated, principally by continuous recording of radio wave intensities from distant radio stations and by observations on radio echoes from the ionosphere. This work supplied useful information on a number of practical problems such as: selection of radio frequencies for transmission over specified distances at various times of day and year; determination of received intensities and limit of usable frequencies for various distances, times, and locations of transmission path; means of carrying on radio communication at times when radio conditions are irregular because of disturbances radiated from the sun or other causes.

The results of the Bureau's radio wave research were extensively utilized by others, e.g., by the Interdepartment Radio Advisory Committee in its work of assigning frequencies to Government radio stations, and by the Government committees preparing for the next meeting of the International Radio Consulting Committee.

"The regular broadcasting of standard frequencies was carried on throughout the year and its high reliability and accuracy were further improved. Modulators of higher output were installed, and frequency multiplying and monitoring devices were made more positive and automatic. The primary standard of frequency was improved by the addition of oscillators of greater constancy."

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CALL LETTERS OF INTERNATIONAL STATIONS CHANGED

By order of the Federal Communications Commission the call letters of all United States international short-wave stations are being changed to conform with the FCC order removing the experimental limitation.

The letter "X" has designated the stations as experimental, heretofore, so that the new call letters have dropped this identification.

FCC officials are waiting for the stations to select their own new call letters before announcing a complete new listing. However, those that have been changed are Columbia's W3XAU to WCAI and General Electric's W2XAF and W2XAD to WGEO and WGEA, respectively. G.E.'s San Francisco station's identification is changed from W6XBE to KGEI.

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NORWAY ADOPTS LAW RE AERIALS

The new law on leases recently passed by the Norwegian Parliament lays down the following provisions covering the erection of aerials:

"The tenant must not install an aerial on the premises or make such alterations in the dwelling or the room occupied as would invclve removal of flooring or stoves or similar objects, without the landlord's consent.

"Should the landlord, without justification, refuse consent to the installation of an aerial or to a necessary alteration of the kind referred to above, the Building Council, upon receipt of a complaint from the tenant, may authorize the alteration. If no Building Council has been instituted the complaint will be referred to the Committee of Conciliation for decision.

"The application of the conditions in the preceding paragraph cannot be waived by agreement."

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FCC HOLDS RECESS MEETING; COMMISSIONERS DEPART

The Federal Communications Commission, in Summer recess, held a special meeting this week to act on emergency cases before two Commissioners, George Henry Payne and Paul A. Walker, left Washington for the West Coast on FCC business.

Three new stations were approved. Construction permits were granted to the Hiawathaland Broadcasting Co., Sault Ste. Marie, Mich., to operate on 1200 kc., 100 watts night, 250 watts daytime, unlimited time, and the Yuma Broadcasting Co., Yuma, Ariz., for 1210 kc., 100-250 watts, unlimited time.

Proposed findings of facts and conclusions proposing to grant the application of WJMS, Inc., Ashland, Wis., to construct a new station to operate on 1370 kc. with 100 watts power, unlimited time were announced.

Among other action taken was the following:

Maj. Edwin H. Armstrong, of New York, was granted a construction permit for a new special high frequency relay broadcast station to use 133030, 134850, 136810, and 138630 kc. with 50 watts power.

The application of Mariannina C. Iraci, transferor, and Arde Bulove, transferee, for consent to transfer control of William Penn Broadcasting Co., licensee of WPEN, Philadelphia, was granted. Station WPEN operates on 920 kc., with 1 KW power, unlimited time.

The Travelers Broadcasting Service Corp., Hartford, Conn., was given a construction permit for a new high frequency broadcasting station to operate on 43200 kc., experimentally, with 1 KW power, unlimited time.

WOKO, Inc., Albany, was granted a permit to build a new facsimile broadcast station to operate on 25050 kc., with 500 watts power, conditionally.

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"If present negotiations are consummated", Leonard Lyons, Broadway columnist, said this week, "practically every Broadway movie house will soon display a television set. . . . which reminded Bobby Clark of the early days of radio, when he was appearing at the Palace Theater. . . One member of the troupe rushed off between shows to appear on a radio program - and this enraged E. F. Albee, who summoned George Godfrey, the Palace's booking-manager, and instructed: 'I want you to put a clause in all my contracts, forbidding artists to work on the radio. I'll put those damn radio companies right out of business.'"

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FREQUENCY-MODULATION HIGH-FIDELITY RECEIVERS ON MARKET

The first frequency modulation radio receivers designed for sale to the public have been announced by the General Electric Radio and Television Department, Bridgeport, Conn., and are now being shown in New York and New England, only sections of the country to date in which there are transmitters and broadcasting stations utilizing the new system developed by Major E. H. Armstrong. Three models are now available, two of them equipped to receive only frequency modulation broadcasts, and a third which also combines three-band radio reception of the conventional type.

Outstanding characteristic of the new receivers, so far as the public is concerned, is their ability to recreate music and voice to an astonishingly lifelike degree, with an almost complete absence of static and interference. The receivers faithfully produce the fundamental notes and harmonic overtones, retaining the personal element even in a human whisper. The individual instruments of a symphony orchestra which ordinarily defy reproduction, such as the tambourine, cymbal, and triangle, can be made to emerge with clarity. G. E. engineers have been engaged in the development of frequency modulation receivers for the public for more than two years, and the ones just announced have undergone rigid testing.

The new model HM-136 makes available standard American broadcasts, foreign and domestic short-wave stations, and those transmitters of the frequency modulation type now in operation. Its five-position tone selector makes possible the adjustment of tonal balance over a wide range in accordance with personal preferences. It is equipped with a 10-inch dynapower speaker with curvilinear cone, field of Alnico, and has terminal connections for a public address system, so that the programs may be fed directly into such a system when desired. A television audio and phonograph key automatically permits the listener to enjoy television sound programs and can be used in conjunction with a television picture receiver, thus tieing-in the other major development of the year in a single instrument. Eleven feathertouch tuning keys are provided for standard broadcast stations.

The tuning range of this receiver, for frequency modulation, is 39 to 44 megacycles; for short-wave, 7500 to 22,000 kilocycles; for police-amateur, 2400 to 7500 kilocycles; and for standard broadcasts, 540 to 1600 kilocycles. Additional features are a multi-vision sliderule dial, floodlighted station finder, drift-proof station setting, tone monitor circuit, automatic tone compensation and volume control. It has 20 watts output, uses 13 tubes.

There are currently three broadcasting stations operating on the frequency modulation system - two in New England and Major Armstrong's original transmitter at Alpine, newr New York City. This fact temporarily limits the markets in which frequency modulation receivers can be sold, as in the case of television. The transmitters have a range of approximately a hundred miles, or twice that of television transmitters of equal power. The Alpine station, in the New York metropolitan area, rebroadcasts the radio programs of WQXR at the present time. Daily half-hour programs are broadcast every hour on the hour, from 11 A.M. to 4 P.M., and after 4 P.M. the program is continuous until 11 P.M.

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SWISS NEGOTIATING FOR LEAGUE'S STATION

The Swiss Government is negotiating with the League of Nations for the purchase of the League's broadcasting station, according to a Geneva correspondent of the New York Times. An agreement is expected soon.

Two chief considerations are said to have prompted Secretary General Joseph A. C. Avenol to authorize the negotiations: First, expenditures recently have greatly exceeded receipts, and the League's declining membership necessitated a sharp budget reduction. Secondly, by agreement with the Swiss Government, the station enjoys extraterritoriality and might prove a source of embarrassment to neutral Switzerland in a war.

The League has received inquiries from broadcasting companies and press associations, especially in the United States whether the station would be available for dissemination of uncensored newsin case of war. Berne, greatly concerned as to possible uses to which this station might be put, offered to buy. Negotiations dragged on until fire last month destroyed the Swiss Government's new short-wave station at Schwarzenberg.

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BRITISH CONSIDER $5 FEE FOR TELEVISION SETS

Owners of home television units in Great Britain will have to pay a special license fee for the privilege, if the Government adopts recommendations of the Television Advisory Committee set up by the Postmaster-General. Every user of a radio already pays 10 shillings ($2.50) annually to the Government for the privilege, out of which the British Broadcasting Corporation is financed, but the plan now is to have a special fee of one pound ($5) for vision sets, covering both picture and sound reception, meaning the viewer will pay out 10 shillings extra.

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TWO STATION REVOCATION HEARINGS SCHEDULED

Revocation hearings on complaints against two broadcasting stations were scheduled this week by the Federal Communications Commission.

John H. Stenger, Jr., licensee of Station WBAX, Wilkes-Barre, Pa., was ordered to show cause why the license of his station should not be revoked because of circumstances in regard to management and control of station. The date was not set.

A hearing before Commissioner Norman S. Case was scheduled for September 25 in the revocation proceedings involving Albert H. Schermann, Yuma, Arizona.

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NBC APOLOGIZES FOR WPA CHARGE AGAINST TYDINGS

The National Broadcasting Company broadcast an apology to Senator Milliard E. Tydings (D.), of Maryland, Wednesday night for an assertion made on a program July 25 that WPA funds had been used to build a private road and a yacht basin on his estate, the Washington Star reports.

The apology said that Bob Allen, newspaper columnist, had made the assertions in an NBC program.

It said Senator Tydings had told the company the statement was "entirely without foundation in fact", and Col. F. C. Harrington, WPA Commissioner had advised it that an investigation "failed to substantiate the allegations".

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CANADA EXPLAINS NEW RULE ON SPONSORED PROGRAMS

Under the Canadian Broadcasting Corporation's new arrangements for administering subsidiary "hookups" of privately-owned stations - to be effective September 24 - the CBC itself will deal directly with sponsors. The new plan was reviewed by the CBC Board of Governors at a meeting in Ottawa. A statement explaining the change was issued as follows:

"Under the law the Corporation is the sole network authority. In addition to administering its national and regional networks, the CBC is responsible for the temporary, informal, limited hook-ups comprised mainly of privately-owned stations which it sets up for special purposes from time to time. These are called subsidiary hook-ups. In the past, the CBC has

restricted its function to approving subsidiary hook-ups, as application was made. In the future, it intends, in addition, to make all the necessary arrangements such as dealing with sponsors and agencies direct, booking time on the stations concerned, quoting rates, and other like administrative details. This is in accordance with the policy stated before the Parliamentary Committee. The change does not involve the taking over of private stations or interference in their operation. It is largely one of administrative procedure."

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TRADE NOTES

The Federal Communications Commission has adopted an order calling upon foreign communications carriers to make a study of their traffic on September 7, 12, 16, 17, 20, 25, and 29, to be reported to the Commission on or before November 10, 1939 in order that the Commission may be more currently informed, particularly so in preparation for the forthcoming international telegraph conventions to be held in Lisbon, Portugal, in 1940, and in Rome, Italy, in 1942.

Virginia Campbell, actress, is ill at her home in Westport, Conn., apparently from the effects of the intense lighting used for a television broadcast, according to Variety. She has been suffering severe headaches and sudden dizzy spells, but is somewhat improved, although still under a physician's care.

She appeared on a televised dramatic program two weeks ago for NBC. She became ill immediately afterward her eyes becoming affected first. It is believed hers is the first such case, although "klieg poisoning" is a common ailment among film players, particularly since the introduction of color photography, requiring more intense lighting.

The Columbia Broadcasting System has signed agreements with L. B. Wilson, Inc., whereby WCKY, Cincinnati, becomes a CBS affiliate effective October 1. The station recently assumed maximum power facilities, broadcasting with 50,000 watts power night and day at 1490 kilocycles. Affiliation of WCKY improves Columbia's coverage of the Cincinnati area by substituting a 50-kilowatt transmitter for WKRC, with 5000 watts day power and 1,000 watts at night. WKRC, which is owned by CBS, will continue to be operated by CBS as a local station.

Stations WBLK, Clarksburg, West Virginia, and WGKV, Charleston, capital of the State, will become affiliates of the National Broadcasting Company on September 24, bringing NBC's station total on that date to 174. WBLK is licensed to The Exponent Company to operate full time on 250 watts on the 1370 kc. channel. John A. Kennedy is President and General Manager.

Station WGKV, which is now being constructed under a permit held by the Kanawha Valley Broadcasting Company, operates full time on 100 watts on the 1500 kc. channel.

Auto-radio is fast becoming an all-year-round business, reports Sayre M. Ramsdell, Vice President of Philco Radio & Television Corporation.

"While seasonal peaks in auto-radio still remain, these peaks are showing a tendency to level off", Mr. Ramsdell declared. "I believe the reason for this trend is two-fold - first, the tremendously high peaks in automobile sales themselves are showing definite signs of spreading over much longer periods of time; second, auto-radio sales are becoming less closely geared to the automobile touring seasons."

William C. Steffy and G. V. Parkinson, trading as Atlas Globe China Company, Advertising Department, Rogers Silverware Distributors, Bordeaux China Company and China Sales Syndicate, 549 West Washington Boulevard, Chicago, were ordered by the Federal Trade Commission to discontinue false representations in the sale and distribution of silverware, earthenware, chinaware, radios or sales promotional plans and to also discontinue the use of lottery methods in the sale of merchandise.

The respondents are prohibited from misrepresenting the retail price of radios; selling any merchandise by means of a lottery scheme, or supplying others with lottery devices so as to enable such persons to sell any merchandise.

It is also ordered that the proceeding in relation to Lorina Steffy, mentioned as a respondent in the Commission's complaint, be closed without prejudice.

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A. T. & T. CHANGES TO SAVE USERS $1,060,000

The Federal Communications Commission announced this week that it has received for filing from the American Telephone & Telegraph Company's long lines department tariff changes which will result in an annual savings to users of $1,060,000.

Affected are private line Morse services, private line typewriter service, private line telephone service, press and government bulletin news service, and channels for program transmission.

In the latter category, the turning points in connection with the computation of interchange channel charges have been eliminated.

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NBC TELEVISION SIGNALS REACH CAPE COD

Television images from the National Broadcasting Company's station W2XBS atop the Empire State Building are being picked up regularly and clearly on Cape Cod, a distance of 185 air-miles from New York City, according to Dean R. Barker, a radio and television engineer who operates an experimental receiving station near West Falmouth, Mass.

Mr. Barker reported to RCA and NBC officials that he uses a home made 21-tube set with a five inch kinescope, a portable 40-foot mast and a two-element antenna beam. Although television signals are supposed to carry only to the horizon as seen from the top of the transmitting antenna, Mr. Barker says that he picks up hour-long programs from W2XBS without the slightest difficulty and with little or no interference.

The engineer's only explanation for the phenomenon is that the signals travel almost exclusively over water from the transmitter to West Falmouth. He points out that at his home in Taunton, Mass., which is far inland from the Cape, he is unable to pick up any visio signals from W2XBS.

Mr. Barker, a member of the Institute of Radio Engineers and the American Radio Relay League, operates amateur station WIJLY.

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