WORCESTER POLYTECHNIC INSTITUTE

DEPARTMENTS OF CHEMISTRY, CIVIL, MECHANICAL
AND ELECTRICAL ENGINEERING

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HARRY B. LINDSAY, Assistant
ALBERT B. R. PROUTY, Assistant

TELEPHONE CONNECTION

IN REPLY REFER TO

Worcester, Massachusetts, May 10, 1915.

Mr. H. P. Davis,

Vice-President,

Westinghouse Elec. & Mfg. Co.,

East Pittsburgh, Pa.

Dear Mr. Davis:

I wish to advise that at a recent meeting of the Worcester Chapter of Sigma Xi you were unanimously elected a alumni member of the society, and I trust it may be possible for you to be present at the annual meeting on Monday evening, June 7th, when the alumni members are initiated and to attend the Commencement lecture before the Sigma Xi Society by Professor R. W. Wood of John Hopkins.

Possibly before I ask your acceptance of this election I should outline briefly the scope and object of the society. Sigma Xi was founded at Cornell in 1886 as an honorary scientific society corresponding, for engineering and scientific work, to the older Society of Phi Beta Kappa for literary and classical work. Since that time there has been established twenty-eight chapters in the leading scientific and engineering schools in this country with a total membership at present of about ten thousand

men who are recognized leaders in scientific and engineering work. The conditions of membership are outlined on the fourth page of the enclosed pamphlet where in section five is stated the condition under which your election takes place, that is "as a man who has shown noteworthy achievement as an original investigator in some branch of pure or applied science". The requirements for faculty and alumni election are far more strict than for undergraduate election, so that out of the total membership of about ten thousand members in the society there are only between three and four hundred alumni members for the entire twenty-eight institutions represented. Up to the present time the Worcester Chapter has elected but four alumni members and will probably never elect any large number, so that this constitutes the most distinguished honor by which we can recognize any of our graduates who have made a success in their chosen field of activity. There is no obligation upon the part of the alumni member other than a pledge to uphold the principles of the Society of Sigma Xi, the motto of which means "companions in zealous reasearch" and the object is to "encourage original investigation in science, pure and applied" to which I am sure you would find no difficulty in subscribing.

I would be glad to have you advise me if you can accept this election and be present with us for our meeting of Monday evening, June 7th.

I may say that your election comes at this time not alone in recognition of your achievement but in part through recognition of the twenty-fifth anniversary of your graduation.

Yours faithfully.

HBS/EL

64: 21
Box 1
Ff= 5

C O P Y.

April 13, 1920.

Mr. H. P. Davis, Vice President,
East Pittsburgh, Pa.

My dear Mr. Davis:-

I had a very discouraging interview with Mr. Mackay of the Postal Telegraph Company and I am forced to the conclusion that it will not be possible to do anything with either the Western Union or the Postal Telegraph Company in the matter of taking an interest in a Radio Corporation; and, since it would not be wise for us to take the responsibility of it ourselves, I think it would not be fair to Mr. Braun to encourage him any further.

Mr. McKay stated he would take the matter up with me again, but I am convinced by his manner and from what he said that nothing will come of it.

Yours very truly,

(Signed) G. E. Tripp,-

Chairman.

AB Western Union + Postal Telegraph not interested in forming radio corporation - not sure what type of corp. HP had in mind in 1920 - NBC?

This is after RCA was created. Was Westinghouse trying to create a competitor?

64:21
Box 1
FF 5

STORY TOLD OF BIRTH OF BROADCAST

Who invented radio broadcasting—not the instrument, but the idea?

This question has been asked of the Radio Editor many times. He has found the answer at last. The story of the vision of the present and future radio broadcasting is an interesting one and, as prepared exclusively for the readers of The Chicago Evening American, will be presented in two installments, the first of which follows:

"Frank, I'm going to close your station."

Paradoxical as the statement may seem, this was the actual start of radio broadcasting as we now know it. The concerts on regular schedules, advance programs, entertainment in the air, all came from "closing Frank's station" and opening KDKA, the first radiophone station in the world.

For "Frank" was Frank Conrad, assistant chief engineer of the Westinghouse Company, and the man who made the statement was Harry Phillips Davis, vice president of the Westinghouse Company.

Mr. Davis had come into his office that morning in September, 1920, with an idea. The idea had come to him while reading the advertisement in an evening newspaper.

FINDS IT IN AD.

In a corner of a full-page ad he came across the words, "Mr. Conrad will send out phonograph records this evening." This advertisement was in the interest of the store's amateur radio department, and was explaining to local radio amateurs that Mr. Frank Conrad, who had operated his station intermittently since the war, would send out by radio phonograph records on a certain evening.

The Conrad station was well known to amateurs all over the country, for it was one of the few amateur stations licensed to operate during the war. This special operating was in the interests of government research work which the Westinghouse Company was doing and also to test some apparatus.

Mr. Davis could not forget his idea. He was struck with the fact that the radiophone fundamentally did not lend itself only to private communication, but that it had a universal field of usefulness, and that through it one could communicate to hundreds, thousands or millions; all could listen who had the suitable "ear"—for if a certain class of people were interested enough to listen to music from a few records there was a possibility of increasing this small audience of radio listeners to an enormous number by sending out entertainments, current events, etc., in a regular and interesting manner.

THE IDEA SPREADS.

Why confine one's audience to a small portion of the country?

Why not build a big station and let every one, who wanted to, hear?

Why not make radio broadcasting a public service?

"Frank, my idea is that you stop sending from your station and we will start a regular service from our experimental station here at East Pittsburgh," he said. "We can arrange for a suitable wave length, and I believe if we do this it will be the beginning of a radio broadcasting public service which seems to me to have wonderful possibilities."

The next article will tell of the great expansion of the broadcasting idea and something of the man "who put it over."

Chicago American
June 19, 1922

SINGLE LINE IN PAPER MADE RADIO

The Chicago Evening American Saturday told its readers of the birth of radio broadcasting. The story was that Harry Phillips Davis of the Westinghouse Electric & Manufacturing Company discovered that Frank Conrad, assistant chief engineer of the Westinghouse company, had created quite a clientele in Pittsburgh by broadcasting phonograph records over a small set. Mr. Phillips conceived the idea of broadcasting music, speeches and news on a great scale from a powerful station. How the idea grew is told in today's installment of this interesting bit of radio romance, written exclusively for The Chicago Evening American:

The conference with Mr. Conrad lasted a short time and Mr. Davis called other conferences before actual work on the broadcasting started. It was not until November 11, 1920, KDKA (the broadcasting station at East Pittsburgh) was formally opened with the broadcasting of election returns.

The remainder of the history of KDKA is now common property. Every one, almost, now knows that there are over 200 broadcasting stations in the United States and that the radio audience numbers into the millions each night.

Not every one knows, however, that it was a single line in a newspaper which suggested to the vice president of one of the largest electrical manufacturing companies in the world the big thing of turning a scientific novelty into a new kind of public service by unfolding a new field of communication.

DAVIS A GENIUS.

Mr. Davis was one of the best equipped men in the electrical industry to take up the difficult problems of broadcasting. He has been a leader in the electrical industry since his college days, and has been issued nearly 100 patents covering electrical apparatus. He is an engineering genius and is known not only as a designing engineer of high rank, but also as a man who gets things done. His ability to accomplish results rapidly has already been proved in the history of his company's broadcasting achievements. This ability was also admirably illustrated during the war. He was at that time in charge of production at the East Pittsburgh works, and the duty of fulfilling the government contracts for munitions was his. Probably no more colossal manufacturing task was ever given any one. The quantities involved were enormous, the time limits short, the specifications most rigid: new and undreamed of problems arose at every step; the government's plans changed with bewildering frequency; material, competent help and transportation facilities became almost unobtainable, and innumerable other difficulties were encountered.

NO PROMISE BROKEN.

Yet, in spite of everything, the work was done, and it was done properly and on time. Not a single promise made to the government was broken.

This is all by way of illustrating the character of the man who first saw that radio broadcasting was something that held greater possibilities than just being the plaything of the amateur.

Mr. Davis was born at Somersworth, New Hampshire. He was [illegible] Worcester Poly-

Chicago American,
June 17, 1922

Radio Geniuses

H. L. Davis. Frank Conrad.

The readers of The Chicago Evening American radio page who were interested in the exclusive and romantic story printed Saturday and Monday of the birth and growth of radio broadcasting will be interested also in the above pictures of the two men who made broadcasting possible. At the right is Frank Conrad, assistant engineer of the Westinghouse Electric & Manufacturing Company, whose amateur broadcasting of phonograph records gave to Vice President Harry Phillips Davis of Westinghouse (left) the idea of broadcasting news, concerts, etc., on a nation-wide scale and made radio reception popular.

Radio World
1922

HARRY PHILLIPS DAVIS, president of the Westing Company, entered his office one mo in September, 1920, with an idea. Th had come to him while reading th vertisement in his evening paper. corner of a full page ad, he came a the words, "Mr. Conrad will send phonograph records this evening." advertisement was in the interest o store's amateur radio department was explaining to local radio ama that Mr. Frank Conrad, who had ated his station intermittently since war, would send out by radio phonog records on a certain evening. The rad station was very well known to teurs all over the country, for it was of the few amateur stations license operate during the war. This sp operating was in the interests of ernment research work which the tinghouse Company was doing and to test some apparatus.

Dr. Davis could not forget his He was struck with the fact that radiophone fundamentally did not itself only to private communication that it had a universal field of usefu and that through it, one could comm cate with hundreds, thousands or lions; all could listen who had the able "ear," for if a certain class people were interested enough to lis to music from a few phonograph reco there was a possiblity of increasing small audience of radio listeners to enormous number by sending out ent tainments, current events, etc., in a r ular and interesting manner.

First Radiophone Station

"FRANK, I'm going to close your station."

Paradoxical as the statement may seem, this was the actual start of radio broadcasting as we now know it. The concerts on regular schedules, advance programs, entertainment in the air, all came from closing "Frank's station," and opening KDKA, the first radiophone station in the world to broadcast programs daily.

For "Frank" was Frank Conrad, assistant chief engineer of the Westinghouse company, and the man who made the statement was Harry Phillips Davis, vice president.

Mr. Davis had come into his office that morning in September, 1920, with an idea. The idea had come to him while reading the advertisement in his evening paper. In a corner of a full page ad he came across the words "Mr. Conrad will send out phonographic records this evening." This advertisement was in the interest of the store's amateur radio department and was explaining to local radio amateurs that Frank Conrad, who had operated his station intermittently since the war, would send out by radio [illegible] evening.

[illegible] to [illegible] ama-

The Conrad station was well known amateurs, for it was one of the few teur stations licensed to operate during th war. This special operating was in the interest of the government research work which the Westinghouse company was doing and also to test some apparatus.

Mr. Davis could not forget his idea. He was struck with the fact that the radiophone fundamentally did not lend itself only to private communication but that it had a universal field of usefulness and that through it, one could communicate with hundreds of thousands or millions; all could listen who hadw the suitable "ear," for if a certain class of people were interested enough to listen to music from a few records there was a possibility of increasing this small audience of radio listeners to the enormous number by sending out entertainments, current events, etc., in a regular and interesting manner. Why confine one's audience to a small portion of the country? Why not build a big station and let everyone who wanted to, hear? Why not make radio broadcasting a public service?

Mr. Davis was so struck with his idea of a public broadcasting service that the first thing he did on his return to his office the next morning was "Ask Frank come in."

"Frank," as has been previously e plained, was Mr. Conrad, who, having bee taken so abruptly with his chief's statemen could only listen to what followed.

"Frank, my idea is that you stop sendin from your station and we will start a reg lar service from our experimental statio here at East Pittsburg. We can arrange fo a suitable wave length, and I believe th if we do this it will be the beginning of radio broadcasting public service whic seems to me to have wonderful possibilities.'

The conference with Mr. Conrad lasted short time and Mr. Davis called other con ferences before actual work on the broad casting started. It was not until Nov. 11, 1920, that KDKA was formally opened with the broadcasting of election returns.

The remainder of the history of KDKA is now common property. Everyone, almost, now knows that there are about 300 broadcasting stations in the United States and that the radio audience numbers into the millions each night.

Not everyone knows, however, that it was a single line in a newspaper which suggested the big thing of turning a scientific novelty into a new kind of public service by unfolding a new field of communication.

64:21
Box 3
FF 36

Springfield Republican
Springfield, Mass.
June 26, 1922

Radio Broadcasting Vision

estinghouse Vice-President Caught it From News-paper Ad—Foresaw Its Popular Appeal and Acted Promptly

An insignificant announcement in the corner of a full-page ivertisement may be said to have given birth to the idea of the neral broadcast as we know it today and to Harry Phillips Davis, ce-president of the Westinghouse Electric and Manufacturing com-ny, came the thought that started the company on its radiophone hedule. No, he did not invent the radiophone, but he was the first an to foresee the popular appeal of radio to the public, which has sulted in a vastly increased volume of business and country-wide me for Pittsburg, Newark and East Springfield.

rank, I'm going to close your on."

radoxial as the statement may , this was the actual start of broadcasting as we now know The concerts on regular sched- advance programs, entertain- in the air, all came from clos- "Frank's station," and opening A. (Pittsburg) the first radio- e station in the world.

r "Frank" was Frank Conrad, words "Mr Conrad will send out phonograph records this evening." This advertisement was in the interest of the store's amateur radio department and was explaining to local radio amateurs that Frank Conrad, who had operated his station intermittently since the war, would send out by radio phonograph records on a certain evening. The Conrad station was very well known to amateurs all over the country, for it was one of the few amateur stations

HARRY PHILLIPS DAVIS

stant chief engineer of the stinghouse company, and the man made the statement was Harry llips Davis, vice-president of the stinghouse company.

Ir Davis had come into his of- that morning in September, 1920. h an idea. The idea had come to while reading the advertisement his evening paper. In a corner of ull page ad, he came across the licensed to operate during the war. This special operating was in the interests of government research work which the Westinghouse company was doing and also to test some apparatus.

For the Millions

Mr Davis could not forget his idea. He was struck with the fact that the radiophone fundamentally did not lend itself only to private communication but that it had a universal field of usefulness and that through it one could communicate with hundreds, thousands or millions all could listen who had the suitable "ear," for if a certain class of people were interested enough to listen to music from few records there was a possibility of increasing this small audience of radio listeners to an enormous number by sending out entertainments, current events, etc., in a regular and interesting manner. Why confine one's audience to a small portion of the country? Why not build a big station and let everyone, who wants to, hear? Why not make radio broadcasting a public service?

Mr Davis was so struck with his idea of a public broadcasting service that the first thing he said to his secretary on entering his office the next morning was "Ask Frank to come in."

"Frank," as has been previously explained, was Mr Conrad, who, having been taken so abruptly with his chief's statement, could only listen to what followed.

"Frank, my idea is that you stop sending from your station and we will start a regular service from our experimental station here at East Pittsburg. We can arrange for a suitable wave length, and I believe that if we do this it will be the beginning of a radio broadcasting public service which seems to me to have wonderful possibilities."

The conference with Mr Conrad lasted a short time and Mr Davis called other conferences before actual work on the broadcasting started. It was not until November 11, 1920, that KDKA was formally opened with the broadcasting of election returns.

Just An Ad.

The remainder of the history of KDKA is now common property. Everyone, almost, now knows that there are over 200 broadcasting stations in the United States and that the radio audience numbers into the millions each night.

Not everyone knows, however, that it was a single line in a newspaper which suggested to the vice-president of one of the largest electrical manufacturing companies in the world, the big thing of turning a scientific novelty into a new kind of public service by unfolding a new field of communication.

Mr Davis was one of the best equipped men in the electrical industry to take up the difficult problem of broadcasting. He has been a leader in the electrical industry since his college days, and has been issued nearly 100 patents covering electrical apparatus. He is an engineering genius and is known, not only as a designing engineer of high rank, but also as a man who gets things done. His ability to accomplish results has already been proved in the history of his company's broadcasting achievements.

War Record

His ability was also admirably illustrated during the war. He was at that time in charge of production at the East Pittsburg works and the duty of fulfilling the government contracts for munitions was his. Probably no more colossal manufacturing task was ever given anyone. The quantities involved were enormous; the time limits short; the specifications most rigid, new and undreamed-of problems arose at every step; the government's plans changed with bewildering frequency; material, competent help, and transportation facilities became almost unobtainable; and innumerable other difficulties were encountered. Yet, in spite of everything, the work was done and it was done properly and on time. Not a single promise made to the government was broken.

This is all by way of illustrating the character of the man who first saw that radio broadcasting was something that held greater possibilities than just being the plaything of the amateur.

New York Globe
June 3, 1922

Westinghouse Executive Caught Broadcasting Idea by Line in Pittsburgh Paper

Few men have had so much to do with the development of broadcasting as H. P. Davis, vice-president of the Westinghouse Electric and Manufacturing Company, and few of his influence are so little known to the public. It was he who caught the idea of regular broadcasting programmes from a single line in a Pittsburgh newspaper to the effect that Frank Conrad, an engineer in his employ, would broadcast phonograph records on a certain evening.

Mr. Davis was one of the best equipped men in the electrical industry to take up the difficult problems of broadcasting. He has been a leader in the electrical industry since his college days, and has been issued nearly 100 patents covering electrical apparatus. He is an engineering genius and is known not only as a designing engineer of high rank, but also as a man who gets things done. His ability to accomplish results rapidly has already been proved in the history of his company's broadcasting achievements. This ability was also admirably illustrated during the war. He was at that time in charge of production at the East Pittsburgh works and the duty of fulfilling the government contracts for munitions was his. Probably no more colossal manufacturing task was ever given any one. The quantities involved were enormous, the time limits short, specifications most rigid, new and undreamed of problems arose at every step, the government's plans changed with bewildering frequency; material, competent help, and transportation facilities became almost unobtainable; and innumerable other difficulties were encountered. Yet, in spite of everything, the work was done and it was done properly and on time. Not a single promise made to the government was broken.

This is all by way of illustrating the character of the man who first saw that radio broadcasting was something that held greater possibilities than just being the plaything of the amateur.

Mr. Davis was born at Somersworth, N. H. He graduated from the Worcester Polytechnic Institute with the degree of B. S. in electrical engineering in 1890, and after a trip to Europe and a few months spent with the Thompson-Houston Company, entered the detail engineering department of the Westinghouse Company in 1891. In 1896 he was placed in charge of this department, and in 1903 he was made manager of the engineering department. This position he held until 1911, when he was elected vice-president.

64:21
Box 3
FF 34

Post-Enquirer
Oakland, Cal.
Nov. 18, 1922.

ELECTRIC CO. WILL BUILD PLANT

Plans are now under way by the Westinghouse Manufacturing & Electric Company to start immediate construction of a million-dollar plant on a twelve and one-half acre site at the foot of Powell street in Emeryville, the ever growing manufacturing section of the east bay district.

H. D. Shute

The new plant will give employment to over two thousand people. It will house an extensive service department, will have large warehouse facilities. The factory will turn out electrical machinery and various electrical appliances. The electrical equipment for the new plant is being designed by Westinghouse engineers.

H. P. Davis

H. P. Davis, known as the father of radio broadcasting, in company with Henry D. Shute, both vice presidents of the Westinghouse Electric Company, inspected the factory site at Emeryville yesterday, they having come here from Pittsburgh, Pennsylvania, to pave the way for actual construction. Davis is works manager of the Westinghouse Company, while Shute is in charge of sales.

The local plant will be one of three large Westinghouse units on the Pacific coast. Seattle and Los Angeles have mammoth plants of this concern. After making a survey of both sides of the bay the company purchased the site here some three years ago but delayed building activity until now. Material for the plant will be on the site within a few weeks.

Mayor W. H. Christy, Marshall E. J. Cary and City Engineer R. S. Hawley of Emeryville, in conjunction with the Emeryville Manufacturers' Association, have played an important part in bringing about the plans for immediate construction of the new plant in Emeryville.

Pittsburgh Post Gazette
Dec. 19, 1922

Greatest Program In Annals of Radio Given in Post Studio

Dr. Mann, Ziegfeld and H. P. Davis, Chief Features.

MUSIC ALSO IS BROADCAST

Innumerable thousands scattered over a continent were treated to one of the greatest programs in the annals of radio telephony last night, when, from the Pittsburgh Post studio of the Westinghouse broadcasting station KDKA, three prominent personages in widely diversified fields made addresses.

These three speakers, who created a precedent by appearing on the same program, were Rev. Dr. Alexander Mann, newly-elected bishop of the Episcopal diocese of Pittsburgh; Florenz Ziegfeld, Jr., famous musical comedy magnate, and H. P. Davis, vice president of the Westinghouse Electric and Manufacturing Company and "father" of radio broadcasting.

The addresses made by these men were in addition to the regular KDKA program, which was featured by a concert by the combined Pitt Glee Club and Mandolin Club.

Never before since the advent of radio broadcasting has anything like last night's concert and program been given. At 7 o'clock Mr. Ziegfeld began speaking. Although his medium of expression is generally regarded as visible beauty, the speaker gave to his unseen audience some interesting and illuminating remarks relative to that field, in which he has won international fame. Following Mr. Ziegfeld's address, there was given the usual "news," "bedtime story" and other features for which the KDKA programs are noted.

Mr. Davis spoke at 8 o'clock. His talk was composed of "Introductory Remarks" regarding a series of 15 radio talks on popular and technical radio problems, which he will give from The The Post studio. His address of last night was technical, but of great interest to those thousands concerned with the radio and its field.

Musical numbers occupied the time between the close of Mr. Davis' address and the beginning of Dr. Mann's remarks. The bishop-elect began speaking at 9 o'clock. He was introduced by Rev. Dr. E. J. Van Etten, rector of Calvary Episcopal church, Shady avenue. He said in part:

"I have been asked to say a word by radio. After a three days' visit in Pittsburgh, which is to be my new home, I am leaving tonight for Boston. The world possibly may be 'listening in,' but what I have to say will, I fancy, be of no special interest outside our two cities: Boston, my home for 17 years, and Pittsburgh, which is to be my home for the years to come.

"Boston and Pittsburgh—it would be hard to name two American cities wherein the popular mind shows greater contrast. And yet my thought tonight is dwelling not on the difference but on the resemblances. The thing which has impressed me is the contrast of location. Climate, architecture and perhaps atmosphere are the underlying values which are identical. Courtesy and kindliness are here what they are there. The spirit of fellowship and good will is the same in both cities. Good citizenship is facing the same problems in Pittsburgh as in Boston. The campaign against ignorance and crime is the same here as there. Good men and good women are in both cities the uniformly valuable assets. And religion, the same as personal responsibility to God, is in Pittsburgh as in Boston, the one solution of the great social and political problems for which neither sermons nor laws can ever be a substitute."

The Pitt Glee Club and the Mandolin Club, directed respectively by T. Earle Yearsly and George R. McNemry, concluded the program with a collection of interesting instrumental and vocal numbers. There were readings by Phyllis L. Newlands.

Electrical Men See Promise on Coast

H. D. Shute, vice president in charge of sales, and H. P. Davis, vice president in charge of engineering and production of the Westinghouse Electric & Manufacturing Company, spent last week in Seattle as part of a Western tour in the interests of the company. Both men expressed themselves as being favorably impressed with the possibility for developing of the electrical industry on the Pacific Coast.

Bishop Mann Gives [illegible] Talk Tonight

Tarkington, Ziegfeld and Davis Also to Speak.

Rev. Dr. Alexander Mann of Boston, newly elected bishop of the Episcopal diocese of Pittsburgh, tonight will make his first public address in this city since his election, when he will speak from The Pittsburgh Post studio of the Westinghouse radio broadcasting station KDKA. Dr. Mann's talk will begin promptly at 9 o'clock.

Although the new bishop has not designated the subject upon which he will speak, it is known that he will have something of interest to say to Pittsburghers in general. It is significant that the ecclesiastic has chosen the radio as the agency by which, in his first important address to reach the thousands interested in his election and installation as bishop of this city.

Preceding the bishop's address at 7 o'clock, two famous personages in their respective fields will entertain the invisible audience of The Post Studio. These are Florenz Ziegfeld, Jr., of "Follies" fame, and Booth Tarkington, noted author. Ziegfeld is in Pittsburgh this week with his wife, Billie Burke, who is starring in "Rose Briar" at the Nixon Theater. Tarkington is author of the play.

64:21
Box 3
FF 36

The Independent Inter-Weekly for Schools

December 2, 1922.

Radio Broadcasting as a Factor in American Life

By William H. Easton, Ph. D.,

Westinghouse Electric and Manufacturing Company

WHY did radio become so widely popular in so short a time? This is one of the several mysteries connected with this mysterious art. The rapidity with which it swept the country is without parallel. Even those directly engaged in its development were astounded at the result of their efforts; and they are still uncertain as to why it happened.

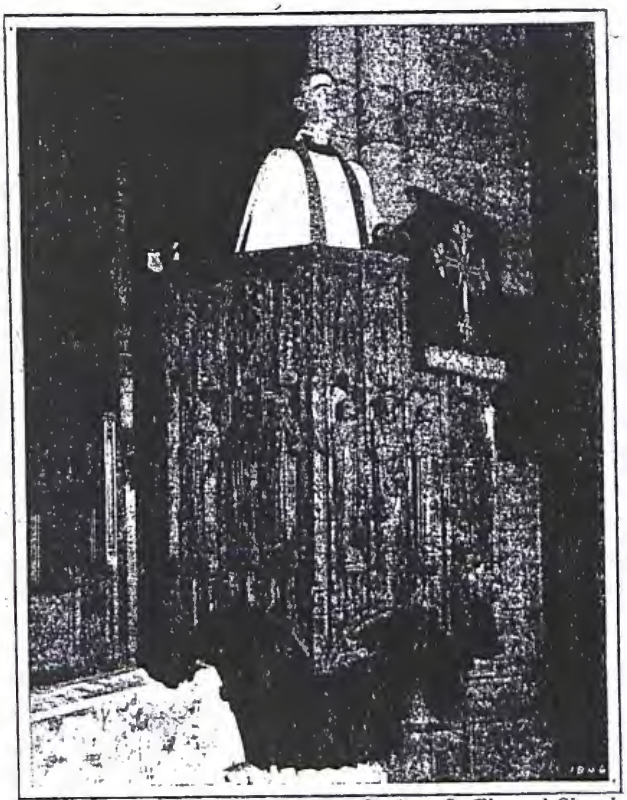
H. P. Davis, the Father of Broadcasting

Curiosity, of course, played a large part in the radio craze of last year. To hear music played 100 or 1,000 miles away was so extraordinary an experience that everyone had to have the apparatus which enabled them to do so. But something more than curiosity had to be involved, or else, now that curiosity is generally satisfied, radio would die out, just as did the kaleidoscope and the ouija board. Many prophesied this would occur, but it did not. Interest in radio is greater today than it ever has been; and no one who has access to the mail which pours daily into every well-managed broadcasting station can be persuaded that this new art is ephemeral. There is too sincere a tone of gratitude, too much evidence of long-continued listening-in, in these letters to indicate a passing fad.

An illuminating explanation for the general appeal of radio is, quite unintentionally, supplied by Stuart P. Sherman, of the University of Illinois. In an article in the November *Atlantic*, Prof. Sherman discusses the outstanding desires of the average American at various periods of our history. Summing up his conclusions, he says:

> In our first period [*i. e.* from 1776 to about 1865] he [the average American] wanted a stable government; and he got it, and wholeheartedly glorified the political and military heroes who gave it to him. In his second period [1865 to 1900] he wanted a rapid and wide diffusion of the material instruments of civilized life; he got them, and wholeheartedly glorified the industrial heroes who provided them. In his third period [the present], the average man is growing almost as scornful of "wealth and pomp and equipage," as John Quincy Adams. The captains of industry are no longer his heroes; they have communicated to him what they had of virtue for their hour. What the average man now wants is the large-scale production and the wide diffusion of science, art, music, literature, health, recreation, manners, human intercourse, happiness—the best to be had; and he is going to get them and to glorify wholeheartedly the heroes of culture who provide them for him.

If this be true, then there is no wonder that interest in radio broadcasting spread so rapidly; for here is the most effective medium ever invented for "the large-scale production and widespread diffusion" of science, music, and literature, culture, philosophy, and religion. Today, a boy with a simple receiver on an Iowa farm can get more of these things than could a New York millionaire of two years ago. Without effort and at practically no expense, he can hear the complete per-



Rev. Dr. E. M. Stires preaching by radio from St. Thomas' Church

formances of the Chicago Opera Company, concerts by the St. Louis, Detroit, and New York City symphony orchestras, organ recitals, oratorios, solos innumerable by artists of every kind and degree, and jazz to the limits of his endurance. In addition, and as a foil to too much music, he hears talks and readings by scientists, literary men, and entertainers; Shakespearean recitals; sporting events, graphically described, direct from the scene of action; and sermons by preachers of every creed and denomination.

Above all, the radio relieves the barrenness of the material life of the average American, and brings directly to the whole people those aesthetic and intellectual pleasures which have heretofore been enjoyed only by the very few. It supplies a want that is just as real as the desire for political freedom or for physical comfort. Culture has been the quest of Europe for centuries, but until recently we Americans have not felt the need of it, as a nation, because our chief interest lay in the exploitation of our vast natural resources. But the days of the "Winning of the West," of railroad construction, and other great new enterprises, are over for us, and we find ourselves wealthy, but (in Carlyle's words, quoted by Prof. Sherman) *bores*. Radio gives us, in a typical American way, the means to round out our lives, and we have welcomed it with typical American enthusiasm.

The one danger from radio culture lies in surfeit; but this danger is probably not great. The listener attends only to those things that really interest him, and, because of the wide variety of things filling the ether, he has ample material from which to make a selection. And as experience grows, taste improves. There is ample evidence of this. Better and better things are constantly being demanded by the public; and each artistic improvement made by the broadcasters receives instant praise. Nor is the listener, however isolated, dependent upon radio alone. He turns eagerly to the books and magazines that explain the things he hears and that assist in widening his horizon. Thus, he is led easily into literature, which, too often, meant nothing whatever to his fathers.

The radio is certain to become a vital factor in politics. From now on, millions of our citizens will get their political information at first hand, instead of at second, third, or fourth hand as at present; and this can hardly fail to stimulate the active popular interest in governmental affairs that is today one of our foremost needs. Furthermore, the candidate, when speaking by radio, must realize that his audience is not simply a crowd of his own sympathizers, but is a perfect cross-section of the public at large. Facts, and not "hokum," can alone win such an audience; and promises made to it are not lightly to be broken. Is it not permissible to hope that the result of all this will be a better general understanding of our important political and economic issues and an improvement in the calibre of our public servants?

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Father of Radio Broadcasting Tells of Problems

H. P. Davis Talks on Some Remedies Needed.

WANTS FANS TO MAKE CRITICISMS

H. P. Davis, vice president, Westinghouse Electric & Manufacturing Company, gave the first of a series of 15 radio talks on popular and technical radio problems at the Pittsburgh Post Studio KDKA. Mr. Davis' address follows:

"Friends of KDKA—In addressing you I like to speak to you in this relation:

"I presume I am talking to many thousands, of whom many have been listeners of KDKA for a long time; others, perhaps, who possibly are just beginning to take up this fascinating diversion and to get acquainted with us.

"Has it occured to you what a curious relation there is betwen us, and how little there is to let us know what the other thinks of us? The artist appearing before an audience is almost immediately aware of the success or failure of his effort; the theater manager has a barometer in his box office; the newspaper or the magazine can tell by its circulation to what extent it is meeting public appreciation. Public utility service companies can readily sense the public's attitude. But in this undertaking of ours—which in a way is also a public service—we have not yet found an effective means to sense the feelings of those who make use of KDKA's service.

Problems to Solve.

"Now, KDKA is anxious to change this situation and wishes in some way to obtain a closer touch with you. Besides, KDKA would like you to have a better understanding of radio matters in general and the problems that must be solved in an undertaking of this kind.

"With a full appreciation of the situation and realizing the serious nature of the difficulties now confronting broadcasting, I am giving this talk as a sort of opening chapter of a series of talks which will follow at short intervals from this station, on the various phases of radio broadcasting transmission and reception, and it is hoped to cover every angle of the subject.

"These talks will be given by some of the foremost radio engineers and broadcasting program managers.

"The broadcasting problems really divide itself into three major divisions, the first of which is that of regulation.

"When KDKA started to broadcast it was the only broadcasting station in existence. It offered a service entirely new and of a most fascinating and mysterious character. It, therefore, had no difficulties with interference, nor did it have to meet any criticism from its comparatively small audience.

"During the period of somewhat over two years that KDKA has been operating, however, this situation has changed materially. Receiving stations have been established at an almost inconceivable rate, so that now they number in the millions, and radio service has become actually a public necessity.

600 Broadcasting.

"Unfortunately, however, this growth is not confined to the receiving or listening public, but the number of broadcasting stations also has increased by leaps and bounds until now there are in the neighborhood of 600 broadcasting stations all bunched on two wave lengths.

"This huge but miscellaneous bunch of broadcasters and listeners is now confronted with a condition of chaos. There is no existing or proposed plan

Mr. Davis, vice president of the Westinghouse Electric and Manufacturing Company, nationally known as the "Father of Radio Broadcasting."

be changed from week to week.

"These stations should operate on wave lengths that night so that they would not interfere with each other, and selection and regulation of the stations and allotment of wave bands would have to be done from Washington.

"In addition to the selection of the stations, the hours which each station would broadcast also should be arranged so that they would not conflict —thus giving the listeners for that evening opportunity to listen to the broad-

available for transmitting and receiving, this limits the number of broadcasting stations that can operate without interference to a relatively small number at widely separated points.

"The radio engineers, therefore, have the problem of devising apparatus for transmitting that will permit sharper tuning and thus allow more broadcasting stations; and, similarly, receiving apparatus that will be more selective to allow a desired station to be tuned in without interference from other stations that may be broadcasting at the same time. This is possible, and in due course much will be accomplished along these lines.

Much to Be Done.

"To make the programs interesting, speech and music must be so transmitted and received as to allow the listener to receive the true tone qualities. A good deal has been accomplished in two years in this respect, but a great deal is still left to be done.

"These problems are being worked upon with intense activity in the research laboratories of the large electrical organizations, for the problem essentially is electrical, and by those organizations, and by them only, is the solution possible. None of this development work is possible by other organizations not so situated. Please do not forget this.

"I have not said anything about the cost of broadcasting. There has been much said about this, however, and a great deal of worry has existed as to the permanency of broadcasting because of the lack of revenue to those who are doing the broadcasting.

"Personally, I believe this is one of the least of the worries you should indulge in. Rather than worry about the expense to those who are broadcasting, you should be more concerned about the confusion to which I have referred, and the failure of the authorities to show inclination to correct it, which is discouraging to those who have development, quality and service in mind. Results along these lines are impossible to obtain under conditions as they exist at the present time.

"I believe the solution is in your hands, and in yours only. This situation will be rescued only when you—the great public—take organised action to bring your wishes before those who make the laws, and to the attention of those who are doing the broadcasting.

"I thank you."

...way to restrict the ... of stations broadcasting if there is to be any hope of enjoying non-interfering reception, so essential to worth-while broadcasting.

"Further, there must be supervision and regulation that will require both quality and service of the broadcasting stations.

"In the range of wave bands alloted by the Government for broadcasting, there are comparatively few available for that purpose and even if all of them were made use of it would not permit more than 30 or 40 stations throughout the country, and location and wave length would have to be carefully allotted and adhered to, to permit these to operate at the same time without interference.

"The problem of accomplishing this with 600 or more stations now operating, and possibly as many more starting in the near future, will make it plain for you to see that the situation is out of control.

"Pending such time as there is proper organization and proper federal regulation to remedy this situation, there have been many suggestions made to improve existing conditions, and the one which has most frequently appeared and has been the most often urged is that of a silent night to permit of long distance reception.

Plan Is Difficult.

"Have you realized how difficult this will be? Suppose that in the Pittsburgh territory all the stations closed for one night to allow local listeners to receive distant programs. In the selection of the night's it would of course be out of the question to select nights in advance when reception conditions would be favorable.

"Next, if all the rest of the world were operating, even though the local stations were closed, the interference still would be controlled and satisfactory reception would be very uncertain.

"It appears that the better suggestion would be to have one night a week in which a few selected stations properly picked throughout the country would operate, and these only. This selection of stations, of course, could ... on interfering wave lengths would ... closed that night.

"If this arrangement were possible, it would give the listening public an opportunity to compare these various stations. In my opinion, it would lead to the solution of some of these problems, thus testing the desirability of limiting the number of stations permitted to broadcast, and of selecting those most capable for such service.

Program Quality.

"But the problem is not merely one for the legislators, although their problem is one that we must all support and urge to the end of organized regulation and limitation of the stations that are permitted to broadcast. In a later talk this phase of the problem will be discussed at length and suggestions made as to how you can exert your influence to bring this about.

"The second division of our problem is that of program quality and development.

"Now, in the matter of programs, we all are vitally interested. Have you ever thought what a task it is to provide a daily program, hours in length, seven days in a week, each of which will be pleasant and satisfactory? Especially when it is recognized that the service given is gratuitous by those who appear on these programs?

"KDKA is especially anxious to give programs that are pleasing to the larger number of its listeners. We ask your co-operation. This co-operation can be given by suggestions, and by encouragement to the artists who appear. A small effort on your part may mean a great deal in our success, and words of praise to the performers will make our task easier in stimulating the desire of performers to appear.

"Nothing discourages an artist so much as a cold audience, and I think we must admit that there is nothing colder than a radio audience unless we will each of us recognize that we have a duty that exists beyond the mere listening to the programs.

"There are hundreds of thousands—yes, millions—of listeners to the nightly programs of the broadcasting stations. At the present time this is a gratuitous service, and as far as I personally can see it is likely to remain so always.

Asks for Criticism.

"But even recognizing this, what is the attitude of the listeners? Are you always to remain passive and take what is offered by the broadcasting stations, or will some way be found to correct this?

"I appeal to you, therefore, for help. Write to KDKA, KYW, WJZ or WBZ, whichever is nearest to you—all stations of the Westinghouse Electric and Manufacturing Company—and give criticisms or suggestions. Thousands have done this, but the number is only a small fraction of the vast unknown and unseen audience. We promise you our best efforts to follow the will of the majority if you will respond.

"The third division of our problem belongs to the radio engineer.

"I want you to realize that this service of radio broadcasting is only a little more than two years old. Obviously, with so young an undertaking, much as to be done in the way of improvement and development, which is bound to occur if those who have the ability, means and facilities to accomplish it are encouraged and permitted to do so.

"There are only a relatively few individuals and organizations so situated that they can accomplish this necessary and desirable end. This work must be done by those who can do broadcasting and who can make the receiving apparatus.

"I already have indicated how few wave bands are available in the limits permitted by the Government for broadcasting. With the apparatus now

graduated from the ... technic Institute with the degree of B. S. in electrical engineering in 1890, and after a trip to Europe and ... few months spent with the Thomp... company, entered the ...tment of the ... son-Houston ... department. He ... detail engineering company in 1891. The Westinghouse company in 1896 he was placed in charge of this department; in 1908 he was made manager of the engineering department. This position he held until 1911, when he was elected vice president.

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Westinghouse Wizard, Father of Radio Broadcasting

Harry P. Davis, Master of Electrical Detail, Won Big Job Through Infinite Capacity for Taking Pains with Little Things

By O. D. Foster

Good background material p1

IN THE EARLY DAYS of the development of electrical energy, when the boilers at the Pittsburg plant of the Westinghouse Electric & Manufacturing Company were fired with natural gas, a tall youth became an apprentice in the shop. Without attracting much attention, he went about his business, picked up the detail of the shop, finished up odd jobs, and made himself generally valuable. His bent was experimentation in electrical engineering, but his keen eyes and alert brain were actively studying shop methods, systems, and manufacturing requirements.

Gas pressure was often very low, and it was only during the late hours of the night that the gas supply was sufficient to fire the boilers to a point where necessary tests could be made.

Late one night the shop superintendent returned to the plant to get something he had left in his desk. He was greatly surprised to find the tall youth bending so eagerly over his work bench that he did not even notice his entrance.

"Trouble, Davis?" he asked a little curiously.

Startled, Davis looked up and flushed a little under his chief's inquiring gaze.

"No," he said, somewhat embarrassed. "But I can work better at night. You know we can't get steam enough during the day to do our testing, and there are lots of ideas I want to try out."

After that the chief dropped in now and then when he happened to be in that neighborhood, and almost without exception he found the young man at work. Sometimes he was testing, sometimes working out a difficult experiment; but it was a rare thing not to find him in the shop. The department head began to watch Davis's way of handling his duties. There were no half-baked plans, hastily conceived and imperfectly executed; no wild experiments, carried out at a serious waste of time and material; and no bombast or apparent desire to attract attention. The youth went quietly about his business, did his work faithfully and well, and then, each day, *added just a little more to it in thought, initiative and labor* until he lifted himself out of the ranks.

HARRY PHILLIPS DAVIS
Vice-President, Westinghouse Electric & Manufacturing Company

This was the beginning of the career of Harry Phillips Davis, now vice-president of the Westinghouse Electric & Manufacturing Company, in charge of engineering and manufacturing: father of radio broadcasting and known internationally, not alone for his numerous inventions, but also as a remarkable organizer, systematizer and an enthusiast on the future possibilities of electrical development.

Young Davis climbed slowly at first, but steadily, step by step he progressed in the engineering work, and before long his superiors began to delegate difficult or important duties to him.

"Turn that over to Davis," came to be the paraphrase for "Get it off your mind." For, once in his hands, an operation was cared for and followed up to its conclusion, regardless of whether the commission was the simple transfer of a deputized order or the working out of some complicated experiment. Once given over to him the work became his responsibility; it was not shifted to the shoulders of another or slighted because he did not consider it of great importance. In his opinion each job, no matter how small, was worthy of his best attention and could not be released until it was 100 per cent. accomplished.

For background he had the training of the Worcester Polytechnic Institute, which he entered on a scholarship, and from which he graduated with honor with the degree of B. S. in Electrical Engineering. For a year after he graduated he taught at the institute, then came several months abroad, and after spending a brief period with the Thompson-Houston Company he entered the engineering department of the Westinghouse Company in 1891. Within a few years he organized the detail engi-

neering department and later became manager of engineering. This position he held until 1911, when he was made vice-president, in charge of manufacturing and engineering.

Backgrounds are important. They either make or mar. Young Davis had spent many precious hours of labor on the background which was to be the setting for his future career. Sometimes he may have wondered, as boys will, whether the game was worth the price. Many times he was thoroughly discouraged, but he always went doggedly back to work, determined that no weakening on his part should mar his chance of successful accomplishment. One of the men who worked with him in those early days told me that many a night during the early period of the electrifying of the street railways, one could have found young Davis in the shops at the car barns until two or three o'clock in the morning—and sometimes all night—testing out the Westinghouse equipment, making inquiries among the men as to trouble causes, studying into the most minute details with a marvellous accuracy of judgment. No complaint was too small to merit his earnest attention. If a man had had trouble with the apparatus, Davis wanted to know *how* and *why* and what finally remedied it.

Saw Early Possibilities in Radio

As a consequence, there is, perhaps, no technician in this country to-day who has a greater mastery of the detail of electrical development than has Harry P. Davis.

The greatest indictment which can, as a rule, be laid against a mind strong in detail matters is lack of progress and initiative. Contrary to usual precedent, Mr. Davis is as keen to seize a new opportunity as he is to work out the infinite detail of a complicated problem. Usually the mind which is bent to the working out of intricate problems involving technical skill finds it difficult to act swiftly on general questions, nor is it often thoroughly in tune with public demands, having studied so intensively in its own specialized range. Let us see what happened to Mr. Davis.

In the Summer of 1920, Frank Conrad—now assistant chief engineer of the Westinghouse Electric & Manufacturing Company—who had made an exhaustive study of radio possibilities during the war period, began experimenting when the government ban was lifted by sending out Friday night concerts from his amateur station to his friends. The experiment aroused unusual interest. Then Mr. Davis, upon reading a newspaper advertisement inserted by a department store for the purpose of calling attention to its amateur radio department, was set thinking.

Dorothy Francis, formerly prima donna of the Chicago Opera Company, broadcasting from the Westinghouse Electric Company's station at the Waldorf-Astoria Hotel, New York

His mind conjured up the remarkable opportunity for a new communication service having the broadest possibilities for wide publicity and utility. Up to that time radio had been more or less in the hands of experts, whose ideas were its development as an extension of existing communication service, and the horde of amateurs mostly made up of young boys, and it had been used either for individual communication service, as in the war, or for the youngsters' amusement. If Conrad had aroused interest through these limited attempts, thought Davis, what could not be accomplished through organized and properly administered effort, with the talent of the country on tap for the public at large!

Visualizes Benefits to Mankind

Swiftly his mind encompassed the vast range of possibilities. What would it mean to the farmer's wife, alone in an isolated hamlet, to pick up a radio set and hear Wagnerian opera, the dream of a lifetime! What would it mean to the shut-in, deprived of all contact with the outside world, to listen to lectures, concerts, the news of the day! What would it mean to the blind man, or cripple, unable to follow the pursuits of boyhood and manhood, to listen in and get the score on some popular football game, hear the wild cheers of the spectators and visualize through the careful description of the operator exactly what was happening on the football field! What would it mean to people in hospitals, on pain-racked beds!

Develops Practical Side

Nor was this all. The moving panorama showed him a picture of communication which would reach to the very bowels of the earth. With radio apparatus properly installed it has been demonstrated that it is possible to communicate with entombed miners and carry to them messages of hope and sympathy to renew their courage. Ships at sea were already using the radio for the most humanitarian purposes, carrying medical advice to ships out of reach of land or a physician, as well as conducting burial services at sea, administering the rites of consolation to dying men, carrying news of disaster and hope of rescue. What might it not mean to the mining camps, the logging camps and others, shut in for months in a dead wall of snow, to be able to lighten their weeks of inactivity by keeping in touch with the world outside!

Thus Mr. Davis visualized the enormous possibilities of radio development. Then he set to work to develop them from the practical side. It was about this time that the presidential election came along. This offered an excellent opportunity for trying out the public's interest in receiving news of this character, and on the evening of November 3 the news of Harding's election was broadcast from the East Pittsburgh laboratory. This was so well received that

(Continued on page 278)

Conrad begin in Summer? p 2 col 1 above last ¶

p2 col 3 last ¶

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Westinghouse Wizard, Father of Radio Broadcasting

(Continued from page 262)

Davis at once threw himself into the work and set out to plan other programs of equal interest.

It was not long, however, before he realized that while he had provided an innovation in the way of public service, in a large measure the service would not come into its own until there were listeners, and the only audience then existing consisted of such amateur radio experimenters as would care to give up time from their own interesting experiments to listen to the East Pittsburgh station.

This resulted in eighteen months of most discouraging work, but in spite of all set-backs, three new stations were opened, at Chicago, Newark, and Springfield, Mass.

One of the first of the plans to be put into execution was the broadcasting of a religious service directly from the church into the home. Arrangements were concluded with Reverend Edwin J. Van Etten, Pastor of the Calvary Episcopal Church of Pittsburgh, who earnestly co-operated with Mr. Davis and his asociates in broadcasting the service. This was the first time an event was ever realistically transferred from the scene of its occurance to the homes of an unseen audience.

The broadcasting of the church service met with such success that it was decided to send out some of the speeches made by prominent men at public dinners. One of the earliest was a speech made by Secretary Hoover, and this met with such favor that it was followed by the broadcasting of many others.

Tremendous Interest in Sporting Events

Next a local boxing match came along. This seemed a splendid opportunity to try out another experiment. It was decided not to limit the public to the things to be heard, but to visualize for them the attendant things they would have liked to see. A local paper arranged with one of its sporting editors to be at the transmitting apparatus at the ringside and report faithfully the progress of the bout. Each important move of the contestants was reported into the microphone. The sound of the gong, the cheers of the audience and their remarks were also transmitted as an accompaniment to the report of the progress of the fight.

This way of transmitting both sight and sound added enormously to the pleasure of the radio audience. It was followed later by the now familiar reports of ball games.

One thing which had interfered with faithful reports was the spontaneous cheering of the crowd at brilliant plays. Sometimes this burst out before the operator could get his report over to the listening fans, and it confused the program, for the listening group did not know exactly what all the cheers were about. This was rectified by installing a sound-proof booth, and to-day the operator follows the plays, reports the moves, and then "turns on" the cheering at exactly the right moment.

Solves Transmitting Problems

In its progress from its inception to its existing use, the radio might be said to have passed through three distinct stages. The first music sent out was what is popularly known as "canned." This was the simplest method, for it could be broadcast under the most favorable conditions and with little ingenuity. But this was only an initial step which gave zest to the public's appetite, and offered Mr. Davis a basis to work on. To his vigorous mind the public wanted real things, big things, current events with life to them; and so he went out for the baseball games, the sporting events, and the great open concerts. If fifteen to twenty thousand people would crowd into a stadium to listen to a concert, many of them standing all the afternoon, he was convinced that it must certainly have considerable public interest, and this was the type of program he was after for his radio fans. The broadcasting of these public events might be said to be the second step.

In every public group there always remain a few who appreciate the superlative in art, picture or story. They are not always those who are able to gratify their desires. And while we are struggling in this young country to give the art lovers what they crave, yet we are progressing slowly in popularizing prices for grand opera, in arranging great open concerts, and in opening up our museums of art. The last two years have seen great strides in the right direction, and Mr. Davis saw how he could aid in the work. A splendid start was made in the broadcasting of opera in Chicago, and because the station was central and located in a territory peculiarly well adapted to the purpose, this was heard over about nine-tenths of the United States, and was so well received that it was followed last winter by broadcasting from the Metropolitan Opera House.

One of the many problems which presented itself in the early days was the difficulty experienced from resonance in the room in which the transmitter was placed. Many experiments were tried and the first summer an out-of-doors studio was used. This demonstrated the necessity of providing an echoless room for transmitting purposes, and after much thought and a great deal of experimenting plans for the present type of studio were worked out by Mr. Davis. All studios are now constructed with acoustic properties as ideal as possible for the transmission of sound.

One such studio has just been opened at the Waldorf Astoria in New York City and will be used for the greater convenience of those soloists who are giving programs sent out by the "W. J. Z." station at Newark. The Pittsburg Post studio at Pittsburgh is a similar undertaking and makes it possible to secure the services of some of the famous stars of the country who could ordinarily be heard by only a very small portion of their present audience.

Concerts While Traveling

Each day brings new suggested uses. A bus company in Sacramento is experimenting with the installation of radio equipment for their eighty-five busses and soon we may be able to ride along the boulevards and listen to concerts from the air. Prisons are many of them being equipped with radio stations, the programs to be used being of an educational and instructive character.

Amusing stories aplenty come in continually to radio centers. There was the policeman who was peacefully traveling his beat one summer night when he heard frantic calls for help coming from a second story window. Rushing up, he rang the bell, only to be greeted by a placid woman who let him in with great astonishment. A radio program was in operation, and the sounds he had heard were part of a recitation.

If executive ability is the power to earn your bread by the sweat of the other fellow's brow, radio is even more thorough in getting things done, for it extracts from an illimitable void the concerted and individual efforts of thousands of artists as entertainment for the man who sits peacefully smoking in his own armchair.

Western Union Telegraph Circular
January 1923

MR. H. P. DAVIS, vice-president of the Westinghouse Electric and Manufacturing Company, and "Father of Radio Broadcasting," speaking of the outlook during the coming year, said recently:

"Friends of Radio:

"Has it occurred to you what a curious relation there is between us, and how little there is to let us know what the other thinks of us? * * *

"In this undertaking of ours—which in a way is a public service—we have not yet found an effective means to sense the feelings of those who make use of broadcasting service.

* * *

"We are anxious to change this situation and wish in some way to obtain a closer touch with you. * * *

"Have you ever thought what a task it is to provide a daily programme, hours in length, seven days in the week, each of which will be pleasing and satisfactory, especially when it is recognized that the service given is gratuitous by those who appear in these programmes?

"Nothing discourages an artist so much as a cold audience, and I think we must all admit that there is nothing colder than a radio audience unless we will each of us recognize that we have a duty that exists beyond the mere listening to the programmes.

"There are hundreds of thousands—yes, millions—of listeners to the nightly programmes of the broadcasting stations. At the present time this is a gratuitous service, and as far as I can personally see it is likely to always remain so.

"But even recognizing this, what is the attitude of the listeners? Are you always to remain passive and take what is offered by the broadcasting stations, or will some way be found to correct this?

"I appeal to you, therefore, for help. Write to whichever station is nearest you and give criticisms or suggestions."

From RADIO REVIEW OF THE EVENING MAIL, NEW YORK, DEC. 30, 1922.

Interstate Radio Body Urged by "Father of Broadcasting" as Aid

H. P. Davis Has Plan To Regulate Licensing.

WOULD HAVE TWO CLASSES

With the idea in view of greatly expanding the usefulness of radio telephone broadcasting, H. P. Davis, vice president of the Westinghouse Electric and Manufacturing Company, nationally known as the "Father of Broadcasting," has suggested a plan for the establishment of a national broadcasting service.

Mr. Davis thinks that a regulating body should be formed to control broadcasting. In an interview, he said: "On the assumption that broadcasting, if not already so, soon will develop into a stable public utility, where the public interest would become paramount, it would appear to us as though the regulating machinery should follow the pattern that has been worked out with other utilities —namely, the establishing of a public service commission, which, in the case of radio, would be an interstate radio commission, and, therefore, a Federal commission, created by presidential appointment.

"This commission should be vested with full power and authority to make regulations and enforce same to the full extent of existing laws.

Would Control Licenses.

"All requests for licenses should come to and be approved by this body, and when an application for a license is approved and the license given, it should take on the nature of a franchise, which should be enjoyed by the owner so long as he gives the service required. This is important, because a large investment is necessary, and in order to encourage the making of the instrument and protecting it afterwards, the owner, so long as he follows the regulations of this commission, will have assurance of a definite tenure in his ownership.

"It appears to us that there must be two classes of broadcasting stations, and, as we see it, these two classes ought to be sufficient. First, there will be stations that are national in scope—broadcasting material of national interest, and, second, local stations serving particular districts.

"In the first class, we think there should be a limited number of stations of considerable power with wave lengths arranged so that they will not interfere at any point, and located where program material always will be available. These will be national stations. They should be, if possible privileged to the greatest extent permissible, so that they may avail themselves of existing facilities such as telephone and telegraph lines, or other means of communication from point to point, for the purpose of picking up interesting features. They, also, insofar as the public policy will permit, should be privileged, if necessary, to requisition program features for this public service.

"The national stations can, if it is desired, transmit at two wave lengths; that is, on the present wave lengths of 360 or 400 meters and also on a wave length that can be relayed. The local stations should be given wave bands that will permit existing receiving apparatus to tune in on them, but these wave bands should be separate sufficiently from the national stations so as to have no interference. It is our belief that the shorter wave lengths are desirable for the local stations, as it gives opportunity for more stations with less interference.

Permit Widest Use.

"As many of these local stations can be allowed as the discretionary powers of this commission determine, with the fact of the proper service in view to make them non-interfering. Adjacent stations can be made non-interfering by proper allocation of the wave lengths within the wave band available for this service; these local stations should hold their licenses so long as they give a service satisfactory to their listening public and to the commission.

"In operating, these local stations would supply features of local interest and in addition would relay programs or parts of programs of the national stations, selecting from the national stations such material as would interest the listeners.

"A plan of this kind can be worked out and would, in our opinion, permit the widest possible use and development of broadcasting. The service of the local stations would allow crystal set reception of distant national stations through the relaying of their programs by the local station. On the other hand, it would not prevent those having suitable receiving sets, selecting programs at will of such of the national stations as they could receive. The privilege of operating a radio receiving set shall be subject to such rules and restrictions as the interstate radio commission, acting in the interest of the public, may find it desirable to enforce.

"This plan obviously would furnish a service of special importance, and especially for those who cannot afford expensive receiving sets, as it would give them the equivalent of elaborate long distance receiving sets and would place both the national and local services at their command."

Pittsburgh Church Unveils Tablet Given by Unseen Radio Congregation

The Boys' Choir of Calvary Church, Pittsburgh, Pa.; Their Voices Travel Into Many a Home by Means of Radio. The Bronze Tablet, Contributed By the Radio Congregation, Is Seen Partially Veiled By the American Flag.

A MOST unusual ceremony—the unveiling of a bronze tablet contributed by and dedicated to the unseen radio congregation of Calvary Church, Pittsburgh, Pa., took place during the church services recently.

The Rev. Edwin J. Van Etten, pastor of the church, who was the first minister in the world to have his services broadcast; Bishop Alexander Mann, of the Pittsburgh Episcopal diocese; H. P. Davis, "father of radio broadcasting" representing Station KDKA, of the Westinghouse Electric & Mfg. Co., which station first broadcast the church services; and other prominent Pittsburghers took part in the ceremony.

More than 4,700 people, representing 40 states of the Union, five provinces of Canada, Cuba and Bermuda, London, England, even sailors from ships sailing the Atlantic Ocean, contributed to the purchase of the tablet. The contributions came in every form of legal tender—silver dimes, stamps, nickels, pennies and checks. There were a surprising number of Canadian dimes. A worker in the Southern Cotton Mill sent Dr. Van Etten two cotton socks with a nickel in each toe. A sailor from a boat on the Atlantic sent the minister 120 pennies he had won playing penny ante.

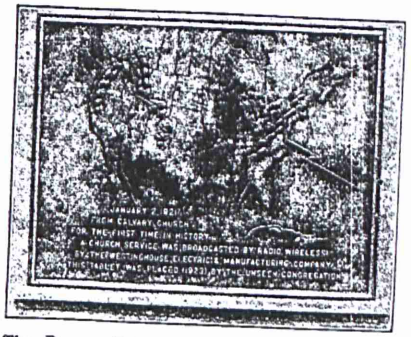
These contributions came as a result of Rev. Van Etten's idea that his radio congregation to which he had been preaching since January 2, 1921, might like to contribute to some sort of memorial. Accordingly, during the reading of his regular church announcements Dr. Van Etten addressed, directly, his unseen hearers and told them of a plan to have small contributions from such of them as might like to participate. The sum obtained from the contributions was to be used for a memorial dedicated to them.

The first announcement was sent out into the ether one Sunday last February and contributions have been coming into Calvary Church ever since. The amount obtained, all of it in small contributions, has been enough to purchase a beautiful bronze memorial tablet.

The tablet is 30 by 24 inches in size. On it is a relief map of the territory where Calvary's Church has been heard and this includes all of the United States and a considerable surrounding territory in Canada, Mexico and the oceans.

The map is criss-crossed by jagged lines, indicative of radio waves, emanating from the radio station at East Pittsburgh, Pa., where the church services go out into the air.

The entire services, including the dedicatory address, as well as the Calvary Church services, were broadcast by Station KDKA.

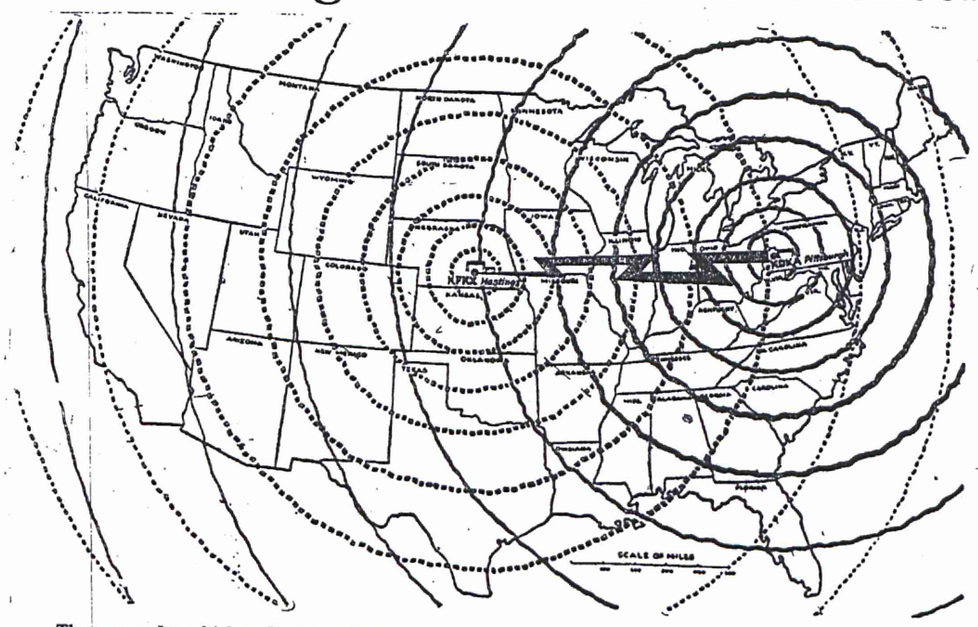


The Bronze Tablet, Contributed By and Dedicated To the Unseen Radio Congregation.

64:21
Box 3
IF 37

RADIO BROADCASTING NEWS

Repeated Radio Concerts Herald New Era Of Radio Broadcasting; Westinghouse Station Is Pioneer



The means by which radio repeating is accomplished is illustrated in the diagram above. The heavy continuous lines indicate the concert broadcasted from Westinghouse station KDKA, at East Pittsburg. The arrow shows the concert being sent to Hastings, Nebraska, on the low wavelength and the dotted lines indicate the repeated concert broadcasted from Hastings.

"Radio broadcasting repeating" is the newest phrase in the English language. It came into general use when the Westinghouse Electric and Manufacturing company announced the opening of its new station KFKX at Hastigs, Nebraska, November 21, 1923, which will be operated as a repeatig station..

Radio broadcasting repeating is, however, more than a phrase, because it opens a new era in radio broadcasting.

Radio programs originating in important centers may now be received in isolated and far distant points with the same ease that they are received in the immediate vicinity of the broadcasting station originating the program.

This is possible in the present instance in the case of KDKA of Pittsburg, Pa, and KFKX at Hastings, Nebraska. KDKA broadcasts the original program, which is repeated with equal strength at KFKX, thus doubling the rangs in which the reception of the original program was possible.

The methods used by a radio repeating station in broadcasting are much the same as those employed in the distribution of electric current with special apparatus, and repeated either at the same high frequency for longer transmission to another repeating station, or it is rebroadcast at a lower frequency which will permit its reception on existing receiving sets, and the repeated program eerves an entirely new area, greatly increasing the numbers of listeners reached.

Owing to the speed at which radio waves travel, which is the speed of light, the repeated broadcast is simultaneous with the original broadcast and the listener is wholly unaware that he is hearing a repeated program.

It is of more than ordinary interest that the Westinghouse Electric and Manufacturing company, which was the pioneer in radio broadcasting, should also take the initiative in this most epochal step. Radio repeating was suggested and recommended by H. P. Davis, vice president of the Westinghouse Electric and Manufacturing company, nearly a year and a half ago. He stated at that time that he was convinced that the solution of the radio broadeasting problem lay in the introduction of a few centrally located broadcasting stations, which would serve many low powered broadcasting stations so located as to obtain the best of program material, would be able to supply the entire continent. These stations should have great power and be non-interfering, and thus be able to cover a great radius, transmitting their programs at high frequency. At distance points should also be repeating stations, of great power, available simply to repeat the original broadcast at the same high frequency.

simultaneously although the pu hears only two of them. Thus radio repeating actually acco. plished.

There is no limit to the range of repeated concerts. KFKX could, just as easily as KDKA, repeat the

Frank Conrad, assistant chief engineer of the Westinghouse Electric and Manufacturing company, who developed the high frequency transmitting and sending apparatus and so made radio repeating possible.

concert to another repeater located in another section of the country. In fact with enough repeating stations, one central broadcaster could service the entire world.

TO-DAY'S RADIO PROGRAM

THURSDAY, DECEMBER 6
(Eastern Standard Time)
WJZ, New York (660 kilocycles)
(455 meters)

3 p. m.—Christmas music by the St Cecile quartet, from the rotunda of the Stewart building; Homer Burress and De Los Becker, tenors; Alvah Nichols and James Thomas, basses.
5:15 p. m.—Dollye Howard, soprano.
4:40 p. m.—Alexander James, tenor.
5 p. m.—"Voice Hygiene," by Dr John Levbarg.
5:15 p. m.—"Sidelights on Egypt," by Mrs Grace Thompson Seton.
5:30 p. m.—Closing reports of the New York State Department of Farms and Markets; farm and home reports; closing quotations of the New York Stock Exchange; foreign exchange quotations; news.
7 p. m.—"Santa Claus Stories," by Burr McIntosh.
7:30 p. m.—Sadie Tresonthick, soprano.
7:45 p. m.—Literary program.
8 p. m.—Sadie Tresonthick, soprano.
8:15 p. m.—Dance program by Irving Selzer and his orchestra.
9 p. m.—Dinner of the New York Railway club, from the Hotel Commodore; speeches by Professor Meyer, of Princeton university, and Senator Ford.
10:30 p. m.—Dance prog Hotel Commodore.

WJY, New Yo

7:30 p

Good graphic
P. 1

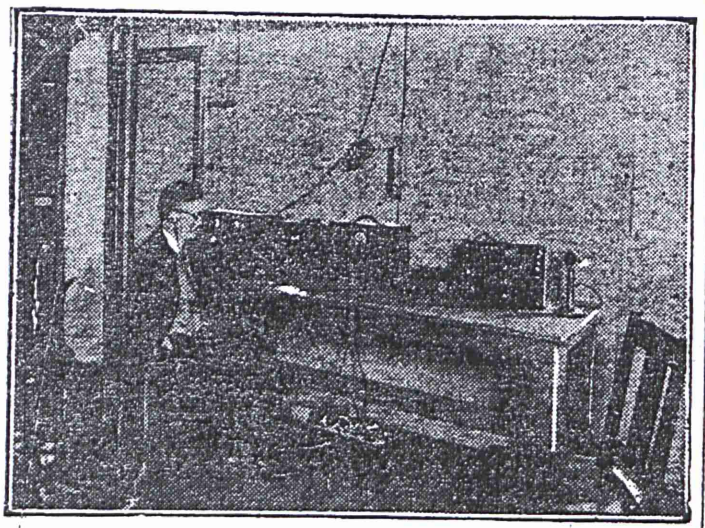
end it can be transformed in a way that makes it suitable for us at the receiving end.

It is practically the same thing with radio repeating. A central station broadcasts the original program. This is sent out on two frequencies—one frequency is such that radio receivers in general use may receive the broadcast; the other frequency is very much higher—so that that radio receivers of the type now in use cannot receive it. This is a necessary and desirable feature as it is necessary that the high frequency transmitting wave must be quiet in order that the repeated program may not be blurred by extraneous noises such as are caused by the attempt to tune in with regenerative receiving sets. This high frequency carries the program to the distant repeating station where it is received

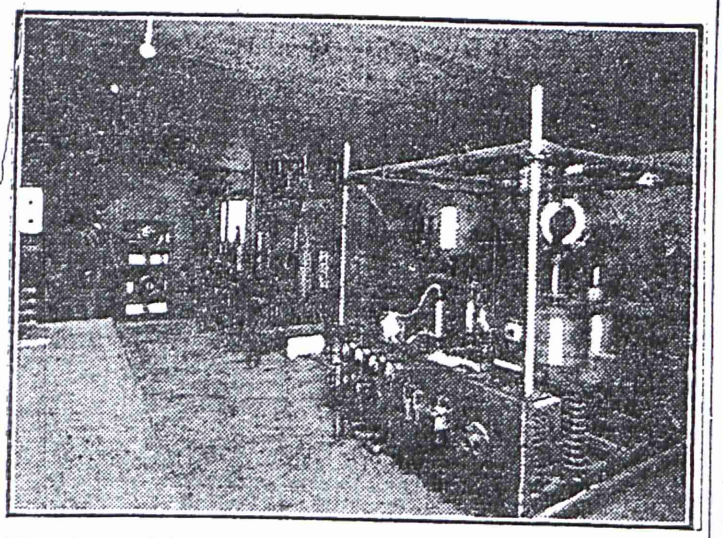
Manufacturing company has followed this suggestion and the scheme seems to be the practical solution to the broadcasting problem, as evidenced by the reception given by the public to the new Hastings, Nebraska, station.

This station repeats the broadcasts sent from the Westinghouse station KDKA at East Pittsburg, Pennsylvania, the world's pioneer. After the first program which KFKX repeated from KDKA, letters were received from every part of the continent, telling of the wonderful results and reception from this new station. Thus KDKA through KFKX has greatly increased its audience, and has brought radio to a vastly greater number of people.

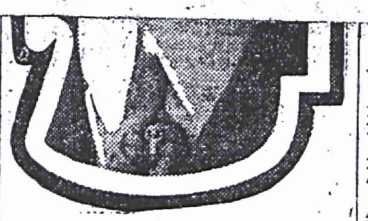
As Mr Davis predicted, radio repeating may be the solution of the broadcasting problem. A few broad-



Short wave or high frequency receiver at Hastings, Nebraska, used to receive the high frequency broadcasts from Westinghouse station KDKA at East Pittsburg, Pa.



View of transmitting apparatus at Westinghouse station KFKX, at Hastings, Nebraska, the first radio repeating station in the world.



H. P. Davis, vice president of the Westinghouse Electric and Manufacturing company.

By this means a blanket of high frequency radiations will be made to cover the whole country. Then in each community it would be possible to locate a low powered and repeating station which could be used to repeat the selected program for those living within its range. These stations can also be used to furnish local color for the immediate vicinity.

The Hastings station is not a low powered repeater. On the contrary, it has the same power, or about the same power, as KDKA, but it was installed to demonstrate the principle of repeating, and can be used to repeat at a high frequency which is inaudible to the ordinary receiving set, or at a lower frequency, name 1050 kilocycles, or 286 meters, which permits it to be heard by the ordinary receiving sets.

In actual operation KDKA and KFKX operate in the following manner. KDKA has two transmitters. One of the transmitters broadcasts on 960 kilocycles frequency. These are the broadcasts which KDKA'S audience has been hearing for the past three years. The other transmitter broadcasts the same concert simultaneously on 3200 kilocycles frequency. This broadcast is the one received at KFKX. A special receiver is used which is connected by a telephone line to the radid transmitter where it is again broadcast, but this time on 1050 kilocycles frequency. There are three transmitters broadcasting

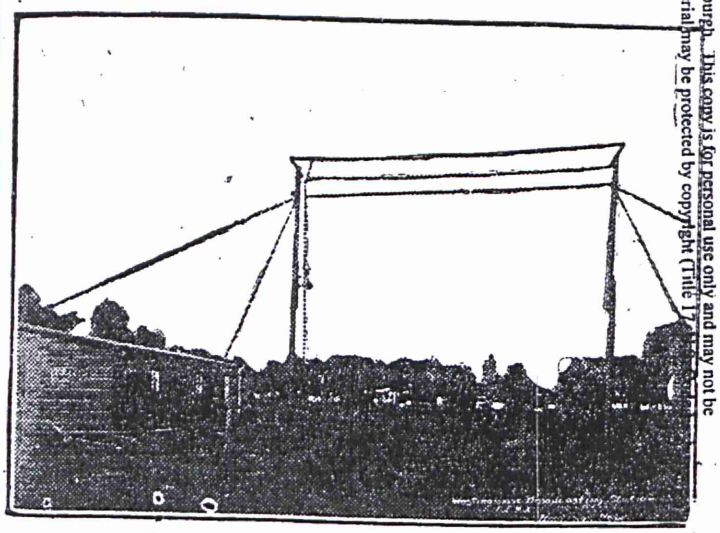
company chorus of four voices.

WEAF, New York (610 kilocycle (492 meters)

11:20 a. m.—Musical program.
11:30 a. m.—"Care of the Hands by Mrs Auralee Bloom.
11:50 a. m.—Market reports.
4 p. m.—Muriel H. Wilson, lyric s prano.
4:15 p. m.—Maurice L. Seifstei blind tenor.
4:35 p. m.—Muriel H. Wilson, lyr soprano.
5 p. m.—Christmas program f children.
7 p. m.—Interdenominational se vices under the auspices of th New York Federation of Churche Address by the Rev Irving F Berg. Arthur Billings Hunt, bar tone, and Anne B. Tyndall sopran
7:30 p. m.—Sport talk by Thorn ton Fisher.
8:40 p. m.—Edna Fields, mezz contralto.
8:10 p. m.—Aida Quartet.
8:40 p. m.—Eda Fields, m contralto.
8:50 p. m.—Reading of mag story by William L. Roberts.
8 p. m.—William Sweeney, ba tone.
8:15 p. m.—Music by the "C fornia Ramblers."
9:30 p. m.—Aida Quartet.
9:45 p. m. — Margaret mezzo-soprano, and Jose querriere, tenor.
10 p. m.—William Fried pianist.
10:15 p. m.—William Swe baritone.
10:30 p. m.—Margaret mezzo-soprano, and Jose Dela diere, tenor.
10:45 p. m.—William Friedm pianist.
11 p. m. to midnight— Vin Lopez orchestra.

WOR, Newark N. J. (740 kilocy (405 meters)

2:30 p. m.—Soprano solos by E. Porth.
2:45 p. m.— Bertha Luck, tralto.
3 p. m.—"The Experience Magazine Writer," by Ida M. bell.



View of extremely short antenna used to receive the high frequen broadcasts at Westinghouse station, KFKX, at Hastings, Nebraska.

64:21
Box 3
FF 37

AT&T
WEAF ?
Chairs

C O P Y.

January 9, 1924.

Mr. E. M. Herr,
President.

As you know, for the last two years I have been urging a plan of broadcasting which, as events develop, indicates one that offers the greatest possibilities for national and even world-wide broadcasting and reception.

This has been discussed by correspondence and also verbally with Dr. Goldsmith and Mr. Sarnoff, and many others in our own organization, and there is considerable correspondence in my files about it.

1/9/24
Memo by
HPD
"network
idea"

This plan proposes the following -

First - The establishment of a relatively few high power primary broadcasting stations; these stations to be located in centers where the best of program material is available, as for instance, San Francisco, Chicago, New York in this country; London in England; Paris, Berlin and Vienna in Europe; and similar suitable places in Asia, Japan and possibly Australia, South Africa and South America; each of these primary broadcasting stations to have an exclusive wave band, for its individual use, to permit encircling the globe if thought desirable, without interference.

These stations will have facilities to send program material out not only at a wave audible for receiving sets, but also on another wave inaudible to receiving sets; this latter to be a high power frequency wave similar to that now being used by KDKA and KFKX.

Second - Scattered at suitable locations throughout the world there should be high power repeating stations whose purpose will be simply to relay or repeat the programs being broadcast by the primary broadcasting stations on the high frequency wave, with, if required, facilities to make a world circuit.

Third - An unlimited number of low power secondary, or local, broadcasting stations, using waves audible for receiving sets, with the power so restricted as to be non-interfering between themselves or with the repeating stations. These stations will select the material they desire from one of the primary bfoadcasting

stations' repeating wave, for their main programs, and, as desirable, use the stations between times for the broadcasting of local material.

This is a very brief statement of the plan, but I think it is sufficient to give an idea of what is proposed and what its possibilities and scope are. Such a plan will make world events available to everyone at widely different points and on different continents.

This plan when first proposed was somewhat nebulous, but is no longer so as it has been demonstrated beyond doubt that a scheme of this kind is wholly feasible, and I feel that it is now time to think seriously about it and to consider undertaking it on a commercial basis by the formation of an international company to undertake to organize and promote this plan.

It will be necessary for such a company to have exclusive rights to these restricted wave bands in order to furnish the programs at the primary stations, and to maintain the repeating stations and the high quality service necessary. This company must control the service and be able to make arrangements with the secondary stations for leasing receiving and rebroadcasting sets which would carry the rebroadcasting or repeating rights from the primary stations This service will give a source of revenue to the company which will allow profitable operation and permit expenditures of considerable sums of meney for talent at the primary stations.

I am satisfied that if such a company can be set up, monopolistic as it must be, it would be one of the greatest benefits to mankind ever promoted, if properly administered, and in addition

p 2 last pt

be a profitable enterprise, as it must be to endure and be successful.

A great deal of work is necessary, I realize, but if something of the kind is to be undertaken it should be attempted early before rights are given away that would prevent the carrying out of a comprehensive scheme of this kind.

I am so impressed with the possibilities of an organization of the kind and the practicability of the plan that I have felt it should be made the basis of a letter to you, as the Westinghouse Company to date has taken all the forward steps in this development and has proven out these theories by actual demonstration at very considerable expense in research and experimental work. I do not mean to give the impression, however, that development work is finished; in fact, it is quite the reverse - the ground is not even scratched, and much is to be done which can, I feel, only be accomplished successfully under some such organization as I am proposing.

(Signed) H. P. Davis,

Vice President.

64:21
Box 3
FF 34

(Copy to Mr. E. M. Herr)

M E M O R A N D U M.

February 18, 1924.

PLAN PROPOSED BY H.P.D. FOR ORGANIZED BROADCASTING.

This plan was discussed with Mr. Herr on February 6th, 1924. Assuming that it would be possible for an organization to be licensed to use copyrighted music and to collect revenue for broadcasting, it would be possible with the patent situation now existing to establish a few primary broadcasting stations whose programs could be repeated to secondary stations in the manner previously proposed by H.P.D. These primary stations, having an exclusive license under copyrights of the best authors, composers and publishers, could then use sufficient of this material in their programs so that only licensed secondary stations could make use of this service.

This would be the only real way to keep out unlicensed repeating, and would be similar to the methods now in vogue with the Associated Press.

By licensing these secondary stations to use the repeated programs, a very considerable revenue would result which could be used for paying the license fees for the copyrights, support the organization and the primary and repeating broadcasting stations, and leave a large sum available for paying for talent.

Such a plan, if possible would immediately put broadcasting on an organized and paying basis, with a permanent future, and with proper administration would offer such superior service that any other attempt would be futile, and would leave the field practically free for this organization and its licensees to do the broadcasting of the country, if not the entire world.

64.21
Box 3
FF 36

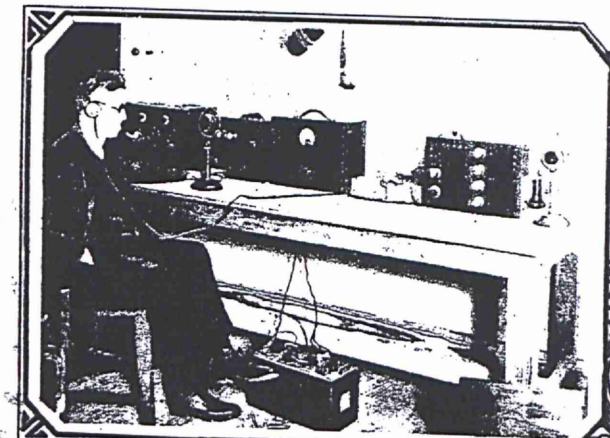
Dec 1922 ?

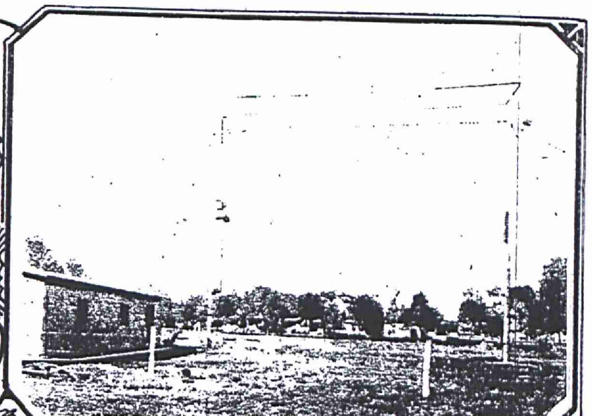
p. 1

"one or two" ↓ top caption p. 1

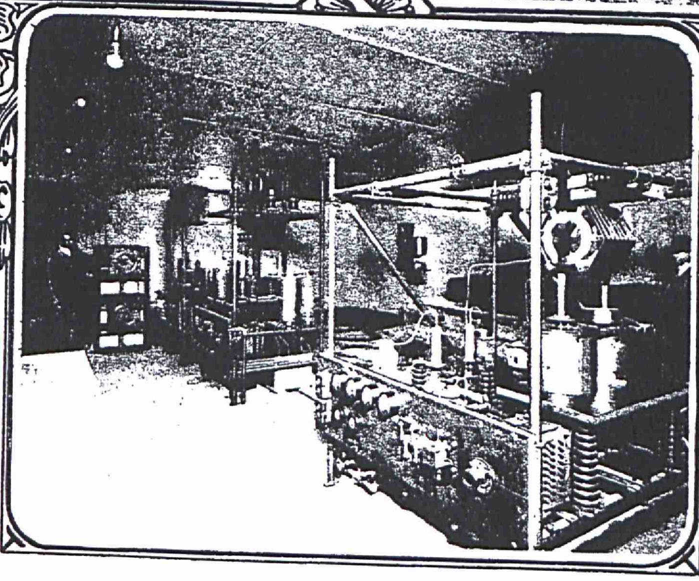
Re-broadcasting, a New Era in Radio

It is gratifying to us to see that re-broadcasting has at last become a reality. This was first indicated in our editorial in the December, 1922, issue. In that issue, as will be remembered, we made mention that amateurs could re-broadcast broadcast concerts by very simple means. It will be seen from this article that the theory has now at last been translated into practise along lines as originally proposed in Mr. Gernsback's editorial. There is a strong probability that in the not too distant future there will be only one or two central broadcast stations which will furnish the whole country with entertainment. This entertainment will then be picked up by other stations which will re-broadcast it. The technical difficulties are, of course, as yet great, but they are surely and gradually being overcome.





of WEAF chain p. 1



Above: Short wave or high frequency receiver at Hastings, Nebraska, used to receive the high frequency broadcasts from Westinghouse Station, KDKA, at East Pittsburgh, Pa. From there it is passed through a power amplifier, then into the transmitter and re-broadcast.

Above: View of the extremely short antenna used to receive the high frequency broadcasts at Westinghouse Station, KFKX, at Hastings, Nebraska. Left: View of transmitting apparatus at Westinghouse Station, KFKX, at Hastings, Nebraska, the first radio repeating station in the world.

"RADIO broadcast repeating" is the newest phrase in the English language. It came into general use with the announced opening of Station KFKX at Hastings, Nebraska, November 21, 1923, which will be operated as a repeating station, giving no programs of its own.

Radio broadcast repeating is, however, more than a phrase, because it opens a new era in broadcasting.

Radio programs originating in important centers may now be received in isolated and far distant points with the same ease that they are received in the immediate vicinity of the station originating the program.

This is possible in the present instance in the case of KDKA of Pittsburgh, Pa., and KFKX at Hastings, Nebraska. KDKA broadcasts the original program, which is repeated with equal strength at KFKX, thus doubling the range in which the reception of the original program was possible.

The methods used by a radio repeating station in broadcasting are much the same as those employed in the distribution of electric current from a central station. It is a well known fact that the central station, where the power originates, can transmit this power over long distances, and that at the receiving end it can be transformed in a way that makes it suitable for use at the receiving end.

It is practically the same thing with radio repeating. A central station broadcasts the original program. This is sent out on two frequencies—one frequency is such that radio receivers in general use may receive the broadcast; the other frequency is very much higher—so that radio receivers of the type now in use cannot receive it. This is a necessary and desirable feature, as the high frequency transmitting wave must be kept clear of extraneous noises such as are caused by the attempt to tune in with regenerative receiving sets.

This high frequency carries the program to the distant repeating station where it is received with special apparatus and repeated, either at the same high frequency for transmission to another repeating station, or it is re-broadcast at a lower frequency which will permit its reception on existing receiving sets. The repeated program serves an entirely new area, greatly increasing the number of listeners reached.

SPEED OF LIGHT

Owing to the speed at which radio waves travel, which is the speed of light, the repeated broadcast is simultaneous with the original broadcast and the listener is wholly unaware that he is hearing a repeated program.

Radio repeating was suggested and recommended by H. P. Davis, Vice-President of the Westinghouse Electric & Manufacturing Co., nearly a year and a half ago. He stated that the solution of the radio broadcasting problem lay in the introduction of a few centrally located broadcast stations which would serve many low-powered and non-interfering repeating stations, and so bring the best to the greatest number of listeners.

(Continued on page 1322)

Re-broadcasting, a New Era in Radio

(Continued from page 1242)

The Westinghouse Company has followed this suggestion and the scheme seems to be the practical solution to the broadcasting problem, as evidenced by the reception given by the public to the new Hastings station.

This station repeats the broadcasts sent from the Westinghouse Station KDKA. After the first program which KFKX repeated from KDKA, letters were received from every part of the continent, telling of the wonderful results.

As Mr. Davis predicted, radio repeating may be the solution of the broadcasting problem. A few broadcast stations so located as to obtain the best program material would be able to supply the entire continent. These stations should have great power and be non-interfering. At distant points there should be repeating stations of great power available simply to repeat the original broadcast at the same high frequency.

COVER NATION

By this means a blanket of high frequency radiations will be made to cover the whole country. Then in each community it would be possible to locate a low powered and repeating station which could be used to repeat the selected program for those living within its range.

The Hastings station is not a low powered repeater. On the contrary, it has the same power, or about the same power, as KDKA, but it was installed to demonstrate the principle of repeating, and can be used to repeat at a high frequency which is inaudible to the ordinary receiving set. Or it can re-transmit at a lower frequency, namely 1,050 kilocycles, or 286 meters, permitting it to be heard by the public.

In actual operation KDKA and KFKX operate in the following manner: KDKA has two transmitters, one of which broadcasts on a frequency of 960 kilocycles. These are the broadcasts which KDKA's audience has been hearing for the past three years. The other transmitter broadcasts the same concert simultaneously on a frequency of 3,200 kilocycles. This broadcast is the one received at KFKX. A special receiver is used which is connected by a telephone line to a transmitter which re-broadcasts the program on a 1,050-kilocycle frequency. There are three transmitters broadcasting simultaneously although the public hears only two of them. Thus is radio repeating actually accomplished.

There is no limit to the range of repeated concerts. KFKX could, just as easily as KDKA, repeat the concert to another repeater located in another section of the country. In fact, with enough repeating stations, one central broadcaster could give service to the entire world.

Scientific American
May 1924

Radio repeating, on the other hand, has no such limitations and possesses flexibility to the utmost degree. While only one such station—the Westinghouse station at Hastings, Nebr., KFKX—is at present in commercial operation, the success already attained with this station is sufficient to demonstrate the possibilities of this method of repeating, and to indicate that it marks the first step toward a comprehensive system of radio repeating which will, in time, cover not only the United States, but the entire world, according to H. P. Davis, Vice President of the Westinghouse company. Under this system, we are assured, it will be possible to listen in on the interesting events of the old and the new worlds.

The system is so flexible that it is susceptible of indefinite expansion without excessive cost. When completely worked out, the owner of every crystal or low-power set, no matter where located, can listen to selected programs in which the best from every quarter of the globe can be included. The primary broadcasting stations need be but few in number, but will be located where the best of program material is available.

How does this radio repeating work? Simple enough—at least now that it has been worked out by radio engineers after several years of painstaking efforts. The KDKA station of the Westinghouse organization, the pioneer broadcaster, please remember, broadcasts two waves at one time. The regular broadcast audiences are being entertained by means of the 326-meter broadcast, while a 94-meter short-wave broadcast is going out to the repeating stations. Tests have proved that the short-wave or high-frequency broadcasts go farther with the same power input than the ordinary broadcast waves. It has also been proved that daylight, which has a marked effect on the usual wave lengths, has little effect, if any, on this carrying power.

Great things are bound to come out of this short-wave transmission and re-broadcasting. Only the other day a concert broadcast by KDKA was picked up in London on a short-wave receiver, properly amplified, and re-broadcasted on the higher wave lengths used by the British broadcasters. The Pittsburg concert, via London, was picked up in Calcutta, India, and held for thirty-two minutes. This system of short-wave transmission and repeating is enabling the British audiences to listen to American radio programs, and even the French, Belgian, Dutch and German listeners-in may have an opportunity of listening to the fascinating strains of American jazz via the British repeating stations.

64:21
Box 3
FF 37

Improved Radio Broadcasting Service

There are now in the United States and Canada more than 600 radio broadcasting stations. Of this number approximately 130 are using 500 watts, or more. In general, these stations are sufficiently scattered so that the broadcasting from them covers the entire country.

With so many high-power stations there is, however, if receiving conditions are good, a considerable overlapping and as a result more or less interference, so that the listener needs fairly good receiving equipment to pick out any particular station and bring it in so that the quality is good. This is especially true if he is located in the vicinity of one of these stations.

Aggravating this situation is the public's desire for distant reception. In an effort to obtain distance in too many cases the listener tries to "get" stations which are beyond the proper capacity of his receiving apparatus, which results in forced regeneration, especially with certain types of sets. This results in turn in a bedlam of whistles and shrieks—"birdies"—which, in the case of weak and medium signals from the transmitting station, causes these attempts at reception to seriously interfere with the clear reception of that station by the neighbors.

What is the remedy for this condition? Clearly, nothing but a system of broadcasting which will curb the desire on the part of the listener to receive stations beyond the capacity of his set.

As a matter of fact, it is generally the case that the program from one or more of the stations well within the listener's receiving range is just as good as—probably better than—the great majority of those that are farther away, and can be received without the distortion which is inevitable from the interference between the transmitting stations and the "birdies" from over-regenerated sets.

If it were possible for the nearby station, instead of the listener, to do the "hunting" and to provide the listeners with the best that the broadcasting stations of the country were featuring as programs for the evening, it is believed that this would, to a large extent, satisfy and hold the interest of listeners to their local station. There is hardly a night when there are not events of intense interest being broadcast from some location, or when music of superlative excellence or a speech of national importance is not available to which the majority of listeners would be glad to listen, and would be satisfied to hear the program through. If the station doing this transmitting, however, is at some distance, then crystal and single-tube sets cannot be used satisfactorily. The possessor of the latter type of set, however, in an effort to receive, will cause disturbances that are not fair to his neighbors. In other words, the cheaper and simpler sets which are undoubtedly in the great majority, cannot receive such special features unless they happen to be close to the transmitting station.

It is the correction of this whole situation that must be worked out. It can be improved, of course, but never corrected, by forcing the use of receiving sets in which possibilities of disturbances of this kind are eliminated or greatly reduced.

The crystal set is ideal in some ways as it does not generate any power of its own, and therefore cannot cause disturbances. Tube sets in which the regenerative feature is eliminated are either of short range or of an expensive nature and somewhat complicated in operation.

The quickest approach to a correction of these difficulties would be to have the features referred to above broadcast from every station in the country, or from stations so located and spaced throughout the country as to provide the possibility for all crystal set listeners to listen in.

Two methods are available for performing this service—one by telephone wire transmission at audio frequencies, and the other by wireless transmission at radio frequencies. Both are entirely successful. Simultaneous broadcasting by a number of stations, widely separated, has been carried on at intervals by wire transmission for some time. Unfortunately, however, the limitations of this method are considerable and the difficulties of repeating programs increase with the distance and the number of stations, so that while it is possible to do this, from the cost standpoint it appears entirely impractical to consider the possibility of a comprehensive repeating scheme.

In addition to this, a most serious limitation is the lack of flexibility at the repeating station, to permit it to shift from one program center to another, as it would be impossible to change the telephone wire connections, without prearrangement.

Radio repeating, however, has no such limitations and possesses flexibility to the utmost degree. While only one such station—the Westinghouse Electric & Mfg. Company station at Hastings, Nebraska, KFKX is at present in commercial operation, as described in this issue of the JOURNAL, the success with this station is sufficient to demonstrate the possibilities of this method of repeating, and to indicate that it marks the first step of a comprehensive system of radio repeating which will in time cover not only the United States, but the entire world. Under this system it will be possible to listen in on the interesting events of the old and the new world.

The system is so flexible that it is susceptible of indefinite expansion without excessive cost. When completely worked out, the owner of every crystal or low power set, no matter where located, can listen to selected programs in which the best from every quarter of the globe can be included. The primary broadcasting stations used will be few in number, but will be located where the best of program material is available.

The pick up equipment for these primary stations, which is now connected to the broadcasting station by means of telephone wires, will instead use radio frequencies, with short wave transmission. This equipment will be more or less mobile, so that it can be taken at will to the location where the event occurs. Here the feature will be picked up and transmitted at an inaudible frequency, so far as receiving sets are concerned, to the nearest primary broadcasting station. This station will then broadcast at two frequencies—one which the local listener's receiving set can receive,

and the other the inaudible or repeating frequency, which will have high power, to obtain distance transmission. This latter will be picked up by a chain of repeating stations of the same nature as the Nebraska station, also using an inaudible frequency, and can be made to circle the globe.

There are a good many possible paths in the ether for these repeating waves, and with a sufficient number of properly located high power repeating stations an indefinite number of programs will be made available for the secondary broadcasting stations of low power, which will repeat and broadcast at a frequency audible for receiving sets.

While this is a crude and incomplete description, it is, I hope, sufficient to indicate the possibilities. The future of broadcasting will be determined largely through the success by which such a system, or a similar one having equivalent possibilities, can be worked out.

Reference has been made so far only to the repeating possibilities, but necessarily the features of local interest cannot be overlooked. It is obvious, however, that it will be easy for the secondary broadcasting stations to include in their programs items of local interest, and which are of interest only to the immediate vicinity. Thus, the local listeners will be able to receive everything that they have had under the present limited system; and in addition, have available the interesting events of the world, and will be permitted to use, with perfect ease, the cheaper and simpler types of receiving sets.

From the national, or even international standpoint, and from the view of the greatest good to the largest number of people, it would seem that some such system is essential. It would have the immediate effect of materially strengthening the quality of the programs sent out by the majority of the broadcasting stations. It would greatly heighten the interest in radio broadcasting, and increase its value to the public in general by enormously increasing the scope of the programs and the availability of simple receiving sets.

H. P. Davis

Philander Johnson

Hope Ended.

"You used to be a great advocate of spelling reform."

"I've given up hope. What chance for it is there when half the country agrees that KDKA spells 'Pittsburgh.'"

Washington Star Nov 24

H. P. Davis Discusses Future of Radio

WHITHER is radio broadcasting bound?

Can radio broadcasting be compared to a ship with full sails, speeding along, ever going faster but with no helmsman and constantly changing its course?

Or is it like a modern ocean greyhound with tremendous speed but with a captain at the helm, every post manned, its destination fixed and the ship held strictly to a pre-arranged course.

These questions were asked H. P. Davis, vice president of the Westinghouse Electric and Manufacturing Company, a man who has been in direct touch with radio since its start and who, by organizing and by starting KDKA, actually gave present day broadcasting to the world. Mr. Davis has very decided views for the control of radio broadcasting. In reply to the questions Mr. Davis made the following statement:

"Today, radio broadcasting can be compared to neither of these illustrations. Radio broadcasting is neither at the mercy of the winds nor is it fully manned or properly controlled.

"Yet no one doubts that, radio needs the guiding hand. The influence of radio upon the public is tremendous and this influence is growing faster and faster; still radio is not travelling a prearranged or well-ordered course. This, however, is to be expected and it is well that it is so until practical experience points the proper avenues of development and organization, which will lead to a permanent, well-ordered, satisfactory and world-wide public service. This future is still obscure but I feel sure that its solution is near at hand.

"At the present moment I feel that the practical requirements of greatest development must point the way and control the situation and that everything should be subordinated to the obtaining of such an end, even though it may introduce selfish considerations. Such conditions often are usually the greatest spur to final perfection in the shortest time. This should be encouraged by giving organizations possessing the ability and facilities, sufficient protection and promise of future security in the broadcasting field, to make them willing to spend the money and make the efforts necessary to accomplish the most in the shortest time.

"America had led in this development because this principle has been in operation. It would be a pity now to so regulate, hamper and discourage these organizations by annoying restrictions that this incentive be destroyed and thus America loses its pioneer station.

"Of the great organizations of which I speak, the Westinghouse Company is an example. It should be encouraged to develop, expand and operate the stations it will to carry on the radio development and organization to the end where the highest degree of public service may be obtained.

"Radio broadcasting is new and progress ever demands intense research, new development, new inventions, new ideas and new applications. The pace is swift and very expensive.

"Organized broadcasting, with its regular service as it exists today, would not have been possible except for the personnel and facilities of the Westinghouse Electric & Manufacturing Company. Every step in design of studios, stations and technic of broadcasting was first worked out by that company. I do not know of a single program, method of feature that is broadcast, from the several hundreds of stations existing today, that was not pioneered by the Westinghouse Company.

Because of the research and engineering talent and facilities of the Westinghouse Company, the first dry cell tube for use in broadcast receivers was perfected for practical uses; the first ultra-audible microphone for transmitting purposes was developed; the first really simplified radio receiver was given the public; and a system of short wave repeating was developed which makes world-wide broadcasting practical. These are only a few developments of one company in the radio field.

"Could one imagine these developments taking place were radio development restricted as it would be if placed entirely under the control of the government or private individuals or organizations not possessing the facilities so ever present in these great electrical organizations. Many research and radio engineers are continually at work, devising, planning and perfecting for radio progress. These many minds, spurred on by the necessity for development, are responsible for all the progress in radio. Without such conditions radio would have no future but only a past.

"Therefore, for the greatest good of the public, we should keep these electric companies prominently in the field; keep all their research and engineering facilities organized and interested to the highest degree, so that radio may progress continually.

"Then, lest there be some who take advantage of this condition let the government appoint a non-political and unbiased interstate radio commission.

Let this commission take the helm, as it were, and be the guiding hand. Let the radio commission direct the general policy of organization and development so that the public may always have the best. I cannot conceive anything different in the final outcome. An agency so vast in its possibilities for human good is bound to reach the proper

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Pgh Gazette
June 12, 1924

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WESTINGHOUSE ISSUE APPROVED

Stock to Be Increased From $125,000,000 to $200,000,000.

DIRECTORS ELECTED

A proposed increase in the authorized capital stock of the Westinghouse Electric and Manufacturing Company from $125,000,000 to $200,000,000 was approved yesterday at the annual meeting of the stockholders of the company, held in the main offices at East Pittsburgh.

Directors, as follows, were elected by the stockholders:

Of the class whose term will expire the second Wednesday of June, 1928—Guy E. Tripp, chairman of the board, Westinghouse Electric and Manufacturing Company; H. H. Westinghouse, chairman of the board, Westinghouse Air Brake Company; Joseph W. Marsh, president, the Standard Underground Cable Company; Albert H. Wiggin, president, Chase National Bank of New York.

Of the class whose term will expire the second Wednesday of June, 1925—H. P. Davis, vice president, the Westinghouse Electric and Manufacturing Company.

Of the class whose term will expire the second Wednesday of June, 1927—L. A. Osborne, vice president, the Westinghouse Electric and Manufacturing Company.

Two Directors Retire.

Mr. Osborne and Mr. Davis are new directors elected to fill vacancies created by the retiring of James C. Bennett and William H. Woodin.

The new directors are well known through their activities in the electrical industry. Mr. Davis is probably best known for his work in starting and maintaining the interest of the public in radio broadcasting through the establishing of KDKA, world's pioneer broadcaster, and other radio stations operated by his company.

Mr. Osborne's most recent achievement, co-operating with Mr. Tripp, was the consummation of a manufacturing agreement between his company and the Mitsubishi Electric and Engineering Company of Japan, by means of which American design of electrical apparatus was given a decided impetus in the Far East.

At the meeting E. M. Herr, president, made the following statement:

The condition of business in our industry is quite satisfactory, especially considering the tendency of business in general to slow up at the present time. While our business also is somewhat less than for the corresponding period a year ago, the decrease has not been of sufficient volumn to materially affect our operations and our commercial people believe that it will improve in the fall.

NEW DIRECTORS

L. A. Orborne.
H. P. Davis.

PARTY CAMPAIGNS PROMOTED BY RADIO

Unprecedented Vote in Fall Predicted, Due to Broadcasting of Conventions.

Special Dispatch to The Star.

PITTSBURGH, July 8.—"Broadcasting the proceedings of the great national conventions of the Republican and Democratic parties has aroused such national interest that the greatest poll of votes ever cast at a presidential election will result," according to Vice President H. P. Davis of the Westinghouse Electric and Manufacturing Company.

Mr. Davis, internationally known as the "father of broadcasting," has had an opportunity to study closely the reaction of the public to the broadcasting of the convention proceedings, because three of the four stations operated by the Westinghouse electric broadcast the proceedings of both conventions. These stations were KDKA, the world's pioneer, at East Pittsburgh, Pa.; the repeating station KFKX, located at Hastings, Neb., and station WBZ, at Springfield, Mass. "The natural result of broadcasting the 'keynote' and nominating speeches, the cheers of the delegates and their songs, the casting of the votes and the final selection of the candidates is to excite the interest of the people in the forthcoming presidential race," continued Mr. Davis.

Notes Natural Result.

"Having had their interest piqued by their intimate association with the details of the nominating conventions, it is but natural to expect the voters to go to the polls in great numbers next November.

"The reaction of the public to the convention proceedings evidently was not taken into account by the political managers, else there would have been less of the wild, tumultuous shouting and mob scenes of the delegates and a more businesslike assembly, which the public quite naturally believed these conventions to be. It cannot be doubted that the schoolboy enthusiasm of the delegates was not quite in keeping with so solemn an occasion as selecting a future candidate for the President's chair."

"There is another aspect to the broadcasting that few have foreseen. Because KDKA broadcast the proceedings of the conventions, which broadcasts were repeated by KFKX and WBZ, people living far beyond the borders of the United States heard all the details of the assemblies. The people of Canada, Mexico, South and Central America, through their radio sets could tune in at any time and hear the delegates. During the broadcasting two cablegrams were received from listeners in Argentina, who heard KDKA short waves. The wild scenes at the conventions, particularly the Democratic assembly, could not have given these foreigners the correct impression of our great republic's method of choosing a President.

Useful to Party Managers.

"The political managers will surely keep radio broadcasting in mind in future conventions and perhaps have the spokesmen present their cases in a clear and concise manner as though they were talking to the public as well as to the delegates.

"Radio, which brings only sound, without the action, and which makes it impossible to bring about emotional "mob effects" will probably eliminate this disorder in the future, as it will also bring a greater number of people to the polls.

"These two outstanding changes that radio broadcasting probably will make in the convention proceedings and in the poll of votes more than justify its use politically."

It is interesting to recall in connection with the enthusiastic interest of the people in the broadcasting of these convention returns that four years ago, November, 1920, KDKA broadcast the first political news to ... on the air. This event was the

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Collier's

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A. E. Winger, Treasurer — A. B. Casey, Secretary

SEPTEMBER 6, 1924

Broadcasting for Votes

AUTOMOBILES, the movies, radio, and other diverting instruments of the existing civilization have been blamed by some diagnosticians of nonvoting for this disturbing tendency in our democracy. What seems to be a sounder view is that taken by H. P. Davis, widely known as the father of broadcasting, and who is vice president of the Westinghouse Electric and Manufacturing Company.

"Radio," predicted Mr. Davis recently, "will bring a greater number of people to the polls. The natural result of broadcasting the keynote and nominating speeches from the conventions, the cheers of the delegates and their songs, the casting of the votes and the final selection of the candidates, is to excite the interest of the people in the forthcoming Presidential race. Having had their interest piqued by their intimate association with the details of the nominating conventions, it is but natural to expect the voters to go to the polls in great numbers next November."

Mr. Davis has logic on his side. Radio should be one of the most valuable instruments of those patriots of peace who devote themselves to the task of getting out the vote. If the dry farmer out in Idaho picks up WCAP some night when his crop is under cover and hears the President of the United States make a nonpartisan appeal to him to vote, why, then it is likely that he will vote when the time comes. The thing has been brought home to him. And if he has an automobile that will take him to the polls and back in two hours where a team of mules would require ten hours, it is more than likely. The pressure of farm work and the distance separating farmhouses from country polling places account for the fact that the country vote is harder to get to the polls than the city vote. The automobile, plus the call of the radio, should do more than even the score.

As for the motion picture, a Griffith could prepare a movie that would dramatize the perils that threaten our nation from nonvoting so sharply as to reform every slacker citizen who saw it.

Instead of diverting the voters from their obligation, the radio, the automobile, and the movie should be most effective aids to making this The Year of the Big Vote.

THE PITTSB

HOOVER SUGGESTS NATIONAL SYSTEM OF RADIO PROGRAMS

Secretary Advocates Broadcasters' Organization to Give Service Much as Press Associations Do for Newspapers, In His Speech Before Wireless Conference.

1924

[By Associated Press to The Gazette Times.]

tion of a national system of radio

WASHINGTON, Oct. 6.—Organiza-
programs through a broadcasters' association to give service much as press associations do for newspapers was suggested by Secretary Hoover tonight in an address opening the third national radio conference.

The conference is attended by representatives of all branches of the industry and was called by Mr. Hoover to consider the numerous problems of radio development in the United States. Beginning tomorrow morning the general sessions will be open to the public for presentation of any problem involving the industry.

The addresses tonight were broadcast through a system of 16 radio stations.

Opposes Air Monopoly.

In presenting his views tonight, Secretary Hoover reiterated his opposition to any attempt to monopolize the air, declaring that local broadcasting stations are of first importance and must not be driven from the field.

The Secretary's suggested plan for a national program association would provide for a self-sustaining system of interconnection of radio broadcasting stations, and the offering through those stations of the best the nation has in music and entertainment.

Mr. Hoover said in part:

My proposition is that the local stations must be able to bring to its listeners every important national event with regularity. The local station must be able to bring its listeners the greatest music and entertainment of the nation, but far beyond this it must be able to deliver important pronouncements of public men. it must bring instantly to our people a hundred and one matters of national interest. To this, it must add matters of local interest. This can only be accomplished by regularly organized interconnection on a national basis with nationally organized and directed programs for some part of the day in supplement to more local material

Praises Pioneers.

It may be stated with assurance that the greatest advance in radio since our last conference is the complete demonstration of the feasibility of interconnection. We owe a debt of gratitude to those who have blazed the way. The pioneers have been the American Telephone and Telegra[ph] Company in wire interconnection [and] the Westinghouse Electric and Ma[nu]facturing Company in radio in[ter]connection through the use of sh[ort] wave lengths.

It is our duty to consider the possibility of interconnection as a regular daily routine of the nation. Unless [it] be systematically organized we cannot expect its continuation. I realize that this matter, except insofar as it may be fostered and encouraged, does not lie in the government. It would be unfortunate indeed if such an important function as the distributi[on of] information should ever fall into [the] hands of the government. It woul[d be] still more unfortunate if its co[ntrol] should come under the arbit[rary] power of any person or group [of] persons. It is inconceivable that such a situation could be allowed to e[xist].

But I am not dealing with [mo]nopoly. Nor is this a question wh[ere] any one lays claim to a monop[oly]. Interconnection is going on to l[arge] extent and over the wires of t[he] telegraph companies. the teleph[one] companies, and by radio itself. [We] have promises of super radio and [we] have promises of interconnection [by] wired wireless. If there are sev[eral] methods, it means that we m[ight] have several alternative programs a[l]ways available. But whatever th[e] method of interconnection may be, [we] are lacking a definite organizatio[n] [for] a national system of programs an[d a] basis of support.

Would Not Allow Advertising.

I believe that the quickest wa[y to] kill broadcasting would be to u[se it] for direct advertising. The read[er of] the newspapers has an option wh[ether] he will read an ad or not, but [if a] speech by the President is to be [used] as the meat in a sandwich of [two] patent medicine advertisements, there will be no radio left. To what ex[tent] it may be employed for what we [may] call indirect advertising I do n[ot] know and only experience, with [the] reactions of the listeners can tell.

I do not believe there is any [prac]tical methods of payment, from [the] receivers. I wish to suggest for [con]sideration the possibility of mu[tual] organization by broadcasters of [a] service for themselves similar to th[at] which the newspapers have for [their] use in the press associations, wh[ich] would furnish programs of nat[ional] events and arrange for their t[rans]mission and distribution on some [sort] of a financial basis just as the pre[ss] associations gather and distribu[te] news among their members.

Mission HPD memo in part
Singles out West

networks HPD

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1923-24

Hoover recommends national radio organization 10/24

TUESDAY MORNING,

Oct 7-1924

RADIO MEET

PLAN TO LINK STATIONS URGED BY HOOVER TO DEVELOP FIELD

Co-Operative Program Plan Suggested to Conference.

WESTINGHOUSE FIRM LAUDED

BY THE ASSOCIATED PRESS.

WASHINGTON, Oct. 6.—Organization of a national system of radio programs through a broadcasters' association to give service much as press associations do for newspapers was suggested by Secretary Hoover tonight, in an address opening the third national radio conference.

The conference was attended by representatives of all branches of the industry and was called by Hoover to consider the numerous problems of radio development in the United States. The address tonight was broadcast through a system of 16 radio stations.

INTER CONNECTION IS BASIS.

In presenting his views tonight, Hoover reiterated his opposition to any attempt to monopolize the air, declaring that local broadcasting stations are of first importance, and must not be driven from the field.

The secretary's suggested plan for a national program association would provide for a self-sustaining system of interconnection of radio broadcasting stations, and the offering through those stations of the best the nation has in music and entertainment.

RAPS GOVERNMENT CONTROL.

"My proposition," Hoover said, "is that the local station must be able to bring to its listeners every important national event with regularity. But far beyond this it must be able to deliver important pronouncements of public men, it must bring instantly to our people a hundred and one matters of national interest. This can only be accomplished by regularly organized and directed programs for some part of the day in supplement to more local material.

"It may be stated with assurance that the greatest advance in radio since our last conference is the complete demonstration of the feasibility of inter-connection. We owe a debt of gratitude to those who have blazed the way. The pioneers have been the American Telephone and Telegraph Company in wire interconnection and the Westinghouse Electric and Manufacturing Company in radio inter-connection through the use of short wave lengths.

"It is our duty to consider the possibilities and potentialities of interconnection as a regular daily routine of the Nation. Unless it be systematically organized we cannot expect its continuation. I realize that this matter, except insofar as it may be fostered and encouraged, does not lie in the Government. It would be unfortunate indeed if such an important function as the distribution of information should ever fall into the hands of the Government. It would be still more unfortunate if its control should come under the arbitrary power of any person or group of persons. It is inconceivable that such a situation could be allowed to exist.

"I do not believe there is any practical methods of payment from the receivers. I wish to suggest for consideration the possibility of mutual organization by broadcasters of a service for themselves similar to that which the newspapers have for their use in the press associations, which would furnish programs of national events and arrange for their transmission and distribution on some sort of a financial basis just as the press associations gather and distribute news among their members.

Going into the licensing by the government of super-broadcasting stations, with strength of five times and more of that of the present largest stations, the secretary declared that nothing must be done to interfere with the programs of local stations on which so many of the radio public depend, nor with the wide selective range they now have.

CO-OPERATION PLEDGED.

Recommendations, embodying the views of newspaper publisher-radio broadcasters, were submitted to the conference here today after a meeting, called by Walter A. Strong, chairman of the radio committee of the American Newspaper Publishers' Association.

Its resolutions committee opposed removing present restrictions on the power of stations; pledged co-operation in the broadcasting of events of national importance, as suggested by Hoover; expressed its belief that listeners are "opposed to any form of direct advertising by radio"; and agreed that the department of commerce be vested with authority to compel stations to eliminate "all harmonic transmissions and to maintain in constant use a frequency indicator approved by the bureau of standards."

The committee pledged the publishers broadcaster to a program of education, "to instruct the listener-in to avoid unnecessary interference caused by certain receiving sets," and for the benefit of future radio broadcasting development recommended that "at least ten per cent of the wave lengths below 150 meters be set aside for special use by broadcasting stations."

Hoover No govt control of bcg.

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ILLINOIS ATHLETIC CLUB MAGAZINE, DECEMBER 1924.

Radio Service to Public Much Improved

By WILLIAM J. CLARK
Radio Editor

TENS of millions of people, seated comfortably in their homes in every community of the United States, or at their clubs or in the theater received the result of the nation-wide balloting by radio election night. Before they retired for the night, they knew in a definite way the national, and in many instances the state results.

It was the climax of radio's service to the public.

Even on the Twentieth Century trains flying westward from New York to Chicago, and eastward from Chicago to New York, the passengers seated in the club cars were given the broadcast of the election results. This too was the climax of experiments with radio reception on fast trains.

Radio has succeeded in conquering all fields open to it up to the present, and it is a safe prediction that as new avenues of activity and service are found they too will be conquered.

The election night's demonstration of the great service radio broadcasting offers the public has a significance beyond just that. That night marked the fourth anniversary—in event if not exactly in date—of the opening of the first radio broadcasting in the United States, Westinghouse station KDKA at East Pittsburgh.

The previous presidential election fell on November 2, 1920, and on that night KDKA went on the air for the first time, and the program broadcast included some returns of the election of the late President Harding. In comparison with the returns broadcast November 4, this first service was of course meager and probably heard by a few hundred listeners at most.

The opening of KDKA and the start of radio's popularity—for without broadcasting there would be no reception—was the result of the meeting of genius and vision. Frank Conrad, chief engineer of the Westinghouse Electric & Manufacturing Company, and a radio expert during the war, had been experimenting at his home near Pittsburgh with a miniature sending set, broadcasting records and other canned music to a few radio friends.

Vice President H. P. Davis of Westinghouse learned of this and investigated.

"If this thing will work for a few, it will work for thousands," he said. "We will do this in a big way and let the nation hear."

Mr. Davis, acting on his inspiration, caused Westinghouse KDKA to be erected. He is called "The Daddy of Radio."

The first radio party ever held was attended by a small anxious group of friends of Mr. Davis and Mr. Conrad on election night four years ago, November 2, 1920. KDKA did its first broadcasting that night. In the light of present-day radio, all present admit it wasn't much of a program.

But it was a start, and the wonderful progress that radio transmission and radio reception has made in the four years that have intervened is indeed marvelous.

Today there are more than 550 radio broadcasting stations in the United States, so many and so well distributed that it is reported by the Washington authorities that there is scarcely a point in the country that using an inexpensive one tube set is out of range of some station. The estimates of the number of listeners range from 10,000,000 to twice and three times that number.

November is peculiarly the month of radio.

H. P. DAVIS, VICE-PRESIDENT WESTINGHOUSE ELECTRIC CO.

God quote source?

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Box 3
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GENERAL ELECTRIC COMPANY
120 BROADWAY, NEW YORK

OWEN D. YOUNG
CHAIRMAN OF THE BOARD

January 23, 1925.

Mr. H. P. Davis, Vice President,
Westinghouse Electric & Manufacturing Company,
East Pittsburgh, Pa.

Dear Mr. Davis:

Many thanks for your thoughtfulness in sending me the Johannesburg clippings. While it is apparent they were able to get something of the subject in South Africa, it is also pretty clear I think, from the report, that it did not go through altogether clear. To hear it at all, however, is a marvelous achievement for which I think you are perhaps as responsible as anybody else. So far as I know, you backed your vision with action to a greater degree than anyone else in the field. My heartiest congratulations.

Very truly yours,

Owen D. Young

OY credit
HP

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Internationalism of Radio Deserves Careful Consideration so that it May be Established Properly

(By Vice President H. P. Davis, Westinghouse Electric & Manufacturing Company.) "The Father of Broadcasting."

Pittsburgh, Pa.—Though the question of super power radio broadcasting stations as opposed to the requirements of the local broadcasters may seem upmost in the minds of many people today, the fact is that it may be necessary to formulate soon a schedule to follow in International broadcasting and any attempt to settle a national broadcasting problem should not overlook this prospect.

In viewing radio broadcasting as a problem involving only the requirements of individual cities, we are confronted with the fact that in one week KDKA has serviced every continent in the world except Asia. In the week starting January 24, 1925. KDKA, the world's pioneer broadcaster, located at the East Pittsburgh Works of the Westinghouse Electric & Manufacturing Company, transmitted programs that were received and in most instances repeated in Europe, South America, Africa and Australia, another of its pioneer achievements.

EPOCH-MAKING FEAT

This feat of radio telephone communication, epoch making and unprecedented in history must be accepted as a definite forward step and establishes the fact that radio broadcasting must be considered from the broad angle of Internationalism. There is no question of isolation in radio broadcasting. It is necessary, therefore, to step out boldly and to formulate a program which will insure that radio broadcasting can be of service to the greatest number of people and in doing so, to keep in mind, people not living only in the United States but also in countries of all continents.

In sending a program to Australia, half way around the world, the ultimate in radio broadcasting achievement, KDKA transmitted at high power but without interfering with a single broadcast listener. The reason was that short waves were used, which are "inaudible" to the ordinary broadcast receiver. A wave length of 63 meters, that was used by KDKA, in this epoch making week, has proved to be capable of reaching simultaneously to five of the six continents. Asia alone was not heard from and it is entirely possible that KDKA's signals were received there. There is no reason why they could not have been heard.

WORLD-WIDE SERVICE

In this Inter-continental broadcasting KDKA has proved that a world-wide service is entirely feasible. Had these other continents been equipped with the short wave transmitters of the power and design such as used at KDKA, we, in America, could have received concerts in foreign lands and repeated them for the benefit of the listeners of North America.

High power when so used has not the disturbing effect as is the case when used for the longer "audible" waves. A good selective receiver can eliminate a signal from any sharply tuned transmitting station in five degrees of the ordinary tuning dial but short wave lengths as the transmitting medium are not even heard on the ordinary receiver and so do not interfere. There is no reason why such short wave transmitting stations should not use as high power as is necessary for their work, provided the listeners' receivers are not used to pick up their signal.

It is submitted that this work of KDKA points the way for the future development of broadcasting and proves an ability to repeat programs not only from central points of the United States, but also from any part of the world. It is apparent that by establishing powerful short wave transmitting stations at stragetic points, supplemented by properly located short wave repeating or boosting stations a service can be established for the entire world.

REPEATING OF PROGRAMS

In 1923 the writer predicted the possibilities of such a development and this achievement of KDKA demonstrates that were such a system of short wave stations established, each transmitting station having the transmitting efficiency of KDKA, there could be set up what might be termed channels of radio signals in which any local broadcasting station by means of a suitable short wave receiver, could tap at will and repeat the program in its own locality. Thus a local broadcasting station, having only a very limited power could receive and transmit a distant program from a short wave channel without setting up a signal strong enough to interfere with any other long wave broadcasting station located within reasonable distance from it. It is such a system of short wave transmitting and boosting stations combined with longer wave

RADIO PARTY OF RED CROSS BRINGS MANY CONTRIBUTIONS

Thousands Send Pledges to Aid in Relief Work.

ALL ARTISTS SERVE GRATIS

Millions of persons, it is believed, heard last night's American Red Cross radio surprise party program, put on at station KDKA from The Post studio, which was relayed through three other stations, as a climax to the Pittsburgh chapter's drive for membership and contributions. The concert was heard more than half way around the world, and early this morning contributions amounting to several thousand dollars had been reported by phone and wire. Many listeners assured that checks and money were being forwarded to help the Red Cross in its endeavors among disabled World war veterans.

A corps of 25 women of the Red Cross handled the telephone and telegraph messages.

Secretary of the Treasury A. W. Mellon, Secretary of Labor James J. Davis, Senator David A. Reed and Congressman James M. Magee, all of Pittsburgh, sent telegrams from Washington, praising the work of the Red Cross.

TALENT GALORE ON AIR.

Red Cross workers by the thousands also listened in. Many entertained radio parties in their homes, while still others who had invited in the neighbors to listen to what was considered one of the most remarkable programs ever put on the air, took up collections for the Red Cross to help swell the Pittsburgh Chapter's funds, imperatively needed at this time.

Acts from all the theaters, local talent galore, and men and women of international fame gave of their service without recompense or hope of reward, except in the knowledge, Mrs. Ambrose N. Diehl, chairman of the big benefit said, that they were rendering service to a good cause.

H. P. Davis, father of broadcasting, personally turned Station KDKA, the pioneer broadcasting station of the country, over to Mrs. Diehl and J. Rogers Flannery of the Red Cross roll call committee. For four hours, from 6 to 7 o'clock and from 10 o'clock to long after midnight, music never before heard on the air was sent almost around the globe.

APPEAL IS MADE.

In his address, Mr. Davis said:

The humanitarian purpose of the American Red Cross is serving the needs of unfortunates and its work in time of distress are well known, and it is not surprising that the Pittsburgh chapter, in its present roll-call, should find a well-nigh universal attitude of cooperation. The record of this organization in war in peace is such that a noble tradition surrounds its every endeavor.

We regard public service, as an all-important function of broadcasting and in a fulfillment of that service, radio can serve no better way, than to carry far and wide, in its all-pervading way, the message of the Red Cross.

Tonight two services, the Red Cross and radio broadcasting will unite in a "Surprise Program" in which public-spirited organizations and artists will participate. It is with a sense of gratification that by tendering the facilities of KDKA and its sister stations we can do our part in bringing to the public, a program and a message which I am sure will touch a responsive chord in the hearts of all those in sympathy with the work of the American Red Cross.

It is with pleasure, then, that I give into the hands of Mr. Rogers Flannery, roll call chairman, Pittsburgh chairman of the American Red Cross, the direction of KDKA for this Red Cross surprise program.

EXTENDS GREETINGS.

In reply, Mr. Flannery spoke as follows:

I extend the greetings of the American Red Cross, Pittsburgh chapter, to Red Cross workers of Allegheny County who are listening in, to Red Cross workers of other chapters throughout the United States and to Red Cross organizations everywhere in foreign countries, who will be on the air tonight. I also extend greetings to all listeners in who are not Red Cross workers but who are undoubtedly are members or will be before the evening is over.

I hope that the many thousands of radio friends of the Red Cross heard Mr. Davis turn over the facilities of KDKA to the Pittsburgh chapter of the American Red Cross for an entertainment that I think will not be equalled this year in any part of the United States.

Because as chairman of the Ninth Red Cross Roll Call in Pittsburgh, I wish to take this opportunity of expressing the gratitude of the American Red Cross to Mr. Davis for the whole-souled and enthusiastic co-operation of every member of KDKA with whom we have come in contact to make this evening an enjoyable one for our radio friends.

KDKA stands out in the broadcasting world as the pioneer in probably the greatest invention of modern times, not only in point of time but in establishing such a splendid ethical foundation as well as an artistic excellence for others to imitate.

CONCERT BEGINS.

Mrs. Ambrose Diehl has been in complete charge of all arrangements for making this Red Cross radio night the great success that it is going to be, and it is her modesty that compels me to accept in the name of the Red Cross the wonderful contribution of KDKA that makes our radio concert possible. We very gratefully accept the KDKA station for our entertainment and wish to extend our thanks to not only the Westinghouse Company, but also to all the members of the organization who have contributed their services.

The most outstanding fact in this radio entertainment has been the wonderful spirit shown by those who have volunteered to perform.

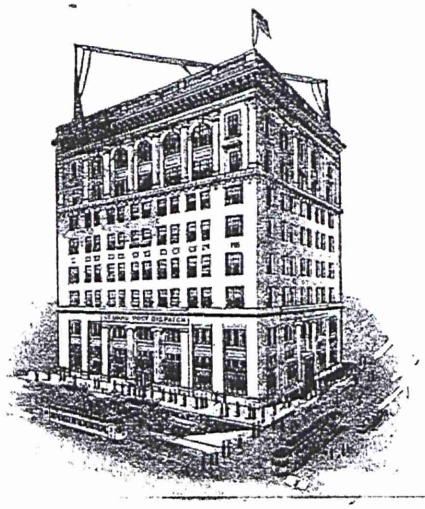
It is with great pleasure that I now formally open our Red Cross radio concert with the certainty that every radio listener will spend a very enjoyable evening. Do not forget that all of our friends who are going to entertain us have been to great trouble, and in some cases great expense to do their part for the Red Cross and you who are sitting back in your chairs at home will undoubtedly appreciate what they are doing and respond by doing your part in sending some slight testimony of your appreciation.

The stations through which the program was relayed from KDKA were WBZ, Springfield, Mass.; KYW, Chicago, Ill., and KFKX, Hastings, Neb.

One of the listeners in last night was Ambrose N. Diehl, who is vice president of the Carnegie Steel Company, now in New York, and whose wife is chairman of the radio committee which staged the program. Mr. Diehl had a radio specially installed in his room at the hotel in New York to hear the concert.

Reports came in from persons in 26 states who heard the concert. Telegrams reported checks being mailed from Nova Scotia to Florida and as far west as California. Will H. Hays wired he was sending a contribution of $25.

64:21
Box 3
FF 38



ILY
NING

SUNDAY
MORNING

PUBLICATION DEP- TMENT

ST. LOUIS POST-DISPATCH

PUBLISHED BY THE PULITZER PUBLISHING CO.

WESTERN ADVERTISING OFFICE:
Tribune Tower, Chicago

ST. LOUIS, MO.

EASTERN ADVERTISING OFFICE:
World Building, New York

June 19, 1925.

"ultimate"
"and a new idea"

Mr. H. P. Davis,
Westinghouse Electric Mfg. Co.,
E. Pittsburg, Pa.

Dear Mr. Davis:

I want to thank you for your courtesy to me yesterday for you certainly gave me much food for thought.

The more I think about your plan, the more feasible it seems as the ultimate proposition. It was such a new idea to me that it was difficult to see all sides of it at once.

After I have given it a little more thought I will outline my ideas to you.

Thanking you again for your courtesy, I remain

Yours very truly,

ST. LOUIS POST-DISPATCH

Stuart M. Chamberlain
National Advertising.

SMC.KML

64:21
Box 1
FF 6

June 27, 1925.

Mr. Stuart H. Chambers,
St. Louis Post-Dispatch,
St. Louis, Mo.

Dear Mr. Chambers:-

I wish to acknowledge your letter of the 19th. Mr. McQuiston has just returned and he and I have discussed the subjected which we talked over, quite thoroughly and I am glad to say that we feel very much interested if the general plan can be modified in a way to make it possible to work out something along lines you and I discussed.

Mr. McQuiston and I believe it would be very desirable for the group which you represented and ourselves to get together for a general discussion, with a view to seeing if we cannot formulate a plan which would be mutually satisfactory and beneficial.

If you concur, I suggest that ~~you~~ we arrange for a date and place to meet as soon as possible.

Yours very truly,

(Signed) H. P. Davis

Vice President.

64:21

Box 1

FF 6

Place in chrono order for Tom to review upon return

HP 6/27/25 "Advertising medium"

June 27, 1925.

MEMORANDUM OF THE PROPOSED ORGANIZATION OF A BROADCASTING COMPANY.

Form a broadcasting company to be known as the General Broadcasting Company.

The purpose of this Company will be to form a group of the best established and suitably located stations throughout the United States and Canada, for the purpose of organizing and improving general broadcasting conditions; to improve quality and to maintain it on the highest possible plane; to obtain the best in the way of programs; and to make available all national events and important performaces, of whatever character; and to make available the best talent obtainable, both musical and dramatic, occurring or appearing in the principal centers of this country.

high class and acceptable

It is the purpose also, while improving quality and programs, to reduce the operating expense to all members of the Company.

It is proposed to develop this organization into a national, and possibly an international, advertising medium which will be extended as much as possible with the hope of making the entire project self-supporting.

It is proposed tomake one or more of the broadcasting stations in the group, primary stations. These stations will be provided with long distance wire connections to such centers as Boston, New York, Washington, Philadelphia, and Chicago, with suitable pick-up net-work

in these cities for obtaining programs.

These primary stations will be equipped to broadcast on short or inaudible wave lengths, and will be super-powered for this transmission. These primary stations may also have audible wave transmission, but in this roll will occupy the status of the secondary stations.

The other stations will be secondary stations, with power equipment not in excess of _____ watts, and will broadcast on the longer, and audible, wave lengths. These stations will distribute the programs furnished from the primary stations, and will in addition use the stations for such local matters of interest, as seems desirable.

Each member station will pay a certain monthly fee to the General Broadcasting Company. This fee is to be used in the maintenance of all stations, and to defray other expenses of operation.

The Broadcasting Company will maintain a suitable executive force for general direction of the organization, to direct the general operations for procuring the programs, and to see the advertising, the fees for which will also be paid to the General Broadcasting Company.

The General Broadcasting Company will support a certain amount of research investigational work as will be necessary in the development of the general plan, and efficiency of the entire undertaking, and will give the necessary help required to member stations in a technical way.

The funds accumulating to the General Broadcasting Company

from various sources will, in addition to the purposes specified above, be used for hiring such talent as is used for general distribution to the members, and as its income accrues in excess ofits actual cost of operation, dividends are to be declared to the members, after proper reserves are set up.

H. P. Davis

64:21

Box 1

FF 12

Davis HP memoranda proposing org of broadcasting company 1925

Davis HP 1868-1931, Papers 1915-1944

FORM 873

Westinghouse Electric & Manufacturing Company

July 7, 1925.

Mr. H. P. Davis,
Vice President.

In line with our general thoughts lately in reference to newspaper connections, I wish to inform you that the Fort Worth Star-Telegram requested permission in a letter just received to rebroadcast some of our programs. I also received a telegram from the Atlanta Journal in which they inquired whether we were sending the recent prizefight results on the short wave. They did not state that they were rebroadcasting but it shows their interest.

It might be well to keep these two newspapers in mind when considering any plam.

C.W. HORN, SUPT.,
RADIO OPERATIONS.

CWH:O

FORM 873

Westinghouse Electric & Manufacturing Company

July 7, 1925.

Mr. H. P. Davis,

Vice President.

I thought you would like me to sum up my impressions of the meeting with the representatives of the Post-Dispatch, St. Louis, held Monday, July 6.

1. I think it is apparent from the attitude of these newspaper men that there will be little trouble in getting plenty of broadcasting business at a good rate and the chain of stations could be organized to work together.

2. However, it seemed to me that these men possibly are thinking too much of the advertising returns that would come from such an arrangement, instead of an objective to build up a high standard of excellence of broadcasting, for example, much as a newspaper would sell advertising space with a disregard for a high standard of editorial.

3. While these men shied at the idea of the formation of a company, it seems to me it would make little difference at the outset whether it would be a company or an association. The all-important point is that there will be set a code of ethics tending to raise the standard of broadcasting features that can be made to carry the name's of national advertisers as sponsors and thus give them institutional advertising benefits. To accomplish such ends, some additional and independent experts would have to be employed to properly guide the formation and perpetuation of such a combination of broadcasting stations.

I think the meeting with these men was of benefit because it gives us a valuable contact with certain of the stations in the Mid-West which we would wish to use if we are granted the privilege to make use of the short wave relay system. These men, I am sure, are convinced of the advantages that would come to their stations if the short wave system were successfully applied.

Therefore, regardless of whether they carry out their plans at once or not, we can feel they will welcome an opportunity to have the short wave proposed to these stations when we are in a position to make a definite proposition.

Mr. H. P. Davis,

Vice President. July 7, 1925.

4. I am impressed with the necessity, however, of our making it as easy as possible for these papers as far as expense is concerned. They very quickly shy at any suggestion of monthly assessments or heavy charges and apparently regard any reference to these expenses as being additional to those already incurred by the stations. Therefore, if it would be possible for us to quote a figure that would appear reasonable and, in connection with it, suggest economies and benefits that would compensate for the investment in improved broadcasting service and increased returns, we could more easily secure their endorsement.

It strikes me that all of these stations are spending upwards of $50,000 a year. Therefore, if our short wave system introduced into their chain plan would bring some returns from the broadcasting that would materially reduce their annual outlay, they should be willing to subscribe to the plan.

The chain plan is a long step in the direction of establishing a service for short wave transmission and if we can encourage desirable newspaper broadcasting stations to establish rules which will raise the standard of broadcasting and avoid in every way possible the improper use of broadcasting for advertising, with our relations already established with these stations we will be in a position to make rapid progress if our plans for using the short wave go through.

I am convinced that the best people to perpetuate radio broadcasting are the newspapers. They are in the advertising business. Therefore, they will be more inclined to prevent its misuse than others who may own or sponsor broadcasting excepting, of course, ourselves and the General Electric Company.

5. I wish to submit also that in the event of the failure of our plans to carry on short wave broadcasting with the newspapers in the manner proposed, there is still the possibility of our financing the broadcasting work at Pittsburgh (KDKA), Springfield and Boston (WBZ), and Chicago (KYW), by going to certain of the national advertisers in these localities and giving each of these a day a week, or a day every so often, and prorating the cost of operation for the periods thus used to the companies enjoying the service.

Our three stations are sufficiently well established not only in this country but throughout the world to warrant financial support for a service that can be rendered in broadcasting.

"improper" advertising + high broadcast standards p2 & 3

Mr. H. P. Davis,

Vice President.

July 7, 1925.

Of course I am more than ever convinced, since our meeting in St. Louis, that the preferable plan is to follow the lead we have taken with the newspapers. We began this way and found that the press is in the best position to handle it because it understands how to handle features and, again, the press has a powerful influence with the Government.

Therefore, if we are able to use the short wave in the manner proposed, we will derive the maximum benefit through newspaper contacts as there will, of course, be reflected continual credit to the Westinghouse Company. Also, there is the additional possibility of assigning time, as suggested previously, to advertisers and in this way relieving ourselves of our broadcasting expenses.

If we can tie together by land wires great Eastern cities, including Boston, New York, Philadelphia, Washington, with KDKA at Pittsburgh, and with KYW at Chicago, - the three most powerful and best-known stations, any chain of broadcasting stations will not only have the opportunity to bring features that can be secured by the newspapers at these various places, but will have the advantage of selling time on the air to national advertisers in these cities, as well as in the cities where the newspaper stations are located and open up the choicest possibilities for selling time.

As a matter of fact, as I see the situation, the difficulty will not be to sell time - our difficulty will be to thresh out from the demands the choicest and best - those who will provide the highest grade features for broadcasting.

J. R. McLaughlin

Manager, Department of Publicity.

M:E

proposal to p.3
link 3 p3
stations by
land wires to
reach greater
audience

64:21
Box 1
FF 6

July 8, 1925.

Mr. J. C. McQuiston, Manager,
Department of Publicity.

I have noted your letter of the 7th in regard to our recent visit to St. Louis and our discussion with representatives of the Post-Dispatch in connection with organized broadcasting.

In my opinion there are only three ways in which successful organized broadcasting can be accomplished - one is to handle it the way it is now being carried on by the A.T. & T. Company; second, by the substitution of short wave wireless transmission, in place of wires; and third, the combination of the two.

This latter plan seems to me to offer the greatest possibilities for the solution of this important problem.

Of course, as we discussed it and as pointed out in your letter, we have in our own stations an opportunity of handling national advertising profitably probably, and with success, but I am afraid our undertaking this would invite an inordinate amount of competition just in the same way as our starting broadcasting has led to the present disorganized condition in the broadcasting world.

Taking this lesson to heart, it would seem worth a good deal of effort on our part to make an attempt to bring all the best in broadcasting together and to link them up, if possible, in

p. 1 & 4

HP's desire to create a national broadcasting service - interoffice memo

p. 1 & 5

Need to get mkt Powers p2

a national, and possibly international, service. This, of course, was the intention in the brief memorandum I made of June 27th, 1925, suggesting a plan.

I might say in addition to the above points that I do not believe there is sufficient good program material available to serve a competitive crowd, and in their efforts to obtain this material competition will develop and prices for talent will be bid up.

I feel from the discussions you and I have had that you agree with me in this, and are wholly sympathetic with the desirability of making the organizing effort. I think that we accomplished as much at St. Louis as could be expected under the circumstances since we were not in a position to make any direct advance, or to offer anything tangible.

HP emphasizes ← that he + McQuiston are on board re: ~~a national~~ organizing a national service p. 2 #2

I will continue my efforts along this direction to see if we cannot get ourselves in a position where we can really propose something that can be accepted or rejected.

H. P. Davis

Vice President.

64:21
Box 1
FF 6

July 9, 1925.

Papers with files

Mr. E. H. Herr, President,
New York Office.

BROADCASTING FOR PAY.

Dear Mr. Herr:-

On July 3rd, 1924, the Board of the Radio Corporation passed a resolution permitting the General Electric and Westinghouse Companies to accept and receive financial contributions and support for the maintenance and operation of their existing broadcasting stations, and to receive payment from broadcasters from stations except by the General Electric and Westinghouse Companies. A copy of the resolution is attached.

The resolution provides that the consent granted by it shall not take effect or become operative prior to the "final decision" of the Referee in the arbitration proceedings with the Telephone Company and not then, if by the terms of the award of the Referee the Radio Corporation should be denied the right to broadcast for pay.

The cost of maintaining and operating our stations, and the importance of providing better programs for the stations in order that they may sustain the position and reputation they now have, makes it highly desirable, if not necessary, that the rights extended by this resolution be made effective at once.

The Referee, Mr. Boyden, has been prepared for some months to hand down his "final decision" in the arbitration, but has re-

Known for 11 months prior to the memo 7/9/25 D. 241

frained from doing so at the request of the contesting parties, although the exact nature of his decision is known completely. In fact, his decision is already final in the respect that we know now, and have for months, just what his position and views are on the questions at issue. The handing down of the decision is being delayed for certain reasons of policy, which have no relation to, or bearing upon, the consent of the Radio Corporation granted in the above mentioned resolution.

This is true especially because the Reserve held as follows -

"The Radio Group has non-exclusive rights to establish and maintain transmitting stations for transmitting and broadcasting news, music, and entertainment from a transmitting station to outlying points",

and also -

"REVENUE: Each Group is, so far as the Agreement is concerned, at liberty to derive revenue from its rights in any way it sees fit".

It is highly desirable that an understanding be arrived at that the consent granted by the resolution be regarded as effective at once, especially because the only reasons for delaying its becoming operative was that it was not known at the time the resolution was adopted that the Reserve would confirm the right of the Radio Corporation to broadcast for pay.

It cannot be detrimental to the interests ofthe Radio Corporation to make the resolution effective now, but, on the contrary, should be beneficial to it in that improved broadcasting service should serve to further stimulate the interest of the public and the demand for receiving instruments. A high quality of programs and service is essential for this latter purpose.

In this connection, it should be noted that the Telephone Company has sold a large number of broadcasting stations and has granted to their owners licenses to broadcast for pay. As a result, the majority of stations in operation today have greater rights than do we, who are the pioneers, and who have incurred great expense to establish and foster this new industry, by maintaining and operating high-class stations entirely at our own expense.

Can you not secure the desired understanding, as we must prepare with preparations to receive pay if we are to hold our position in this activity, and if we are to lessen the burden of expense. On the other hand, if the permission is not granted, I feel the time has come to quit while our reputation is that of the leader, and not risk the strong probability of degenerating into a second or third class position, which will unquestionably result if we do not have full freedom of action in the organization and development of this service.

Yours very truly,

Vice President.

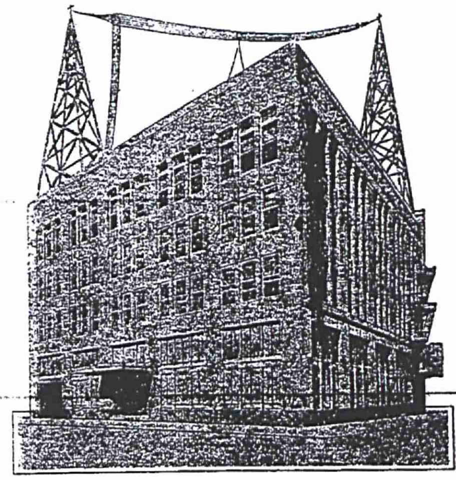
Enclosure.

Copies to-
Mr. F. A. Merrick
Mr. C. A. Terry

? How many did they own? p. 341

64:21
Box 1
FF 6

THE LARGEST CIRCULATION OF ANY NEWSPAPER IN TEXAS



Afternoon and Morning

Fort Worth Star-Telegram

AMON G. CARTER, President and General Manager

A TEXAS-OWNED NEWSPAPER

More News, More Features, More Markets, More Circulation

Printed Just Before Your Train Departs From Fort Worth—the Railroad Center—Insuring the LAST—FIRST

HAROLD V. HOUGH.
Treasurer and Circulation Manager

Fort Worth, Texas,

July 14th, 1925.

Mr. C. W. Horn, Supt. Radio Operations,
Westinghouse Electric & Manugacturing Co.,
East Pittsburgh, Pa.

Dear Sir:

Referring to your letter of July 7th, one of the main reasons why the writer was interested in an experimental way on the short wave broadcast of KDKA was that the Mid-Continent chain of stations consisting of the Detroit News, the St. Louis Post Dispatch, Kansas City Star, and the Fort Worth Star-Telegram have been trying to decide whether or not to consider an application from your company, and also from the Detroit Free Press, and the Jewett Company.

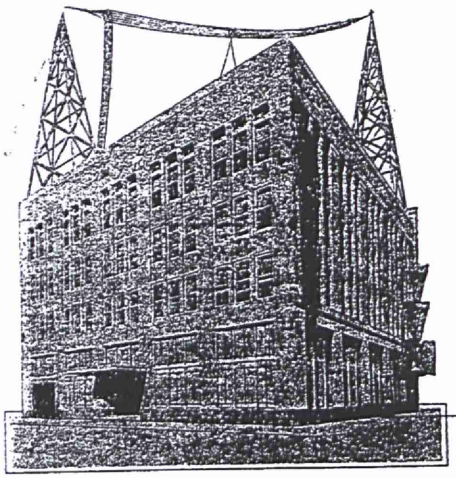
The writer was in favor of linking up with the Westinghouse Company due to the fact that the stations could be linked together by short wave remote control, and a letter sent to Mr. Arlin was intended to be more or less an experiment to see just how well this re-broadcast could be done by us.

As you understand the Mid-Continent chain is a combination of these powerful newspaper stations with the purpose of selling advertising, and in a letter from your company the Westinghouse Company seemed to be very anxious to be in on the combination. As you can readily see we will be running in direct competition with the A T.& T Company and if we decided to rent lines from them for linking the stations together they could raise their prices to make it prohibitive on our part. At present the Mid-Continent chain is not considering the linking together of stations but this is sure to come sooner or later.

At WBAP we are seriously considering the installation of a 500 watt transmitter on short waves for experimental purposes. For your information the 5 KW station which we are installing is designed and built by the writer. From all indications we will be on the air about the middle of August if no hard luck overtakes us.

Texas station explains that the midwest chain of stations hasn't considered linking stations ~~but that it would~~ eventually p.1

LARGEST CIRCULATION OF ANY NEWSPAPER IN TEXAS



HAROLD V. HOUGH.
Treasurer and Circulation Manager

Afternoon and Morning

Fort Worth Star-Telegram

AMON G. CARTER, President and General Manager

A TEXAS-OWNED NEWSPAPER

More News, More Features, More Markets, More Circulation

Printed Just Before Your Train Departs From Fort Worth—the Railroad Center—Insuring the LAST—FIRST

It might be possible that after learning more about us from this letter you will reconsider as to whether or note it would be worth while to run some tests and experiments with us along this line. We are not new in the broadcasting field and know very well how to take care of our end of the deal.

Hope to hear from you, and if at any time we can co-operate on the short wave transmission from KDKA notify us and you can count on our co-operation.

Very respectfully yours,

W.E. Branch

W. E. Branch.
Director-WBAP.

WEB:EF

64: 21

Box 1

FF 6

NBC

p1

network structure

HP Davis letter to President of Westinghouse re: national broadcasting co. 7/24/25

July 24, 1925.

Mr. E. M. Herr,
President.

I attach memorandum which I have dictated today in line with our discussion, of the organization of broadcasting, which I hope is clear enough to briefly outline the plan proposed.

As you know, there has been sufficient discussion of this by us with broadcasters separated almost over the entire country, to indicate that the time is near when a plan of this order can be started, and I have very good belief can be worked out. I am satisfied, however, that it must be made on a broad, mutual basis, in which all the parties thereto are, insofar as possible, equally interested and are partners, and that the plan must be broad enough so that competitive effort is impossible.

"organizing" "money"?

← HP raises issue of organizing national broadcasting service with the President of Westinghouse p. 1 of 2

You will see that each of the member stations preserves its individuality and direction except insofar as it is bound by its agreements with the central Service Company. The relation of the General Electric Company, the Radio Corporation, the A.T. & T. Company and ourselves would be exactly the same as any other member, insofar as our own broadcasting stations are concerned. We would all of us have to refrain from short wave work, but would probably be able to occupy some position with the Service Company as technical advisers, and we would, between us, do the necessary research and development work which would be available to this Service Company.

I have not attempted to indicate how this can be done, as I believe that this is a detail of the organization that would have to be worked out by the group.

One of the objections, ofcourse, to this at the moment would be the fact that short wave broadcasting or repeating has not been developed to a state where it could be called a tried out or reliable service. The indications are, however, that it is going to be possible to do this, which - coupled with wire service - would make a very comprehensive network for distributing programs.

I am quite sure that enough stations of a high grade character can be interested now to give this a try-out and to start the plan. If it proves reasonably successful, I am also sure that the plan can be extended and made as broad as proposed.

My feeling is that the present is the time to act. There are competitive organizations starting up, and unless a broad and comprehensive plan for giving this service is started soon, a bad situation will grow up which may be even worse than now exists in broadcasting. For our associates and ourselves, who derive so much benefit from the manufacturing activity, it is going to be serious, and therefore makes it doubly of interest to us to see something of this kind worked out.

On the other hand, we have been carrying much more than our share of the burden in broadcasting and relief from this expense is desirable, if not necessary, and this proposal offers a possible solution.

p. 2
For our

I would suggest that in our own case we dispose of all stations except one, and I would advise the same for the General Electric Company, the Radio Corporation and the A. T. & T. Company.

Vice President.

Enclosure.

64:21
Box 3
FF 38

HP's proposal for a national broadcast organization p. 4

July 24, 1925.

MEMORANDUM.

HP Paris memo proposing nat'l organization 7/24/25

BROADCASTING - PROPOSAL FOR ORGANIZATION.

Broadcasting is in a state now where it may very easily become retrogressive in its character with resulting loss of public interest and failure, eventually, to the entire undertaking; or, with a proper effort, it can be organized into a great public service which will grow to an international project.

In the following a suggestion is made of one way in which such a broadcasting service can be organized and placed in a healthy condition, with a definite plan for future development, resulting eventually into a world-wide service such as will establish broadcasting as a necessary part of the every-day life of the people of the world.

It is felt that to accomplish this any plan must start with the idea that the organization will be free from any taint or appearance of monopoly, but must very largely prevent competitive efforts in the field - both of which conditions are essential to the successful development of organized broadcasting.

It is proposed to start the organization in this country and make an attempt to get the best broadcasting station in each selected locality in the United States and Canada into a mutual association. In the selection of stations, first preference should be given to stations maintained by newspapers of established standing. In localities where these are not available, stations

p 1 of 3

maintained by companies of a substantial character should be selected. If stations of this character are not existent or available in other localities where it is desirable to have stations, municipal stations supported by the local public are desirable.

It is proposed to form these selected stations into a national association or group. This association, however, is to be only for coordinated action, and each station will maintain its own individual ownership and management.

It is proposed that this Association will establish and support a central organization or company, which, for convenience, I will call The Service Company. The Service Company and the member broadcasters will bear similar relation to that now existing between the newspapers and the press associations.

The Service Company will act for all of the member companies of the Association in obtaining and distributing the special features and programs; will provide technical help, etc., and will solicit paid advertising. These programs will be transmitted by The Service Company to the members by means of short waves (or inaudible waves) through one or more stations of this character owned and operated by The Service Company. The Service Company will have wire service to these short wave stations for picking up the programs wherever originating; such wires may connect the short wave stations with such centers as Boston, New York, Washington, Philadelphia and Chicago.

As the service broadens, however, short wave stations may be located in foreign countries, or in other centers, so that the broadest possible opportunity will be afforded in picking up program material that will be available, either national or international, which will be distributed to the member stations of the Association by The Service Company.

It will be desirable in the beginning to set up The Service Company in the simplest possible way as regards its organization and personnel, so as to minimize expense, as it will have to be largely supported by the members of the Association. As it develops, however, the ability to get high grade program material for member stations will reduce their individual expenses, and in total ought not to increase expenses over the present cost of operation, at the same time furnishing higher grade and more interesting programs.

The main support of the project will come eventually, however, from paid programs obtained and distributed by The Service Company, supplied by national and international advertisers. It would be the purpose to have The Service Company developed commercially in this way to solicit and organize such paid programs.

Proper contracts must exist with the member stations that give certain periods of time to The Service Company for broadcasting its programs.

The income to The Service Company eventually from paid advertising programs should be very considerable, and probably much more than sufficient to operate and maintain it.

adv
p3 last ¶

The method of reimbursement to the individual members of the Association forgiving time and repeating programs can be worked out in several ways. One would be, of course, to pay for time by the hour as each program is broadcast; another, would be to hold the funds in the treasury of The Service Company and reimburse the member stations by dividends.

Contracts will have to be made between individual members of the Association and the Association, that they will support the Service Company and will operate their stations for a definite period and in a way satisfactory to The Service Company so that it can give service to the locality which that individual station covers. Suitable understandings must be had to cover failures and to provide for transfers of the ownership, etc.

The member broadcasters of the Association, as I have indicated above, still remain individual in ownership and management, and at other periods of time than those allotted to The Service Company will be free to use the stations for their own benefit and for local programs.

The Servitie Company, on the other hand, will be bound for the period that is allotted to it to furnish suitable programs to each station for the period.

Each Association member's interest in the whole Association will be in proportion to the number of broadcasting stations it supports, and of course it is desirable to confine this to single stations. The general direction, however, of the whole undertaking must center in the Association. This may take the form

P. 4 last ¶
oops!

of a Board of Directors for The Service Company.

The Service Company will maintain a suitable executive organization for the general direction, and to procure and organize the programs, to solicit the advertising, and to furnish the necessary amount of technical help and instruction to maintain a high grade of broadcasting in all stations of the Association.

It is proposed that the member stations would gradually be standardized in equipment, in power, and in general technique, and organization, and would be of as low power as possible to get the coverage necessary; but in any event, to be as economical in every way (such as first cost and operation) as it is possible to get them.

If a plan of this kind can be worked out, it is felt that it will very shortly establish itself on such a plane of superiority that competition from outside sources would be eliminated because the Association members would have so much better programs and news items, with quality, that competing stations could not exist for lack of interest on the part of the public.

Looking at this broadly, it would seem as if it is worth a good deal of effort on the part of the companies like the General Electric, the American Telephone & Telegraph and ourselves, and of course the Radio Corporation, to make an attempt to bring a plan of this kind into operation and to link up this service. I am quite sure that there is not enough good program material available to serve morethan one organization of this kind, and competitive efforts will result in generally poor operation, andwill develop a

July 24, 1925.

competitive situation that will bid up prices for talent, reduce rates of advertising, and will eventually destroy public interest.

Mr. E. M. Herr,

H. P. Davis.

I attach memorandum which I have dictated today in line with our discussion, of the organization of broadcasting, which I hope is clear enough to briefly outline the plan proposed.

As you know, there has been sufficient discussion of this by us with broadcasters separated almost over the entire country, to indicate that the time is near when a plan of this order can be started, and I have very good belief can be worked out. I am satisfied, however, that it must be made on a broad, mutual basis, in which all the parties thereto are, insofar as possible, equally interested and are partners, and that the plan must be broad enough so that competitive effort is [illegible].

You will see that each of the member stations preserves its individuality and direction except insofar as it is bound by its agreements with the central Service Company. The relation of the General Electric Company, the Radio Corporation, the A.T. & T. Company and ourselves would be exactly the same as any other [illegible]

64:21
Box 3
FF 38

PROPOSAL AS TO THE IMMEDIATE ORGANIZATION OF A "BROADCASTING SERVICE ASSOCIATION".

At its inception the members of the Association will be

General Electric Company,
Radio Corporation of America, and
Westinghouse Electric & Mfg. Co.

The immediate objects to be achieved through this organization are:

1. The pooling and proper allocation of all expenses of operation and development of existing broadcasting stations belonging to the group.

2. The prevention of duplication of effort in development work having to do with broadcasting.

3. The establishment of a united front in dealing with the Telephone Company's broadcasting situation.

4. The unified control and direction of the general development of broadcasting, including plans for participation of outside or independent broadcasters in the association and the terms and conditions under which they will be offered participation.

5. A central control over programs.

6. The establishment of methods of securing income for service.

In order to accomplish the above it is suggested that this Association be governed by a Board of Trustees, one member from each of the parties and that they relinquish to said Board of Trustees the full control of operation and development of their existing stations, but not the ownership of them; the stations to retain their individuality as at present (i.e. name); the parties to contribute in proportions to be agreed upon to a fund which shall be under the control of the Trustees, out of which shall be paid the expenses of operation and development as aforesaid.

While it is not anticipated that any of the parties

proposal for a broadcasting service organization 9/8/25

Sarnoff 9/8/25 8/12/25

will desire to operate and maintain broadcasting stations except those alreading existing, and which are to be included within the terms of this agreement, nevertheless nothing herein shall operate as a bar to such action if they so desire. Moreover, if the Trustees shall determine that any of the stations included in this agreement are no longer useful to the broadcasting organization, they (the Trustees) shall so notify the owner and he may then operate it as an independent station at his own expense, or discontinue it as he sees fit.

At the first meeting of the Trustees they shall make an estimate or budget of the cost of operation and development of stations included in the Association for a stated period and the parties to the Association after approval of said budget shall underwrite it. Thereupon the Trustees shall be authorized to call these subscriptions from time to time at their discretion. Similar periodical budgets shall be submitted in like manner. Any expenses beyond the budgets so approved must receive special approval.

The Board of Trustees shall be charged with the duty of the development of broadcasting in its wider aspects, commercial, political, and social, it being the intention to place in the hands of said Board the broadcasting problem of the nation insofar as the parties are concerned or can contribute to it.

In order that the Trustees may be in a position to more effectually exercise their control over operation and development they shall have jurisdiction over the personnel in the various stations; the parties to the Association to agree to accept their decision in matters of employment and organization of their broadcasting personnel. The Trustees to create a sufficient central organization to effectually carry out the purpose of this Association.

rustees to have jurisdiction over broadcasting development and

broadcast by the leading stations.

2. FROM THE GOVERNMENTAL STANDPOINT: Secretary Hoover has clearly and frequently directed the attention of the radio industry to the need of an economic solution of the broadcasting problem, in order that a permanent and assured system of broadcast communication be provided for national purposes. In addition, there is the fact that the problem of allocating wavelengths is making it increasingly difficult for the Government to exercise its functions in the air.

3. FROM THE INDUSTRY STANDPOINT: It is patent that the success of the Radio Industry is dependent upon the character and quality of the program furnished to the home. Inadequate broadcasting facilities can vitiate the progress made in receiving-set design. Lack of interest in program material will be reflected in falling sales. The delay in inaugurating a permanent national broadcasting system, founded upon an assured economic basis, is already reflected in the uncertainty that exists in distribution and trade channels.

4. FROM THE STANDPOINT OF THE RADIO CORPORATION and ITS ASSOCIATES: While the Radio Corporation of America and its associates have a large and important equity in the success of the radio industry, it is true, nevertheless, that the burden of public service involved in radio broadcasting is being borne to a disproportionate extent by the Radio Group, to

to become direct, rather than indirect, as at present, in which event public resentment might be expressed through political action.

Whatever may be said with regard to the possibilities of deriving revenue in this manner, the primary problem of the industry in general, and the Radio Corporation in particular, is to place broadcasting on a sound and permanent economic basis, and this involves a permanent source of revenue for a permanent public service.

3.- A NATIONAL BROADCASTING SYSTEM THROUGH SELF-IMPOSED TAXATION.

A plan calling for the Radio Group to initiate a national broadcasting system, by seeking the voluntary support of other factors in the radio industry, and by revenue to be derived from broadcast advertising, from endowment, and other sources, does not seem timely, for the reason that no true basis exists for voluntary cooperation within the industry. As in the early days of every industry, too many opportunists and other irresponsible factors exist, whose voluntary cooperation cannot reasonably be expected. The result of such a plan, therefore, it is probable, would be to throw an even greater burden than at present upon the Radio Group.

THE POLICY OF THE RADIO CORPORATION TOWARDS THE BROADCASTING PROBLEM

The policy of the Radio Corporation towards the broadcasting problem has been consistent throughout. We were the first to propose the basis of a solution on sound economic lines, viz: that a tax be levied at the source of manufacture upon the sales price of radio products, as the first step

towards the support of a national broadcasting program.

We have stood upon the ground that before such a system could be organized, it was necessary to develop the art to a stage where national facilities were technically practicable and economically possible.

We proposed the development of super-power, so that the country might be covered by the fewest possible number of high-grade broadcasting stations. This principle has come to be generally accepted, not only by technical experts, but by the listening public.

It is our duty now, both from the standpoint of public service and in our own interest, to cooperate in the initiation of a plan that shall be the first step in the economic solution of the broadcasting problem.

THE PLAN

The plan outlined herewith contemplates the formation of the

Public Broadcasting Company.

This company, incorporated under federal charter, would be a non-profit-making organization, in which the Radio Group, independent broadcasters,

the Government, and public interests could participate. For the Government, the public, the industry, as well as other broadcasters, are all vital factors in the solution of the broadcasting problem.

BASIS AND CHARACTER OF ORGANIZATION

Since the inauguration of the Radio Industry, Secretary Hoover has taken a leading position in behalf of public service towards radio. He has appealed to the industry on various occasions to cooperate in the solution of the broadcasting problem. It is probable that he is waiting for action by the radio industry itself before deciding upon his position towards a constructive plan for the organization of a National broadcasting system. The Radio Group, as leaders in the industry, cannot cooperate more effectively than by joining in the formation of the Public Broadcasting Company under the chairmanship of Mr. Herbert Hoover.

The Board of Governors of the Public Broadcasting Company, in addition to Governmental representation, should include members of the radio industry, prominent independent broadcasters, newspaper interests identified with broadcasting, leaders of education in the United States, representative social service leaders, and those prominent

in operatic, musical and music-publishing enterprises. The public character of these institutions could be further augmented by a Board of Trustees that would reflect every phase of American life and activity, including labor. This would materially strengthen the political appeal of such a project.

TRANSMISSION FACILITIES

Because of the fact that by wire inter-connection in most cases and by radio inter-connection whenever possible, the broadcasting stations now maintained by the Radio Group could form the nucleus of a national broadcasting system, we should offer to sell or lease or even to lend, such of our stations to the Public Broadcasting Company as it may require for its public service. With similar contributions made by other interests, upon the same basis, it is submitted that an efficient broadcasting transmission system could be immediately developed.

To demonstrate our motives of public service, the terms of our contribution should be as generous as the circumstances require. We would accept debentures from the Public Broadcasting Company for such contributions in this respect as we are called upon to make.

HOW REVENUE IS TO BE DERIVED

Based upon the accepted economic position of payment for service, a tax should be levied by the Government at the source of manufacture upon the sale of radio products, for the support and maintenance of the Public Broadcasting Company. Conservatively estimating the sale of radio products for the next five years at two hundred million dollars annually, a five percent. tax would net a yearly income of $10,000,000.00.

In view of the fact that the Public Broadcasting Company, with an assured system of national transmission facilities at its command, would be the first permanent organization of this character, definitely supported and working purely in the public interest, a substantial source of support, it is believed, could come from public endowments. A plan to this effect, providing in detail for the organization of a system of educational, cultural and musical foundations for radio, has been worked out in detail by the Radio Corporation and is ready for consideration in connection with any primary solution of the broadcasting problem which may be adopted.

Following upon the practice of national broadcasting systems abroad, another material source of revenue might be derived from a program publication to be issued by the Public Broadcasting Company,

in which advertising would be accepted.

DEVELOPMENT OF PLAN

In view of the great importance of radio broadcasting and the vast measure of public and congressional interest in the art, a bill could be prepared for Congress that would combine the charter of incorporation, the means and methods of collecting the necessary revenue from radio manufacturers, and which would fix a form of organization in which Governmental participation would be permanently assured (preferably by the membership in the Board of Governors of the Secretaries of Commerce, Treasury, War, Navy, Interior and the Postmaster General of existing and future administrations), provided that Mr. Hoover and such congressional leaders as Congressman White and others are in sympathy with the principle of this plan.

It is obvious that the presentation of such a bill would have to take into consideration its legal, political and public aspects. The consideration already given to the problem by Secretary Hoover, Congressman White and other members of the Administrative and legislative branches of the Government would make their cooperation in these respects invaluable.

It would, therefore, be best if the problem,

as a whole, was first crystalized by Secretary Hoover before the forthcoming conference in Washington of the radio industry, to be followed by our own acceptance of the principle. Thereafter, we could cooperate in working out the details that would show the plan as technically sound, financially possible and legally practicable.

STATUS OF BROADCASTING UNDER THIS PLAN

The Public Broadcasting Company, operating on exclusive wave-lengths reserved to it by the Government, would regularly broadcast a series of primary programs through its national broadcasting system. This system would be the backbone of a permanent, national broadcasting service.

Independent broadcasters who desire to do so, might operate their stations, as at present, at available wave-lengths.

Manufacturers who, for publicity or other reasons, desired to contribute individual programs, could continue the practice.

Communication or other interests which, for one reason or another, desire to experiment with and technically develop the art of broadcasting, would be left free to continue their projects.

SUMMARY

The plan submitted herewith provides;

1. For the formation of the National Broadcasting Service, an organization in which the industry, the public and the Government would be represented.

2. For the sale, or leasing, or lending, of broadcasting facilities to the P.B.C. by the Radio Group, as well as by other manufacturing or broadcasting interests.

3. For legislation imposing a sales tax, levied at the source of manufacture upon radio products, for the support and maintenance of the Public Broadcasting Company.

4. For additional means of support to a national broadcasting program by endowment and by the publication of a program magazine which would contain paid national advertising.

5. For the continuance of individual opportunity to newspapers, manufacturers and other broadcasters who may desire to distribute programs through their own stations.

David Sarnoff

New York, August 12th.

04:21

Box 1

FF 12

Form 1550 B

Westinghouse Electric & Manufacturing Company
150 Broadway, New York

Office of
Guy E. Tripp,
Chairman

September 8, 1925.

Mr. H. P. Davis, Vice President,
Westinghouse Electric & Mfg. Co.,
East Pittsburgh, Penna.

Dear Mr. Davis:-

Enclosed is a copy of the memorandum which I dictated Friday concerning the organization of a Broadcasting Service Association. I would be glad to have you look it over and make suggestions. It would be well to do it promptly in order that we may get an early start.

Yours faithfully,

G. E. Tripp

Chairman.

Enclosure.

Westinghouse Chairman's proposal re: national broad. service in re: ITP's letter to W. President p 2

PROPOSAL AS TO THE IMMEDIATE ORGANIZATION OF A "BROADCASTING SERVICE ASSOCIATION".

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General Electric Company
Radio Corporation of America, and
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2. The prevention of duplication of effort in development work having to do with broadcasting.

3. The establishment of a united front in dealing with the Telephone Company's broadcasting situation.

4. The unified control and direction of the general development of broadcasting, including plans for participation of outside or independent broadcasters in the association and the terms and conditions under which they will be offered participation.

5. A central control over programs.

6. The establishment of methods of securing income for service.

In order to accomplish the above it is suggested that this Association be governed by a Board of Trustees, one member from each of the parties and that they relinquish to said Board of Trustees the full control of operation and development of their existing stations, but not the ownership of them; the stations to retain their individuality as at present (i.e. name); the parties to contribute in proportions to be agreed upon to a fund which shall be under the control of the Trustees, out of which shall be paid the expenses of operation and development as aforesaid.

While it is not anticipated that any of the parties will

desire to operate and maintain broadcasting stations except those already existing, and which are to be included within the terms of this agreement, nevertheless nothing herein shall operate as a bar to such action if they so desire. Moreover, if the Trustees shall determine that any of the stations included in this agreement are no longer useful to the broadcasting organization, they (the Trustees) shall so notify the owner and he may then operate it as an independent station at his own expense, or discontinue it as he sees fit.

At the first meeting of the Trustees they shall make an estimate or budget of the cost of operation and development of stations included in the Association for a stated period and the parties to the Association after approval of said budget shall underwrite it. Thereupon the Trustees shall be authorized to call these subscriptions from time to time, at their discretion. Similar periodical budgets shall be submitted in like manner. Any expenses beyond the budgets so approved must receive special approval.

The Board of Trustees shall be charged with the duty of the development of broadcasting in its wider aspects, commercial, political, and social, it being the intention to place in the hands of said Board the broadcasting problem of the nation insofar as the parties are concerned or can contribute to it.

In order that the Trustees may be in a position to more effectually exercise their control over operation and development, they shall have jurisdiction over the personnel in the various stations; the parties to the Association to agree to accept their decision in matters of employment and organization of their broadcasting personnel. The Trustees to create a sufficient central organization to effectually

carry out the purpose of this Association. The Trustees to have jurisdiction over broadcasting development and experimental work of the Association, both as to its character and the location of factories where it shall be carried on. Any such work carried on by any of the parties independently of the Trustees shall be at that party's own expense.

September 8, 1925.

64:21
Box 1
F= 6

September 9, 1925.

General G. E. Tripp, Chairman,
New York Office.

Dear General Tripp:-

I am just in receipt of yours of the 8th with the enclosed memorandum which you dictated concerning the organization of a Broadcasting Service Association.

I have thought a great deal about this since my return and have also discussed it with those men here whose ideas about it would be worth while, but have not been able to develop anything of major importance that would add strength to your memorandum. There has been considerable talk and some suggestions about details, but I think - and I believe you will agree with me - that the discussion of details should be left to the proposed trustees.

In the proposal there is no mention made of termination in case it is desired by any one of the parties concerned. This is only a thought, however, and not a suggestion as I believe better working results will be obtained if a provision of this kind is not included.

It is felt that the proposal is very broad and very complete, and I do not think I can add anything to improve it. I believe it should be submitted just as it stands.

Yours very truly,

Vice President.

64:21

Box 1

FF 6

COPY

Apparently Tripp sent it to OY

GE's response to Westinghouse proposal for national broad. service

GENERAL ELECTRIC COMPANY
120 Broadway, New York

October 16, 1925.

General Guy E. Tripp,
Westinghouse Electric & Mfg. Co.,
150 Broadway, New York City.

Dear General Tripp:

Our people are studying your suggestion regarding the unification of broadcasting, and I expect to have a statement of their views now before very long. Personally, I have been so interested in the possibility of taking over the Telephone broadcasting that I have not pushed as hard as I otherwise would the study of your proposal. The relationship of the Telephone Company at the present moment, as you can see, is a very sensitive one, and I think it important beyond measure that all of us sit steady in the boat now for a month or two until we see if we can not get it straightened out. If any of us change our policies, we may create difficulties and reactions which would work to the disadvantage of our development of a comprehensive program, such as we talked over today at the Directors' meeting.

Yours very sincerely,

(SIGNED) OWEN D. YOUNG

64:21
Bx 1
FF6

COPY

HPD
Wants wire line
to Chicago: 4-
station chain.
Worried about "drift"

GENERAL ELECTRIC COMPANY
120 Broadway, New York

October 16, 1925.

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Yours very sincerely,

(SIGNED) OWEN D. YOUNG

October 21, 1925.

Mr. E. M. Herr, President,
New York Office.

Dear Mr. Herr:-

Referring to the development of our broadcasting activity, about which we were talking yesterday, the Westinghouse Company has been able to maintain a pre-eminent position in this activity up until the present time. I feel the same about this as I do about any product of the Westinghouse Company where we have a reputation to sustain, and that it would be a reflection if we permit it to become second place or mediocre. With competition from the American Telephone & Telegraph Company and restrictions which have been imposed on this activity, I feel that we cannot keep our position and that something must be done immediately to improve it or we should drop out entirely -- which seems to me to be unobtainable.

A connection to New York from KDKA, while desirable, would place us in competition with the A.T. & T. Company and the Radio Corporation for talent, or we would have to link up with the Radio Corporation and be subject more or less to their judgment and will relative to programs originating there. Further, these would be competitive, more or less.

We have a very good situation now in Chicago. Chicago is second to New York in size and is an aggressive rival of New

York in almost everything. Our connections there are such that we can make good arrangements, it is believed, to get program material that would compare favorably with program material originating in New York.

We have discussed this situation many times and it is our belief that if we could make a wire connection from KDKA to Chicago we could have a hook-up that would again "put us on the map". The idea of connecting up KDKA is to make the short wave broadcasting station here in Pittsburgh available for program transmission, as no such facility exists in Chicago. With this wire service from Chicago, we could put out these programs from KDKA on the normal wave and also on the short wave. The short wave will allow our Springfield station to repeat the programs, and also the Nebraska station. Chicago could have them direct, as well as KDKA. In this way we would have four stations on our chain, and if we thought it desirable we could make connections with Pacific Coast stations to also repeat the programs transmitted to them through our Nebraska station.

Having programs supplied in this way would reduce some of the program expense in these separate stations, and I believe that the wire line expense could be nearly canceled out. It is my understanding that the Western Union have a good wire from Chicago to Pittsburgh which they would lease to us. We would have to provide amplifiers for this line, and while I haveno exact figures it is my opinion that the entire expense would not exceed $20,000 a year.

The season is well on and if we are to take this step it is essential that we do it immediately. It is not a step, in my opinion, that is inimical to any of the plans that are being discussed or proposed for consolidation of the stations in the Radio Group, since it would be a very helpful advantage for the Group to have this connection to Chicago.

Bringing Chicago into the picture from these several stations would give the radio listeners a new interest, as they would have Chicago as a center of distribution where now they have only New York.

If this could be decided at once I think we could arrange to get the Chicago Grand Opera. We cannot, however, do this unless the line is available, but it would be a splendid attraction to transmit all over the country - as would be possible with this chain of stations. There are also other possibilities there, but for the same reason we cannot make any move to discuss the question until we have a definite program in mind.

I think this letter, with the talk we had, will give you a general idea of the situation, and I would like to urge a definite decision as I feel that we are making a mistake in drifting as we are doing. As matters stand now, however, without some definite policy, that course seems inevitable, and I urge a decision regarding a definite policy.

Yours very truly,

Vice President.

64: 21

Box 1

FF 6

Form 6836 A

Westinghouse Electric & Manufacturing Company

150 Broadway, New York

Office of
E. M. Herr,
President

October 22, 1925.

Mr. H. P. Davis, Vice President,
East Pittsburgh Offices.

Dear Mr. Davis:

I have yours of the 21st instant in regard to the matter of broadcasting and agree with you that the delay in getting this matter finally settled is unfortunate. I find that General Tripp is out of the city until Monday, and as I have before me a letter from Mr. Young to General Tripp (copy of which I am enclosing) I find it impossible to change our status in regard to radio matters. It will therefore be necessary for the next few days to mark time and avoid doing anything that will precipitate any new situation which might embarrass the Radio people in their negotiations with the Telephone Company. I will have this whole matter in mind however, and as soon as possible will endeavor to get some action that will be constructive. It will probably be the latter part of the week before I can get the matter at all in hand.

Yours truly,

President.

64:21

Box 1

FF 6

posting for
Chicago
Seems to ignore
ATT politics
P1

October 28, 1925.

CONFIDENTIAL.

Mr. E. M. Herr, President,
New York Office.

Dear Mr. Herr:-

I wish to acknowledge your letter of October 22nd in regard to the matter of broadcasting facilities, with which you forwarded copy of Mr. Owen D. Young's letter of the 16th to General Tripp in reply to General Tripp's memorandum covering the organization of a broadcasting service association.

There are two separate and distinct matters which we have been discussing in connection with broadcasting. The first is the proposal of General Tripp, which covers a pooling of the broadcasting activities of the General Electric Company, the Radio Corporation and the Westinghouse Electric & Manufacturing Company. The second refers to our own activity, as covered in my letter to you of October 21st.

In regard to the first, the General Electric Company has been a strong advocate for a long time of a broadcasting company, and to a lesser degree, the Radio Corporation has also, and the circumstances that brought about the proposal made by General Tripp came through the Radio Corporation's desire to have us connect up with them by wires from New York, in connection with some of the programs which they were undertaking this winter.

It should be remembered that our broadcasting rights are

HP acknowledges that W's proposal for a national service was stimulated by RCA, + that GE has always supported a bdcast. company. What can RCA + GE's internal memos show us about this?

p. 1 & 3

individual rights, and as the negotiations with the Telephone Company are now being carried on they are being undertaken by the Radio Corporation, probably under the direction of the General Electric Company. It would seem to me that we would all be in a better position if our interests were pooled, and the negotiation had the advantage of joint effort instead of more or less single effort, as is now the case.

It might not be advisable for the proposed Trustees to carry out all of the suggestions in General Tripp's proposal at the present time, but nevertheless the pooling of the interests would, in my opinion, be an advantage in the negotiations and would allow more constructive work to be done, since there would inevitably be some plan of development in mind which would allow better consideration of how well the proposal of the Telephone Company (whatever this may be) would fit into this.

In regard to the pooling arrangementproposed, knowing that the Radio Corporation has agreed to this and as Mr. Young personally asked General Tripp to make the suggestion, it would seem incumbent on the General Electric Company to approve or disapprove the suggestion in principle, and not avoid this by an excuse which does not appear to me to carry a sufficient reason.

Relative to the second matter, which we have been discussing, it does not seem to me that the negotiation with the Telephone Company has any bearing on this situation. KDKA is practically occupying a second-rate position here in this district due to our lack of program material, as our only real competitor (WCAE) is one of the

acknowledging that GE asked Westinghouse for a proposal

p. 292

Telephone chain and it is with this in mind that we have proposed a Chicago wire. The General Electric Company and the Radio Corporation are both using long distance Postal wires for pick-up service, and have proposed - and even negotiated - for us a connection from New York to Pittsburgh with thePostal, which we did not agree to. The Chicago connection would tap a new field and would increase the interest in our station, and allow us also a means for inter-connection of our several stations, thereby, I believe, reducing our program expense in an amount sufficient to almost pay for this wire service.

I am inclined to believe that the Telephone negotiation, even if it is successful, is going to be a long-drawn out matter and I feel it essential for us to maintain our pre-eminent position in broadcasting, and therefore again urge the approval of this Chicago connection, which is in reality nothing more than a pick-up wire, of which we have a great many in service for shorter distances.

I urge this prompt decision because such attractions as the Chicago Opera cannot be obtained if we do not make an immediate decision.

Yours very truly,

Vice President.

64:21
Box 1
FF 6

How Can We Improve Radio Broadcasting?

THE Westinghouse Electric and Manufacturing company operates four of the country's best known and popular broadcasting stations. Three were in the business from the start, KDKA, their Pittsburgh plant and "the daddy of them all," being the first station. This company besides being the first in the field has been ever progressive. It has not hesitated to revamp its whole system to keep up with the many improvements introduced from time to time. In all this activity, H. P. Davis, vice-president of the company in charge of broadcasting, has taken the lead.

In the following discussion, prepared in response to questions suggested by Radio Digest, Mr. Davis gives his views on the questions of the day in Radioland, "What's Wrong with Broadcasting?" and "How Can We Improve Radio?"

Other articles prepared by leaders in the broadcasting field will follow this one. The suggested questions are enumerated in the box at the right of this page.

By H. P. Davis, Vice President, Westinghouse Electric & Manufacturing Company

1. I BELIEVE that the future of the small station is secure, provided it meets the requirements of the district in which it is located.

The term "superpower" seems to me to be most unfortunately used in connection with a higher power station, since "superpower" is a relative term and not definite. The so-called "superpower station" of today may be a low power station of tomorrow. It is believed that on account of economical conditions, the competition between stations to see which station can talk the loudest will, in the end, defeat itself.

I believe that a broadcasting station's power in a definite locality should be sufficient, and only sufficient, to get dependable coverage for its definite area 365 days in the year.

Day and night broadcasting by relaying is wholly possible by using a method which I have repeatedly proposed. This method depends on boosting the Radio signal to keep it of sufficient strength to permit relaying. With such a plan in successful operation, I believe there will be little or no necessity of superpower stations, and that low-power stations, with cheaper maintenance and operating requirements, would be quite sufficient. I believe that the small station could easily "hold its own" and not be forced off the air by competition if this plan, which is outlined in the following, can be developed.

The plan I have in mind proposes the transmission of programs by short wave broadcasting, with boosting by suitably spaced auxiliary amplifying stations. These short-wave broadcasting stations will be located at central points where the best material is available, and be connected by telephone wires to adjacent points of pick-up. The regular wave broadcasting stations will depend on, and will pick up and relay these short wave transmissions, to fill out their program service, and will undoubtedly, in some way, help support the service.

In other words, at selected points on this continent, and possibly on other continents, short-wave high power transmitting stations will be erected, each station having a transmission channel of its own, and long distances will be covered by means of the boosting and amplifying stations located to maintain and continue the signal strength.

This system will correct fading difficulties, and will in a large measure overcome static and other interference, and establish a service to the regular wave broadcasting stations equal to or better than that supplied by wire, but much cheaper, more flexible and suitable for greater distances.

H. P. Davis

The broadest possible opportunity will be provided these short-wave transmitting stations to pick up any suitable program material, either national or international, and to distribute it in a way analogous to the news service of the Associated Press for newspapers, the regular wave broadcating stations taking this service being formed into an association in a manner similar to that of the newspapers.

There may be as many channels of program transmission as there are short wave transmitting stations. Each having different programs, considerable choice will be available to the pick-up regular broadcasting stations, and programs of great interest can be built up by them.

2. REGARDING entertainment programs, I believe an answer to this is hardly possible since it is so much a matter of individual taste and will be guided so thoroughly by the demand of the public.

State and federal censorship would be a distinct step backwards, as it seems to me this would stifle initiative and be cumbersome in operation. It might be possible, however, to have general guidance formulated by a set of federally prepared rules of procedure. Nevertheless, it is our experience that in the long run the public fills this position admirably and does it better than any board or law-making body.

3. AS TO "who is to pay," in our opinion this question will not be answered by toll stations. Radio broadcasting is the greatest medium for advertising that has ever appeared to date, and undoubtedly it is going to be used in some way for that purpose—at least as a means of good will advertising, and as such will be paid for and paid for well. It is too early now to say how this is to be worked out, but a great many are thinking about it and trying out various schemes, and we are satisfied that something will be developed which will be profitable and still not be obnoxious to the listening public.

Taxing Radio manufacturers or imposing a receiving set fee is, in my opinion, quite impractical.

4. UNQUESTIONABLY there should be some method of limiting the number of stations if the broadcasting service is to be developed as it should be and public interest maintained, and a station once established, because of the investment required, should have a protected right that is good so long as that station gives a satisfactory service.

The Kintner plan is probably as good as any that has so far been proposed.

5. A BOARD of control, such as indicated, is, in our estimation, of doubtful value. It would be better to have a federal commission functioning in a similar manner to the interstate commerce commission or the public service commission in the various states, the constitution of the commission being wholly non-political.

6. IT WOULD be a mistake, in the present condition of broadcasting, to have any new legislation enacted at once until this situation is clarified and better understood, and some plan or method similar to that indicated herein is sufficiently worked out to show its practicability. It would be a misfortune to have new limitations introduced over those already existing.

7. IT IS believed that the appropriations for the operation of the Radio section of the department of commerce are wholly inadequate when the importance of the service is considered, and that the amount should be very greatly increased.

The various broadcasting stations have all the expense they can support at the present time, and it would be asking too much to have any taxation imposed on them to support this inspection activity.

As it is, the public is the great beneficiary from broadcasting and pays nothing for it, and therefore it seems to me that the appropriations should come out of the general funds of the government, which of course come from the people at large.

8. WE are thoroughly in accord with the proposal relative to the use of piezo electric crystals for controlling the broadcasting stations' waves. KDKA, of the Westinghouse Electric and Manufacturing company, has had these crystals in use for some time now, particularly in its short wave transmissions, and is, I believe, the first station to so employ them.

9. THE plan herein proposed contemplates the location of certain short wave bands or channels to definite transmitting stations, and as this would extend to other continents, it would obviously require allocation of channels for such a purpose. This allocation will have to be made and restrictions of some sort must be established which will prevent the use of apparatus or devices which will cause interference with, or in any way disturb these channels.

SUGGESTED QUESTIONS

1. What is the future of the small station? Daylight broadcasting? Relay night broadcasting? Or will that be unnecessary on account of the superpower stations? Will the small station be forced off the air by program competition?
2. What type of programs (include various classes) are destined for the future? Of entertainment programs, what kind would you consider the best? What of the "continuity" or "presentation" program? Are you opposed to state and federal censorship of Radio programs? Why?
3. Will toll stations be the answer to "Who's to pay?" We must consider that large business enterprises, who operate their own stations, are really doing toll advertising on an exclusive scale, unless these big firms allow a certain part of their time on the air to be leased by other firms or individuals. Will superpower growth cause the toll station to be the sole survivor of the American system? What about taxing Radio manufacturers, or by a public receiving license fee as in England?
4. Shall broadcasting stations be limited in number by some licensing plan based on priority and ability to serve, or some similar device? The Kintner plan has been proposed as a means of limitation. What is your opinion of this plan?
5. Do you favor appointment of an unbiased, non-partisan broadcasting control board, in which the public, the broadcasters, the Radio industry and the government shall be represented, which board shall have the power vested to settle all differences pertaining to broadcasting and the interpretation of present or future Radio legislation? How should such a board be appointed? Define the board's power.
6. Do we need new or amended Radio legislation? What should this include?
7. The Radio section of the department of commerce last year was given $125,000 with which to work. The department, according to an estimate, employs 70 persons. Trips of supervisors and their assistants all over the country must come out of this appropriation as well as the salaries. No money is left for instruments—the most necessary equipment for the supervision. Does the department need more money? If the government wishes to reduce taxes, why not apportion the inspection costs wholly or partly, to the various stations?
8. The piezo-electric crystal is an unswerving guide which holds a station on its assigned frequency. Why not adopt it as requisite of every broadcasting licensee? The bureau of standards could test each one to see that it was ground to the exact licensed frequency, and the cost—not large, being well under one hundred dollars—could be borne by each station. If not each station, why not make it a requisite of every station having a power exceeding 250 watts?
9. What do you think of allocating certain wave bands to international superpower broadcasting and reception?

64:21
Box 3
FF 38

ADDRESS FROM STOCKMAN AND FARMER STUDIO.

H. P. Davis.

November 3, 1925.

Tonight we are celebrating the fifth anniversary of the starting of Station KDKA by the Westinghouse Electric & Manufacturing Company, on November 2nd, 1920, and since KDKA was the pioneer station of the world, tonight we have reached another milestone which marks the passage of five years of radio broadcasting.

I think you will pardon our just pride of accomplishment if we review some of these pioneering steps which were initiated by KDKA in what was then an "uncharted sea", for the vast amount of this work on the part of KDKA in giving radio broadcasting to the world and establishing it on a permanent foundation is vividly recalled by this occasion.

The technical development of broadcasting and the origination of program features, in all of which KDKA was a pioneer, have been continuously studied and improved and account for the present high position of KDKA among the broadcasting stations of the world.

This position of KDKA is unique. It has the record of pioneering in the development of nearly every technical and program feature now standard with all broadcast transmitting stations, with the possible exception of the broadcasting of grand opera music which honor is held by its sister station KYW in Chicago.

Among the many pioneering feats of KDKA may be mentioned its pioneer broadcasting of news reports, from the Pittsburgh Post, a part of the first program November 2nd, 1920; the first church

services from Calvary Episcopal Church of Pittsburgh, January 2nd, 1921, which was the occasion of the first use of outside pick-up - a term which means the broadcasting of an event occurring at a point remote from the transmitting station; broadcasting for the first time from a hotel, the William Penn in Pittsburgh, February 28th, 1921; broadcasting for the first time from a theatre, the Davis, March 10th, 1921; broadcasting the first sport feature, a boxing match, from Motor Square Garden, Pittsburgh, April 11, 1921; the establishment of the first radio studio, especially designed and constructed to be suitable for broadcasting; and also the establishment of the first remote control studio, that of the Pittsburgh Post Studio of KDKA; the first farm program; children's stories, etc; in short, the developing of a varied live interest radio program in which all the features mentioned have their part.

In the early days of its history KDKA blazed the trail in the perfection of the preparation of programs, while the engineering development of the quality of the transmission progressed hand in hand with the program. In fact, engineering development in every department made possible KDKA's ability to present its pioneering features to the public.

The establishment of outside pickup apparatus, for example, made it possible for KDKA to broadcast the first church services and to obtain other program events from points remote from the transmitting station.

The development of the proper type of studios required pioneer engineering work, the placing of the instruments, the reduction of

reverberation, and in the perfecting, as far as broadcasting was concerned, of proper acoustic conditions.

Of the contributions made to broadcasting by the Westinghouse Company none bids fair to be more important than the development of the so-called high frequency or short waves, which are more penetrating and less subject to interference than those ordinarily used.

This development brought about the ability to reach long distances by rebroadcasting programs from repeating stations and in the establishment of such stations, Westinghouse again pioneered by installing station KFKX at Hastings, Nebraska, in 1923.

With the advent of Station KFKX, which regularly repeated KDKA's programs, the simultaneous broadcasting of the same program from two stations was accomplished.

The short waves transmitted by KDKA have made its programs known today in every continent of the world.

KDKA short wave broadcasts were repeated by the stations of the British Broadcasting Company in Europe on New Year's Day 1924. Later in the year KDKA's short waves were repeated in South Africa.

Early in 1925 the short waves of KDKA were repeated in Africa and Australia, and some months ago Asia reported the reception of these signals.

KDKA thus transmits to every continent. It isthe world's station, and is an exceedingly important agency in the dissemination of American ideals, which when heard by radio in other lands give the listener, no matter what his nationality, a more intimate picture of the United States of America.

Thus is briefly, very briefly, recorded the history of five years' accomplishment in broadcasting by KDKA. The station has maintained its pioneering record until today the call letters "KDKA" are known in every corner of the world.

Broadcasting, without question, is one of the many great - if not the greatest - contributions made by electrical science to the development of civilization.

The broadcasting station brings to everyone - to the dweller in the desert, to the lonesomeness of the arctic spaces, just as to the inhabitant of the country and the city - the fine things of art, education, and entertainment. It is a great leveler. The finest sermons are now heard, not only in the spacious city church, but also in the by-ways of the nation.

Educational courses conducted by some of our best universities, fine concerts, notable speeches, and sporting events of all kinds, are now available to the radio listener. Probably all the events in which there is great public interest are now carried the length and breadth of the country.

Every citizen may know the manner in which presidential conventions are conducted, and hear the intimate details which before were not available to the average mortal.

Less important, but perhaps as interesting, is the broadcasting, direct from the field, of such events as the recent World's Series ball games. Each play wasknown in the most remote places of our own and other countries as soon as it was seen by

those attending the games, and with all the attendant thrills.

With such progress made by broadcasting in the past five years one can foresee a much greater development and use in these to come.

Broadcasting should be considered as only one adaptation of radio waves. Ere long it is more than probable that we will have what has been termed "radio movies", by means of which we will not only hear but see broadcast events. Radio will also be applied to other fields of usefulness with which it now has no connection.

The almost unlimited possibilities ofthese radio waves, the same which carry the voice of the broadcaster and the music of the instrument, will be more fully utilized in the years which are ahead, and these developments, when they arrive, will probably outdo the previous five years of radio - important as they are.

These past five years, in which has been written largely the pioneering of broadcasting, are only the beginning of a era in which radio will play a more and more important part in the lives of the people, not only of the United States but of the world.

We, who have been identified with broadcasting since its birth, look forward eagerly to the wonderful developments we are sure are just ahead of us. And we look forward confidently, for we know that the development of this wonderful agency is keeping thousands of our best minds at work on it, and whatever problems confront us in the future will be solved in due course as they have been in the past.

future

P.5

My last word is an assurance that KMA's spirit of progress will always be its inspiration, constantly supplemented with a single desire to serve its vast audience.

64:21
Box 3
FF 38

role of vac tube
big as industry

Pittsburgh Post. Oct. 9 1925

parallel can be found for the remarkable development of the radio industry as disclosed in the estimate emanating from official sources at Washington that sales of wireless equipment this year will exceed $750,000,000. The prediction made in connection with Secretary Hoover's call for a conference on radio problems next month that within two years this will be a billion dollar business is not hard to believe in view of the way in which this infant industry, already gigantic, has been growing. It is only five years old.

It is true that the transmission of electrical energy without wires goes back much farther. J. C. Maxwell forecast radio with his theoretical work in 1865 and experiments made by Heinrich Hertz in 1887 proved the truth of Maxwell's theory. Guglielmo Marconi began his experiments in wireless telegraphy in 1894; he succeeded in sending a wireless message 14½ miles in 1898, and increased it to 200 miles in 1901. Three years later the first wireless telegram was sent across the Atlantic. Jack Binns made radio famous with his C. Q. D. message from the steamship "Republic" in 1909, which saved the lives of 1,500 persons after a collision. During the next few years experimenters in this field directed their attention to wireless telephony. The vacuum tube made long distance transmission of the spoken voice possible. In 1920 the Westinghouse Electric & Manufacturing Company established the first broadcasting station, KDKA, now operated through the studio of The Post. The first regularly organized program service was initiated November 2, 1920. which may be regarded as the birthday of radio as a great business. Total sales of wireless equipment previously had not exceeded $2,000,000 a year.

The growth of the automobile industry has been regarded as phenomenal, but it has lagged as compared with the development of the radio business. More than a year ago Roger W. Babson, the financial statistician, stated that for every dollar spent on furniture in the United States thirty-three cents was spent on radio apparatus; for every dollar spent on boots and shoes twenty-five cents was spent on radio; for every dollar spent on musical instruments, including phonographs and pianos, seventy-five cents was spent on radio, and the same ratio obtained in a comparison with the jewelry business, including clocks; while for every dollar spent on sporting goods of every description two dollars was spent on radio.

The story of the development of the industry, in which hundreds of thousands of persons are now employed, is merely another illustration of the business opportunities which this age affords far-sighted and aggressive men. Automobiles, the movies, the phonograph business and other Twentieth Century industries have brought riches to keen financiers. It is not to be doubted that the developments of science will give rise to still other new industries.

I think I saw the first part of this somewhere in these files. 1st col

vac tube tied to voice "In"

11/25 Davis talks about large chain that shares programming

New York Sun - November 20, 1925.

Would Centralize Programs

H. P. Davis Sees Big Station Chain Using Same Features.

BUFFALO, N. Y., Nov. 20.—Some plan must be worked out by which good radio program material can be furnished to any and all stations at will, somewhat in the way that news service now is furnished in the newspapers, H. P. Davis, vice-president of the Westinghouse Electric and Manufacturing Company and in executive charge of broadcasting, told the Electrical Supply Jobbers' Association in an address here last night. It was under Mr. Davis's direction that KDKA, pioneer broadcasting station of the world, was established.

The best program talent for broadcasting is not to be found in every nook and corner of the country, Mr. Davis said in explaining why some distributing system would be necessary. The source of the best program usually can be found only in the large centers of population, he said.

"We must not, however, think only of the broadcasting station located in these centers in which are found the best progress," Mr. Davis continued. "The local or neighborhood station also has a definite place in broadcasting, and it, too, must serve its individual public. A link must be found between the stations located in the program centers and those that are termed local stations because of their having a restricted range. The same source of program must be made available to both.

Centralizing Programs.

"The problem of the organization of broadcasting may be solved by means of interconnecting and distributing programs from a central source in such a way that the entire listening public can be reached from one central point, if desired. This central point may eventually be any place in the world."

Three possible methods of supplying the stations with programs from a central source were mentioned by Mr. Davis: a network of wire circuits; short wave repeating and moving the artists about from place to place. Dismissing the last as unsatisfactory, he outlined a system combining the best points of the wire network and short wave transmission.

"The best stations in the United States and Canada could be organized into a mutual association, the stations elected because of their recognized excellence and of their location in respect to other stations, so that if linked together they could cover the entire country without interference.

"Stations located in the centers where the finest source of program may be found could be equipped with short wave transmitters. These stations would be reservoirs of program material into which stations comprising the association could tap at will."

With such a system in operation, so-called "super-power" will be unnecessary, and not used except in the short wave relaying or boosting stations because of its expense, Mr. Davis predicted.

groping toward networking
"moving the artists"! 2d col

64:21
Box 3
Fr 38

Buffalo Evening News
November 19, 1925

SYNDICATING OF RADIO SEEN BY KDKA PIONEER

Inability of All Stations to Get Best Talent Means New Method of Distribution, Says H. P. Davis—Plan Already a Success.

"Syndicated radio programs are what the radio broadcasting stations will have to come to," H. P. Davis, vice president of the Westinghouse Electric company told the Electrical Supply Jobbers' convention at Hotel Statler Thursday afternoon. Mr. Davis was responsible for the establishment of KDKA, pioneer radio station of the world, and is known as the "Father of Broadcasting."

"A service in radio something like syndicated service by which newspapers get their news from all over the country is what will have to be worked out," Mr. Davis said. "It must be possible for any and all stations to obtain good radio program material at will. The best program talent is not to be found in every nook and corner of the country. On the contrary, it is only obtainable in and around the large centers of population. That is why some method of distribution must be found.

"We must not, however, think only of the broadcasting station located in these centers in which are found the best of programs. The local or neighborhood station also has a definite place in broadcasting, and it, too, must serve its individual public. A link must be found between the stations located in the program centers and those that are termed local stations because of their having a restricted range. The same source of program must be made available to both.

Three Methods Possible.

"The problem of the organization of broadcasting may be solved by means of interconnecting and distributing programs from a central source in such a way that the entire listening public can be reached from one central point, if desired. This central point may eventually be any place in the world."

Three possible methods for supplying the stations with programs from a central source were mentioned by Mr. Davis, a network of wire circuits, short wave repeating and moving the artists about from place to place. Dismissing the last as unsatisfactory he outlined a system combining the best points of the wire network and short wave transmission.

"Any scheme to be successful in unifying this service must be on a broad and mutual basis in which all parties are, as far as possible, equally interested and partners, and in which each of the member stations will preserve its own individuality and direction in so far as is possible.

"The best stations in the United States and Canada could be organized into a mutual association, the stations elected because of their recognized excellence and of their location in respect to other stations, so that if linked together they could cover the entire country without interference.

"Stations located in the centers where the finest source of programs may be found could be equipped ... hort wave transmitters. These stations would be reservoirs of program material into which stations comprising the association could tap at will.

Plan Already Tried Out.

"Such a plan, while ambitious at present, presents no impossible or unsolvable features. Our experience in repeating KDKA's short wave transmission at KFKX, Hastings, Neb.; KYW at Chicago, and WBZ at Springfield has shown that it is possible to do so very successfully."

With such a system in operation, so-called "super-power" will be unnecessary and not used except in the short wave relaying or boosting stations because of its expense, Mr. Davis predicted. The short wave relaying would be much cheaper than the wire net work system.

In discussing the question, "Who is to pay for broadcasting?" Mr. Davis said:

"If advertising can be developed as as an important function of radio broadcasting, and in a way satisfactory to the public, then I would say that our question is answered, as advertising is an established commodity.

"Radio advertising as now understood means that renting of periods in the broadcasting schedules of one or more broadcasting stations, the party so renting the space sponsoring the program furnished.

"The ethics of radio advertising is often questioned. Perhaps this is due to the fact that we are wont to think of advertising in the more blatant forms which it takes. Radio broadcasting is the greatest medium for advertising that has ever appeared in the world's history, but it presents an entirely new problem in the manner in which it must be put across. Radio advertisers must measure up to an ideal so that they will be looked upon as rendering a valuable public service."

2d col
last sent.

Buffalo Morning Express
November 18, 1925

H. P. DAVIS TO SPEAK ABOUT BROADCASTING

Vice president of Westinghouse company will address electrical jobbers.

HEADS GREAT INDUSTRY

Father of radio was instrumental in establishing pioneer station KDKA.

H. P. DAVIS

Vice President H. P. Davis of the Westinghouse Electric & Manufacturing company, one of the most prominent officials identified with the electrical industry, will address the members of the Electrical Supply Jobbers' association on Thursday on Problems of Radio Broadcasting, at Hotel Statler.

Mr. Davis is known throughout the industrial field because of his achievements with electrical apparatus for industrial work. Through these accomplishments, he became noted among engineers and operators of industrial plants, but, within the last few years, his accomplishments have become known to practically every man, woman and child in the United States and elsewhere who has developed an interest in radio, for Mr. Davis, through his initiative and foresight in the radio field, has won himself an enviable place in the history of radio and is generally known as The Father of Radio Telephone Broadcasting.

This title was conferred upon Mr. Davis because of his placing in operation the Westinghouse Electric company's station, KDKA, the first radio telephone broadcasting station in the world established for the broadcasting of regular daily concerts and other entertainments for the public.

The first concert was broadcast from KDKA at East Pittsburgh, Pa., on November 2, 1920, this broadcasting was the direct result of the foresight of Mr. Davis in regard to the entertainment possibilities of the radio telephone and because of his theory that the greatest field of the radio telephone was in public casting. KDKA brought rad certs directly into the homes public and within a few mon wave of interest greater tha other in history swept over United States. Radio was on tongue. Many broadcasting st were started and thousands of receiving sets were manufa and sold.

The list of 75 patents issued Davis shows the breadth of h terest in the chain of apparatu constitutes every electrical in tion. This list is made up o items as resistance coils, c breakers, controllers, fuse b solenoid brakes, trolley clamp similar devices. A trouble-less mission line has been his idea he has done much to remedy defects in details that were s spicuous in the early days of el cal engineering. In addition, h also done excellent work with lamps and meters. His arc lam a standard in the days when t form of illumination was domina and his alternating-current mete which Frank Conrad was co-inve or) superseded the original Shal berger type. For the last fi years he has worked in wider fiel but his devotion to the perfectio every part has always been mai tained.

Mr. Davis is known not only a designing engineer of high rank, b also a man who gets things done. is a tradition in his organization th whatever work is assigned to him certain of rapid completion. Th ability to accomplish results regar less of overwhelming difficulties w admirably illustrated during the wa He was at that time in charge of pr duction at the East Pittsburgh worl and the duty of fulfilling the gover ment contracts for munitions fe upon him. The quantities involve were enormous.

4th col
or
Conrad &
HPD go
back a
ways

64: 21

Box 3

FF 38

December 18, 1925.

Memorandum of conference of Primary Committee on Broadcasting, between

Mr. A. G. Davis, General Electric Company,
Mr. H. P. Davis, Westinghouse Company, and
Mr. David Sarnoff, Radio Corporation,

regarding proposed Broadcasting Service Company.

The proposed Company will be owned by the three companies of the Radio Group in proportions to be agreed upon and each of these companies will furnish capital in proportion to its holdings.

It will have the exclusive right to broadcast for revenue so far as that right can be given to it by the three companies and by the Telephone Company.

It will maintain studiosand produce programs and will leaseor purchase or otherwise acquire such facilities or the use of facilities that may from time to time be necessary for distributing programs to a chain of stations on terms to be arranged between the Broadcasting Service Company and the stations.

In principle, the stations of the three companies are to be members of the chain, but no station of the chain is to lose its identity. The three companies are also to give to the Broadcasting Service Company the exclusive right under their patents and copyrights to transmit signals to other broadcasting stations. It is contemplated that the Telephone Company shall not be in the business of furnishing programs as dintinguished from transmitting by wire programs of others.

The principle is the maintenance of two services:

1. A national service furnished by the Broadcasting

Service Company and made available to a chain of stations each under proper contract relation with the Broadcasting Service Company.

2. A local service maintained by the associated stations for broadcasting their own local programs.

The contract between the Broadcasting Service Company and the local stations of the chain will provide in general that the local stations will devote certain specified times to the national programs.

The charter of the Broadcasting Service Company will be broad enough to enable it to own, lease or operate broadcasting stations, and also to make contracts with local stations upon such terms and conditions as may seem proper to it.

The immediate necessity is to work out this plan in coordination with suggestions as contained in Mr. Bloom's memorandum of November 18, 1925, in sufficient detail to enable us to present to the RCA Board at an early date a reasonably accurate forecast of the balance sheet of such a company, together with a general forecast of its scope and set-up.

For the above purpose, the following sub-committee is appointed:

Sub-Committee

For the General Electric Company -	Martin P. Rice W.R.G. Baker
For the Westinghouse Company -	J. C. McQuiston Frank Conrad
For the Radio Corporation -	Dr. Alfred N. Goldsmith Charles B. Popenoe

Among other things, the Sub-Committee will study the general

set-up of the proposed Broadcasting Service Company and make recommendations regarding its operation, its budget and its relations with the local stations, and also study all the requirements of wire and radio service, the economy of the proposed wire rates, submittec by the Telephone Company, and the character of the wire service.

64:21

Box 1

FF 12

December 18, 1925.

MEMORANDUM OF CONFERENCE BETWEEN
MR. A. G. DAVIS, GENERAL ELECTRIC COMPANY
MR. H. P. DAVIS, WESTINGHOUSE COMPANY and
MR. DAVID SARNOFF, RADIO CORPORATION.

This company at the end of six months will be owned by the three companies in proportions to be agreed upon and will furnish capital in proportion to their ownership.

It will have the exclusive right to broadcast for revenue so far as that right can be given to it by the three companies and by the Telephone Group.

It will maintain studios and produce programs and will lease or purchase or otherwise acquire such facilities or the use of facilities that may from time to time be necessary for distributing the program to a chain of stations on terms to be arranged between the Broadcasting Company and the stations.

In principle, the stations of the three companies are to be members of the chain, but no station of the chain is to lose its identity. The three companies are also to give to the Broadcasting Company the exclusive right under their patents and copyrights to transmit signals to other broadcasting stations.

The principle is the maintenance of two services:

1. A national service, to which will be available a great chain of stations, each in proper business relation with the Broadcasting Company.

2. The maintenance of the stations for the purpose of furnishing local programs a part of the time, under such conditions that the greatest possible stimulus will be exerted on the individual stations to do that work in the best possible way.

The contract between the Broadcasting Company and the individual stations of the chain will provide in general that the individual stations will devote certain specified times to the national broadcasting, and that in the case of any great national event, they will disarrange their local programs to whatever extent may be necessary. They will of course protect the individual station against being obliged to broadcast matter that they cannot properly broadcast.

There is to be nothing in the charter of the National Company to prevent it from owning or operating broadcasting stations, or preventing it from making arrangements that seem best to it to allow the individual stations to broadcast local advertising on terms satisfactory to the National Company.

The immediate necessity is to work out this plan in coordination with Mr. Bloom's suggestion in sufficient detail to enable us to present to the Board at an early date a reasonably accurate forecast of the balance sheet of such a company, together with a general forecast of its organization etc.

The following sub-committees are appointed:

General Sub-Committee

For the General Electric Company - Martin P. Rice

For the Westinghouse Company - J. C. McQuiston

For the Radio Corporation - Charles B. Popenoe

Technical Sub-Committee

For the General Electric Company - Mr. Baker

For the Westinghouse Company - Frank Conrad

For the Radio Corporation - Dr. A. N. Goldsmith

The scope of the General Subcommittee is as follows: To study the general set-up of the proposed service company and to recommend regarding its operation and its budget and its relations with the stations in the chain.

The scope of the Technical Subcommittee shall be to study all the requirements of wire service and the economy of the proposed wire rights, submitted by the Telephone Company, and the character of the wire service.

64:21
Box 1
FF 12

THE PITTSBURGH POST
THE PITTSBURGH SUN

A.E. BRAUN, PRESIDENT

PITTSBURGH, PA.
November 27, 1925.

Mr. H. P. Davis,
Westinghouse Electric & Mfg. Co.
East Pittsburgh
Pa.

Newspapers planning to broadcast simultaneously

Dear Mr. Davis:

Will you be good enough to read the enclosed letter from Jason Rogers and advise me whether you find any merit in his idea?

Mr. Rogers was formerly publisher of the New York Globe, which I believe was the first newspaper to get out a radio magazine supplement, and it was a very successful venture. I would be obliged if you will advise me whether you think it worth while to go into the matter further with Mr. Rogers.

Very truly yours,

A E Braun

PRESIDENT.

AEB G

COPY.

THE ADVERTISERS' WEEKLY
Incorporated
32 North Avenue
New Rochelle, N.Y. November 24, 1925.

Mr. E. A. Braun,
% The Pittsburgh Post,
Pittsburgh, Pa.

My dear Mr. Braun:

Your note from Atlantic City received.

In briefest form the plan under consideration is:

First Unit - An organization to be composed of the managers of artists for the exclusive control of broadcasting service. Artists to be paid full price for service. Artists to be assured greater number of engagements in concerts, etc.
(Already linked together in principle giving me control)

Second Unit - Newspapers owning broadcasting stations are able to make connections. Newspapers to get credit for producing highest grade programs. Newspapers to raise funds to pay for artists through voluntary contributions from listeners-in, and to take a small percentage for their services.

Third Unit - Perhaps a tie-up giving R. M. A. the benefit of the whole tie-up.

I have practically all the correspondence between newspapers operating broadcasting stations regarding plans for developing some sort of a scheme to give them a return. They have sent it to me and asked me to try my hand at working the thing out.

I will write out the plan in greater detail showing inter-relations and benefits to be derived for each unit for possible consideration in case you think well enough of it to want to go over it with me.

Mr. E. A. Braun.

My idea in seeing you in the first instance is on account of your triple interest - 1st newspaper, 2nd Broadcasting Station and 3rd your relation to R. C. A.

I sincerely believe that I can organize the units if in your opinion it is worth while.

I would prefer to see you in New York if you are coming this way for there might be developments that could be more effectively handled here.

Very sincerely,

(Signed) Jason Rogers,

64:21
Box 1
FF 6

November 28th, 1925.

Mr. A. E. Braun, President,
Pittsburgh Post,
Pittsburgh, Penna.

My dear Mr. Braun:

I wish to acknowledge your letter of the 27th instant and enclosed letter of the 24th from Mr. Jason Rogers, which letter I am returning to you herewith.

I think the wisest course would be not to encourage Mr. Rogers. The organization of broadcasting activity is one of the most important and as I see it pressing matters now coming up, but we can do it ourselves and very much better than to have to deal with an outsider who will have to be compensated in one way or another and who will not be able to do it the way it would be most desirable. We have already made several tentative moves, but owing to the unsettled condition of the arbitration with the Telephone Company, have not yet been able to take it up actively, Mr. Young feeling that nothing should be done until that situation has been disposed of. You will recollect that Mr. Herr and I discussed a plan for organization with you some time ago, and I feel that that plan is very much more inclusive and workable than Mr. Roger's proposal. I would therefore recommend that he be discouraged.

Yours very truly,

Enclosure

Vice President.

64', 21

Box 1

FF 6

November 28th, 1925.

Mr. E. M. Herr, President,
New York Office.

Dear Mr. Herr:

As you know I have pointed out that with increasing frequency efforts are being made in one quarter and another to exploit and organize radio broadcasting.. Mr. Braun has referred one such proposition to me to-day and I am sending you a copy of the letter which was addressed to Mr. Braun.

In replying to Mr. Braun I have suggested that he discourage Mr. Rogers. I believe attempts of this kind would make it more difficult for us if there is any future hope of accomplishing anything ourselves. I think that we are letting valuable time slip by however, and the delay may make a situation which will be difficult for us to deal with if we come to a decision later to attempt organization ourselves.

Yours very truly,

(Signed) F. Conde

Enclosure.

Vice President.

64:21
box 1
FF 6

COPY

RADIO CORPORATION
of America

New York, December 4, 1

first mention in these letters of "NBC" ←

Mr. Edwin M. Herr, President,
Westinghouse Electric & Mfg. Co.,
150 Broadway,
New York, N.Y.

Subject: <u>NATIONAL BROADCASTING COMPANY</u>

Dear Mr. Herr:

Referring to the discussion of the above subject which took place at the Board Meeting today, I will be obliged if you will designate two representatives from your company to serve as members of a joint committee of representatives of the General Electric Company and Westinghouse Company and the Radio Corporation of America to consider the data which Mr. Sarnoff handed you personally at the meeting today and to report on the following:

1. The economies of a national broadcasting system as a whole which would take over the existing stations and broadcasting business of the American Telephone and Telegraph Company as well as the stations of the General Electric and Westinghouse Companies and the Radio Corporation of America, and merge them into a national unit.

2. The feasibility of the proposed rates quoted by the Telephone Company for wire service, as compared with the corresponding rates for equally high grade service using the wires of the telegraph companies.

I have appointed Dr. Goldsmith, our Chief Broadcast Engineer, and Mr. Popenoe, our Program Manager, to serve as the two members for the Radio Corporation of America. My suggestion is that the two persons appointed to represent your company on this joint committee should consist of a technical representative acquainted with the technique of broadcasting and a program man familiar with that phase of the business.

Your representatives should be prepared to bring to the joint committee the figures showing the cost of operating your present broadcasting stations and the representatives of the Radio Corporation of America will do likewise. It is necessary to put all these figures together in order to detemine on the economics of a national system, which would include some or all of the present broadcasting stations. The Telephone Company, in the data submitted, has already stated the cost of operating its stations.

If agreeable to you, Dr. Goldsmith, who has given this matter detailed consideration and who has prepared an analysis of the memorandum submitted by Mr. Bloom, will serve as Chairman of the proposed committee. The Telephone Company is anxious to have the present negotiations, which include this important item of broadcast transmission, concluded not later than January 13th, the date of termination of the present agreement relating to the handing down or withholding of the Arbitrator's report.

In forwarding his memorandum to Mr. Sarnoff under date of November 18th, Mr. Bloom, Vice President of the American Telephone & Telegraph Company, stated "For reasons which I explained to you, I would appreciate it if this is kept confidential to your higher officials". May I ask that the subject matter be treated accordingly, as Mr. Bloom's subordinates are not aware of the present negotiations in connection with broadcast transmission.

Sincerely yours,

(SIGNED) J. G. HARBORD.

64:21

Box 1

FF 6

Form 4535 B

Westinghouse Electric & Manufacturing Company

150 Broadway, New York

Office of
E. M. Herr,
President.

December 5, 1925.

Mr. H. P. Davis, Vice President,
East Pittsburgh Works.

Dear Mr. Davis:

After you have had a chance to digest the report on the proposed Broadcasting Company, which was handed us at the Board meeting of the Radio Corporation yesterday, and comes, I understand, from the American Telephone and Telegraph Company, I would like to have you advise me what your views are in regard to this proposed Company and how it could best be handled.

We should endeavor to formulate our views as promptly as possible so as to guide the officers of the Radio Company in dealing with the situation.

Yours truly,

E M Herr

President.

BW. President asks for HP's advice on RCA's proposed report on the broad. Company ←

64:21
Box 1
FF 6

December 8, 1925.

Mr. E. M. Herr, President,
New York Office.

Dear Mr. Herr:-

Replying to your letter of the 5th in regard to the proposed Broadcasting Company and the memorandum passed around at the Board Meeting of the Radio Corporation, I was called away very suddenly on my return to Pittsburgh on account of Miss Taylor's condition and have only had an opportunity to read this memorandum very hurriedly. There are quite a good many points, especially in connection with the proposals about the Company itself, which it seems to me are not well-advised, and I want to study the matter further.

The suggestion that is made, however, that a representative from each Company work out this situation together, I think is the most important point, and is the matter about which I have spoken to you several times as being most desirable. I believe this Committee should be set up, and I would like to represent this Company on it as I feel that this may be the critical time in the adjustment of this very serious matter. I know of no better way to guide the officers of the Radio Corporation in dealing with this situation than to have this Committee act.

Yours very truly,

Vice President.

HP was pushing this idea earlier ← 9 2

HP wanted to rep Westinghouse on it ←

64:21
Box 1
FF 6

Form +535 B

Westinghouse Electric & Manufacturing Company

150 Broadway, New York

Office of
E. M. Herr,
President.

December 8, 1925.

Mr. H. P. Davis, Vice President,
East Pittsburgh Works.

Dear Mr. Davis:

Supplementing my letter of December 5, I enclose copy of letter from General Harbord in regard to the proposed National Broadcasting Company.

Please note the Committee he proposes to form. I shall wish you as one of our representatives and also wish you to select the other representative who could properly collaborate with you on this Committee.

Will you please let mehave your recommendation on this matter as promptly as possible.

Yours truly,

E. M. Herr
President.

Enclosure.

64:21

Box 1

FF 6

December 12, 1925.

Mr. E. M. Herr, President,
Westinghouse Electric & Mfg. Co.,
~~150~~ Broadway, New York, N.Y.

Dear Mr. Herr:-

Referring to your letter of the 8th, in regard to the proposed Committee to confer on the matter of the National Broadcasting Company, I note that you desire me to act as one of our representatives; and if a second is required, I would nominate Mr. Frank Conrad.

I wonder, however, whether you have noticed what General Harbord is proposing. I feel that this is wholly inadequate, and I hardly think it a proper committee. Obviously, I should not be serving on a committee of which Dr. Goldsmith is the chairman. Apparently, this committee is to be constituted of subordinates who are to make a report which will commit our Companies, and then the negotiating, etc., will apparently be done by General Harbord or Mr. Sarnoff.

I do not think the Westinghouse Company should agree to this. I know of nothing that is so important as the proper line-up of this activity, and I believe it deserves the best that can be given it in each one of the three companies, and I feel that three men are sufficient.

If you agree with me, I would suggest that a protest be sent to General Harbord, and that we request a committee of which Mr. Sarnoff will be one member, if you choose I can be the Westinghouse representative, and an executive of equivalent standing should be the General Electric representative; that this Committee have power and not be a Committee of the character proposed, which will leave us with nothing to say when the matter of negotiation is carried on.

HP chooses Frank Conrad as W's 2nd representative on the NBC committee!

#1

HP insists on different committee structure

#4

As you know, the broadcasting activity is an individual right, and as such we ought to have as much voice in any proposed arrangement as the Radio Corporation or the General Electric, and I believe we should insist upon this if we are going to go along with this proposition.

Yours very truly,

Address; Westinghouse Electric & Mfg. Co.,
East Pittsburgh, Pa.

64:21
Box 1
FF6

HP's working

December 14, 1925.

General J. G. Harbord, President,
Radio Corporation of America,
233 Broadway, New York City.

Dear General Harbord:

Please refer to your letter of December 4 with reference to the National Broadcasting Company.

I have now had an opportunity to give this matter consideration and am not in accord with your suggestion as to the composition of the Committee to be appointed to report on this Company. As you know, the right to broadcast is a specific right held by the Manufacturing Companies, as well as by the Radio Corporation. In view of this and the importance of this proposed National Broadcasting Company, it would seem to me better that the initial report come from a committee consisting of an executive from each of the Companies interested, rather than to include the commercial people in such committee. I would be glad to designate our Vice President, Mr. H. P. Davis, to represent the Westinghouse Company, and believe an equally important officer should be appointed by the General Electric and Radio Companies, to deal with this matter initially. After this Committee lays out the broad basis on which the National Broadcasting Company can be formed, a Technical Committee could then

W. Pres takes HP's suggestion ← + proposes different ~~board~~ committee composition

be formed to work out the details.

I see no reason why the Committee of executives should not get together at once and act very promptly in the matter. I am sure Mr. Davis has given it a great deal of study, as you state has been done by your people also.

Yours truly,

President.

64:21
Box 1
FF 6

Form 4535 B

Westinghouse Electric & Manufacturing Company

150 Broadway, New York

Office of
E. M. Herr,
President.

December 16, 1925.

Mr. H. P. Davis, Vice President,
East Pittsburgh Works.

Dear Mr. Davis:

Referring to your letter in regard to the Committee which will be appointed to consider the formation of a National Broadcasting Company, I at once wrote to General Harbord in line with your suggestion and he called meon the 'phone a few moments ago, stating that he would be very glad to have you meet Sarnoff and some executive of the General Electric Company at 10:30 A.M. on Friday, December 18. He thought it would be best to have some of their other men sit in at this conference. I pointed out to him, however, the importance of having the executives outline the principles under which this Company is to be formed before the technical part of it is taken up.

Will you please arrange to attend this meeting.

Yours truly,

President.

HP's suggestion for executives to be on the committee is taken ←

64:21
Box 1
FF 6

RADIO CORPORATION OF AMERICA
TECHNICAL AND TEST DEPARTMENT
VAN CORTLANDT PARK SOUTH
AND SAXON AVENUE
NEW YORK

ALFRED N. GOLDSMITH
CHIEF BROADCAST ENGINEER

TELEPHONE: KINGSBRIDGE 2202 2203 2204

December 31, 1925.

Mr. M. P. Rice, General Electric Company, Schenectady, N. Y.
Mr. G. H. Lange, " " " " "
Mr. H. R. G. Baker, " " " " "

Mr. J. C. McQuiston, Westinghouse Electric & Mfg. Co. New York.
Mr. C. W. Horn, Westinghouse Electric & Mfg. Co. E. Pittsburgh, Pa.

Mr. C. B. Popence, Radio Corporation of Americn, New York.

Gentlemen:

I am sending you herewith the following:

1. An uncorrected copy of the report of the latest meeting of the Sub-Committee appointed to advise the Joint Committee which is dealing with the formation of the proposed American Broadcasting Company.

2. Supporting budgetary material, drawn up at the latest meeting of the Sub-Committee.

3. A proposed addition to the report mentioned under 1 above, presumably to be article 12 thereof, and proposed by Mr. McQuiston.

Will you kindly forward me any proposed corrections in this report at your earliest convenience. These should reach me not later than Wednesday, January 6th. If the corrections suggested are sweeping or radical in nature, or unlikely to be accepted by the entire Sub-Committee, it will then be necessary for me to call another meeting of the Sub-Committee to reconcile differences of opinion. If, on the other hand, the suggested corrections are minor and likely to be accepted by the entire Sub-Committee membership, I shall endeavor to embody them in a proposed final draft of the Sub-Committee report, which I shall then forward to each of you for approval and signature.

Very truly yours,

Chief Broadcast Engineer.

ANG.MF
Encs.

Dec. 30, 1925

There is submitted herewith the report of the Sub-Committee appointed to advise the joint committee of the General Electric Co., Westinghouse Company and Radio Corporation concerning the formation and future operation of a proposed broadcasting company. In the following this Company will be referred to as the "American Broadcasting Company" (an alternative designation "The American Broadcasting Associates" is also submitted).

(1) It is recommended that the American Broadcasting Company be formed by the Radio group and the American Telephone and Telegraph Company as proposed, with suitable provision for participation in the management thereof by individuals representing the members of the Radio group, in order to enable such representatives to gain experience and information which will permit them intelligently to take over the management of "American Broadcasting Company" at the end of six months or such other period as may be deemed best.

(2) At the end of the period in question, when the American Telephone and Telegraph Company interests in the American Broadcasting Company are transferred to the Radio group, it is recommended that the entire management of the American Broadcasting Company (A B C) be taken over and the existing plant thereof be continued with certain modifications (in Exhibit A is described the present plant and personnel which should be turned over to the A B C).

It is proposed that the new management of the A B C make recommendations to the directors thereof from time to time for the extension or contraction of the physical and program facilities and scope of operation of the A B C.

(3) Upon the transfer of management of the A B C to the Radio group, it is recommended that the following wire line network be established for the use of the A B C for program distribution. It is believed by the Sub-Committee that the quoted rate of $128.00 per mile per year for telephone and telegraph facilities from the telephone company is a reasonable rental charge.

Long Lines Network:

A circuit from New York through Springfield to Boston.
A circuit from New York through Schenectady, Buffalo, Cleveland, Detroit to Chicago.
A circuit from New York through Washington to Atlanta.
A circuit from New York through Pittsburgh, Cincinnati to Chicago.
A circuit from Pittsburgh to Cleveland joining the North and South trunk lines.
A circuit from Chicago to St. Paul — Minneapolis.
For the 1st year [illegible] circuit from Chicago to Davenport — Iowa.
" " 2nd " " from Chicago to St. Louis.
" " 3rd " "

[illegible]ge proportion of the above mentioned circuits are in [illegible]stitutes principally a rearrangement of facilities [illegible] ting service to the South Eastern portion of the

country, the division of the network into sectional sub-networks for special programs, and the transmission of duplicate programs originating in New York, Chicago, or certain other points of the system.

The following stations will be included in the A B C network:

New York	WJZ	Pittsburgh	WCAE
New York	WEAF	Buffalo	WGR
Washington	WRC	Cleveland	WTAM-WEAR
Washington	WCAP	Detroit	WWJ
Schenectady	WGY	Cincinnati	WLW-WSAI
Springfield	WBZ	Akron	WADC
Worcester	WTAG	Chicago	KYW
Boston	WBZA	Chicago	WGN-WLIB
Boston	WEEI	St. Paul-Minneapolis	WCCO
Providence	WJAR	St. Louis	KSD
Philadelphia	WOO-WIP	Davenport	WOC
Baltimore	WBAL (?)		
Atlanta	WSB (?)	Hastings, Nebr.	KFKX
Pittsburgh	KDKA	Denver	KOA
		Oakland, Cal.	KGO

These last three stations will rebroadcast by short wave relay.

(4) The revenues of the A B C, based largely upon information at hand to the effect that the American Telephone and Telegraph Company's annual gross revenue from broadcasting will be $750,000.00 and that the network and facilities of the A B C will be more extensive and that the business may be normally expanded, are estimated as follows:

For the 1st year following the transfer ownership of the A B C to the Radio group - $1,000,000.00

" " 2nd " " " " " " " " " " " $1,250,000.00

" " 3rd " " " " " " " " " " " $1,500,000.00

(5) The expenses of the A B C, based upon extremely inadequate information which should be greatly enhanced during the period of joint management of the A B C by the Radio group and the telephone company, are estimated as follows:

For the 1st year following the transfer of ownership of the A B C to the Radio group - $1,410,000.00

" " 2nd " " " " " " " " " " " " - $1,600,000.00

" " 3rd " " " " " " " " " " " " - $1,750,000.00

(6) On the basis of the above estimates, the losses during period following the transfer of ownership of the A B C to the Radio group, will be as follows:

For the 1st year following the transfer of ownership of the A B C to the Radio group - $ 410,000.00

" " 2nd " " " " " " " " " " " " $ 350,000.00

" " 3rd " " " " " " " " " " " " $ 250,000.00

It is unprofitable to attempt at this stage to estimate the revenue or operating expenses of the A B C beyond the above period.

(7) It is assumed that provision will be made by the Radio group for the remittance to the American Telephone and Telegraph Company of $1,000,000.00 for their rights and physical equipment in the broadcasting field and that suitable arrangements will be consummated for providing working funds during the period of joint ownership of the A B C by the Radio and telephone groups.

(8) An investment during the first year following the transfer of ownership of the A B C to the Radio Group, $230,000.00 additional equipment will be required for the operation of the Company.

(9) It is necessary that the Radio group shall have the right to use its present wire facilities or any necessary additions thereto at least until the transfer of ownership of the A B C to the Radio group and such time thereafter until the telephone company shall be prepared to furnish the desired substitutes.

(10) After transfer of ownership of the A B C to the Radio group, it is recommended that the A B C be made up of two classes of membership, sustaining and associated.

Sustaining members will include such stations in the Radio Corporation group (Radio Corporation, General Electric and Westinghouse stations) and that these members will direct, control and stand such losses and derive such profits as may result from the conduct of the broadcasting work that will form the basis of its existance.

Associated members will for a given consideration, hourly, monthly, or annual period rates, receive such benefits as the use of high grade national programs originating in New York or other programs, and such associate members will agree to contribute all other broadcasting time in such amount as may be required to nationalize the advertising programs arranged by the A B C.

(11) The short wave or long wave relay broadcasting transmitters of all members of the Radio group shall be available to the A B C for the retransmission of any of its programs (with appropriate covering announcements indicating the station of origin) and regardless of the programs being sent out by the corresponding regular broadcasting station of the Radio group at that time. The principle is that Radio relaying, in common with wire line relaying and toll broadcasting shall ultimately be in the exclusive field of the A B C.

Exhibit A

The personnel involved in the broadcasting activities of the telephone company, who, it is assumed, will be transferred to the American Broadcasting Company , if desired, include the following.

Sales force (paid programs)

Program-gathering force (sustaining programs)

Publicity force

Station staffs in New York and Washington

(announcers, hostesses, etc., station engineers, telephone operators, inside operators)

Outside staff

(announcers, field operators)

Concert bureau

WEAF "opera" orchestras and similar organizations

Telephone and telegraph operators at other stations of network

The contractual rights and obligations of the telephone company which, it is assumed, will be turned over to the A B C include all toll broadcasting and sustained program contracts of the telephone company, advanced program arrangements and program commitments of the telephone company, artist placement percentage contracts, agreements with broadcasting stations, contracts with owners of copyrights, and all other contracts bearing on broadcasting.

The physical plant of the telephone company which, it is assumed, is to be turned over to the A B C includes the following:

Transmitter and supplies of Station WEAF at 463 West Street, New York City:

Corresponding "listening watch" receiver of WEAF wherever located.

Studio furnishing and equipment of WEAF at 195 Broadway, New York, including all microphones, amplifiers, control boards, ele home boards for program distribution, monitoring equipment, spare tubes and other supplies.

Outside equipment of WEAF, New York, including microphones, amplifiers, portable receivers, public address equipment, special measuring equipment, equalizers, trucks for transporting equipment, etc. and spare tubes and other outside supplies.
Office equipment of WEAF and Telephone Company's broadcast business at 195 Broadway, New York.
Similar equipment to above but for station WCAP at Washington.
Amplifiers, equalizers, and other equipment and supplies for use in control rooms of other stations in Telephone Company's chain of stations.
All miscellaneous equipment, supplies, etc. used in broadcasting by Telephone Company.
All technical, commercial, legal, patent and copyright and other records and data of Telephone Company in broadcast field.

The space now occupied by the broadcasting business of the Telephone Company which, it is assumed, will be rented to the A B C as desired, for a period of one year with a renewal privilege for two additional terms of one year each is as follows:

Office space at 195 Broadway, New York, now occupied by broadcasting personnel mentioned above.
Studios, control rooms, reception rooms, telephone switchboard rooms, monitoring rooms, and other rooms devoted to broadcasting at 195 Broadway, New York.
Space in transmitter rooms on roof of 463 West Street, New York.
Similar space facilities in Washington at building of the Chesapeake and Potomac Telephone Company.
Any other space now being used by Telephone Company for broadcasting purposes.

I. - OPERATING BUDGET (THREE YEARS)

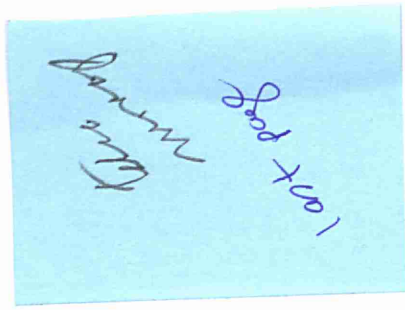
	First Year	Second Year	Third Year
ESTIMATED INCOME:			
Tolls from Advertising, etc.	$1 000 000	$1 250 000	$1 500 000
ESTIMATED EXPENSES:			
Rental of Wirelines	600 000	600 000	600 000
Local Wire Loops	25 000	30 000	35 000
Station Amplifier Attendants (25 Stations)	100 000	100 000	100 000
New York Operating Expenses	550 000	700 000	800 000
Washington " "	8 000	10 000	15 000
Chicago " "	50 000	70 000	100 000
	1 333 000	1 510 000	1 650 000
Depreciation	77 000	90 000	100 000
TOTAL EXPENSES	1 410 000	1 600 000	1 750 000
ESTIMATED OPERATING DEFICIT	410 000	350 000	250 000

II. - INVESTMENT (FIRST YEAR)

Broadcasting Rights and Physical Equipment of American Telegraph & Telephone Company	$1 000 000
ADDITIONAL EQUIPMENT:	
30 Outside Amplifiers	30 000
25 Control Room Amplifiers & Equalizers	50 000
New York - Additional Studio, Office and Technical Equipment	100 000
Chicago - Technical and Office Equipment	50 000
TOTAL INVESTMENT (FIRST YEAR)	$1 230 000

PROPOSED ADDITIONAL ARTICLE XII.

It is to be expected that economies in program will be enjoyed by such stations in the Radio Group as participate in sustaining and paid programs. Naturally, as program material is furnished by A.B.C., less local program material will be required, resulting in reduction of force and other local expenses incident to this item. It is impossible, however, to predict at this time what these savings will amount to and they will vary [redacted] according to the present local set-up.



A-(3)

It is believed by the Sub-Committee that the quoted rate of $128 per mile per year for telephone and telegraph facilities from the Telephone Company is possibly a fair basis upon which to negotiate, however, the situation is unique in that we have but one Telephone Organization to deal with so that they are in a position to dictate rates.

64:21

Box 1

FF 6

RADIO CORPORATION OF AMERICA
TECHNICAL AND TEST DEPARTMENT
VAN CORTLANDT PARK SOUTH
AND SAXON AVENUE
NEW YORK

ALFRED N. GOLDSMITH
CHIEF BROADCAST ENGINEER

TELEPHONE: KINGSBRIDGE {2202 2203 2204}

Pls return C.W. Horn

January 8, 1926.

Mr. M. P. Rice, General Electric Company, Schenectady, N. Y.
Mr. W. R. G. Baker, " " " " "
Mr. C. H. Lange, " " " " "

Mr. J. C. McQuiston, Westinghouse Electric & Mfg. Co. E. Pittsburgh, Pa.
Mr. C. W. Horn, " " " "

Mr. G. B. Popence, Radio Corporation of America, New York City.

Gentlemen:

I attach hereto the fourth tentative draft of the report of the Sub-Committee which has been considering the formation of the A.B.C. The comments and suggestions of the representatives of the General Electric and Westinghouse Companies relative to the third draft previously sent you have all been embodied in this fourth draft of January 7th.

Will you kindly advise me as soon as possible of your agreement with this latest draft and, at the same time, furnish the desired additional information relative to annual broadcasting costs of your respective companies, as requested in my recent letter.

Very truly yours,

Alfred N. Goldsmith

Chief Broadcast Engineer.

ANG.MF
Enc.

Useful info on expected revenue; Telco deal p1

January 7, 1926.

There is submitted herewith the report of the Sub-Committee appointed to advise the joint committee of the General Electric Company, the Westinghouse Company, and the Radio Corporation of America concerning the formation and future operation of a proposed broadcasting company. In the following this Company will be referred to as the "American Broadcasting Company" (an alternative designation the "American Broadcasting Associates" is also submitted).

In submitting this report the committee feels that it has made recommendations as definite as seem warranted with the facts at hand, which are too meager to be used as a basis of final judgment.

(1) It is recommended that the American Broadcasting Company be formed by the Radio Group and the American Telephone and Telegraph Company as proposed, with suitable provision for participation in the management thereof by individuals representing the members of the Radio Group, in order to enable such representatives to gain experience and information which will permit them intelligently to take over the management of "American Broadcasting Company" at the end of six months or such other period as may be deemed best.

(2) At the end of the period in question, when the American Telephone and Telegraph Company interests in the American Broadcasting Company are transferred to the Radio Group, it is recommended that the entire management of the American Broadcasting Company (A.B.C.) be taken over and the existing plant thereof be continued with certain modifications (in Exhibit A is described the present plant and personnel which should be turned over to the A.B.C.).

It is proposed that the new management of the A.B.C. make recommendations to the directors thereof from time to time for the extension or contraction of the physical and program facilities and scope of operation of the A.B.C.

(3) Upon the transfer of management of the A.B.C. to the Radio Group, it is recommended that the following wire line network be established for the use of the A B C for program distribution. It is believed by the Sub-Committee that the quoted rate of $128.00 per mile per year for telephone and telegraph facilities from the Telephone Company is possibly a fair basis upon which to negotiate, assuming that this rate includes the necessary equipment and attendants at all intermediate stations, and all terminal equipment at control rooms; however, the situation is unique in that we have but one national telephone organization to deal with so that they are in a position to dictate rates.

Long Lines Network:

A circuit from New York through Springfield to Boston.
A circuit from New York through Schenectady, Buffalo, Cleveland, Detroit to Chicago.
A circuit from New York through Washington to Atlanta.
A circuit from New York through Pittsburgh, Cincinnati to Chicago.
A circuit from Pittsburgh to Cleveland joining the Northern and Southern trunk lines.
A circuit from Chicago to St. Paul — Minneapolis.
A circuit from Chicago to Davenport, Iowa.
A circuit from Chicago to St. Louis.

A large proportion of the above-mentioned circuits are in exist-
ence, and the above constitutes principally a rearrangement of facilities,
with a few extensions permitting service to the South-Eastern portion of the
country, the division of the network into sectional sub-networks for special
programs, and the transmission of duplicate programs originating in New York,
Chicago, or certain other points of the system.

The following stations will be included in the A.B.C. network;
duplications in Washington, Pittsburgh and perhaps Chicago to be eliminated
as soon as expedient:

New York	WJZ	Pittsburgh	KDKA
New York	WEAF	Buffalo	WGR
Washington	WRC	Cleveland	WTAM-WEAR
Washington	WCAP	Detroit	WWJ
Schenectady	WGY	Cincinnati	WLW-WSAI
Springfield	WBZ	Akron	WADC
Worcester	WTAG	Chicago	KYW
Boston	WBZA	Chicago	WGN-WLIB
Boston	WEEI	St. Paul-Minneapolis	WCCO
Providence	WJAR	St. Louis	KSD
Philadelphia	WCO-WIP	Davenport	WOC
Baltimore	WBAL (?)		
Atlanta	WSB (?)	Hastings, Nebr.	WDAF
Pittsburgh	KDKA	Denver	KOA
		Oakland, Cal.	KGO

When and if possible, these last three stations will rebroadcast by short or
long wave relay. At times of national programs these three stations and others
may be connected by wire lines to the net work by wires leased for these occasions.

(4) The revenues of the A.B.C, based largely upon information at
hand to the effect that the American Telephone and Telegraph Company's annual
gross revenue from broadcasting will be $750,000.00 and that the network and
facilities of the A.B.C. will be more extensive and that the business may be
normally expanded, are estimated as follows:

For the 1st year following the transfer of ownership of the A.B.C. to the Radio Group- $ 250,000.

" 2nd " " " " " " " " " 1,100,000.

For 3rd " " " " " " " " 1,300,000.

(5) The expenses of the A.B.C., based upon extremely inadequate information (which should be greatly enhanced during the period of joint management of the A.B.C. by the Radio Group and the Telephone Company), are estimated as follows:

For the 1st year following the transfer of ownership of the A.B.C. to the Radio Group- $1,410,000.

" " 2nd " " " " " " " " " " " 1,500,000.

" " 3rd " " " " " " " " " " " 1,750,000.

(6) On the basis of the above estimates, the losses during period following the transfer of ownership of the A.B.C. to the Radio Group, will be as follows:

For the 1st year following the transfer of ownership of the A.B.C. to the Radio Group- $ 500,000.

" " 2nd " " " " " " " " " " " 500,000.

" " 3rd " " " " " " " " " " " 250,000.

It is unprofitable to attempt at this stage to estimate the revenue or operating expenses of the A.B.C. beyond the above period.

(7) It is assumed that provision will be made by the Radio Group for the remittance to the American Telephone and Telegraph Company of $1,000,000. for their rights and physical equipment in the broadcasting field and that suitable arrangements will be consummated for providing working funds during the period of joint ownership of the A.B.C. by the Radio and Telephone Groups.

(8) An investment during the first year following the transfer of ownership of the A.B.C. to the Radio Group, of $250,000. for additional equipment will be required for the operation of the Company.

(9) It is necessary that the Radio Group shall have the right to use its present wire facilities or any necessary additions thereto at least until the transfer of ownership of the A.B.C. to the Radio Group and such time thereafter until the Telephone Company shall be prepared to furnish the desired substitutes. The Telephone Company should agree to extend the network temporarily at such times as special national programs make additional coverage desirable.

(10) After transfer of ownership of the A.B.C. to the Radio Group, it is recommended that the A.B.C. be made up of two classes of membership, sustaining and associated.

Sustaining members will include the stations of the Radio Corporation, General Electric, and Westinghouse Companies and these members will direct, control and stand such losses and derive such profits as may result from the conduct of the business.

Associate members will for a given consideration, at hourly, monthly, or annual period rates, receive such benefits as the use of high-grade national sustaining programs originating in New York or other places, and such associate members will agree to contribute all such broadcasting time as may

be required to nationalize the advertising programs arranged by the A.B.C.

(11) The short wave or long wave relay broadcasting transmitters of all members of the Radio Group shall for proper monetary or other considerations be available to the A.B.C. for the re-transmission of any of its programs (with appropriate covering announcements indicating the station of origin) and regardless of the programs being sent out by the corresponding regular broadcasting station of the Radio Group at that time. The principle is that radio relaying, in common with wire line relaying and toll broadcasting, shall ultimately be in the exclusive field of the A.B.C.

(12) It is to be expected that economies in program will be enjoyed by such stations in the Radio Group as participate in sustaining and paid programs. Naturally, as program material is furnished by A.B.C., less local program material will be required, resulting in reduction of force and other local expenses incident to this item. It is impossible, however, to predict at this time what these savings will amount to and they will vary considerable according to the present local set-up.

(13). The present cost of broadcasting to the Radio Group (based on the 1925 figures) is as follows:

Radio Corporation of America	$.....
General Electric Company	$.....
Westinghouse Electric and Manufacturing Company	$..... 476,500

Hm

Exhibit A

The personnel involved in the broadcasting activities of the Telephone Company, who, it is assumed, will be transferred to the American Broadcasting Company, if desired, include the following:

Sales force (paid programs)

Program-gathering force (sustaining programs)

Publicity force

Station staffs in New York and Washington

(announcers, hostesses, etc., station engineers,

telephone operators, inside operators)

Outside staff

(announcers, field operators)

Concert bureau

WEAF "opera" orchestras and similar organizations

Telephone and telegraph operators at other stations of network.

The contractual rights and obligations of the telephone company which, it is assumed, will be turned over to the A.B.C. include all toll broadcasting and sustained program contracts of the Telephone Company, advance program arrangements and program commitments of theTelephone Company, artist placement percentage contracts, agreements with broadcasting stations, contracts with owners of copyrights, and all other contracts bearing on broadcasting.

The physical plant of the Telephone Company which, it is assumed, is to be turned over to the A.B.C. includes the following:

Transmitter and supplies of Station WEAF at 463 West Street, New York City:

Corresponding "listening watch" receiver of WEAF wherever located.
Studio furnishing and equipment of WEAF at 195 Broadway, New York, including all microphones, amplifiers, control boards, telephone boards for program distribution, monitoring equipment, spare tubes and other supplies.
Outside equipment of WEAF, New York, including microphones, amplifiers, portable receivers, public address equipment, special measuring equipment, equalizers, trucks for transporting equipment, etc. and spare tubes and other outside supplies.
Office equipment of WEAF and Telephone Company's broadcast business at 195 Broadway, New York.
Similar equipment to above but for Station WCAP at Washington.
Amplifiers, equalizers, and other equipment and supplies for use in control rooms of other stations in Telephone Company's chain of stations.
All miscellaneous equipment, supplies, etc. used in broadcasting by Telephone Company.
All technical, commercial, legal, patent and copyright and other records and data of Telephone Company in broadcast field.

The space now occupied by the broadcasting business of the Telephone Company which, it is assumed, will be rented to the A.B.C. as desired, for a period of one year with a renewal privilege for two additional terms of one year each is as follows:

Office space at 195 Broadway, New York, now occupied by broadcasting personnel mentioned above.
Studios, control rooms, reception rooms, telephone switchboard rooms, monitoring rooms, and other rooms devoted to broadcasting at 195 Broadway, New York.
Space in transmitter rooms on roof of 463 West Street, New York.
Similar space facilities in Washington at building of the Chesapeake and Potomac Telephone Company.
Any other space now being used by Telephone Company for broadcasting purposes.

EXHIBIT "B"

I. - OPERATING BUDGET (THREE YEARS)

	First Year	Second Year	Third Year
ESTIMATED INCOME :			
Tolls from Advertising, etc.	$ 850 000	$1 195 000	$1 300 000
ESTIMATED EXPENSES :			
Rental of Wire Lines	600 000	600 000	600 000
Local Wire Loops	25 000	30 000	35 000
Station Amplifier Attendants (25 Stations)	100 000	100 000	100 000
New York Operating Expenses	550 000	700 000	800 000
Washington " "	8 000	10 000	15 000
Chicago " "	50 000	70 000	100 000
	1 333 000	1 510 000	1 650 000
Depreciation	77 000	90 000	100 000
TOTAL EXPENSES	1 410 000	1 600 000	1 750 000
ESTIMATED OPERATING DEFICIT	560 000	500 000	450 000

II. - INVESTMENT (FIRST YEAR)

Broadcasting Rights and Physical Equipment of American Telegraph & Telephone Company	$1 000 000
ADDITIONAL EQUIPMENT:	
30 Outside Amplifiers	50 000
25 Control Room Amplifiers & Equalisers	80 000
New York - Additional Studio, Office and Technical Equipment	100 000
Chicago-Technical and Office Equipment	50 000
TOTAL INVESTMENT (FIRST YEAR)	$1 280 000

64:21
Box 1
FF 7

Form 82—10M-3-25

PAGE

RADIO CORPORATION OF AMERICA

January 22, 1926.

To the Board of Directors
Radio Corporation of America.

Your Committee on Broadcasting at its meeting on December 18, 1925, considered the subject in its broader aspects and appointed a Technical Sub-Committee and issued instructions reading as follows:

"The proposed company will be owned by the three companies of the Radio Group in proportions to be agreed upon and each of these companies will furnish capital in proportion to its holdings.

"It will have the exclusive right to broadcast for revenue so far as that right can be given to it by the three companies and by the Telephone Group.

"It will maintain studios and produce programs and will lease or purchase or otherwise acquire such facilities or the use of facilities that may from time to time be necessary for distributing programs to a chain of stations on terms to be arranged between the Broadcasting Service Company and the stations.

"In principle, the stations of the three companies are to be members of the chain, but no station of the chain is to lose its identity. The three companies are also to give to the Broadcasting Service Company the exclusive right under their patents and copyrights to transmit signals to other broadcasting stations. It is contemplated that the Telephone Company shall not be in the business of furnishing programs, as distinguished from transmitting by wire, programs of others.

"The principle is the maintenance of two services:

"1. A national service furnished by the Broadcasting Service Company and made available to a chain of stations, each under proper contract relation with the Broadcasting Service Company.

"2. A local service maintained by the associated stations for broadcasting their own local programs.

The contract between the Broadcasting Service Company and the local stations of the chain will provide in general that the local stations will devote certain specified times to the national programs.

The charter of the Broadcasting Service Company will be broad enough to enable it to own, lease or operate broadcasting stations, and also to make contracts with local stations upon such terms and conditions as may seem proper to it.

The immediate necessity is to work out this plan in coordination with suggestions, as contained in Mr. Bloom's memorandum of November 18, 1925, in sufficient detail to enable us to present to the RCA Board at an early date a reasonably accurate forecast of the balance sheet of such a company, together with a general forecast of its scope and set up.

For the above purpose, the following sub-committee is appointed:

Sub-Committee

For the General Electric Company - Martin P. Rice
W. R. G. Baker

For the Westinghouse Company - J. C. McQuiston
- Frank Conrad

For the Radio Corporation - Dr. Alfred N. Goldsmith
- Charles B. Popenoe

Among other things, the Sub-Committee will study the general set up of the proposed Broadcasting Service Company and make recommendations regarding its operation, its budget and its relations with the local stations and also study all the requirements of wire and radio service, the economy of the proposed wire rates, submitted by the Telephone Company, and the character of the wire service.

(signed) Albert G. Davis
David Sarnoff
H. P. Davis."

The Sub-Committee has studied as fully as possible all the information available and has submitted a unanimous report, which is attached hereto.

Your Committee is of the opinion that the preliminary estimate submitted by the Sub-Committee is necessarily based on inadequate information because estimates of broadcasting revenue and expense,

relating to future operations cannot, at this time, be based on definite statistics. Furthermore, the matter of expense will largely depend on the nature of the organization to be set up, its management, and the exploitation methods adopted by the proposed Broadcasting Company.

Your Committee has ascertained that for the year 1925, the total cost of broadcasting to the three members of the Radio Group was as follows:

Radio Corporation of America.....	$ 370,000.
General Electric Company.....	411,000.
Westinghouse Electric & Mfg. Co.....	476,500.
Total.....	$1,257,500

The preliminary operating budget submitted by the Sub-Committee estimates that for the first three years the operating deficits will be as follows:

First Year.....	$ 560,000.
Second Year.....	500,000.
Third Year.....	450,000.

It also estimates that new capital of approximately $1,230,000 will be required upon the organization of the company. ($1,000,000 payment to the Telephone Company for its broadcasting business and $230,000. for necessary equipment).

The Sub-Committee did not find it possible to estimate the net results beyond the first three year period for the reasons previously mentioned. However, the Sub-Committee made the following statement:

"It is to be expected that economies in program will be enjoyed by such stations in the Radio Group as participate in sustaining and paid programs. Naturally, as program material is furnished by the Broadcasting Company, less local program material will be required, resulting in reduction of force and other local expenses incident to this item."

Summarizing, your Committee desires to point out the following:

1. The proper organization of broadcasting transmission and programs are the basis of the radio industry.

2. The Radio Group being the leaders in the industry, must take the initial steps in the solution of this problem; not only because of the responsibility which leadership in the art imposes upon it, but also because this is the only group, (outside of the Telephone Company) capable of rendering proper technical service and of suitably developing the art.

3. The proposals of the Telephone Company as analyzed by the Sub-Committee and reviewed by your Committee, appear to be satisfactory in principle. It is believed that further negotiations resulting from an effort to arrive at a definite contract will probably clarify and improve these proposals.

RECOMMENDATIONS

Your Committee therefore recommends that the Executive Officers of the Radio Corporation be empowered to proceed with negotiations for a definite contract which should be submitted, through your Committee, to this Board for its final action.

Respectfully submitted,

04:21
Box 1
FF 7

previous page indicates April 1926

Let KDKA Vouch for You

W. W. Rodgers,
Department of Publicity

ONE would rather meet an old friend than a new acquaintance. With the first, there are many things to chat about concerning this experience or that event which has been shared in common. With the second, conversation may lag because a common bond of experience is usually lacking, and often a subject of mutual interest is hard to find.

A salesman endeavors first of all to interest his prospect. In what better way can this be done than to start the conversation in channels in which each has some interest or knowledge?

An illustration of the benefits of this elementary psychology of salesmanship is furnished by a Westinghouse dealer engaged in selling our farm light equipment in a Rocky Mountain district of the Far West, who capitalizes the invention and the development which, to the public, are synonymous with Westinghouse, namely, the airbrake and radio broadcasting.

The dealer, whose policy we mention, calls on men far removed from the ordinary haunts of what is erroneously termed civilization. His prospects are inherently suspicious of strangers and are accustomed to deal plainly with facts. Although they live in the Rockies, these ranchers are "from Missouri" and require the salesman to "show them". These conditions require that a salesman must first win the confidence of his prospects and then sell them on the application of the equipment to their specific needs.

This dealer's success in gaining the friendship of his prospects largely depends upon his first statement, for after introducing himself as a Westinghouse representative, he immediately follows with the remark that "of course Westinghouse is well-known, as it is the Company that invented the airbrake and established KDKA, world's pioneer broadcasting station".

The rancher knows that airbrakes made the modern trains possible, he is usually familiar with their history and he hears our programs nearly every night.

It has been the experience of this Western dealer that the response to this form of approach has always been immediately favorable and that from then on he has never had difficulty in winning the confidence of the customer.

This dealer is capitalizing the public's interest and confidence in KDKA. He, by giving the information that he is connected with the broadcasting company, is immediately accepted in the same spirit with which the broadcasting station's programs are welcomed in the home.

All our salesmen should remember to capitalize the good-will of the public obtained through its constant contact with Westinghouse broadcasting stations, these being not only KDKA, operated from the East Pittsburgh Works, but also KYW at Chicago; WBZ at Springfield, Massachusetts, and KFKX at Hastings, Nebraska.

Many prospects for Westinghouse apparatus belong to that class termed "radio fans". Such "fans" are willing talkers on all subjects pertaining to radio. Mention radio to them and very likely the salesman, will spend the next hour listening to their experience concerning the operations of their radio sets and will be expected to give some information in return.

Nearly every owner of a radio receive belongs to the "fan" class, having the "disease" in a form which may vary from mildness to acuteness.

The radio stations operated by the Westinghouse Company are their most constant contacts with the public, and are today, according to public reckoning probably the outstanding achievement of the Company. These stations are unceasing in their efforts to build up of good-will in the public mind.

The salesman who is not capitalizing this good-will, who is not using it to advantage, is not utilizing all the tools at his command in promoting his work. He is not making the most effective contact.

Consider the record of Westinghouse broadcasting. KDKA was the first station established as a broadcaster in the world; it was the first to broadcast every modern program feature, except the transmitting of operatic programs, and these were first sent by its sister station, KYW in Chicago. Westinghouse pioneered in short wave development KDKA now holding the record for first transmitting the ultimate in distance because of its many transmissions with Australia halfway around the world. Westinghouse also pioneered in the repeating by radio of programs, having established such a system; first, at KFKX, and later, at KYW and WBZ; all these stations now being equipped with short wave apparatus to enable them to rebroadcast a program originating at East Pittsburgh.

KDKA'S programs have been heard on every continent in the world. It is a familiar and an old friend to radio listeners in the British Isles, in Europe, in South Africa, in South America and finally in Asia, notably Japan.

The records established by the stations of the Company, both in program origination and transmitting, have never been equalled by any organization. It is, therefore, inevitable that the public should recognize this merit and react favorably when Westinghouse Broadcasting is mentioned.

No other agency has yet been developed which has so permanently established itself in the homes of the public, as has broadcasting. No method of communication has been developed which so effectively becomes a part of the daily life of the listener.

The statements made in the preceding paragraph are platitudes which have been publicized for some years and which still are impressive.

Westinghouse leadership in broadcasting provides an opportunity for the salesmen to so identify himself as to be a welcome visitor to his customer's office. Make KDKA serve as an advance agent.

Date ?, see above

Submitted by C.W.Horn, Supt. Radio Operations. April 17,1926.

WHAT RADIO BROADCASTING NEEDS.

I have viewed the last five years of radio broadcasting very much in the light of a big experiment and have endeavored to gainfrom it sufficient information upon which to base its future possibilities and to obtain an idea of the lines along which this development would proceed. I did this for a rather personal reason in that my future activities in radio are to a great extent dependent upon the direction of growth. I have, therefore, been giving this matter considerable attention and have formed a few opinions which I will give below. I believe this is what you wanted when you requested me to write down for you the practical possibilities of radio and the probable direction of development. I am dividing this into two headings:

(a) Technical
(b) Program

TECHNICAL

The average person's conception of radio today is not a true one. Mention radio and he mentally pictures a receiving set, loud speaker and a few other pieces of apparatus, with perhaps the names of a few artists or programs. In reality I feel that radio is a distinct line of development, a branch of alternating current itself, a distinct field and one which will fill a long felt want on the part of the human race to overcome the barriers of distance and space. This radio has already done to a small extent in that it enables programs to be transmitted to distant points.

Radio is a service only a part of which is now being rendered. Just as wires are not telephone service, just so is present day radio not "Radio Service." We have much to accomplish and many features to add before it becomes a necessary service. However, we have before us radio vision - radio control of clocks and other devices, etc.

So much for my dream as to the future possibilities of radio. At present we are concerned with a very congested atmosphere, there being 534 stations licensed, with something like 526 additional applications pending. Obviously, such a condition cannot continue to exist, as there are but 86 wavelengths available at the present time. Unless these stations are reduced in number through elimination and the only businesslike method by which this number can be brought to a reasonable figure is through economic pressure. This latter will mean stiff competition, which will be somewhat expensive but will undoubtedly benefit in the end, and which will show the average station owner who has no ultimate reason outside of advertising for broadcasting that it does not pay him to be in that business. I feel that some day in the

near future this condition will arise and there will be a wholesale deletion of licenses. In order to be prepared to bring about this competition, or condition, those who have an ultimate reason for being in this field and who intend to remain therein must prepare by entrenching themselves firmly. That means a combination of stations into a powerful group controlling its sources and avenues of program. The Westinghouse Company and its associates are in an excellent position for this purpose in that they are owners of the most powerful and best known stations and are all associated, so that it is but a step to form a real combination in the broadcast field.

At the present stage of development it is obviously impractical for a few stations to cover the entire country. Interconnection seems the logical answer and we have two means of doing this:

(a) The proven one, which is by wires, and
(b) The experimental one, or short waves.

The individual stations should have sufficient power to thoroughly cover a reasonable radius about their station and should pay particular attention to quality of transmission. The stations should be so located that they will not overlap very much and care should be taken that the signal strength from the nearest station is sufficient in all parts of the territory to override the average static and interference.

Any combination which intends to engage in interconnection at the present time should depend to a great extent upon wire line interconnection. In the near future there is a possibility of forming a combination of short wave and wire line interconnection with the distant future possibily permitting interstation connection by radio alone.

As we have to deal with the present, we must consider the present wire situation. The A.T. & T. Co.has the most efficient system at present. Its trunk lines connecting the principal cities are already prepared for radio program transmission, or can be prepared. In addition, that company has its repeater stations with trained attendants, which will permit the installation of proper repeating and correcting devices for maintaining high quality. In addition they have a sufficiently large plant to permit spare wires and routes in case of emergency. The only other services available at present are Western Union wires, which are either already transposed or can be prepared, along definite routes connecting the principal cities. In view of the patent situation the Western Union cannot operate repeaters but can merely rent the lines. In other words, the Telephone Company can furnish complete service from point of pickup to the station terminals, while the Western Union Company will only furnish the wires suitably prepared, but all pickup equipment, line amplifiers, correction devices, etc. must be furnished and manned by the broadcasting interests.

The rates for wire line interconnection in the case of the Western Union are definitely fixed by the Interstate Commerce Commission, as the rental charge for wires is filed with that commission. In the case of the Telephone Company, broadcasting not yet being recognized as a definite public service, is not listed on the tariff files of the Commission and the rates at present are whatever the Telephone Company feels like charging.

In summarizing the technical phase of this discussion, I wish to state that the future looks bright for radio, having so many fields and avenues along which to develop. I feel that radio broadcasting will become a more stable proposition when the number of stations is reduced and that it will be along economical lines rather than through legislation that this will be brought about. I feel that the field is waiting for the radio group to set the pace and bring about this competitive condition. I have pointed out the wire situation and the necessity for wire connection ~~and~~ at the present time and probable future conditions of short wave interconnection. I have also shown that the most reliable service can be furnished by the Telephone Company and that the matter of cost will have to be determined by "bargaining." The picture, therefore, of the future system is a network of stations throughout the country, each individually capable of covering its territory with excellent transmission, sufficient signal to override interference, and with a program that cannot be matched by individual or small groups.

PROGRAM

"vaudeville beg" → "Hours" p. 3 ¶ 3

At the present time broadcasting reminds me very much of ordinary vaudeville performances. The microphone is switched on, the announcement is made, giving the name of the singer, the selection and the author, and the artist does his part. This then is repeated very much as the acts appearing on a stage in a vaudeville house. This could really be termed "vaudeville broadcasting," or, as we used to say "variety shows." This has not been satisfactory in that it is a monotonous repetition of selections. The Telephone Company, I notice, has realized the necessity of breaking away from this type of program and is offering what we might term "Hours." KDKA did this simultaneously with the Telephone Company. We now occasionally obtain a program which has a continuous story, or thread, to keep the listeners' interest until the conclusion. This is an improvement but is yet far from being what we feel radio broadcasting should be.

When the average person visits a show he expects to be entertained and to leave with a satisfied feeling. For this purpose the stage director endeavors to draw the attention and mind of the audience and make them feel, or live, with the actors through the show. He has at his command and does use many devices, such as scenery, music and accessories to produce certain effects. He appeals to the brain and heart of the audience through two senses, the eye and the ear, and, in some few instances, the sense of smell, by perfumes, incense, etc. The motion picture director had a more difficult task in that he had but one sense, that is the eye, through which he

could appeal to the mind of his audience. You will note that the early motion pictures were "one-reelers" and in many ways similar to the radio performances of today. Then came the two-reelers, which might be classed as paralleled by our radio "Hours." Do you remember when between each reel some slides were shown? The pauses now between our selections are in the same class and are becoming as offensive to the ear as those slides were to our eyes in the early days of motion pictures.

Therefore, in order to look for a possible solution to the question "What will be the program of the future?" let us take a page out of the history of themotion pictures. In attending a performance at the Capitol Theatre, New York, you first of all are ushered to a comfortable seat. The show starts generally with an overture played by an excellent orchestra, generally followed by additional music featuring perhaps a ballet and usually a rendition by some talented artist. Without any pauses the program shifts from one piece to the next, and, while the orchestra is still playing the screen is brought into sight, and the machine having already been adjusted, the picture starts without any flickering and we see, perhaps, a news reel, at the conclusion of which, without the slightest hestitation or sudden change, it may fade into a comedy or perhaps the screen disappear and a stage seene may be brought before us. Without the slightest break the next act takes place with perhaps finally the feature picture being brought on and run through to its end without a single break, shifting from one reel to another so that the eye cannot notice it. At the conclusion of such a performance, if all parts of the program are of average worth, one feels satisfied and pleased. All of this has been carefully worked out by stage directors who have vision and who visualize what they want to do and how they want to do it.

Now, let us parallel this with radio. First, we need one person who has the artistic sense and necessary experience to know what can be done and how to do it. In other words, we need a stage director, or "Producer." There must be but one man in authority in a case like this and he must be given a sufficiently free hand in order to be able to put over his thoughts and ideals. Such a man would createa show, appealing to the ear in his case, just as the movie director appeals to theeye. He would run the continuous thread of thought and createplays with the climax at the proper point in order to hold the attention of the listener. We all have experienced the reluctance to break away from a movie in the middle of its performance. The artistic development of presentation for aural reception will have to be worked out very much along the same lines that the presentations for visual reception were worked out. I feel that men can be developed who will be able to take an orchestra, with some additional talent, and work it into a play with an appeal which will satisfy the listener.

You will remember that WGY started rather intensively to have plays written suitable for radio presentation. This was a step in the right direction but they stopped short of their objective. I feel, however, that they had the right conception but not sufficiently far advanced to realize that spoken plays alone do not satisfy. All programs must be acted from well written "Radio Scenarios," with climax, plot, etc.

It will, of course, be rather an expensive proposition for individual stations to have such a high class directorship and productions, but that is all the more reason why we should encourage this, as through a combination of stations we could finance such productions, thus setting the pace, which, as I explained above, will, in my opinion, economically solve the broadcasting problem. It is through some big effort, some breaking away from what we are accustomed to know that we will regain the leadership in broadcasting and set the pace, which will be too fast for the individual station owner who is interested only in advertising.

I have spoken to theatre people and many program directors, etc., in an effort to gain their ideas and thoughts and I believe that the usual calibre of broadcast program personnel is too low to conceive of anything better than what they are now doing. This is another reason why we should act on this opportunity of doing this more elaborate and finer thing and why I feel that we should get together with our associates and form an organization capable of handling such a proposition.

I believe that when such an organization does exist it will obtain the support and cooperation of music publishers, dramatic leagues, etc., for the reason that the director of a chain of stations covering the country will be more likely to keep from offending the ears of the listeners by repetitions of "By the Waters of Minnetonka," or some other composition that is being played to death. That is one of the big objections that the music people now have, in fact the only real complaint that they can make. In my opinion, an organization handling such a proposition must look for the one man who will undoubtedly become world famous if successful - one who can mould his program to such a point that he can command the attention of the majority of his listeners.

With this, of course, I consider that the advertising value of the stations will rise and the rates must, of course, be such that they will support such an organization. But, because of this high standard, there is no doubt that this will create additional returns for the purchasers of time, so as to make it worth while paying these additional rates. For, after all, it must be remembered that the amount of available time is limited to a few hours a week.

Limited adv time ⇒ high pricing to prod. p 5 #4

In summing up I feel that all efforts should be directed toward forming an organization capable of handling such a proposition as outlined above. The selling of time is a logical way of financing such a plan but in order to coordinate the work, in order to be able to follow definite policies, the matter of program should be entirely under the control of the Broadcasting Company. I believe that only national broadcasting of the best grade will be the final result during certain hours, with local programs at other times to satisfy any desire the public may have for such local affairs.

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64:21
Box 1
FF 7

FORM 873

Westinghouse Electric & Manufacturing Company

April 19, 1926.

Mr. H. P. Davis,
Vice President

RADIO BROADCASTING
FUTURE POSSIBILITIES

The extent to which a broadcasting station fulfills the demands of the listeners may be judged by the same criterion as that which would be employed in the case of a newspaper or magazine; namely, its circulation. The number of listeners which a broadcasting station can command will depend upon the extent to which its program appeals to its possible listeners, this latter in turn being determined by the power or range of the station and its location. To make a given program available to a great number of listeners, we may employ a single station of adequate power to cover the desired area, or we can simultaneously impress this program on a number of lower powered stations properly distributed.

As regards relative cost, and neglecting the question of wave channels and connections between stations, it is probable that the greatest area could be covered by a number of lower powered stations rather than by concentrating our expenditures on one high-powered station. This condition is due partly to the fact that the area covered does not increase proportionately to the power and also to the fact that certain items of cost, such as tube renewals and station operating personnel, increase at a rate faster than that of the station range. We may compare the

lines. The subscribers' apparatus could be comparatively simple, and the results would probably be superior to those obtained by the present radio equipment. In fact, some of the western telephone companies are now experimenting on this service, and will deliver wired programs to subscribers having individual line service.

The greatest possibility of radio lies in the ability of a listener to pick up any program he desires within any reasonable distance. To meet this condition the station should be operated at the highest power practicable, the limits of which will be governed largely by the engineering advances which are made in the apparatus and the maintenance cost of tubes and equipment in general. To permit of the greatest conservation of wave channels, all stations transmitting a common program should operate on the same wave-length. It is probable that this arrangement will have the additional advantage of minimizing the phenomenon of fading.

There is the possibility of the radio relay as a channel for program distribution, and as its technique is worked out it should be possible to greatly extend the number of programs which can simultaneously be distributed. It is probable that as the radio relay is developed there will be a gradual tendency for the listener to listen directly on the relay wave rather than to the local station which is retransmitting the same program. The

gradual distribution of receivers which will be suitable for the high frequencies and which normally would be used for relaying, will also open up the possibility of extending the broadcasting channels in the direction of the high frequencies, or lower waves. It appears that the transmission characteristics of the high-frequency bands are such that they are not particularly suitable for very short distances under moderate power, but that the long distance range is greatly increased for a given power as compared to the frequencies now employed for normal broadcasting.

We apparently have several arrangements which give possibilities of improvement and which may ultimately be jointly employed. Thus, to reach the outlying listeners with a minimum of fading would imply several stations transmitting the same program and operating on the same frequency. To make possible an economy of power, we can operate our stations on the higher frequencies, and by a possible compromise we may operate several of these high-frequency stations in parallel and at separations which probably would not be very great.

It is doubtful that the popularity of radio can be maintained on the basis of the listeners' making use of a local station only, as in this case, as mentioned before, the telephone companies could furnish a much more satisfactory service and assure a definite income for maintenance. The interest in radio is largely due to its ability to cater to the "wanderlust" with

which we are all naturally possessed. This is further illustrated by the fact that during the first few years of radio the transmission conditions were apparently very much better than they have been for the last several years. This change in condition is reflecting itself in the demands of the listeners for more sensitive sets, and some times in the mistaken accusation that the local stations are interfering with distant reception. To best fulfill the possibilities of diversified programs and locations will imply a general tendency toward increase of station power and an extension of wave channels in the downward direction, that is, toward the high-frequency end. The possibility of reduction in fading by parallel operation will also remove one of the great drawbacks to distant reception.

It is, of course, impossible to do more than speculate on just how transmission conditions will change in the future. Apparently the range of a station with a given power has been decreasing for several years past. The cause is not known, nor can we tell whether the bottom has been reached or whether there will be a further reduction in the future.

F. Conrad
Assistant Chief Engineer

FC:MB

64:21
Box 1
FF 7

FORM 873

Westinghouse Electric & Manufacturing Company

May 6, 1926.

Mr. H. P. Davis,
Vice President.

I would like to elaborate a little more on the plans that I have in mind concerning the probable trend of radio and how the Westinghouse Company as well as the radio group could take advantage of it.

In my previous correspondence I mentioned that I felt that we are at present in the "one-reel" stage, which, if maintained for any length of time, would become monotonous and cause radio to become less interesting just as the motion pictures did for a while until two reelers and feature plays became the rule. At the present time, even with the Atwater-Kent Hour, such as we had last Sunday when at least six very prominent stars appeared, there is no cessation of conversation or activity in the home during such a program. In other words, no respect is paid nor very great attention given to the program. There was nothing to induce the listener-in to remain quiet and focus his attention on the radio. The talent was of the best but it was like listening to phonographic reproduction. One might as well play the phonograph for one's self as to listen to such radio concerts and I am sure that no one would willingly spend an evening at home and amuse themselves by just playing the phonograph.

This brings it home to us that what is needed is a full-fledged entertainment, something that will hold the interest of the listener through to the climax of the play or program. Then, if very prominent talent is employed it is used to make the production that much better. I feel that A. Atwater Kent missed a big thing by merely having the wonderful talent that he engaged sing a song or two or play a piece and then retire. If he had put some connected theme through his "Hours" he would have obtained a much more responsive reaction.

It all comes back to the point where we need an organization large enough to enable it to engage a "producer" with proper directors and scenario writers, in order that every production may be a finished piece of work. When such productions can be transmitted throughout the country over a chain of stations it will then be worth while for the average listener to stay home and listen to an evening's entertainment, not merely one hour but a finished, well planned "evening." We could take a page out of the history of motion pictures. We could have a "newsreel" by some prominent journalist, giving fifteen minutes or a half hour report on world news. We could put on comedy and lighter material in such a program and lead it up to the great feature in the evening. The feature can be anything

Horn proposes different radio programming — an entire show built around a theme p. 193

Westinghouse Electric & Manufacturing Company

from a play to a conducted tour or journey, but must have a well written story running through it either musical or spoken in order to lead the listener on until the climax of the program. When we have such a program we may feel sure that those who are at home and can get near a radio receiver will listen in. Also then, can we approach a national advertiser and demand sufficient recompense to pay for this talent and use of stations for we can assure him an audience absolutely impossible to obtain in any other way. Supposing that such an evening should cost an advertiser $25,000 or $35,000, he would undoubtedly reach ten times as many persons as the Saturday Evening Post reaches with its $7,500 per page. Furthermore, having the entire program for the evening he is the one outstanding "advertiser" rather than just one or more pages in a large publication. It will mean that we shall require fewer customers than if we go after it

in the cheap haphazard way that is at present the vogue.

It is my belief that we in the radio industry should make radio broadcasting the one big thing possible rather than just feel satisfied with mere mediocre and third class vaudeville acts. The radio group has the facilities and is peculiarly fitted to perform such a benefit to the public while at the same time making radio an important adjunct to the home rather than a plaything for the radio fan. With such a program as outlined above there will be a greater tendency toward refinement in quality in radio receivers than is at present the case.

A good feature of such a plan as I propose, which is to give a complete evening entertainment rather than just the haphazard "hours" is that we need but conduct a few a week to begin with but I feel that the demand for space will be very great and that rates can be correspondingly high. Another advantage besides making the radio group circuit the one fine, big, high-class, outstanding feature which the public will look for is that it will make it very difficult for competitors to engage in similar activities and thus we shall be refining the broadcasting game until there will be but few chains of stations. I believe that this is the way to solve the present tangle and do it along economical linesrather than by any legislation or unnatural means. The answer is, who will listen to a type of station as now in existence when they have but to tune to an evening's well operated and well conducted entertainment. Such

Westinghouse Electric & Manufacturing Company

a system as I propose would place our radio stations on a plane with the high-class motion picture theatres instead of leaving them in the"nickelodeon class" if you remember what that used to mean in the old days.

Taking for example the figures mentioned above, $25,000 or $35,000, not more than $10,000 would be needed to cover the cost of operating and engaging the wire lines, etc. The other $15,000 or $35,000 could be used for the payment of talent, directors, apparatus, etc. A great deal can be done with such sums. I am giving rather large figures, for at present it costs but $4,200 to engage wire connecting facilities and the stations in a chain of seventeen of the telephone group but not including the cost of talent, for one hour. Probably two hours would not be very much greater and these stations extend from Portland, Maine, to Kansas City.

I feel that somebody must start this and that it is the duty and destiny of the radio group to go into this and show the way rather than to be pushed into it later on. The value of such a system originated by the radio group should mean a great deal in dollars and cents in the sale of radio equipment, and would prevent cries of monopoly, etc., if the radio group should take over the wire line connection as will surely be the case if the telephone company's present methods of broadcasting are continued.

I will summarize. The advantages in my opinion are listed below:

1. Increased prestige of the radio group if they conduct a chain of stations for chain broadcasting.

2. Complete entertainments, not merely hours, as at present.

3. Increased public interest as all programs will have a definite story or scenario, with aplot, climax, etc.

4. Reduce broadcasting competition due to difficulty of small or individual station owner to compete. If such a system is placed in effect by the radio group on a grand scale it will have tendency to discourage competing chains.

goal.
p. 34 2.3.

Westinghouse Electric & Manufacturing Company

5. Renew interest in radio and benefit through sales, equipment.

6. Make radio the premier publicity and advertising agency.

7. Reduce the cost of broadcasting to the indivual companies.

RADIO OPERATIONS,
C. W. HORN, SUPT.

CWH:O

64:21
Box 1
FF 7

Form 6836 A

Westinghouse Electric & Manufacturing Company

150 Broadway, New York

Office of
E. M. Herr,
President

May 11, 1926.

Mr. H. P. Davis, Vice President,
East Pittsburgh Works.

Dear Mr. Davis:

This is to remind you that you are to send me a revised draft of your memorandum regarding the National Broadcasting Company. I should like two or three copies of this.

Yours truly,

E. M. Herr
President.

Do we have H P's left?

64:21

Dux 1

FF 7

FTC hearings

Herald Tribune
5/15/26.

Millions Spent For Radio by Westinghouse

Research Manager Tells of $3,460,000 Expended to Keep in Field in So-Called "2 Billion Ring"

Owns 4,000 Patents

Engineer Credited With the Experiment Which Led to Present Broadcasting

How an engineer's experiments in his home led to the organization of a group of corporations of kindred industrial interests with assets of more than $2,000,000,000 within the last five years was related yesterday by Samuel M. Kintner, manager of the research department of the Westinghouse Electric and Manufacturing Company, testifying at the Federal Trade Commission's hearing on the radio monopoly, so-called.

Kintner also declared that his company had been compelled to expend $3,460,000 in radio communication and patent purchases alone in order to keep up with the tremendous advancement of the radio. He said the Westinghouse company owns 4,000 patents, of which a very large number relate to radio invention.

Planned News Service

Testifying before Examiner William C. Reeves, Kintner and a vice-president of the Westinghouse firm had at first intended to use the radio "like a newspaper."

Frank Conrad, of Pittsburgh, was the engineer whom Kintner credited with instituting the pioneer experiments in radio broadcasting which have developed into a new science with unknown possibilities. Conrad began, he said, by broadcasting scraps of news and musical reproduction from phonograph records from his home. Amateur wireless experimenters who caught his program sent him other phonograph records and aided him with suggestions.

"Finally, Conrad provided a program regularly every Wednesday and Saturday nights.," Kintner said, "and Pittsburgh department stores began selling small crystal detector sets. H. P. Davis, vice-president of the Westinghouse Company, told Mr. Conrad he was going to erect a broadcasting station at the Westinghouse plant in East Pittsburgh and take over his broadcasting program."

A few weeks before the Presidential election in November, 1920, the new station, KDKA, was finished. Its first big achievement was to broadcast the election returns. Mr. Kintner said the tubes for the Conrad experimental set were lent by him by the Navy Department.

Kinter was testifying for the third day in the government's investigation of a supposed $2,000,000,000 "radio trust," in which the Westinghouse Company, the General Electric Company, the Radio Corporation of America, the American Telephone and Telegraph Company, United Fruit Company and others are accused of gaining and then dividing control of the radio industry.

During the war, Kintner said, the government guaranteed manufacturers who supplied it with wireless apparatus to hold them blameless for patent infringements. He said this caused wholesale production under adverse patent arrangements and resulted in such a mass of lawsuits that it was almost imperative for the companies to get together on a common production basis.

So-Called Pool Explained

The Radio Corporation of America

game from the pit
Field, reporting the
burgh and Philadelphia
September 12, 21—The first
speech broadcast from station KDKA
William A. Magee, seeking nomination a
Republican candidate for mayor of Pitts
burgh.
September 20, 1921—The Pittsburgh Pos
studio was installed as a member of th
KDKA chain.

FIRST BEDTIME STORY.

November 11, 1921—Marshall Ferdinand Foch, generalissimo of the allied armies during the World war, spoke over KDKA.
November 15, 1921—The first bedtime story was broadcast from KDKA.
November 28, 1921—The first broadcasting from a Catholic church; from Old St. Patrick's Church.
January, 1922—First play by play reports of a football game. KDKA transmitted a detailed report of the game between the University of Pittsburgh and the University of California at Pasadena, Cal.
January 3, 1922—The concert of the Carnegie Glee Club was broadcast through KDKA.
January 13, 1922—The concert of the Philadelphia Symphony Orchestra was broadcast.
March 12, 1922—William J. Bryan spoke from the pulpit of the Point Breeze Presbyterian Church over the radio.
November 7, 1922—First radio wedding. The marriage ceremony which united Miss Bertha Anna McCunn and George Albert Carver was broadcast through KDKA.
December 4, 1922—The first program by the KDKA Little Symphony Orchestra was broadcast on this date.
February 12, 1923—The first drama was given from station KDKA.
March 1, 1923—First daily organ recital.
June 4, 1923—Memorial radio tablet placed on church. The tablet was dedi-

FOUNDING OF KDKA BEGAN WITH WATCH

Dr. Conrad Was Interested in Time Signals.

PITTSBURGH, Feb. 5 (A. P.).—The pride of an eager young engineer in the cheap watch he owned in 1912 figured largely in the birth of radio broadcasting.

The owner was Dr. Frank Conrad, now assistant chief engineer of the Westinghouse Electric & Manufacturing Company and recent recipient of the Edison medal of the American Institute of Electrical Engineers.

His work led to the establishment of KDKA here in 1920 as the first broadcasting station operating on a scheduled program. Since then he has seen broadcasting become the giant of the radio industry, advancing so rapidly that he sees synchronization — placing stations carrying the same program on the same wave length—and television becoming virtually "talking movies by radio," as the only important developments in the future. Television, he thinks, will take years of experimenting before it is generally accepted.

Conrad, the young engineer rapidly making a name though without college training, had no thought of broadcasting, one lunch hour in 1912, when he pitted his watch against the more expensive timepiece of an associate to determine which kept the most accurate time. Yet the contest led him to master the radio devices of the day so he could check his watch against Arlington's time signals.

Picking up those signals created an interest in radio in general. That interest resulted in his setting up his own station. Experimentally playing phonograph records over the air brought demands for more and more from the possessors of the crude receivers of the day. Interest thus created about Pittsburgh led one store to advertise apparatus with which to pick up Conrad's programs. That attracted H. P. Davis of Westinghouse to the commercial possibilities of broadcasting, KDKA was established.

Today Dr. Conrad is solving some of the last problems associated with synchronization of radio stations to make room on the air for others. The problems are not simple. Synchronization involves the setting of the wave length of all stations on the chain from one control point, overcoming the complexities introduced by time and distance so all stations will be in step. Synchronization will be commonplace soon, though, he believes. It was his work on that problem that did much in bringing him the Edison award.

Television is a different matter. Looking upon the picture now received as relatively crude, he thinks their quality must be improved until

THE NEW YORK SUN, THURSDAY, FEBRUARY 5, 1931.

64:21
Box 4
ff 47-49

gestions.

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So-Called Pool Explained

The Radio Corporation of America is alleged to have received the right to sell radio sets, while the Western Electric Company, the General Electric and the Westinghouse company got the manufacturing rights. According to Mr. Kintner, the patents which the Westinghouse firm acquired were chiefly those of Professor Reginald Fessenden and Edwin H. Armstrong, and these were transferred to the so-called patent pool by sale and license agreements.

Primarily the Westinghouse firm was interested in the manufacture of apparatus rather than wireless communication, Kintner said, but it was willing to spend $2,500,000 on radio communication alone "in order to get in on the patents involved therein." Besides this sum, he said, the company paid out $870,000 additional for certain patent licenses considered essential to the future radio business of the company. He said these patents were protected in twenty-four foreign lands.

Following the direct examination of Kintner by Edward L. Smith, counsel for the Federal Trade Commission, he was cross-examined by F. H. Wood, chief counsel for the Westinghouse company.

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game from the Pitt Field, reporting the [illegible] burgh and Philadelphia.

September 17, '21—The first political speech broadcast from station KDKA: William A. Magee, seeking nomination as Republican candidate for mayor of Pittsburgh.

September 20, 1921—The Pittsburgh Post studio was installed as a member of the KDKA chain.

FIRST BEDTIME STORY.

November 11, 1921—Marshall Ferdinand Foch, generalissimo of the allied armies during the World war, spoke over KDKA.

November 19, 1921—The first bedtime story was broadcast from KDKA.

November 28, 1921—The first broadcasting from a Catholic church, from Old St. Patrick's Church.

January, 1922—First play by play reports of a football game. KDKA transmitted a detailed report of the game between the University of Pittsburgh and the University of California at Pasadena, Cal.

January 3, 1922—The concert of the Carnegie Glee Club was broadcast through KDKA.

January 13, 1922—The concert of the Philadelphia Symphony Orchestra was broadcast.

March 12, 1922—William J. Bryan spoke from the pulpit of the Point Breeze Presbyterian Church over the radio.

November 7, 1922—First radio wedding. The marriage ceremony which united Miss Bertha Anna McCunn and George Albert Carver was broadcast through KDKA.

December 4, 1922—The first program by the KDKA Little Symphony Orchestra was broadcast on this date.

February 12, 1923—The first drama was given from station KDKA.

March 1, 1923—First daily organ recital.

June 4, 1923—Memorial radio tablet placed on church. The tablet was dedicated at the Calvary Church by Rev. E. J. VanEtten.

October 1, 1923—First broadcasting of reports of air liner progress. The trip of the ZR-1, later known as the Shenandoah.

March 7, 1924—First linking of stations of the United States and Great Britain.

March 25, 1924—KDKA's first Spanish program broadcast direct to the nations of South and Central America, a Spanish program.

January 28, 1925—First successful broadcasting to Australia.

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SDAY, FEBRUARY 5, 1931.

May 17, 1926.

Mr. E. M. Herr, President,
New York Office.

Dear Mr. Herr:-

Referring to your memorandum of the 11th, I am sending herewith three copies of the revised draft of the proposed National Broadcasting Company.

Yours very truly,

David P. Davis

Vice President.

Enclosure.

64:21
Box 1
FF 8