

HEINL RADIO BUSINESS LETTER

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FARNSWORTH GETS PERMIT FOR ELECTRIC TELEVISION UNIT

A new television station will shortly be erected in Philadelphia and join the growing ranks of practical experimenters in the field of television broadcasting. The builder, however, is not new to the laboratory phase of television.

The applicant, who was granted a permit this week by the Federal Communications Commission, is Philo T. Farnsworth, President of Farnsworth Television, Inc., Philadelphia, who has been engaged in technical research on the subject for a decade.

Upon recommendation of Examiner R. H. Hyde, he was granted a permit to construct an experimental television station for operation on 42,000-56,000 and 60,000-86,000 kc. with 1 KW power. His purpose is to develop an all electric television system as contrasted with the mechanical system ordinarily employed.

The Philadelphia station will become the sixteenth now in operation in the ultra-high frequencies although a number of other former licensees are awaiting assignments in the new bands, set aside for television early this Fall.

Operating stations which are attracting most attention at present are those of the Radio Corporation of America in New York, the Philco Radio and Television Corporation in Philadelphia, and the Don Lee Broadcasting System in Los Angeles.

When he appeared for a hearing before Examiner Hyde, Mr. Farnsworth said he had expended \$800,000 in research work during the last ten years.

Discussing Mr. Farnsworth's background and ability to carry forward his plans, the FCC Examiner said:

"He has spent ten years as Director of Research and as an inventor for Farnsworth Television, Incorporated, and its predecessor, Crocker Research Laboratories, is a member of a number of engineering associations, has appeared before the Commission as an expert in television engineering, and is well known in engineering and scientific fields for his work looking to the development of an all electric television system. He is assisted by a staff of twenty-five to thirty engineers employed by the applicant at all times. Approximately one-third of the members of the organization have been associated with Mr. Farnsworth for eight years and two-thirds of the number have been with him for five years or more.

"Facilities maintained by the applicant for development work include laboratories for tube, circuit, and receiver research, and an experimental television studio having three separate camera channels with provisions for showing transmissions from moving picture film, and from both outdoor and indoor "shots". Opinion testimony by experts, particularly Mr. Farnsworth, holds that the applicant has adequate facilities to carry forward the program outlined in this application. But the accomplishments already achieved probably provide the best indication as to the adequacy of the applicant's technical resources and ability. Patents have been obtained on more than twenty inventions and a number of patent applications are now pending the determination of interference questions in connection with claims of various other applicants. A single patent covers an electron multiplier. A number of other patents relate to the dissector tube. The applicant classes its image dissector, straight line scanning method, and its synchronization system as major contributions to the development of television. Recognition of the applicant's research achievements is apparent in the applicant's testimony to the effect that certain important foreign countries, the Fernesh AG Company of Germany and the Baird Television Company of England, have adopted methods employing the principles and technique of its system, under licenses from the applicant, in preference to mechanical systems previously used.

"The general objective of the work that has been done and which is being done by the applicant's engineers is the development of a complete electronic television system that will be practical for general use. And the program has been advanced in laboratory work with transmission over wire, to a point where, to use Mr. Farnsworth's description, 'an excellent quality image' is transmitted and reproduced with 'absolutely no flicker'. These claims are supported by photographs of transmitted images which were submitted upon request, and by the testimony of an engineer from the Commission's staff who characterized a demonstration transmission of an outdoor scene as remarkable for clearness and detail, stating that the wires on a power line approximately 150 yards distant were visible in the reproduced image. The size of the picture reproduced is $5\frac{1}{2}$ x 7 inches. It has the definition of 341 lines to a picture, 60 pictures per second interlaced.

"Electrical methods, utilizing the extreme speed of the electron and recurring peaks and recessions of high frequency wave motion in modulated electrical current are used in the applicant's system for high definition, high speed scanning seemingly beyond the possibilities of mechanical methods. The image to be transmitted is projected by a lense system to a sensative surface from which rays of electrons are emitted with variations in intensity corresponding to the variations in the shading between the light and dark areas of the image. This, in effect, reproduces the original image in a complete electron picture which is subject to control by electromagnetic and electrostatic fields. Methods similar to the usual high and

low frequency fields are employed to control the movement of the electron picture in transverse and vertical directions over a sensitive cell, dividing the picture into lines and producing interlaced scanning. Transmission from this point can be accomplished in accordance with the usual methods of radio transmission.

"The applicant contends, through the testimony of Mr. Farnsworth, that radio transmission is necessary to the further study, investigation, and advancement of its program of research. The problem now has to do with the modulation of the television image on the carrier and investigation of coverage with a given amount of power and given frequency band. Little is known about the propagation of ultra short waves with modulation of the type that television requires, and the only possible way to investigate the matter is by transmission of waves of this type. For the purposes of study, the applicant proposes to establish a large number of receivers in as many different locations as possible. In addition to outlining its own program, the applicant indicated a willingness to undertake any special line of investigation the Commission might suggest and make such reports as the Commission may request.

"The evidence regarding the site selected for the construction of the proposed transmitter indicates that due consideration has been given the problem of finding a location that will be satisfactory for the operation of an experimental television transmitter. The site is in Springfield Township, immediately adjacent to the City of Philadelphia and convenient to the applicant's laboratories. There are no residences in the neighborhood of the site due to its zoning classification as commercial area, and it is higher in elevation than the surrounding property. The construction of the transmitter at one side of the City of Philadelphia is expected to facilitate study and experimentation with directional transmission of television signals."

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INDIA TO INAUGURATE EDUCATIONAL BROADCASTS

With the active co-operation of the University of Calcutta, the broadcasting authorities in India, World-Radio reports, are drafting a plan by which lectures on various educational topics will be broadcast in the colleges and schools in Bengal. Eminent professors of colleges and head masters of big schools will regularly broadcast talks from the studio of the All-India Radio station in Calcutta. A comprehensive curriculum is being drafted for the purpose. The scheme will come into operation in January 1937. The program will be broadcast both on medium and short waves. No political propaganda of any kind will be broadcast from the Calcutta station.

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GENERAL ELECTRIC, FCC TO ATTACK DIATHERMIC INTERFERENCE

The General Electric Company was authorized this week by the Federal Communications Commission to conduct a special program of experimental research in collaboration with the FCC Engineering Department on means of shielding diathermy and other similar equipment, which causes widespread interference to radio reception.

"Such experimentation, if successful", the FCC stated, "would result in the larger and more effective use of radio in the public interest."

General Electric will conduct its experiments on the frequencies of 13000, 13300, 13700 and 15000 kcs.

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COAXIAL CABLE INTRODUCED TO THE PRESS

What may be the "key" to television, had its first public demonstration this week, namely the coaxial cable installed by the Bell Telephone Laboratories between New York and Philadelphia. Dr. Frank A. Jewett, President of the Laboratories, talked with members of the press over the circuit, looped within itself to cover 3,800 miles, although in reality the cable spans less than 100 miles.

Television was not demonstrated on the line in this initial speech test because the terminal instruments now in use are not suitable for motion pictures.

The "pipe" is designed to handle 240 telephone conversations simultaneously when used with the proper terminal equipment. The speaker talks into an ordinary telephone but his voice is split up twenty different times between New York and Philadelphia. Dr. Jewett explained that if it were possible for the human ear to eavesdrop along the route it would hear "a terrible jumble" but the extremely high-frequency currents make such a test impossible because the transmission is far out of range of the sense of hearing. The complex terminal apparatus does the "unscrambling" so that within the twinkling of an eye the electrical mixup is straightened out and transformed into intelligible speech corresponding to the original.

There are twenty loops in the circuit and each loop has a one-way amplifier. The voice passes through each amplifier twenty times, giving a total amplification of 400. The present cable as set up will handle a frequency band of 1,000,000 cycles but by the use of the proper terminal equipment the path can be widened to 2,000,000 cycles and higher. In fact, it must handle 5,000,000 frequency to produce television effects of good motion picture quality.

"Our main purpose in this preliminary experiment is to reveal the telephone possibilities, not television", said Dr. Jewett. "The performance has been up to expectations and no important technical difficulties have arisen to cast doubt upon the future usefulness of the coaxial-cable system. Much work remains to be done, however, before coaxial systems suitable for general commercial service can be produced."

"This is not a television circuit as we are demonstrating it today. But it is a necessary step forward to television. We think we know how to use it for television, but that is several months off. As far as television is concerned, it is still around the corner, and all we can say at this time is that the cable is a possible network link for television transmitters in the future."

"What we are literally doing along this cable is radio transmission", continued Dr. Jewett, "but we are sending it over what might be called a segregated slice of the ether. In this case, however, all of the ether is in the little pipes of the cable. It is a scheme for making radio transmission free of the elements that bedevil radio, such as static and fading."

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FRANCE REORGANIZES BROADCASTING CONTROL

France is reorganizing her broadcasting. Two decrees recently issued establish a Higher Council and a Council of Management for each station.

The Higher Council, which will have control over the entire system, will have a president and a vice-president appointed for two years by the Government. It will have various sections, dealing respectively with literature, music, science, economics, social question, news and education, with which last subject sport, leisure and touring will be linked up.

At the same time, the Higher Council will not be free to do as it likes. The Government's representatives will be entitled to the first look at any address or statement proposed for broadcasting.

The Councils of Management, each of 30 members, will comprise representatives of the public services, technicians, authors and artists, and also 10 members of the public, whose status will be defined later.

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SPONSOR DEFENDS "GOOD WILL COURT" IN BRIEF

The side of the Good-Will Court radio program in the case of legal ethics, filed recently in the Appellate Division for an opinion governing the appearances of judges as legal advisers on such commercial broadcasts, was disclosed in New York this week in a brief prepared by Charles H. Tuttle, former United States Attorney, representing the program's sponsor and advertising agency, and Louis Nizer, attorney for A. L. Alexander, who conducts the broadcasts.

The brief was filed also with the New York County Lawyers' Association. The sponsor of the broadcast over nationwide radio facilities on Sunday nights, is Standard Brands, a food concern. J. Walter Thompson Company, of New York, is the agency handling the program. The American Bar and other legal associations have criticized the conduct of lawyers, judges and ex-judges who participate in such commercial broadcasts.

The brief-memorandum contends that as a broadcast the court "is distinctly educational in its content and in the manner in which the content is presented", and that it "serves to accomplish effectively and on an incomparable scale one of the objects which bar associations have recently been urging - to wit: the popularizing of the law."

In a letter sent August 11 by Governor Lehman to Mr. Alexander, which was contained in the brief, it was pointed out that Mr. Lehman had declared the Good-Will Court broadcasts "serve a very real purpose in bringing to people a better understanding of the scope and purpose of our courts and of our laws."

Attorney General John J. Bennett, Jr. in July, in a letter to Mr. Alexander, declared:

"The practice of having members of the local judiciary answer and advise is to be commended. * * * The idea of the broadcast is a most humane one, since here is provided a great system of public education."

Other such letters of commendation were received from Attorney General Wilentz of New Jersey, Governor Hoffman and various legislators and city officials.

The brief expressed the opinion that many of the so-called "cases" heard during the broadcasts "illustrate and emphasize the inadequacies of existing laws and sometimes their downright injustice.

"To shut off this method of speech", the memorandum continued, "this medium of education and this incitement to public thinking would be a gross interference with the freedom of speech and of thought. To do so on purely technical and legalistic grounds and for the fancied benefit of some particu-

lar class would be to deny fundamental rights and to restrict the liberties and opportunities of the whole community. * * * If such a force as this for social betterment is contrary to law, then there is something wrong with the law."

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FCC OPENS U. S. - FRENCH RADIO PHONE CIRCUIT

Telephonic communication with Paris over a new direct radio circuit 3,600 miles in length was opened December 1st by the American Telephone and Telegraph Company with ceremonies conducted in this country from the office of the Federal Communications Commission.

Anning S. Prall, Chairman of the Commission, spoke first to Robert Jardillier, Minister of Posts, Telegraphs and Telephones in Paris, after which Andre de Laboulaye, French Ambassador in the United States, talked with Mr. Jardillier and R. Walton Moore, Acting Secretary of State, took official cognizance of the occasion in a message delivered personally to William C. Bullitt, Ambassador in Paris, and through him to Yvon Delbos, French Minister of Foreign Affairs.

The new direct circuit to Paris consists of a short wave radio telephone channel between A. T. & T. Company stations in New Jersey and stations of the French Ministry of Posts, Telegraphs, and Telephones near Paris. The American transmitting station is at Lawrenceville, which is picked up at Noiseau, while the French transmitter at Pontoise sends the voice from Paris to the American receiving station at Notcong. Wires and cables carry the voice impulses from the radio stations in New Jersey to the overseas switchboard in the Long Distance Building, 32 Sixth Avenue, New York City, whence the connection is made to Bell System telephones.

This is the first direct contact which the Bell system has made with continental Europe, telephone service to France having been heretofore handled through London. It will be recalled, however, that Paris was the first to hear a voice by radio from the other side of the Atlantic. In 1915, through the courtesy of the French government, Bell System engineers were permitted to set up receiving apparatus in the Eiffel Tower, in an attempt to pick up a speech sent out by other telephone engineers from Arlington, Virginia. These experiments, ending successfully with the transmission of intelligible speech, marked an important milestone in the development of the radio telephone system which now aids the Bell System subscribers to reach more than 90 percent of the world's telephones.

The cost of a three minute call between New York and Paris is \$21 on week-days and \$15 at night and on Sundays.

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DE FOREST, RADIO PIONEER, DECLARES BANKRUPTCY

Listing \$103,943.95 as his liabilities as against \$390 in assets, on which he claims exemption, Dr. Lee DeForest, radio engineering pioneer, filed a voluntary petition in bankruptcy in Federal Court in Los Angeles this week.

Dr. DeForest's action followed by one day a New York real estate concern's suit for \$10,000 in back rent.

His petition listed the Railway Cooperative Building and Loan Company of New York City as the chief creditor, with a claim of \$50,000.

Assets listed by Dr. DeForest included his Hollywood laboratory, where he recently has been conducting television experiments, his experimental library, and his machinery.

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PUBLISHER DENIES RADIO CREDIT FOR F.D.R. VICTORY

Taking issue with some of his own colleagues and many expressions of opinions, Frederick E. Murphy, publisher of the Minneapolis Tribune, this week denied that radio deserves the credit for the overwhelming reelection of President Roosevelt in the face of a hostile press.

Speaking at the annual convention of the Associated Grocery Manufacturers of America, Inc., in New York, he asserted that the newspapers have not lost their influence over the public. The recent election, in which 80 percent of the newspapers opposed the President, merely demonstrated that the remaining 20 have more influence than the other 80 percent.

Mr. Murphy asserted that there was no basis for comparison between radio and newspapers. The radio, he said, is a neutral information transmitting agency, while the newspaper is both an information transmitting agency and a protagonist.

Admitting that radio speeches of President Roosevelt were effective, Mr. Murphy added that "it was the President that was influential and not the radio." He called attention to the complete political collapse of Father Coughlin, who, he said, was the only political opponent of the President comparable to him as a radio speaker."

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BUFFALO GETS BID FOR FIRST TELEVISION SPONSORSHIP

The Buffalo Broadcasting Corporation has received the following letter, but it hasn't figured out whether it's from a forward looking business concern or a prankster:

"Mr. L. H. Avery,
Buffalo Broadcasting Corp.,
Buffalo, N. Y.

"Dear Mr. Avery:-

"My client, the Golden Rule Children's Shop at 473 Main Street, Buffalo, has authorized me to make you an offer of up to three times their present rate for a televised broadcast of their present program, 'The Golden Rule Hour' on WGR, Saturday at 10 A.M.

"We are ready to sign a 'when, as and if' contract at any time.

"Yours very truly

(Signed) Robert P. Mendelson,
The Radio Advertising Co."

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NEW D. C. COURT ROOM TO HAVE RADIO OUTLET

One of the six court rooms to be provided in the new Police Court Building to be erected in Washington, D. C., will be wired so proceedings there may be broadcast, if the judges so decree.

Plans have been drawn for installation only of the necessary wiring and outlets, in anticipation of the day when the judges may approve the broadcasting, it was said. The decision would rest with members of the bench, rather than with members of the District Commission. The fact that plans call for wiring only one of the court rooms in the new building suggested that the broadcasting might be considered particularly for Traffic Court proceedings.

Police Court judges have received petitions to broadcast cases as a part of drives for reducing traffic deaths and accidents. In the past, however, the judges have refused to consider such proposals. One of the judges said he would not oppose broadcasting of court proceedings but that some of the other judges were in opposition.

With the wiring and outlets in place, it would be a simple matter to set up equipment needed for a broadcast.

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GERMANY INTRODUCES NEW SYSTEM OF TRADE DISCOUNTS FOR RADIO

The German Minister of Economy has decreed that a new schedule of maximum trade discounts is to be introduced in the German wholesale and retail radio trade.

According to this decree, manufacturers of radio receiving sets, tubes and loudspeakers can only grant certain specified rates of maximum discounts on the retail values to wholesalers and retailers doing business on the domestic market.

The maximum allowable discount rate in the case of each dealer is based on their certified turnover in radio receiving sets, tubes and loudspeakers achieved by that dealer in a specified period of 12 months.

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FCC ANNOUNCES \$12,000,000 PHONE RATE CUT

The second major reduction in long-distance telephone rates since the Government's investigation of the American Telephone & Telegraph Co. began was announced December 2nd by the Federal Communications Commission.

The reduction - amounting to \$12,000,000 a year - will become effective, Commissioner Paul Walker said, as soon as new rate schedules can be prepared "and in any event not later than mid-January."

Both Mr. Walker and Walter S. Gifford, A. T. & T. President commended the method in which the rate reduction was negotiated, without long drawn out legal battles. In New York, Mr. Gifford noted it was the ninth reduction in the past ten years.

"The new cut", Mr. Walker said, was the result of informal conferences between the Commission and the company, and followed a \$10,000,000 reduction by the company last September, just prior to the first hearing in the Commission's far-reaching study of the company's capital structure.

Mr. Walker disclosed the Commission was running short of funds and would ask Congress for a new appropriation of \$350,000 to assure completion of the inquiry. Funds now on hand, he said, would finance it only through January.

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CUBA OFFERS GOOD RADIO MARKET NOW

The outlook in the radio market in Cuba appears very favorable for a good volume of sales this season, according to U. S. Assistant Commercial Attache Charles H. Ducote, Habana.

Imports of radio sets into Habana in October, according to private compilations from ships' manifests, numbered 3,436 units valued at 98,903 pesos. These data compare with 2,914 sets valued at 70,425 pesos entered in September, and 2,452 sets with a value of 65,120 pesos, corresponding to incoming shipments in October of last year.

More than 33 brands were represented in the total imports for October. There was also received a shipment of 45 used sets, the makes of which were not indicated in the compilations. No Philips sets were imported during the month.

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KGNC AND WFEA TO JOIN NBC

Stations KGNC, Amarillo, Texas, and WFEA, Manchester, N. H., have been added to the networks of the National Broadcasting Company, it was announced December 1st at NBC's Radio City headquarters. They will bring the number of NBC affiliate stations up to 110.

KGNC will join NBC as an optional member of the Southwestern Group, effective Friday, January 1st. It will use both Red and Blue Network programs, intensifying NBC's coverage in Northern Texas. The Amarillo Globe-News owns the station, which operates on a frequency of 1410 kilocycles, with a power of 2500 watts daytime and 1000 watts at night.

Effective March 1, 1937, WFEA, at Manchester, will become an optional outlet of NBC, using both the Red and Blue Networks. The station is owned by the New Hampshire Broadcasting Company.

WFEA is the only broadcasting station in Manchester. It operates on a frequency of 1340 kilocycles, with a day time power of 1000 watts and a night time power of 500 watts.

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