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BBC NOTES INCREASING USE OF SHORTER SHORT-WAVES

"The most noteworthy trend in short-wave propagation conditions during 1936 has been the increasing use made of the shorter waves, namely those of the order of 14 and 17 metres", the British Broadcasting Corporation notes in its 1937 annual just released.

The annual, which reviews progress in the technical and program fields, also carries descriptions of the BBC television stations and the service now in operation.

Explaining the trend toward shorter short-waves, the BBC says:

"Short waves are propagated round the earth by reflection or refraction in the ionosphere and the amount of bending that takes place depends on the wavelength and on the intentisy of ionization in that sphere. The more intense the ionization, the shorter is the wavelength that is reflected. Although the exact mechanism of the action of the sun in producing ionization in the ionosphere is not yet fully understood, it has been observed that there is a fairly close correlation between the degree of ionization and the activity of the sun as evidenced by sunspots. Here the wireless engineer and the astronomer meet on common ground. The one observes the trend of short-wave propagation conditions; the other observes the sun with his telescope or spectrohelioscope and records the varying degrees of solar activity. A convenient figure to express solar activity is the mean daily area of sunspots in a given year expressed as millionths of the sun's visible hemisphere. Observations at the Royal Observatory, Greenwith, give the following figures for this: 1932, 163; 1933, 88; 1934, 119; 1935, 624; and 1936, up to June 30th, 1200; from which the sunspot minimum year is shown clearly as 1933. The great increase in activity in 1936 is also well illustrated, coinciding with the wireless engineer's observation that much shorter waves were needed. For instance, in earlier years, a wavelength of 17 metres had been short enough to give a midday service to South Africa during the Autumn. But to provide an equivalent service during the past year, it became necessary to use 14 metres, as it was found that the 17 metre wave was severely attenuated on some days. There is evidence that an even shorter wave - say of 11 or 12 metres - might have been the optimum, for on some days the ultra-short wave transmissions from the London Television Station at Alexandra Palace on 6.67 and on 7.2 metres were received in Cape Town and Johannesburg. Another instance of

this trend was the relatively large number of days on which American amateur stations and police stations on 9 and 10 metres, working on very low power, were audible in this country.

"The use of the shorter waves is advantageous because atmospheric interference decreases rapidly with decrease in wavelength and relatively weak signals can give noise-free reception if receivers are available to cover these wavelengths efficiently. The need for such receivers has been well demonstrated in the past year in Africa, in India, and in Malaya, and those designed for the reception of Empire broadcasting should cover efficiently at least the lowest waves at present in use at Daventry, i.e., GSH and GSJ, 21.47 and 21.53 mc/s respectively (approx. 13.9 metres).

"The range of wavelengths necessary to cover the Empire in the different conditions of day and night, winter and summer, remains about the same. In 1933, when 17 metres was the lowest wavelength used, it was necessary to use a wavelength of the order of 70 metres to serve Canada at night in mid-winter. A wave of this length was outside the bands allocated to broadcasting by the Madrid Convention of 1932; consequently, Canada could not be served for a number of nights in mid-winter. With the physical trend towards the shorter waves, 70 metres becomes unnecessary and, in fact, the use of 50 metres has been called for on only a few nights at the end of 1936 and the beginning of 1937. This is fortunate, as interference in the 50 metre broadcasting band is very severe, owing to the use of this band by a large number of low-power local broadcasting stations in Central and South America. While the local service range of these stations is very small, they are capable of producing widespread interference and, indeed, the whole of Canada and the West Indies have had serious interference from this source.

"The trouble is spreading, as these small stations have followed the trend towards the use of shorter waves and are now using waves in the 31 metre band. Six Central American stations are now causing interference to Daventry on four of its wavelengths, namely, GAS, GSL, GSB and GSC on 6.05 mc$\frac{3}{4}$s, 611 Mc/s, 9.51 Mc/s, and 9.58 Mc/s respectively. Strong representations have been made to the authorities by the British Post Office, but so far, unfortunately, with little effect. Daventry is not the only station to suffer, and the value of short-wave broadcasting is being seriously compromised by this problem of interference. Proposals to deal with it at the next World Communications Conference to be held in Cairo in 1938 are receiving consideration."

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AUSTRALIAN PRAISES AMERICAN BROADCASTERS

J. S. Larkin, Sales Manager of Nilsen's Broadcasting Service, Melbourne, Australia, was in Washington last week. He said that he had made a trip to the United States especially to study our broadcasting system, and the program construction and material used here.

Mr. Larkin said, in view of the fact that Australia is approximately seven-eighths the size of the United States that this was the only country whose radio problems more nearly approximate those of Australia.

Mr. Larkin was especially pleased with the reception he had received here, he told Thomas P. Littlepage, Sr., radio counsellor, on whom he called in Washington, and said that all the broadcasters had been most courteous to him, and he had learned many things of interest. He was very much gratified at the assistance that had been rendered him, and was impressed with the progress that broadcasting had made in the United States.

"The Australian problem does present a very difficult situation in view of the great area but with a population for the whole continent of six million people, which is less than that of New York City", Mr. Larkin said, "I found the American broadcasters to be gentlemen and indeed they were very helpful to me."

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MONOCACY LOSES APPEAL FROM FCC DENIAL

Suit by the Monocacy Broadcasting Co. to restrain the Federal Communications Commission from holding a public hearing on the granting of a permit for erection of a broadcasting station near Rockville, Md., was lost in the United States Court of Appeals Monday. It was ruled that the company should have appealed directly to the Appellate Court instead of seeking an injunction in the District Court.

The company contended its application had been approved tentatively when a belated objection was filed by a local station. It was to bar the hearing of the latter protest that the company sought an injunction. The court did not pass upon the merits of the question.

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LOHR SEES GREATER DEVELOPMENTS JUST AHEAD

Radio receivers that will print newspapers in the home, bring actual pictures of events and reproduce sounds with absolute fidelity were predicted by Lenox Lohr, President of the National Broadcasting Company, in an address in Washington this week.

Speaking before the Washington Board of Trade at the Hotel Mayflower, Major Lohr declared that all three developments - facsimile broadcasting, television and ultra-high frequency sound broadcasting - are workable and are definitely out of the laboratory stage.

He forecast, however, that it would be "at least a year" before any of them could come into general use.

Before out of town newspaper correspondents and local newspaper officials gathered to attend the Trade Board's annual "press night", Mr. Lohr was careful to point out that the newly developed "facsimile broadcasting", while capable of producing a complete illustrated newspaper in the home, would in no way compete with the newspaper industry.

At present, he said, the facsimile broadcasting doesn't do such a good printing job as do newspaper presses and is, also, tremendously expensive. He added that even if these two handicaps should be overcome, the newspaper would still have to gather and assemble the news.

Major Lohr declared that ulstr-high frequency sound broadcasting isn't in general use today because there are few receivers capable of picking up such broadcasts. He praised the development, saying that ultra-high frequency receivers had perfect fidelity and were entirely free from natural static.

The speaker said that his company is now conducting nightly television broadcasts, but that all receiving sets were in the hands of company engineers. He emphasized the danger of "freezing the art" by allowing thousands of sets to be sold to the public and thus blocking scientists from making further improvements.

Other obstacles in the path of television, Mr. Lohr said, are the great expense - which presumably will have to be borne by advertisers - and the difficulty of "networking" programs. Television waves, unlike radio sound waves, cannot be relayed over telephone wires but require either special cables or short wave transmission relays. Experiments are being made with both possibilities, the NBC president said.

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RADIO SET PRICES GOING UP, SAYS EDITOR

Survey of radio industry shows that current rises in raw materials, parts, and labor costs will soon be felt in radio-receiver prices, according to O. H. Caldwell, editor of Radio Today. "A boost of 10 to 15 per cent is looked for when the new lines are announced in May or June with perhaps more increases later", he said in the current issue.

"Facing labor difficulties, some set-makers have been cautious in fixing new prices too early. Factories which have not yet been forced into union contracts are holding back announcements until they learn what uppance may be needed to meet new costs.

"If coming price increases do not exceed 10 to 12 percent, distributors and dealers feel that boost will not seriously affect consumer buying, since radio purchases are made at long intervals by any one family or buyer, and price memory does not linger.

"Unless sit-downs and lock-outs further hold up automobile production, 1937 is going to be auto-radio's biggest year, by far.

"Plans of the car-makers contemplate a 30 percent increase in number of car-radios installed this season as compared with last year, when auto-radio sales were 2,000,000 sets, according to observers in a position to review all makes.

"At least one million auto-radio sets will be sold through local retail dealers during 1937, according to this same authority."

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EDITORS OPPOSE CURB ON PRESS-OWNED RADIO STATIONS

Opposition to the proposal of Senator Wheeler (D.), of Montana, to impose a curb on the ownership of broadcasting stations by newspapers was voiced last week at the closing session of the American Society of Newspaper Editors in Washington.

A resolution objecting to "efforts in Congress to prevent newspapers owning and operating radio stations" was adopted.

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ARTA RUMORED REFUSED A. F. OF L. CHARTER

The press reports carry the announcement of the granting of a charter by John Lewis' C.I.O. to the American Telegraphers' Association.

The rumor in labor circles here in Washington is that this organization, known as the ARTA, several months ago applied for affiliation with the Commercial Telegrapher's Union, a branch of the A. F. of L. It is said that a charter for this affiliation was denied on the ground that the ARTA refused to comply with the rules and requirements of the A. F. of L. and further that the A. F. of L. had information that the ARTA was really backed by Communists.

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HARBORD TO BE AWARDED MEDAL OF MERIT

Maj. Gen. James G. Harbord, Chairman of the Board of the Radio Corporation of America, who was Chief of the Services of Supply of the American Expeditionary Forces during the World War, will be awarded the Medal of Merit of the Army Ordnance Association.

The award will be in recognition of General Harbord's service to the national defense and to the industrial development and social betterment of the United States "as a soldier, humanitarian and public-spirited citizen."

The medal will be presented at the annual dinner-meeting of the Army Ordnance Association at the Mayflower Hotel the evening of May 12. Hilaire Belloc, British author, historian and military analyst, will address the Association on the subject, "Yesterday's Wars Are Not Tomorrow's." General Harbord will speak on "Radio and Industrial Preparedness."

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Among new fields explored by the Rockefeller Foundation in the humanities division during 1936 were the movies and the radio, it was disclosed last week. The World Wide Broadcasting Foundation, which furnishes electrical transcriptions for broadcasting, received $40,000 "for trial work in the development of radio programs of cultural and educational value", it was stated.

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TRADE NOTES

The Telegraph Division of the Federal Communications Commission has amended Rules 411 and 442 to read as follows:

"Rule 411. No applicant who fails to qualify for an operator's license will be reexamined within 3 months from the date of the previous examination.

"Rule 442. An applicant who fails examination for operator license of professional class may not be reexamined within 3 months, but this does not apply to examination of radio-telephone type following one of radiotelegraph type, nor vice versa, nor one for lower class following one for higher class of the same type, nor to successive examinations at a point named in Rule 30 a."

Station WMAL, Washington, has asked for modification of license to increase night power from 250 to 500 watts, 630 kc. and the application has been set for hearing.

Two more stations were added to NBC networks on April 15th. WDEL, Wilmington, Del., joins NBC as a regular Basic Red Network station. WDEL operates full time on a regional channel frequency of 1120 kilocycles with daytime power of 500 watts and nighttime power of 250 watts. Station WORK, York, Pa., joins NBC as a supplementary station available for use with the Basic Blue or the Basic Red Network. WORK operates full time on a regional channel frequency of 1320 kc. with a power of 1,000 watts. The addition of WDEL and WORK increases the total of NBC affiliated stations to 124.

W. G. H. Finch, formerly an FCC engineer, last week announced the first successful transmission of natural color photographs over ordinary long distance telephone lines. Utilizing standard public toll lines from Chicago to New York, modified equipment that is used for black and white news photo transmissions was employed.

The American Radio Telegraphists' Association is prepared to call a strike on the ships of those lines which refuse to accept it as the bargaining agency of their men under the provisions of the Wagner Act, according to Mervyn Rathborne, President.

Lenox Lohr, President of the National Broadcasting Company, will address the American Red Cross convention in Washington, May 1sth. The address will be carried on the NBC network.

First radio transmission of pictures by radio across the Pacific was accomplished recently when a photograph of the arrival of Prince Chichibu at Vancouver was transmitted from San Francisco to Japan, R.C.A. Communications officials at San Francisco state. The transmissions are purely experimental, H. H. Christiansen of RCA said. Development of the circuit across the Pacific is largely being undertaken in anticipation of the Olympic Games in 1940.

Radio baseball announcers have the dual responsibility of "selling" the American public baseball as well as the program sponsor's product, it was stated by speakers at the first national conference of 70 sportscasters held in Chicago last week. The conference, representing advertisers sponsoring the majority of basebell broadcasts, was staged under co-sponsorship of Knox Reeves advertising agency, Minneapolis, and J. Stirling Getchell, Inc., New York. Donald Davis, President of General Mills, said his firm and Socony-Vacuum will spend $1,500,000 for baseball broadcasts over a period of five months.

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NAVY PIONEER IN COMMUNICATIONS FIELD, SAYS RODMAN

The United States Navy was a pioneer in the field of communications, Admiral Hugh Rodman said in an article in the Indiana History Bulletin.

"Our Navy was the pioneer in the field of systematically collecting and distributing information of every kind to all seagoing ships, no matter what their nationality, that would facilitate their passage at sea and keep them out of danger", he said. "Today it is the greatest source of this kind on earth. Our Communications Service keeps in close touch with all information of use to seagoing vessels and regularly broadcasts this as well as weather forecasts, storm warnings, hydrographic information, time signals, and news items of importance. It receives SOS calls, and helps to provide assistance. It furnishes radio-compass bearings to vessels at sea, as means of finding their positions, often warning them of danger. It has been the means of saving many lives and millions of dollars worth of property.

"During the Japanese attack on Shanghai the news was sent by Navy radio to Washington, thence to Japan, where it had not yet been received. From Japan there came inquiries back to Washington seeking confirmation. It was confirmed and the whole time occupied, from its inception to completion, was twenty-five minutes. Our installations are sufficiently powerful to send a single impulse three times around the world, and what is to me more wonderful still, it is automatically recorded each time it passes its initial point of transmission.

"Not only does our Naval Observatory serve the whole country with the most accurate time service in the world, but by its broadcasting it serves ships all over the face of the earth that depend upon this for accurate and safe navigation."

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RADIO PATENT BAN WEAKENING IN CZECHOSLOVAKIA

An improvement in the radio market of Czechoslovakia is forecast by U. S. Consul General Raymon E. Cox, Prague.

"The sale of American radio apparatus in Czechoslovakia at present is negligible mainly because of the patent pool which has existed between the local 'Radiotechna' Company, representing the large German Telefunken concern, and the Dutch Philips Company", he reports. "This patent pool has, since January, 1932, up to the present time, been able to prevent successfully the sale of American radio sets on this market through declining to grant permits for the sale of such apparatuses on the ground that they infringe upon its patent rights. During this long period of exclusion, American radio sets were extremely competitive in price and quality.

"Important changes are occurring which, it is believed, will seriously weaken the patent position of the controlling companies. Several of the patents for which they claim to have the sole rights have been successfully contested in the local courts, and it is understood that a number of basic patents have expired. Consequently, the patent pool has organized a cartel of Czechoslovak radio producers and dealers in the hope that it will be able to continue its control of the market through the regulation of production and prices of radio sets, and through compelling dealers to sell only the products of the cartel under threat of non-fulfillment of their orders."

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DON LEE TELEVISION SUCCESSFULLY SPANS 10½ MILES

The Television Division of the Don Lee Broadcasting System, the Mutual Broadcasting System's California affiliate, piloted by Harry R. Lubcke, staged a demonstration last week at the California Institute of Technology's annual exhibit.

Witnessed by laymen and celebrated scientists, among them Nobel Prize Winner, Dr. Robert A. Millikan, television programs, both "sight and Sound", were successfully transmitted over a distance of 10½ miles. It was done not merely once, but many times, during the day at 15-minute intervals.

These repeated demonstrations were performed via the Don Lee owned and operated experimental television station W6XAO which carried the images, and an auxiliary ultra-short wave channel which conveyed the sound.

They marked the first time that high-definition television (300 lines to the image, repeated at the rate of 24 images per second) had been broadcast so great a distance, according to a WOR press statement. Transmitters were located in the Don Lee Building in Los Angeles, while the television receiver was located in the Physics Exhibit at the California Institute of Technology in Pasadena, a distance of slightly more than 10½ miles.

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EL SALVADOR BUYS ALL-WAVE EQUIPMENT FROM U. S. FIRM

The Government of El Salvador has agreed to purchase from an American concern all-wave radio equipment, according to a U. S. Consular report. This equipment will be used for radio-telephonic communications with other Central American countries and Panama during the daytime, and for radio broadcasting at nighttime. Information regarding wave length, power, etc., will become available only after installation.

The total cost of the apparatus is stated to be $14,525.15. According to the last report of Government finances, as of December 31, 1936, the sum of $22,772, or approximately $9,110 at present exchange rates, has been set aside for this purchase.

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