

Yellow # 5

# KDKA BROADCASTS VOICE 9,000 MILES TO AUSTRALIA FOR NEW WORLD'S RECORD

[Special Telegram to The Gazette Times, New York Times Service.]

NEW YORK, Jan. 27.—A human voice rode the air across the continent today, crossed the Pacific and delivered its message to hundreds of thousands of persons in Australia, more than 9,000 miles away. Officials of the Westinghouse company, through whose station KDKA at Pittsburgh, the test was made, declared the achievement to be the greatest in radio history.

A cablegram received here several hours after the broadcasting related that the voice had been distinctly heard by radio set owners, who had tuned in at Sydney, Australia, and at Rabaul, the capital of British New Guinea. Two amateurs reported having picked up the words winged 9,000 miles at Melbourne, although the main station there failed to receive them because of atmospheric interference.

The messages put on the air for the Australians were from Frank B.

Novey, president of the Associated Press; J. A. M. Elder, Australian commissioner to the United States; Herbert Bayard Swope, and Arthur Brisbane, editors, and Frank Munsey, publisher. The tests will be continued the remainder of the week.

W. W. Davies, New York representative of a Buenos Aires newspaper, arranged the tests with the corporation of the Westinghouse company and the Melbourne Herald. Mr. Davies supervised the radio broadcasting of the Dempsey-Firpo fight to Buenos Aires, a distance of 6,000 miles, which was believed to be the record for long-distance air voice transmission up to today's successful broadcasting to Australia.

KDKA sending at the prearranged time of from 5 to 6 o'clock in the morning, at which time it was between 8 and 9 o'clock in Australia, broadcasting on a wave length of 63 meters.

*Pittsburgh Gazette Times  
Jan. 27, 1925*

Next Thursday Station KDKA, world's pioneer broadcasting station, will take official cognizance of the fact that its signals are being heard nightly in the Transvaal and broadcast the first radio program directed to and made especially for listeners in South Africa.

The broadcasting will bring into effect the world's greatest radio repeating feat in that arrangements have been made through station JB, located at Johannesburg, South Africa, to pick up and repeat the signals of the Westinghouse station. The arrangement with station JB will start on 8,500 mile radio repeating tie-up, a distance equal to one-third the circumference of the entire globe.

Broadcasting will start from KDKA at 5 o'clock Thursday night, Eastern Standard Time, though the South Africans will be listening in at midnight, their time. There is a difference in time of seven hours between Pittsburgh and Johannesburg.

All South Africa will be listening in the night of the special broadcast. Owners of radio sets in all parts of the Transvaal in East, South and West Africa will tune in for KDKA's signals in this epoch-making test.

Letters have been received by KDKA officials which state that nightly for the past three months or more the signals have been received with amazing strength. In speaking of the broadcast Vice President H. P. Davies, the Westinghouse Company, said: "The fact that our signals are reaching South Africa consistently, must not be attributed to a radio freak but is the natural outcome of the improved efficiency of station KDKA. In recent months, KDKA's transmitting apparatus has been moved from its former site in the Westinghouse fac-

... showed an increase during totality.

There was a prominent lack of any unusual phenomena although many observers reported that at the time of totality there was sudden static, frying noises, mush or crackling sounds all of which may have been due to the increased line voltage or power surges. Several stated that a transmitting station faded out entirely and that one or more faded in on the same wavelength.

There were only two reports of reception of the 40 meter band, the transmission heard in both cases being

H. P. Davies, vice-president of the Westinghouse Electric and Manufacturing Company and known as the "Father of Broadcasting," says:

"In the broadest sense radio broadcasting must always be interpreted as a public service. This applies to either privately owned or publicly owned stations. I can see no difference fundamentally in the functions of either, except the advertising the municipality gets from its own station. Our code of ethics always has for its objective high grade service or entertainment, instruction and news to the public, carefully avoiding and prohibiting any self-aggrandizement of individual or organization or other selfish cause. It is always non-sectarian in religion and non-partisan in politics. Direct advertising is prohibited.

### Should Be Free of Politics

"A municipally owned station should not be in control of the political organization in power, but should be under the control of representatives of the public, and political influence should not be able to reach these representatives. It is my opinion that legislation cannot fix the ethics of broadcasting. The public will do that, and the public's approval will be in proportion to the service rendered. No station, either private or public, can continue long with an audience, so in the last analysis the public will determine its success and permanence."

Here is what Henry M. Shaw, president of the National Radio Trade Association, an organization of manufacturers, jobbers and dealers, says:

"We can find only one obvious reason for the maintenance of a broadcasting station by the government of a city—the desire to gain the good will of the rest of the country. City broadcasting stations, however, as well as those that are privately owned, should avoid propaganda, and they are rapidly realizing the impossibility of influencing public opinion against the trend of affairs by broadcasting.

"The broadcast listener is the most suspicious individual in the world, and the flick of a dial will swiftly remove the drawing of a political speech and bring in music from another station. No political party can ever hope to be able to use radio effectively to influence the public.

### Talks Losing Favor

"Municipal broadcasting stations that expect the public to listen to talk of any kind have a sad awakening coming to them. Regulation of broadcasting is difficult, but regulation of the program received is easy for the listener. A code of ethics for broadcasting stations conducted by city governments might be of value as a guide to the operators of the station, but the best guide for the operators is the mail that arrives commenting on the individual numbers. From this it is evident that talks of any kind have been pulling less and less since the first broadcasting in Pittsburgh in 1922."

*radio makes world smaller*

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# International Radio Schedule Considered Problem for Future

Must Be Reckoned  
With Soon, Opinion  
Of Davis.

## REVIEWS FEATS OF KDKA STATION

By VICE PRESIDENT H. P. DAVIS,  
Westinghouse Electric & Manufacturing Co.

Though the question of super-power radio broadcasting stations as opposed to the requirements of the local broadcasters may seem uppermost 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 KDKA, the world's pioneer broadcaster, located at the West Pittsburgh works of the Westinghouse Electric and Manufacturing Company, transmitted programs that were received and, in most instances, repeated in Europe, South America, Africa and Australia; another of its pioneer achievements.

### IS FORWARD STEP.

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 living not only in the United States, but also in countries of all other continents.

In sending a program to Australia, halfway 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 36 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.

### NO INTERFERENCE.

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

## Godowsky in Music Memory Test



LEOPOLD GODOWSKY - PIANIST

The first of the music memory contests conducted by the Brunswick-Blake-Collerder Company, will end with a program to be given Tuesday night from 9 to 10 o'clock, which will be broadcast by five of the largest broadcasting stations of America—KDKA, Pittsburgh; WGY, Schenectady, N. Y.; WJZ, New York city, and KYW, Chicago.

Among the artists who will take part in one of the contests, which will run for three months, will be Leopold

Godowsky, exclusive Brunswick pianist. He was born in the ancient town of Vilna, in the Lithuanian province of Russian Poland. At the age of 9 he made his first public appearance in concert work in his native town. Later Godowsky toured in concerts for two years and then returned to Europe, studying under Liszt and Welter. He is a master pianist of singular depth and profundity of thought and is celebrated for his perfect technique.

tuned transmitting station in five degrees of the ordinary tuning dial, but short wave lengths in 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, providing the listeners' receivers are not used to pick up their signal.

### SERVICE FOR WORLD.

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

In 1923 the writer predicted the possibilities of such a development and

this achievement of KDKA demonstrated 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 into 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 a reasonable distance from it. It is such a system of short wave transmitting and boosting stations combined with longer wave length local broadcasting station pick-ups that will some day service the world.

### Pittsburgh Tells the World.

A human voice, speaking from KDKA in Pittsburgh, has been heard in Western Australia, 11,000 miles away. This is even a greater accomplishment than the feat of reaching South Africa. Thus the progress of radio broadcasting dazzles the comprehension. It was only yesterday, it seems, that thrilled at news that the great Westinghouse station has reached England and continental Europe. Asia remains unconquered, and the barrier screens it is thin as paper. A little more power, more likely a little more ingenuity of ingenuity that already seems magical, and will encircle the world.

What this means to Pittsburgh no man can estimate, and no wise man will try to minimize it. It is that the voice of Pittsburgh reaches the voice of any other city. Millions of Pittsburghers to whom cities not half so far away are nearer. And they comprehend that this is a chance, but of achievement. That KDKA pays tribute to years of boundless patience and high hope for that a vision and a hearing will be made.

That was Pittsburgh.

← radio brings world closer

## THE PITTSBURGH SUN,

# BOOSTING' OF RADIO WAVES CARRIED OUT

### May Now Hear Single Program Through Invention of Local Engineers.

A successful test of "boosting," or amplification of radio waves without changing their form or frequency, was made by the Westinghouse Electric Manufacturing Company yesterday. It proved that a single program could be transmitted from a central source could cover the entire world. The achievement, which is considered as important as the inauguration of broadcasting, was announced by H. P. Davis, vice president of the Westinghouse company, in an international address "The Broadcasting."

Frequency waves—the so-called "short waves"—carrying a spoken message or a musical program from a transmitter received by a special antenna at station KFKX, Hastings, Neb. They were there amplified times and put on the air exactly the same frequency length, and at approximately the same length at which they were transmitted from KDKA.

Ernest S. Purdy, assistant chief engineer of the Westinghouse company, described a special selective receiving system that would not pick up signals from certain directions. An antenna type was constructed at Hastings, Neb. It was in such a position that it would pick up signals coming from the north but would pick up those from the south. The signals were picked up last night and were designed receiving antennas. The test was carried by special broadcasting stations. The test was repeated many times the original and again sent on their change in frequency or wavelength. The achievement, Davis

## Autoist Excited After ( Number of His O



said last night: "The development of the radio booster system for radio makes reliable repeating or relaying feasible, as the development of the telephone repeater made possible long-distance telephony. While our short wave transmission was very successful, reaching as it did to all parts of the world, it could not always be depended upon. "The application of the new booster system to broadcasting will mean an amplification of program work far beyond that possible today."

### 10,000 DINERS IN 62 CITIES HEAR SAME SPEAKERS BY RADIO

In 62 cities of the United States, Canada and Great Britain, 10,000 diners met simultaneously October 11 at the world's first international radio banquet to celebrate Founder's Day by the H. J. Heinz Company, radio being used as the medium to tie into a unit these scattered banquets.

With the banquet in Pittsburgh acting as the key, the entire program at the Heinz plant was broadcast from the short and long wave station of KDKA and picked up on receiving equipment which had been previously installed in the various banquet halls and with loud speakers, so that every banqueter enjoyed the same program as it was given in Pittsburgh.

Speakers at the banquet included President Calvin Coolidge, who spoke from the White House, Charles M. Schwab, the Secretary of Labor and Senator George Wharton Pepper. The three latter speakers were in Pittsburgh. Special direct telephone line connections were set up between the White House and Pittsburgh. It carried the President's message to Pittsburgh where it was impressed simultaneously on a public address system installed in the banquet hall and also on the long and short wave transmitting stations of KDKA. Arrangements were made in the White House for the President to hear all the details of the banquet on a radio receiver. Through this arrangement the President was aware of the progress of the banquet and was prepared to start his address at the proper moment.

All other speakers were at the banquet table, where a most complete system of microphone pick-ups had been installed. The voices impressed on this pick-up installation were carried to the transmitting station at East Pittsburgh and from there broadcast on the long and short waves. Station KFKX located at Hastings, Nebraska, picked up the short waves and there rebroadcast the banquet proceedings over the Rocky Mountains to the Pacific Coast. To insure the greatest possible blanket of radio signals being thrown over the largest possible territory, KYW at Chicago, and WBZ at Springfield, Mass., also picked up the short wave relaying sig-

## KDKA Reaches Every Land but Asia in a Week

### H. P. Davis Holds Universal Service Feasible, Suggesting Need of International Broadcasting Schedule

PITTSBURGH, Feb. 21.—In one week Station KDKA has served every continent in the world except Asia, according to H. P. Davis, pioneer radio broadcaster and vice-president of the Westinghouse Electric and Manufacturing Company, which owns and operates the station. Mr. Davis believes that it soon will be necessary to form a schedule for international broadcasting, and suggests that this be borne in mind in any consideration of a super-power broadcasting plan in the United States.

"In sending a program recently to Australia," said Mr. Davis, "KDKA transmitted at high power on a wavelength of 63 meters without interfering with a single broadcast listener. In intercontinental broadcasting we have proved that a world-wide service is entirely feasible. Had the other continents been equipped with short wave transmitters of the power and design used at KDKA in the United States, could have received concerts broadcast in foreign lands and repeated them for the benefit of listeners in North America.

"In 1923, I predicted," continued Mr. Davis, "the possibilities of such a development and this achievement of KDKA demonstrates that 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 into which any local station at will through the medium of a suitable short wave receiver, could tap and repeat the program in its own locality.

"Thus a local station, having only a very limited power, could receive and transmit a distant program from a short wave station without setting up a signal strong enough to interfere with any other long-wave station located within a reasonable distance from it. It is such a system of short-wave transmitting and boosting stations

GENERAL ELECTRIC COMPANY  
120 BROADWAY, NEW YORK

OWEN D. YOUNG  
CHAIRMAN OF THE BOARD

January 23, 1925.

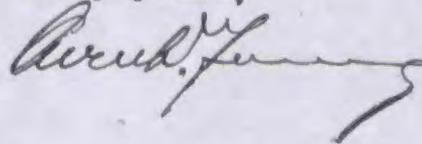
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Mr. H. P. Davis, Vice President,  
Westinghouse Electric & Manufacturing Company,  
East Pittsburgh, Pa.

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,



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radio  
makes  
world  
smaller

### SPECIAL BROADCAST RECEIVED AT GREAT DISTANCE

Broadcasting in excess of 5,000 miles was the remarkable achievement of radio engineers of the Westinghouse Company recently in connection with the heavyweight fight between Luis Angel Firpo, "Wild Bull of the Pampas," and Harry Wills, United States contender for the heavyweight boxing championship of the world.

For the first time in the history of the world, fight returns were broadcast direct from the ringside by station KDKA and re-broadcast by the relay station of East Pittsburgh to broadcast stations in Buenos Aires, Argentine, South America, and Hastings, Nebraska, and the peoples of the two

continents, so widely separated, were enabled "to be present" at an international sporting event, in which both were intensely interested.

"The presence" of the fight fans in the United States and South American countries at the fistic contest was made possible through the operation of the two radio broadcasting sets, both situated at station KDKA, 450 miles from the actual scene. The fight returns were broadcast to the fans of the United States on the long wave, and to South American countries on the short wave.

The event was broadcast from the ringside, and every action of the fighters was minutely described. The equipment used permitted the picking up of all sounds at the ringside, such as the applause and the cheering of the immense throng, the sound of the gong, the conversation of those close to the ringside, the issuing of instructions to the fighters by the referee and the advice of the seconds of the boxers.

This broadcast was arranged for and clearly picked up in South American countries, particularly Buenos Aires, Argentine, where arrangements had been made by "La Nacion," the leading South American newspaper, to re-transmit in Spanish to throngs of interested countrymen of Firpo.

The antenna of the short wave station is a copper tube, erected vertically and supported from a pole 50 feet high. The antenna has a ball on one end and is made rigid to prevent swaying.

### Talking Around the World.

Yesterday morning the KDKA station at Pittsburgh broadcast a number of messages from prominent editors and publishers. These were picked up in British New Guinea, in Sydney, Australia, and in Melbourne, Australia. The human voice has been successfully projected over a distance of more than 9,000 miles.

The accomplishment is unparalleled. Radio signals—as distinguished from broadcast messages—have been relayed around the world. They have been sent further than any spoken word—Captain MacMILLAN off the northern coast of Greenland heard such messages from New Zealand. But no one has ever talked over such a distance before. The demonstration probably means that in a short time music or speeches can be exchanged between points at the opposite sides of the earth.

There is of course no immediate promise in yesterday's performance of anything like regular broadcasting over such distances. Talking to Australia was just a "stunt." It was made possible by the use of a short wave, an agency which, while peculiarly effective in covering long distances, is also known to be peculiarly susceptible to interference by weather and light conditions. Still, the short wave may soon become as dependable as it is already effective, and the "stunt" may become every day practice. This is a possibility the rapid development of radio justifies the world in regarding seriously.

# Ultimate in Radio Broadcasting Achieved By KDKA in Test

## Signals Transmitted Half Way Around World.

## ALL DISTANCE MARKS BROKEN

Achieving the ultimate in broadcasting, by transmitting a program half way round the world to Australia, KDKA, world famous pioneer broadcasting station, again has made history in radio telephony and given a most auspicious start to radio progress of 1925.

In establishing the fact that distance was no barrier to radio waves and that the most modern form of radio broadcasting stations was fully capable of servicing the world, KDKA again has pioneered in the most romantic exploit in the history of communication.

January 27, 1925, always will remain one of the historical dates in the annals of broadcasting for on that date the signals of KDKA crossed the American continent and the Pacific Ocean fitted through the entire belt of the world spanned a distance so great that there is 15 hours' difference in time and impressed themselves on radio receivers in Australia.

The record was made during a communication test held between KDKA and the Melbourne "Herald." Not one, but several cities heard the signals. Radio receivers located in Sidney and Melbourne, Australia and Raboul, the capital of British New Guinea reported reception.

### OTHERS HEAR SIGNALS.

Two days later on January 29, KDKA's signals were received in Perth, Balaarat and Bendigo and Hobart Tasmania, in addition to the cities first named, proving the strength and reliability of reception.

C. W. Horn, superintendent of radio operations for the Westinghouse Electric & Manufacturing Company, was in direct charge of the tests. According to Mr. Horn, this feat of KDKA's is the apex of broadcast achievement.

"Previous distance reception records" said Mr. Horn, "were often what is termed radio freaks, in that climatic conditions and only one operator, or at the most a few people, reported reception, KDKA's achievement was made during a prearranged test, scheduled at an hour which would bring the signals into Australia at an hour when the radio public would be listening in and announced in advance.

"The tests were conducted at KDKA between 5 and 6 a. m., which because of the 15 hours' difference in time between Pittsburgh and Australia would bring them to the Antipodes at 3 o'clock Australian time. What is most remarkable was the signals were heard not only one but night, but every night of the week's test, establishing...

radio signals are not limited by known barriers."

### CAN COVER WORLD

The tests between the Melbourne "Herald" and KDKA were conducted during the week starting January 26 and continued until February 1. In this time it was demonstrated that radio telephone communication is conducted through a scientifically accurate station can cover the world.

For not only were the radio signals heard in Australia, during this period but they were also picked up and repeated in South Africa, in Great Britain and in Europe.

Thus while KDKA's feat in servicing Australia was the most spectacular and received public acclaim it should not be forgotten that this station was servicing all of the continents except Asia, Europe, Africa, South America and Australia were all listening in at the same time. After this feat there is little for radio to conquer.

According to H. P. Davis, this world-wide broadcasting ushers in the international radio telephone era. America has proved that it can speak to the whole world by radio. It only remains until the other continents can improve their apparatus to talk back to America before the international broadcasting of programs becomes a reality.

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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 strategic 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 receiving stations combined with linear 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 services 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 8 to 7 o'clock and from 10 o'clock on 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 service of the needs of unfortunate 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 have a well nigh universal attitude of cooperation. The record of this organization is a fine example of its every endeavor.

We render public service, as an all-important function of broadcasting and in fulfillment of that service, radio can serve no better way, than to carry far and wide, in its all-prevailing 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 are on the air tonight. I also extend greetings to all listeners in who are Red Cross workers but who are undoubtedly are members or will be before evening is over.

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

Because as chairman of the Ninth Red Cross Roll Call in Pittsburgh, I wish take this opportunity of expressing 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 been in contact to make this evening an enjoyable one for our radio friends.

KDKA stands out in the broadcasting world as the pioneer in producing 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 greatest 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 entertainment and wish to extend thanks to not only the Westinghouse Company, but also to all the members of the organization who have contributed to the services.

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

It is with great pleasure that I 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 yet who are sitting back in their chairs at home will undoubtedly appreciate what they are doing and respond

by doing your part in sending some testimonial of your appreciation.

The stations through which the program was relayed from KDKA were: WBZ, Springfield, Mass.; KYW, Chicago, Ill.; and KPKN, 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 roll call committee which started 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 said he was sending a contribution of \$25.

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# Linking of Stations To Bring Worldwide Radio Broadcasting

## Westinghouse, KDKA, Broadcast Schedule

- (970 kilocycles)
- 10 p. m.—Closing quotations on hay, grain and feed, from the stockman studio.
  - 11 p. m.—Dinner concert by the KDKA Little Symphony Orchestra, Victor Saudok, director.
  - 11:15 p. m.—Stockman primary reports of the Pittsburgh livestock and wholesale produce markets.
  - 7:30 p. m.—Daddy Winkum and his magical rhyme machine. Post studio. Anniversary program of the University of Pittsburgh studio.
  - 8 p. m.—Addresses by Dr. John C. Bowman, chancellor of the University of Pittsburgh; H. P. Davis, the father of broadcasting, vice president of the Westinghouse Electric and Manufacturing Company; music by the Pitt Four; college yells.
  - 8:30 p. m.—Special program prepared for South America, consisting of music and speeches by prominent South Americans in this country, arranged with the co-operation of La Nacione of Buenos Aires.
  - 9:30 p. m.—Concert by C. M. K. Gospel Quintet, F. H. Lacy, Arat tenor; Spurgeon R. Jones, second tenor; J. W. Parker, third tenor; Henry Hodges, first bass; A. E. Talbot, second bass.
- PROGRAM:**
- "He's Coming Back Again"
  - "Walk in Jerusalem Just Like John"
  - "Serving the Lord in My Weak Way"
  - "My Soul is a Witness for My Lord"
  - "Preacher on the Fence"
  - "The Eastern Gate"
- 9:55 p. m.—Arlington time signals weather forecast.
  - 10:10 p. m.—Rud Light Opera hour. Post studio.
- Symphonic Ensemble—**
- Excerpts from "Oh, Lady Be Good"
  - Baritone solo—Gershwin
  - "You're Just a Flower from an Old Bouquet" from "Denni (Puzzles of 1925)"
- Symphonic Ensemble—**
- "Let It Rain," from "Sky High"
  - Tenor solo—Kendis and Dyson
  - "Little Peach," from "Louie the 14th" Romberg
  - Duet for soprano and tenor—"Just We Two," from "The Student Prince" Romberg
  - Tenor solo—Herbert
  - "My Dream Girl" Archer
  - Symphonic Ensemble—"You and I," from "My Girl" Archer
  - "Rainbow of Jazz," from "My Girl" Archer
  - Duet for soprano and tenor—"Indian Love Call," from "Rose Marie" Friml
- Symphonic Ensemble—**
- "Tea for Two," from "No, No, Nanette" Youmans
  - "I Want to Be Happy," from "No, No, Nanette" Youmans
- Soprano solo—**
- "The Love Song" Kunnick
- Tenor solo—**
- "Remembering," from "Tony and Eva" Duncan Sisters
- Symphonic Ensemble—**
- "My Road," from "Be Yourself"
  - Duet for soprano and tenor—"Deep in My Heart," from "The Student Prince" Romberg
- Symphonic Ensemble—**
- "I'm All Alone," from "China Rose" Heane
  - "China Rose," from "China Rose" Heane

## Davis Sees Great Future in Short Wave Relays.

### TESTS MEETING WITH SUCCESS

The linking together by short waves of hundreds of stations for the simultaneous broadcasting of programs is the ideal toward which radio broadcasting must strive in order to obtain the greatest flexibility of broadcasting service, according to H. P. Davis, vice president of the Westinghouse Electric and Manufacturing Company and internationally known as the "Father of Broadcasting."

In the use of short waves for relaying or boosting, according to Mr. Davis, lies the future of broadcasting as by proper use of this medium programs, originating in the centers of the art, may be broadcast simultaneously in all parts of the world.

In the last few weeks the short waves transmitted from KDKA have

been picked up and repeated by the British Broadcasting Company in Great Britain; by the station operated by the South German Broadcasting Association in Stuttgart, Germany; by Station JB in Johannesburg, South Africa; by a station co-operating with the Melbourne "Herald" in Australia, and by the station operated by "La Nacion," the leading newspaper of Buenos Aires, Argentina, South America. This international repeating is in addition to the regular repeating of KDKA's signals by its repeating station KFKX at Hastings, Neb.

### COULD BE SIMULTANEOUS.

Though the international repeating of KDKA's programs recently took place at different periods and not simultaneously, there is no reason for their not doing so.

Station KYW at Chicago and WBZ at Springfield, Mass., also operated by the Westinghouse company, lately have been equipped to pick up and repeat KDKA's short-wave signals.

Thus, it is perfectly feasible for any station to co-operate with KDKA or any other station using short-wave signals in repeating its broadcasts, for example,

and if this should be done, a program originating in Pittsburgh could be heard simultaneously by radio listeners in Great Britain, Germany, South Africa, Australia and South America as well as all of the radio public within the range of Station KDKA, KYW and WBZ includes nearly all of North America. One program so broadcast could be heard in four continents simultaneously.

### RADIO "CENTRAL SKEN."

With the further development of short wave transmitting and receiving apparatus, any station properly equipped could pick up and repeat KDKA's broadcasts and a broadcast central would then be initiated. Short wave transmitting stations located at strategic points could transmit just as does KDKA present time and form other channels of transmission. Then the stations equipped to pick up and repeat wave transmissions would have several transmission channels to from and thus have different programs.

There is little doubt, according to Mr. Davis, that short waves and the linking method of the Radio waves are the most efficient and flexible carriers of communication. They are also by far the cheapest to install and operate. No great investment is necessary to provide for us nor is a large operation required scattered through the country for their supervision and operation. The other is a broad highway which never damaged permanently by inclement weather. A heavy thunderstorm or an electrical display, for example, the Northern lights, may temporarily make it difficult to transmit, but the clearing of the ether, the highway is again open.

Within the next few years, Mr. Davis states, there will be a great increase in the number of radio stations linked together by short waves. These waves will be used to transmit programs from remote pick-up points to the broadcasting station and the linking together of broadcast stations. It will do the whole world. Worldwide as well as international broadcasting of programs is in the making and only awaits intensive development work with the necessary conditions.

New York Telegram  
Aug. 7, 1925

## BIG RADIO AID SEEN IN WAVE BOOST TEST

### Westinghouse Official Thinks Lone Program May Serve World

EAST PITTSBURGH, Friday.—A great achievement in radio telephony as the inauguration of broadcasting was recorded in a test conducted last night by two stations of the Westinghouse Electric and Manufacturing Company, declared H. P. Davis, vice president of the Westinghouse Company today in announcing that boosting or amplifying radio waves without changing their form or frequency was accomplished for the first time.

High frequency waves, or the so-called short waves, carrying a spoken message and a musical program from KDKA, Pittsburgh, were received on a special receiving antenna by KFKX, Hastings, Neb., and there amplified many times and put in the air again at exactly the same frequency or wave length and at approximately the same strength at which they had been radiated from KDKA.

"The development of the radio boosting system makes reliable long distance repeating or relaying feasible just as the development of the telephone receiver makes possible long distance telephony," Mr. Davis said. "While our recent experiments in short wave transmission were very successful reaching as they did all parts of the world, this method could not always be depended upon. I have felt there was need of a repeater or booster system whereby it would be possible to send dependable transmission by radio to great distances without loss of signal strength and free from static and other sources of interference, by amplifying these signals at stated intervals.

"The application of the new boosting system to broadcasting will make an amplification of program work far beyond that possible today, and pro-

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The OB meter is the product of evolution—cumulative experience.

From top to bottom: O. B. Shallenberger, H. P. Davis, Frank Conrad, Wm. Bradshaw.

## PERSONALITIES PLUS

Four personalities, plus a highly specialized engineering and plant organization, have contributed all of the important watt-hour meter achievements since 1888:

Shallenberger, Davis, Conrad, Bradshaw—each is permanently associated with the advancement of this phase of the electrical industry. All are Westinghouse personalities. All but the first named have been active in this progress for more than a quarter of a century.

Since the day that Shallenberger produced the first practical device of this kind, watt-hour meter development, under

the guidance, on each, in turn, of these four men, has been as steady and sure as human science and skill could produce.

1888, 1894, 1897, 1902, 1904, 1906, 1910, and 1924 mark distinct steps in this phenomenal progress. Each of these years saw the introduction of a new, improved, watt-hour meter. The most recent, and easily the most important of these stepping stones, was the year 1924, which marks the advent of the "OB"—the smallest, lightest, simplest, as well as the most accessible and accurate of all watt-hour meters.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY  
Sales Offices in All Principal Cities of the United States and Foreign Countries  
Newark Works, Newark, N. J.

# Westinghouse

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# LINK WHOLE WORLD FOR PROGRAMS ON SHORT WAVE RADIO

## Experts Plan to Connect Hundreds of Stations for Simultaneous Broadcasting.

(By International News Service.)

PITTSBURGH, Pa., March 20.—The linking together by short waves of hundreds of stations for the simultaneous broadcasting of programs is the idea toward which radio broadcasting must strive in order to obtain the greatest flexibility of broadcasting service, according to H. P. Davis, vice-president of the Westinghouse Electric and Manufacturing Company and internationally known as the "Father of Broadcasting."

In the use of short waves for repeating, according to Mr. Davis, lies the future of broadcasting, for by proper use of this medium for interstation linking, programs originating in the centers of the art may be broadcast simultaneously in all parts of the world.

In the past few weeks the short waves transmitted from KDKA have been picked up and repeated by the British Broadcasting Company in Great Britain; by the station operated by the South German Broadcasting Association in Stuttgart, Germany; by Station JB in Johannesburg, South Africa; by a station co-operating with the Melbourne Herald, in Australia; and the station operated by La Nación, the leading newspaper of Buenos Aires, Argentina, South America. This international repeating is in addition to the regular repeating of KDKA's signals by its repeating station KFKX at Hastings, Neb.

### WILL REPEAT.

Though the international repeating of KDKA's programs recently took place at different periods and not simultaneously there is no reason for their not being repeated simultaneously.

Station KYW, at Chicago, and WBZ, at Springfield, Mass., lately have been equipped to pick up and repeat KDKA's short-wave signals.

Thus it is perfectly feasible for any or all of the stations just enumerated to co-operate with KDKA, or any other station using short-wave signals, in repeating its broadcasts, and if this should be done, a program originating in Pittsburgh could be heard simultaneously by the radio listeners in Great Britain, Germany, South Africa, Australia, South America and all of the radio public within the range of Stations KDKA, KYW and WBZ, including nearly all of North America. One program so broadcast could be heard simultaneously in four continents.

With the further development of short-wave transmitting and receiving apparatus, any station properly equipped could pick up and repeat KDKA's broadcasts, and a broadcast central would then be initiated. Other short-wave transmitting stations located at strategic points could also transmit, just as does KDKA at the present time, and form other channels of transmission. Then the stations equipped to pick up and repeat short-wave transmissions would have several transmission channels to choose from and thus have different programs.

### FOR SHORT WAVES.

There is little doubt, according to Mr. Davis, that short waves will be the linking method of the future. Radio waves are the most versatile and flexible carriers of communication. They are also far cheaper to instal and operate. No great investment is necessary to provide for their use, nor is a large operating force required scattered throughout the country for their supervision and operation.

Within the next few years, Mr. Davis states, there will be a great increase in the number of radio stations linked together by short waves.

World-wide as well as national broadcasting of programs is in the offing and only smaller inter-

POST, MARCH 29, 1925.

## Pitt Studio Year Old



HAMILTON STEWART.

H. P. DAVIS.

JOHN G. BOWMAN.

The University of Pittsburgh studio of Westinghouse radio station KDKA tomorrow night will celebrate its first year of operation with an anniversary program. Speakers will be Dr. John C. Bowman, chancellor of the university, who has chosen as his subject "What Is Worth Repeating."

H. B. Davis, the "father of radio broadcasting," vice president of the Westinghouse Electric and Manufacturing Company, will be the speaker of the occasion. His subject will be "Educational Partnership: University and Radio Broadcasting." Music will be furnished by the Pitt Four quartet, composed of Arden M.

Kearney of Altoona, John Hyslop, Pittsburgh; Owen W. Moran, Anniston, Ala., and M. K. Carmichael, Washington, Pa. They will be accompanied on the piano by J. A. Murray of Pittsburgh.

Since the opening of the studio at the university, 120 programs of educational nature have been broadcast.

Other events of the week will be an address on Friday night by Hamilton Stewart, vice president of the Harbison-Walker Company. His subject will be "The Vital Relation of the University of Pittsburgh to Our City." On Wednesday night at 8:15 o'clock Dr. Mont R. Gabbert will speak on "Why Are Men Moral?"

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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.

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.

July 24, 1938.

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.

... because retrogressive in its character with resulting loss of public interest and failure, eventually, to the entire broadcasting service which will grow to an international project.

Vice President.

Enclosure.

In the following a suggestion is made of one way in which such a broadcasting service can be organized and placed on a healthy basis...

It is felt that an essential step in the development of such a service is the idea that the organization will be free from any kind of appearance of monopoly...

It is proposed to start the organization in this country with a limited number of stations...

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July 24, 1925.

MEMORANDUM.

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

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.

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 Service 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

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 more than one organization of this kind, and competitive efforts will result in generally poor operation, and will develop a

July 24, 1935.

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

Mr. E. W. Horn

I attach memoranda 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.

H. P. Davis.

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, national 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 represented.

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. E. & T. Company and others would be exactly the same as any other carrier, insofar as our own broadcasting stations are concerned. It would all of us have to agree to operate from their own part, but would probably be able to carry over matters with the service company as necessary, insofar as the service company is the necessary channel and equipment and other things available.

THE RADIO INDUSTRY

The radio industry is an infant, although a lusty one. It was only five years ago that KDKA, the first broadcasting station, was put into operation by Westinghouse, and there are today actually over 500 stations operating. It is estimated these stations cost \$5,000,000 to operate annually.

On January 1, 1920, it is estimated, there were but 5,000 receiving sets in the United States largely in hands of experts, and sales annually to that time of receiving sets had not exceeded \$2,000,000 a year. Sales of radio sets and parts increased 150 per cent. in 1921, to \$5,000,000. In 1922 public enthusiasm rose, and sales were \$60,000,000 or 1100 per cent. over 1921; sales for 1923 totaled \$120,000,000; the total for 1924 was between \$300,000,000 and \$350,000,000. Estimates put 1925 sales at \$450,000,000.

End of 1924 found approximately 2,500,000 radio receiving sets in use in the United States, against 12,000 automobiles and 9,000,000 phonographs.

With over 3,000,000 receiving sets in operation it is estimated radio has an audience of approximately 7,000,000. When special events are offered an additional 7,000,000 listen.

There is plenty of room for expansion, say leaders in the industry. They say that from time to time innovations will be added which will simplify and clarify reception, but it is the chief job today to stabilize the business and improve programs so far as possible.

Pittsburgh Sun  
August 7 1925  
First Editorial

More Wizardry of the Air.

Once again the magicians of radio have done the impossible. A new "booster" system, announced last night by the Westinghouse company, will permit KDKA to broadcast to all the world with even greater certainty than was possible through the marvelous short wave system. The development means, according to the experts, that it is now feasible to invite the whole world as the audience of a single speaker.

This age is so accustomed to marvels of science and invention, and especially so familiar with the secrets of radio reception that it is not easily surprised. Indeed, faith in the powers of physicists and chemists is more embarrassing than flattering to them; sometimes they gravely wonder whether they can do all the things that people vaguely expect of them. One thing they know, that laymen generally have little conception of the great toil and immeasurable patience by which even small advances are wrought.

Even now, when the new "booster" system is announced, men's minds are far away, on the day when they may see as well as hear the man before the microphone.

NEW 'BOOSTER'  
SUCCESSFUL IN  
SEVERE TESTS

KDKA Engineers Call Discovery of Repeater Achievement in Broadcasting Field.

HOLDS WAVE LENGTH

The dream of radio engineers to broadcast throughout the world programs from one central source became feasible last night with the successful completion of "booster" tests conducted by engineers of the Westinghouse Electric and Manufacturing Company whereby a program from Pittsburgh was relayed without change of form in wavelength from a special broadcasting station at Hastings, Neb.

The new achievement is considered as great a step in the development of radio as the inauguration of broadcasting. It consists of relaying radio waves from station to station at the same frequency and form as originally sent and in this way give the entire world an opportunity to hear one voice.

In announcing the success of the tests, H. P. Davis, vice president of the company, said:

High frequency waves, the so-called short waves, carrying a spoken message and a musical program, from station KDKA, Pittsburgh, were received by a special receiving antenna at Station KFXX, Hastings, Neb., and there amplified many times and put on the air again at exactly the same frequency or wave length, and at approximately the same strength at which they had been radiated from KDKA.

"Booster" System Perfected.

The development of the radio booster system for radio makes reliable repeating or relaying feasible as the development of the telephone "repeater" made possible long distance telephone. While our short wave transmission was very successful reaching as it did all parts of the world it could not always be depended upon. I have felt there was need of a repeater or booster system whereby it would be possible to send dependable transmissions by radio to great distances without loss of signal strength, free from static and other sources of interference by amplifying the signals in stated intervals. Our efforts have been directed to the perfecting of this problem for some time.

The result of this test shows that we have accomplished this and it is a real milestone in radio achievement. It provides the radio engineer with the thing he has been searching for to further his dream of making radio a practical, dependable method of communication over long distances which could not be accomplished even with use of so-called superpower.

Radio broadcasting, now at a critical stage, is entering a new era in which the future course of its development is becoming quite clearly outlined.

There is foreseen an early organization of the best in radio broadcasting with some sort of mutual arrangement and joint control, an expansion of station linking and an exchange of service whereby a centrally located point of program origin will motivate a great chain of local broadcasters. It is our belief that the coming system of station linking will be accomplished almost entirely by radio waves, and the number of stations linked together will be much greater than is possible today.

Capital investment in broadcasting, great as it is today, will be many times multiplied in the future broadcasting organization. To win this capital and support the organization that will give this service there will be required a protection that will assure their being able to recruit and maintain such a highly specialized and varied service.

Television, another possibility, is now in process of development, and when accomplished will greatly amplify and increase the value of broadcasting service. When given to the public this adjunct will complete a radio service that will make broadcasting the most powerful agency of all time.

By J. H. DELLINGER,  
Chief of Radio Laboratory, Bureau of Standards.

Unquestionably the next outstanding development in radio from the viewpoint of the listening public will be the introduction and widespread use of receiving sets giving high quality reproduction. It is well known that the trend of public interest is toward the reception of the

*M. J. T. ...*  
*... 10/10/25*

Extends Program Limits.

The application of the new booster system to broadcasting will mean an amplification of program work far beyond that possible today. Programs emanating from a central source may be repeated by many hundreds of broadcasting stations, in fact, one program may service the entire world. All that is necessary is a sufficient number of booster stations to repeat and reactivate the signals. It is the possibility of this system to provide a radio service so much greater than that available today that makes it such an outstanding radio achievement.

The chief difficulty in boosting a radio wave and one that hitherto has prevented it, lies in the fact that the receiving antenna at the booster station ordinarily would pick up signals from both the original sending station and the booster station itself, since both are radiating on the same wavelength. This "feedback" of the booster station into its receiving antenna would cause the system to oscillate and thus produce a howl that would defeat the desired purpose.

Prevent Feedback.

To prevent this "feedback," Frank Conrad, assistant chief engineer of the Westinghouse Company, devised a special selective receiving antenna that would not pick up signals from certain directions. An antenna of this type was constructed about a mile north of Hastings and in such a position that it would not pick up signals coming from Hastings, but would pick up those coming from Pittsburgh.

Last night the messages were picked up by the newly designed receiving antenna at Hastings, carried by special wire to the Hastings broadcasting station, amplified to many times its original strength and again sent on its way without change in frequency or the slightest

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## DEVELOPING RADIO BOOSTER SYSTEM

SUCCESS OF TEST BY WESTINGHOUSE ELECTRIC & MANUFACTURING CO MAKES RELIABLE LONG-DISTANCE REPEATING OR RELAYING FEASIBLE

East Pittsburgh—"As great an achievement in radio telephony as inaugurating of broadcasting was recorded in a test contest by two stations of Westinghouse Electric & Manufacturing Co.," declared H. P. Davis, vice-president of the company.

In the test referred to, "boosting," or amplifying, radio waves without changing their frequency was accomplished for the first time in radio communication.

"The development of the radio booster system makes reliable long-distance repeating or relaying feasible, just as the development of telephone repeater made possible long-distance telephony," Mr. Davis said.

Pittsburgh Post - August 7, 1925

# World Now to Hear Single Radio Talk Through Invention

Pittsburgh Engineers  
Announce Solution  
Of Problem.

## OUTSTANDING ACHIEVEMENT

One more far-fetched dream of the ages, more fantastic than the alchemist's vision of transmuting base metals into gold, came true yesterday under the wand of the miracle men of science, when Pittsburgh radio engineers proved the feasibility of making the whole world the audience of a single speaker.

By a successful test of "boosting," or the amplification of radio waves without changing their form or frequency,

engineers of the Westinghouse Electric and Manufacturing Company showed that a single program broadcast from a central source could be made to cover the entire world.

### HIGH FREQUENCY USED.

The achievement, which is considered as important as the inauguration of broadcasting, was announced last night by H. P. Davis, vice president of the Westinghouse company, who is known internationally as "the father of broadcasting."

High frequency waves, the so-called short waves—carrying a spoken message and a musical program from KDKA, were received by a special receiving antenna at station WFFX, Hastings, Neb. They were then amplified many times and put on the air again at exactly the same frequency or wave-length, and at approximately the same strength at which they were radiated from KDKA.

Frank Conrad, assistant chief engineer of the Westinghouse company, devised a special selective receiving antenna that would not pick up signals from certain directions. An antenna of this type was constructed about a mile north of Hastings. It was erected in such a position that it would not pick up signals coming from Hastings, but would pick up those coming from Pittsburgh.

Messages were picked up last night by this newly designed receiving antenna at Hastings, carried by special wire to the Hastings broadcasting station, amplified to many times the original strength, and again sent on their way without change in frequency or the slightest deviation from the original quality.

### FOUND RELIABLE.

Speaking of the achievement, Mr. Davis said last night:

"The development of the radio booster system for radio makes reliable repeating or relaying feasible, as the development of the telephone repeater made possible long-distance telephony. While our short wave transmission was very successful, reaching as it did local parts of the world, it could not always be depended upon.

"I have felt that there was a need of a repeater or booster system whereby it would be possible to send dependable transmissions by radio to great distances without loss of signal strength, free from static and other sources of interference by amplifying the signals at stated intervals. Our efforts have been directed toward a solution of this problem for some time.

### TESTS SUCCESSFUL.

"The result of this test shows that we have accomplished this. It is a real milestone in radio achievement. It provides the radio engineer with the thing he has been searching for to further his dream of making radio a practical, dependable method of communication over long distances, which could not be accomplished even with the use of so-called super-power.

"The application of the new booster system to broadcasting will mean an amplification of program work far beyond that possible today. Programs emanating from a central source may be repeated by hundreds of broadcasting stations; in fact, one program may serve the entire world. All that is necessary is a sufficient number of booster stations to repeat and re-radiate the signals. It is the possibility of this system to provide radio service so much greater than that available today that makes it such an outstanding radio achievement."

# The Radio News Of the Week

By Capt. Robert Scofield Wood

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## Why Super-Power Is Unnecessary

WHEN the super-power broadcast idea was presented to the recent Hoover Radio Conference, The Evening World, in a series of articles, pointed out the disadvantages of employing excessive power in the broadcast wave band. All of these objections, including blanketing, cross talk and heterodyning effects, have since been established as actually existing limiting factors in the presentation of a national program by experiments using an increased power which has not approached the 50 KW contemplated at the conference by 50 per cent.

At the same time The Evening World pointed out the field of development for the transmission of the national programs in the short wave bands, using repeater stations, instead of trying to blanket the entire country with two or three super-power stations. It was a case of the public being caught in the cross-fire of one enterprising group of radio interests trying to duplicate the national program efforts of another group, the Telephone Company, a recognized monopoly, whose land lines gave them a natural advantage and, at present, the upper hand in radio broadcasting.

From the camp of the super-power advocates comes the answer to the national broadcast question for which super-power was suggested, the development of the short wave lengths, using less than one-fifth of the power contemplated in the original "super" station program. The following is part of a statement made by H. P. Davis, "Father of Radio Broadcasting," and Vice President of the Westinghouse Electric and Manufacturing Company, of East Pittsburgh, who opened the first American broadcasting station—KDKA. The Westinghouse Company is one of the manufacturing branches of the Radio Corporation of America, the group supporting the super-power idea.

### NO INTERFERENCE.

"In sending a program to Australia, halfway 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 metres, that used by KDKA, is 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.

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

"High power when so used has not the disturbing effect as in the case when used for the longer 'audible' waves. A good selective receiver can eliminate a signal from any sharply tuned transmitting station to a degree 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, providing the listeners' receivers are not used to pick up their signal.

### POINTS THE WAY.

"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 in the United States, but, also from any part of the world. It is apparent that by establishing powerful short wave transmitting stations at strategic points, supplemented by properly located short wave repeating or boosting stations, a service can be established for the entire world.

"In 1923 I predicted the possibilities of such 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 into which any local station at will, through the medium of a suitable short wave receiver, could tap and repeat the program in its own locality. Thus a local station, having only a very limited power, could receive and transmit a distant program from a short wave station without setting up a signal strong enough to interfere with any other long-wave station located within a reasonable distance from it. It is such a system of short-wave receiving and boosting stations compared with longer wave length local station pick ups that will one day service the world."

HIRAM PERCY MAXIM, PRESIDENT  
CHAS. H. STEWART, VICE-PRESIDENT

F. H. SCHNELL, TRAFFIC MANAGER

A. A. HEBERT, TREASURER  
K. B. WARNER, SECRETARY

# THE AMERICAN RADIO RELAY LEAGUE

INCORPORATED

HARTFORD, CONN.

RADIO STATION 9XX

ARLINGTON HEIGHTS, ILL.

## RADIOGRAM

PHONE \_\_\_\_\_

### Received

No.	FROM STN.	LOCATED AT	DATE	TIME	CHECK	OPERATOR
9009	WAP	ETAH HARBOR 78°15' N. LAT	8-8-25	1:35 AM		GUSTAFSON

FROM COMMANDER E F McDONALD JR DATE AUGUST 8 1925 VIA 9XX

TO

Mr H P Davis  
Westinghouse Elec & Mfg Co  
East Pittsburgh Pa

MY GREETINGS TO YOU FROM THIS FAIRLAND OF  
ICE WITHIN TWELVE DEGREES OF THE NORTH POLE

GENE McDONALD

### Sent

No.	TO STN.	LOCATED AT	DATE	TIME	CHECK	OPERATOR

NOTICE TO ADDRESSEE: The station delivering you this message will be pleased to forward your reply without charge.

# On the Air

## A MAGAZINE OF RADIO

VOL. 2

SEPTEMBER, 1925

No. 1

What Do You Know About

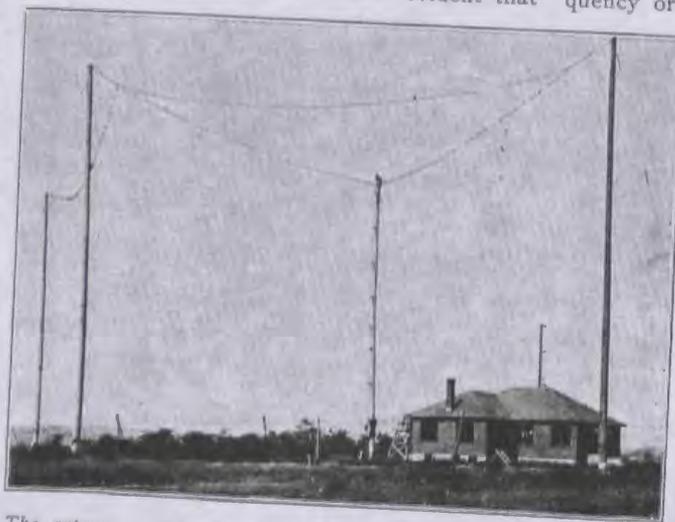
## SHORT WAVE Broadcasting?

- ❑ DO YOU KNOW that Station KDKA has been heard in Spain, England, France and even South Africa on Low Waves?
- ❑ DO YOU KNOW that short waves point the way for future international broadcasts and rebroadcasts of foreign programmes?
- ❑ DO YOU KNOW that high frequency broadcasting requires special and absolute precision in its application as a means of communication?

WITHIN the last few weeks radio listeners on four continents have become aware of a new phase in the development of radio broadcasting, namely the use of short-wave lengths in the transmission of radio broadcasting programs. A quick succession of spectacular accomplishments in radio broadcasting and rebroadcasting has brought this system of transmission prominently to the attention of the public. The successful reception and repeating in England of programs from KDKA at Pittsburgh, Pa., the reception of this same station by the ship, Arctic, while lying in the frozen North, only 11 degrees from the North Pole; then the successful reception of the Wills-Firpo boxing match in Argentine; and finally the consistent reception of Station KDKA in England, France, Germany, Spain and South Africa

By Forbes W. Fairbairn

during the recent international tests, have made it evident that



The antenna system, counterpoise and apparatus "shack" of the short wave transmitter which broadcasts the regular programs of KDKA on wavelengths around 75 to 100 meters at the same time the regular higher wave is used. The signals of this station are regularly heard in Europe and more distant points, while the regular wave is entirely inaudible

something different was being introduced in broadcasting which has pushed the limits for successful reception out to much greater distances.

People have read in the newspapers and magazines that this great range has been accomplished by the use of a high-frequency or short wave transmission. The public accepts this as a rapid development in a rapidly developing art and consider it as having been perfected practically overnight. This is a very mistaken idea. Like most other great achievements it is the result of unusual engineering knowledge and foresight and painstaking experiment and development and coupled with unusual facilities and technical experience.

A brief history of the development of this new system of radio transmission will be interesting.

During the year 1920, Mr. Frank Conrad, Assistant Chief Engineer of the Westinghouse Electric and Manufacturing Company, an outstanding radio engineer of the radio world, main-

tained, as a hobby, a radio schedule with J. C. Ramsey, of Boston. With the power then available, that is, about 100 watts in the antenna, communication was very uncertain during the summer months and had to be abandoned entirely during particularly unfavorable periods, owing to the reduction of the received signal strength and the increased interference from strays. The radio frequency employed in these transmissions was about 1,200 kilocycles or 250 meters. Being aware of the reduction of atmospheric strays on the higher ranges of frequency (short waves) then in use, and from experiments in listening to harmonics from other transmitting stations, Mr. Conrad was convinced that there were greater possibilities of improvement in reliability of transmission, by increasing the frequency rather than by decreasing it as was the general tendency at that time.

#### The First Short Wave Tests

A SERIES of tests was run between Station 8XK, maintained at Mr. Conrad's home in Wilkesburg by the Westinghouse Electric and Manufacturing Company, and Mr. Ramsey's station in Boston, with the cooperation also of the stations of the Massachusetts Institute of Technology and of R. D. Decker, of Boston.

These tests were made during the spring of 1921 and consisted of a series of transmissions from each of the Boston stations at various wave lengths, and measurements were made at Wilkesburg of the audibility of received signals. The result indicated a gain of signal strength as the frequency was increased which, coupled with the great reduction in interference from strays on the higher frequencies, increased reliability of transmission with a given antenna power.

To permit of further observations the equipment of 8XK was remodeled to better adapt it to higher frequencies. The remodeled equipment consisted of a

coupled circuit in which the local oscillating circuit was coupled to the antenna circuit through a coupling condenser or inductance. With this arrangement it is unnecessary to extend the antenna down-lead into the building containing the radio equipment and as the current in the coupling wire is small because it represents the energy component only, a comparatively small conductor can be used. This small current minimizes losses due to high frequency fields. The operation of the transmitting connection was so satisfactory that it was adopted



Above, an interior view of the "shack" housing the transmitter, showing the apparatus that huris signals into the atmosphere with such intensity that they actuate the diaphragms of headphones in Europe, Africa and South America. Right, a photo of the "daddy" of broadcasting, Mr. H. P. Davis, vice-president of the Westinghouse Electric Company, and the sponsor of these important developments

for the several broadcasting stations operated by the Westinghouse Company.

The transmission tests during the following year between Mr. Conrad's station and Mr. Ramsey's station in Boston, at 5,000 kilocycles (60 meters), indicated much greater reliability of communication than during previous operation on 1,200 kilocycles (250 meters).

These tests were being followed by H. P. Davis, vice-president of the Westinghouse Electric Company, well known as the "Father of Radio Broadcasting" on account of his establishing KDKA, the pioneer broadcasting station of the world.

#### Further Experiments Sanctioned

MR. DAVIS recognized the importance of these high frequencies for use in broadcast repeating and for more reliable communication over the longer distances, where communication becomes more or less difficult and unreliable with the lower frequencies used at present in ordinary broadcasting. Mr. Conrad was commissioned to build a transmitter with sufficient power to more thoroughly demonstrate this. This transmitter was built as an adjunct to the transmitting equipment of KDKA and the program of KDKA was simultaneously transmitted on its regular broadcasting wave (340 meters) and on this high frequency wave (90 meters).

In the operation of this transmitter difficulty was experienced in maintaining a fixed frequency. The wave would vary through a range of frequencies of as much as 1,000 cycles, so that it was difficult to receive telephone signals on a sharply tuned set. This variation of frequency was due in part to changes taking place in the various circuits of the factory building, so the vertical pole antenna was replaced by the conventional form of inverted "L" with insulated counterpoise. This arrangement overcame the abrupt frequency shifts, but there remained the generally irregular fluctuations due to various causes, such as vibration of connecting wires, or variations of plate supply voltage.

To eliminate vibration due to machinery in the building, the whole transmitting structure was then suspended from a set of springs. The effect of these changes was to greatly improve the constancy of frequency.

#### Experiments Assume Greater Proportions

THIS transmitter was equipped with four 250-watt air-cooled oscillators and six modulators of similar type. The four oscillators delivered approximately 800 watts to the antenna circuit. The first transmission experiments were carried on between Pittsburgh and Cleveland, attempts being made at Cleveland to pick up the high

(Continued on page 14)

of praise uttered by visitors, ordinary folks like you and I, and people of fame like David Lloyd-George, famous for their excellence in statesmanship, letters, sociology, professions, theology, philanthropy, pedagogy, and the like.

#### New Studio Planned

Even before opening the station Mr. Nelson realized the importance of having a studio in Chicago for the convenience of professional talent, and started to work on it. The difficulty of getting the lines was the only thing that caused delay. While waiting for the Chicago Studio, the playing of Mr. Albert F. Brown on the Geneva Organ at Geneva, Ill., became a feature of the station (and still is, for that matter), and his playing attracted the ear of many a radio fan.

Finally, the Garod Studio in the Palmer House was opened on March 9th, and simultaneously broadcasting of Charley Straight's Orchestra at the Rendezvous Cafe, Chicago, was begun, followed shortly by the addition (during the dinner hour) of John Cerny's Trio at the Belmont Hotel, Chicago.

Jack Nelson and his staff look forward with great eagerness to the opening of the new Palmer House next fall because in the new building a suite of eight rooms have been designed for radio with every modern idea for beauty and efficiency included.

### Short Wave Broadcasting

(Continued from page 4)

frequency signals and repeat them through a small broadcasting set installed there. It was found that the signals received at Cleveland were very much louder than those received from the regular broadcasting transmitter having about the same power output. It was also found that the signals were nearly as loud during the daylight hours as at night. These experiments were conducted at 3,300 kilocycles, (91 meters) and 3,750 kilocycles (80 meters).

At first, serious difficulty was experienced in obtaining good quality for telephone transmission, the signals received being very much distorted. This distortion was practically removed by careful adjustment of the transmitting set and the employment of a comparatively strong signal.

Reports received from various sections of the country on the comparative signal strength of the two waves from KDKA indicated the possibilities of establishing a broadcasting system which would cover the entire country with a comparatively high degree of reliability. To carry out this scheme it was thought advisable to install a transmitter about midway between Pittsburgh and the Pacific Coast to act as a repeating station. Hastings, Nebraska, was selected as the location for this station, its distance from Pittsburgh not exceeding that which these

tests indicated could be covered with fair reliability.

The transmitting at East Pittsburgh was designed to operate only within the frequency range of 3,000 to 3,600 kilocycles, but the set at Hastings (KFKX) was designed to operate at a frequency within this range, or at a lower one within the regular broadcasting range. This arrangement permitted operation under a scheme in which the short wave signals being transmitted from KDKA could be received in Hastings and from there retransmitted on the regular broadcasting wave (880 kilocycles).

#### Results Substantiate the Theories

IT WAS possible also to retransmit from Hastings (KFKX) on a high frequency wave which was necessarily spaced sufficiently from the connecting wave of Station KDKA to prevent feed-back troubles in the receiving equipment used at Hastings. Advantage then could be taken of the better transmission efficiency of the high frequency wave when it was desired to reach the Pacific Coast with a signal capable of again being relayed.

The experimental work detailed above occupied the summer of 1923, but on November 22, 1923, a talk given at Pittsburgh by E. H. Sniffin, manager of the Westinghouse Power Sales Department, was received at a meeting of the National Electric Light Association being held at Salt Lake City, the transmission circuit being from KDKA to KFKX on 3,000 kilocycles; from there retransmitted at 1,050 kilocycles, at which frequency it was received at Salt Lake City. This event marks the first regularly scheduled high frequency long distance relay transmission.

During this time tests were also being carried on between an experimental receiving station located at the Metropolitan-Vickers Electrical Company's works at Manchester, England, on the high frequency waves transmitted from KDKA. So successful were preliminary tests late in 1923 that it was decided to hold the actual broadcasting of the first program exclusively for England on New Year's Eve. Accordingly, on December 31, 1923, Vice President H. P. Davis, of the Westinghouse Co., broadcast a New Year's greeting from the Pittsburgh Post Studio of Station KDKA. This greeting was transmitted at 7 p.m., Eastern Standard Time, which because of the difference in time, was 12 o'clock midnight in Great Britain. This message was received on a short-wave receiver, and repeated from Station ZLO of the Metropolitan-Vickers Company in England and also simultaneously transmitted from seven other stations of the British Broadcasting Company. This was the first prearranged regular broadcasting from KDKA sent to England for re-broadcasting there.

On March 25, 1924, knowing that many of the people in the Spanish speaking countries of South America

were nightly listening to KDKA, a special program of Spanish music and speech was broadcast on both long and short wave sets of KDKA and repeated from KFKX. Reports of the success of this broadcasting were received from listeners in all parts of South America. This was the first of a special Spanish broadcasting service to South America which has been continued. On October 11, 1924, an international radio banquet was held by the H. J. Heinz Company in Pittsburgh. For this banquet 62 short wave receivers were made and distributed to the branch offices of the H. J. Heinz Company in the United States, Canada and Great Britain. Thus equipped, they were able to listen in on the banquet proceedings transmitted by KDKA in Pittsburgh. This was the first attempt to hold an international dinner by radio and was particularly successful in London, where every word of the ceremonies were reported having been heard.

The results of the International tests recently conducted between this country and European countries is now a matter of record. Several American stations were heard in a fragmentary way. KDKA, however, at East Pittsburgh, operated by the Westinghouse Electric Company, was heard consistently throughout the entire tests.

The results obtained so far indicate that, although there is considerable further development required, the use of these higher frequencies will be a decided forward step in extending the range of broadcasting stations. For comparatively short distances there are no particular advantages to be gained over the normal wave other than the possibility of increasing the communication channels.

#### International Programs Possible

IT IS in the possibility of greatly extending the broadcasting radius that the greatest promise lies, and through the medium of the short waves to boost or repeat broadcast programs make it possible to encircle the globe.

In the development of its short wave system of repeating programs of Westinghouse Company has produced a practical method of covering the globe in the radio messages. The system now in use between East Pittsburgh and Hastings, if installed between the points, for instance, between Paris and New York, would immediately effect a system of international broadcasting much more effectively than would the establishing of super-power transmitting station between the two points. The short wave stations also would not interfere with the broadcast listeners because their short waves are inaudible to the ordinary broadcast receiving set. It is generally believed that the Westinghouse short wave repeating system is the radio broadcasting system which eventually will be used to cover the earth with broadcast signals.

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**RECKLES AND HIS FRIENDS**



**-BY BLC**

**WILLIE HAS A RADIO**



**The Progressive Policy of POPULAR RADIO is Serving the Interests of Science**

"POPULAR RADIO, one of the first magazines in the broadcast field, has kept abreast of the extremely rapid development of this science in a manner that reflects much credit upon its editorial direction. The progressive policy of this magazine in giving publicity to developments in the radio field which will affect the future of the science is particularly commendable."

*H.P. Davis*  
 VICE PRESIDENT, WESTINGHOUSE  
 ELECTRIC & MANUFACTURING COMPANY

# 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

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 broadcasting 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.

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.

AS TO "who is to pay," in my 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.

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

## SUGGESTED QUESTIONS

1. What is the future of the small station? Day-night 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 "continuously" or "presentation" program? Are you opposed to state and federal censorship of Radio programs? Why?
3. Will toll stations be the answer to "What is to pay?" We must consider that large business enterprises, who operate their own stations, are really doing toll advertising on an exclusive basis, unless these big firms allow a certain part of their time on the air to be sold 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 disputes between participating in 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. The trips of superiors and their assistants all over the country must cost out of this appropriation as well as the salaries. No money is left for instruments, the most necessary equipment for the superiors. Does the department need more money? If the government wishes to reduce taxes, why not appropriate the inspection fee for the stations, the various stations?
8. The piezo-electric crystal is an unswerving audi which holds a station on its assigned frequency. Why not adopt it as requisite of every broadcasting licensee? The bureau of standards could test such one to see that it was wound 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?

public interest maintained, and a station established, because of the investment required, should have a protection 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.

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 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.

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

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.

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.

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.

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# WORLD-WIDE BROADCASTING OF RADIO PROGRAMS

## PREDICTION BASED ON TRIALS

H. P. Davis, of Westinghouse Electric Company, Gives Views

By ROBERT S. THORNBURGH

World-wide broadcasting of entertainment programs is just around the corner in radio development, H. P. Davis, vice president of the Westinghouse Electric Company said today.

Program transmission will be accomplished from central broadcasting stations on the short wave lengths, with which Westinghouse experts have been experimenting for several years, Davis explained.

Other stations would pick up the short wave signals, transform them into the conventional 200 to 600 meter waves and rebroadcast the programs.

### Experiments Successful

"The greatest opportunity for radio development in the immediate future is in broadcasting, to organize it and obtain suitable program material so that stations all over the world may tap this supply," said Davis.

"Our experiments with amplifying the radio signal seem to be sufficiently successful to show that this is feasible. If this is a fact, it should be easy to maintain as many program channels as desirable and possibly transmit them for unlimited distances, at least from continent to continent and use them as a means of supplying program material to the regular broadcasting stations.

"In its organization this ought to take a form similar to that of the International News Service to newspapers, and would be a mutual organization in which all broadcasters would be interested and help support the distributing or short wave station.

"I am quite sure that means of supporting this organization will be available to put it on a sound and permanent basis."

While Davis did not disclose whether Westinghouse or other big corporations are considering the organization of a "radio press association," for distribution of entertainment programs, it was understood that such a move is on foot.

### Great Changes Ahead

Davis holds that radio will have a profound influence on almost every branch of electrical development and that in twenty-five years great changes will take place.

"Undoubtedly radio will be a very useful and important method of remote control for all kinds of apparatus and machines," he said.

"It should be especially useful on railroads, as a means of signaling and controlling trains and movements, and as a means of signaling throughout the train and from moving vehicles to outside points.

"Transmission of power by radio seems, in the light of our present ideas, a fantastic dream, yet I think that the future has something

## Radio Wave Boosting Makes Rebroadcasting Possible

Boosting, or the amplification, of radio waves without changing their form or frequency was accomplished for the first time in the history of radio communication recently by two stations of the Westinghouse Electric and Manufacturing Company.

The achievement, which is considered as great an accomplishment in radio telephony as the inauguration of broadcasting, was recorded in a test conducted by Westinghouse stations KDKA, East Pittsburgh, Pa., and KFKX, Hastings, Nebraska.

High frequency waves, the so-called short waves, carrying a spoken message and a musical program, from station KDKA, Pittsburgh, Pa., were received by a special receiving antenna at Station KFKX, Hastings, Neb., and there amplified many times and put on the air again at exactly the same frequency or wave length, and at approximately the same strength at which they had been radiated from KDKA.

"The development of the radio booster system for radio makes reliable repeating or relaying feasible as the development of the telephone 'repeater' made possible long distance telephony," declared H. P. Davis, Vice President of the Westinghouse Company and internationally known as the "Father of Broadcasting," in announcing the success of the test. "While our short wave transmission was very successful reaching as it did all parts of the world it could not always be depended upon, I have felt there was need of a repeater or booster system whereby it would be possible to send dependable transmissions by radio to great distances without loss of signal strength free from static and other sources of interference by amplifying the signals at stated intervals. Our efforts have been directed to the perfecting of this problem for some time.

"The result of this test shows that we have accomplished this and it is a real milestone in radio achievements. It provides the radio engineer with the thing he has been searching for to further his dream of making radio a practical, dependable method of communication

over long distances which could not be accomplished even with the use of so called superpower.

"The application of the new booster system to broadcasting will mean an amplification of program work far beyond that possible today. Programs emanating from a central source may be repeated by many hundreds of broadcasting stations, in fact, one program may service the entire world. All that is necessary is a sufficient number of booster stations to repeat and re-activate the signals. It is the

possibility of this system to provide a radio service so much greater than that available today that makes it such an outstanding radio achievement."

The chief difficulty in boosting a radio wave, and one that hitherto has prevented it, lies in the fact that the receiving antenna at the booster station ordinarily would pick up signals from both the original sending station and the booster station itself, since both are radiating on the same wavelength. This "feedback" of the booster station into its receiving antenna would cause the system to oscillate and thus produce a howl that would defeat the desired purpose.

To prevent this "feedback," Frank Conrad, assistant chief engineer of the Westinghouse company, devised a special selective receiving antenna that would not pick up signals from a certain direction. An antenna of this type was constructed about a mile north of Hastings and in such a position that it would not pick up signals coming from Hastings, but would pick up those coming from Pittsburgh.

The messages were picked up by this newly designed receiving antenna at Hastings, carried by special wire to the Hastings broadcasting station, amplified to many times its original strength, and again sent on its way without change in frequency or the slightest deviation from its original quality.

even though of limited extent, will open up a tremendous field of development."

Davis declared that no department of the electrical industry is being so explored or attracting so many brilliant minds as radio.

He predicted that the radio movie

# STATION KDKA TO OBSERVE BIRTHDAY



H.P. DAVIS

SHORT WAVE TRANSMITTING SET AT KDKA

THE PITTSBURGH POST STUDIO

The rapid growth of radio broadcasting is brought to mind with the announcement that the "Pioneer Broadcasting Station of the World" will observe its fifth anniversary next Tuesday.

It was on the presidential election day in 1920 that Westinghouse Station KDKA inaugurated regular daily broadcasting. The anniversary really falls on November 2, but in order that the fifth or "wooden" anniversary may be held under as nearly the same circumstances as the initial program five years ago, the date for the celebration was moved back one day, which happens to be election day.

A special program for the anniversary has been arranged. One of the features will be a concert by the KDKA Little Symphony Orchestra, Victor Saudek, conductor. This was one of the first orchestras ever organized especially for radio broadcasting.

### TOUR AROUND WORLD.

Many of the KDKA programs have been dedicated to the distant countries of the world where the station is heard, and one of the features of the anniversary program is a "leg" of a "tour around the world" to be given by Ross H. Skinner. Trips of this kind were first broadcast from this station.

Another feature in which this station pioneered was in broadcasting direct from a theater stage, and a part of the anniversary program will be the Pittsburgh Post Midnight Revue broadcast from the Grand Theater.

The anniversary program will begin with the dinner concert at 6:15 o'clock and continue until after midnight.

Station KDKA originated in an experimental transmitting and receiving laboratory which the Westinghouse Electric and Manufacturing Company installed at the home of Frank Conrad, now assistant chief engineer of the company, in 1915 for experimental work in developing radio apparatus for the allies. After the United States entered the war, the experiments were confined to apparatus for the American forces.

### INTEREST GROWS.

After the end of the war, Mr. Conrad continued his experiments, and in 1919 started the transmitting of an



FRANK CONRAD THE NIGHT KDKA FIRST BROADCAST ON NOV. 2, 1920. J.C. McQUISTON THE SECOND MAN FROM THE RIGHT READ INTO THE MICROPHONE THE ELECTION RETURNS FROM THE HARDING-COX PRESIDENTIAL ELECTION

audience, until the audience numbered several hundred.

Vice President H. P. Davis, who had been watching the progress of the experiments, foresaw the future held for radio; he directed that the experimental station be moved to the East Pittsburgh plant of the company, and that regular daily programs for the public be inaugurated, thus earning the title of "Father of Radio Broadcasting," by which he is internationally known.

To provide program material, there was needed a publicist, who understood what the public would want, and the development of the program was given to J. C. McQuiston, manager, department of publicity. How well he did this work is shown by the fact that without any precedents to guide him, he originated many of the features which today are standard with broadcasting schedules.

### FIRST REGULAR PROGRAM.

The new station, on top of a nine-story building at the East Pittsburgh plant, was ready to begin operation in the fall, and it was decided to begin broadcasting on election day. The first regular program, therefore, consisted of the broadcasting the returns of the Harding-Cox election, which were collected by The Pittsburgh Post and telephoned to the station, where they were put on the air.

The programs, immediately succeed-

musicians were asked to broadcast direct. The microphone was located in the same room with the transmitters, but soon a separate studio was erected, at first on the roof of the building near the transmitter, and later in another building which was more convenient for the people who came to broadcast. Later other studios were established at The Pittsburgh Post, in the heart of downtown Pittsburgh and the University of Pittsburgh, from where educational talks were broadcast.

### HEARD EVERYWHERE.

Experimental work in the use of short wave was carried, on with the result that the KDKA programs, already

heard as far away as South America and Europe, now are heard on the short wave in every continent of the globe, and are regularly received and relayed by broadcasting stations in practically every civilized country. For this short wave experimental work, a separate station was established on a high point a mile from the East Pittsburgh works, to which the assigned broadcasting equipment also has since been moved. Special wire circuits connect the station with the studios and more than 50 outside points, such as churches, banquet halls and public auditoriums, from which programs are broadcast.

Other stations were established by the company, until four are now maintained, under the direction of C. W. Horn, superintendent of radio operations. These stations are KDKA, KYW Chicago, the pioneer station of the West; WBB in New England, and KPFX at Hastings, Neb.

John Frazier of the Westinghouse Electric and Manufacturing Company is the world's pioneer and veteran in the installation of outside pickups for radio work. His work dates back from November, 1920, when the first program transmitted by Westinghouse station KDKA was transmitted. His ability in developing apparatus for use in picking up programs originating at a distance from a transmitting station has served, as a guide for nearly all such work now being done. Mr. Frazier's official title is manager of the telephone department, but he is also in charge of transmitting activities at station KDKA.

### BROADCASTING STARTED 5 YEARS AGO TOMORROW

11-1-25

TOMORROW will be the fifth anniversary of broadcasting. On Nov. 2, 1920, KDKA, Pittsburgh, radiated the first program and won the title, "The Pioneer Broadcasting Station of the World." It was Presidential election day that year and KDKA featured the election returns on the initial program. In order that the anniversary may be celebrated by broadcasting election returns KDKA will radio its anniversary program Tuesday night.

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 Pest 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 is the 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 was known in the most remote places of our own and other countries as soon as it was seen by

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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 those 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 of these 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.

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

*Stephenson*

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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 14 1/2 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.

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 sources 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 as 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.

# DAVIS SPEAKS AT THE ELECTRIC MEETING

An address by Earl Whitehorne, commercial editor of the Electrical World, on the subject of "Presentations of the James H. McGraw Award," marked the opening of the day at the semi-annual meeting of the Electrical Supply Association in Hotel Statler. About 400 electrical supply men from all parts of the United States were registered this morning. Other addresses were given by George R. F. Pack, vice president and general manager of the United States Power Company, New York; and first vice president of the E. L. A., spoke to the gathering on "The Jobbers' Future Position—Relation with Generating Companies," and Jack North of the Electric Illuminating Company and president of the Electrical League of Cleveland, addressed the assembly on "The Need for and the American Electrical League to a Higher Standard."

The afternoon session featured the address on "Radio Broadcasting" made by H. P. Davis, president of the Westinghouse Electric & Manufacturing Company. A. Lewis, manager of Electrical Merchandising, spoke on the "Merchandising," and W. J. O'Connell, operating vice president of the Society for Electrical Development, gave an address on "The Road to Secure Adequate Wiring."

Meetings will be held tomorrow and following an executive session the convention will close.

Buffalo Evening Post  
November 19, 1925

## H. P. DAVIS IN BUFFALO

"Father of Radio Telephone  
Broadcasting" to Address  
Electrical Jobbers.

IS WIDELY KNOWN

Westinghouse Official Noted  
Among Engineers.

H. P. Davis, vice president of the Westinghouse Electric and manufacturing company of Pittsburgh, is in town today to speak before the meeting of the Electrical Jobbers association in Hotel Statler today.

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 past 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 general public.

Mr. Davis was born in Somersworth, New Hampshire, in 1869. 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 Electric & Manufacturing company in 1891. In 1896, he was placed in charge of this department, and in 1908, he was made manager of the engineering department. This position he held until 1911, when he was elected vice-president.

miles away. This is even a greater accomplishment than the feat of reaching South Africa. Thus the progress of radio broadcasting dazzles the comprehension. It was only yesterday, it seems, that we thrilled at news that the great Westinghouse station has reached England and continental Europe. Only Asia remains unconquered, and the barrier that screens it is thin as paper. A little more power, perhaps, more likely a little more ingenuity on top of ingenuity that already seems magical, and KDKA will encircle the world.

What this means to Pittsburgh no man can estimate, and no wise man will try to minimize. Certain it is that the voice of Pittsburgh reaches farther than the voice of any other city. Millions listen to Pittsburgh to whom cities not half so far away are silent. And they comprehend that this is no matter of chance, but of achievement. The far-flung voice of KDKA pays tribute to years of unremitting toil, boundless patience and high intelligence—and back of that a vision and a heart that greatly dared.

That was Pittsburgh, is Pittsburgh, and will be.

Buffalo Express  
Nov. 20, 1925.

### RADIO FOR ALL

Good programmes needed which  
any station may use, says Davis.

Some plan must be worked out by which good radio programme material can be furnished to any and all stations at will, somewhat in the way that news now is furnished to the newspapers, said H. P. Davis, vice president of the Westinghouse Electric & Manufacturing company, at the dinner of the Electrical Supply Jobbers' association last night at the Statler.

"The best programme 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 programmes usually are in the large centers of population, he said.

"We must not, however, think only of the broadcasting station in these centers in which are found the best of programme material," 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 in the programme centers and those that are termed local stations because of having a restricted range. The same source of programme must be made available to both."

Address of Vice President H. P. Davis,  
to Great Britain,  
New Year's Eve, December 31, 1925.

.....

We are on the threshold of another new year, with a prospect that the nations of the world, more so than ever before, seem destined to be closely allied in peaceful pursuits. Let us not be unmindful of the fact that the medium by means of which this message reaches you is man's great agent for international harmony.

Radio waves do not recognize man-made boundaries nor are they held back by nature's barriers. Neither oceans nor deserts, mountains nor plains, can deter their instantaneous passage from continent to continent, carrying with them an auditory picture of the thought and ideals of far-separated peoples.

As radio communication is developed so will likewise develop a greatly expanded exchange of beliefs on all questions having to do with the welfare of the world, thus making for an all-embracing tolerance.

Much progress has been made in international radio transmissions, in the two years that have passed since the first New Year's greeting ever broadcast from one nation to another was sent to Great Britain from KDKA, New Year's Eve, 1923.

In the years since, that station has transmitted programs that have been repeated in South Africa and Australia, just as tonight's program is being repeated by the stations of the British Broadcasting Company, thus carrying to these far-flung reaches of the British Empire a better understanding of the ideals of the peoples of the United States.

Because of the rapidity with which progress in radio communication is being made today, we can easily look forward to the time when no nation will be isolated from the world, no matter where it lies.

The time will come when radio broadcast messages will cover the world, and then the advantages that one nation is blessed with will be available to all others.

Just as radio waves carry programs of cheer to those living in places out of touch with civilization, so will they bring education and happiness into those minds darkened by various conditions of life.

In the five years that have passed since the inception of radio broadcasting we have witnessed an amazing expansion. There are thousands of broadcasting stations and millions of listeners.

Every continent of the world is represented and still we are only in the first stages of radio progress.

As this progress is continued in the years to come, we will have a full realization of the great gift given by science to mankind in this versatile, all-penetrating medium we term radio broadcasting.

To those in the British Empire and to all others listening, I send greetings and express an earnest hope that the New Year may bring peace, prosperity and cheer into all our lives, both as individuals and as nations.

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## KDKA Celebrates Its Fifth Anniversary

**T**HE amazingly rapid growth of radio broadcasting is brought to mind with the announcement that the "Pioneer Broadcasting Station of the World" observed its fifth anniversary, November 3.

It was on the presidential election day in 1920 that KDKA inaugurated regular daily broadcasting. The anniversary really fell on November 2, but in order that the fifth or "wooden" anniversary might be held under as nearly the same circumstances as the initial program five years ago, the date for the celebration was moved back one day, which happened to be election day.

The special program arranged for the anniversary included a song recital by Sophie Braslau of the Metropolitan Grand Opera Com-

pany broadcast from Hotel Schenley Pittsburgh; concerts by the KDKA Little Symphony Orchestra under the direction of Victor Saudek; the Westminster Choir of Dayton, Ohio, consisting of sixty voices; the Fellow's Club Quartet, well-known for the many concerts presented from KDKA, and concluding with a theatrical review from the Grand Theatre, Pittsburgh, when the California Ramblers, the Devoe Trio, Elias Breeskin, concert-master of the Grand Theatre Orchestra, and David Broudy, conductor and violinist of the same orchestra, took part in the program.

One of the most outstanding features of the evening broadcast was the address by Vice President H. P. Davis, Father of Radio Broadcasting.

### SUPPORT THE RADIO SHOW, 1926

Pittsburgh's place as the fountain head of radio can never be challenged and the position of the city historically could not be improved, yet it is through the successful operation of a show such as will be held at Duquesne Garden from October 4 to 9 inclusive that continuance of the city as a serious radio factor can be guaranteed. No resting upon laurels can be permitted in these modern years; the pioneer has to work as hard as the newest entry if place is to be maintained. For that reason, if for no other, it is necessary that every listener-in take interest in the coming display no less than those who are commercially involved in the business. It must never be forgotten in radio that Pittsburgh men and Pittsburgh energy brought the industry into being; likewise the continuous progress of the city must be fostered at all times.

KDKA is now busy with one of the most ambitious programs it ever presented to celebrate the fifth anniversary of the opening of the Post studio. It is also the fifth anniversary of the radio, as present-day audiences know it. Hence the holding of the show only a few weeks later has singular aptness. It is now time for the audiences to give of their time and thought to the improvement of radio by means of the Pittsburgh show. Their habit has been to receive the programs and enjoy them without care. Now they may do some little in return. The coming exhibition is worthy the support of all Pittsburghers; if its sponsors are assured they will receive it, the show will be a credit to the city and the industry it made possible.

Cleveland Plain Dealer

## WESTINGHOUSE MEN TO RALLY

### Executives Coming for Veterans' Dance.

Executives of the Westinghouse Electric Manufacturing Co. will attend the banquet of the Cleveland chapter of the Westinghouse Veteran Employees' Association at Hotel Cleveland to-



H. P. DAVIS

night. H. P. Davis, vice president of the Westinghouse company, and chairman of the board of directors of the National Broadcasting Co., will speak.

The veteran employees are holding their fifth annual meeting. The Cleveland chapter is composed of approximately 100 men who have served the company twenty years or more.

When Westinghouse employees reach retiring age pensions are paid. After twenty years' service each employe is given a \$2,000 paid-up insurance policy, and in case of illness is allowed \$75 a month.

Others on the speaking program are Alexander Taylor, assistant to the vice president, and E. C. McClelland, director of personnel.

Officers of the veterans' chapter are: G. Zahn, president; F. W. Pascoe, vice president; C. W. Westerman, secretary, and W. R. A. Reid, treasurer. Trustees are F. X. Zehe, F. J. Herbold and A. J. Malchior.

TELEGRAMS: "STANDATION, BOWEST, LONDON."

TELEPHONES: { VICTORIA 3127.  
VICTORIA 3128.

# British Engineering Standards Association.

(INCORPORATED 1918)

FORMED IN 1901 AS THE ENGINEERING STANDARDS COMMITTEE BY:-

THE INSTITUTION OF CIVIL ENGINEERS.  
THE INSTITUTION OF MECHANICAL ENGINEERS.  
THE INSTITUTION OF NAVAL ARCHITECTS.  
THE IRON AND STEEL INSTITUTE.  
THE INSTITUTION OF ELECTRICAL ENGINEERS.

CHAIRMAN:  
SIR ARCHIBALD DENNY, BART.

M/AW

SECRETARY:  
C. LE MAISTRE, C.B.E.

IN ANY FURTHER COMMUNICATIONS  
ON THIS SUBJECT PLEASE QUOTE

-/-/0  
YOUR REFERENCE

28, Victoria Street, Westminster,  
London, S.W.1.

1st January, 1926.

Mr. C.E. Skinner,  
The Westinghouse Electric Co.,  
East Pittsburgh, PA.,  
U.S.A.

*Mr Davis please note*  
*C. Le Maistre*  
Dear Mr. Skinner,

You will be quite interested to know that I heard Mr. Davis, the Vice-President of the Company, speak on the wireless last night. The atmospherics were very bad and it was rather like a big storm at sea with the rushes and crackling. However, I heard perfectly clearly the man announcing Mr. Davis' speech and I heard Mr. Davis give the greetings to the British Empire and Europe. It is truly wonderful that in spite of those difficulties one should nevertheless be able to hear so clearly. That was about  $\frac{1}{4}$  to 1 by our time, so it was in 1926 for us and 1925 for you.

Wishing you a happy New Year,

Yours sincerely,

*C. Le Maistre*  
Secretary.

PLEASE ADDRESS ALL COMMUNICATIONS TO "THE SECRETARY BRITISH ENGINEERING STANDARDS ASSOCIATION,"

# TALK TO MEN IN FAR NORTH BY H. P. DAVIS

## Father of Broadcasting Promises Extensive Programs To Isolated Places.

H. P. Davis, originator of radio entertainment broadcasting, related the possibilities of radio broadcasting messages and news to isolated parts of the world last night through Westinghouse Radio Station KDKA. His address, in part, follows:

Tonight's Far North program, the last of several broadcasts to be made by Westinghouse stations for those isolated in the cold waste lands of the North, I believe to be the forerunner of radio developments which will transform the conditions under which these traders, officers and natives now live.

Very probably those living in these isolated places find that their greatest burden is not the physical hardships they undergo but the isolation. I venture that if those who now are living in Craig Harbor, Pond's Inlet, Panglirtung, and other points, were to get a message from the outside world each day, life for them would be much more enjoyable.

Few natural barriers interpose between the efficient transmitting station and the efficient receiver, and therefore communication between the lonely trader and his headquarters is but a matter of scheduling in advance the time of broadcasting. Tonight's broadcasting, for instance, was scheduled six months ago.

The Westinghouse Electric and Manufacturing Company is gratified to know that its service has been a means of modifying the uncertainty surrounding those living in these distant places.

It is fairly certain that radio eventually will bring to those isolated places not only the spoken word but visual messages. The time will come when something on the order of a regular service will be available and the fact of being hundreds of miles from the outposts of civilization will mean nothing more than physical isolation.

### BIRTHDAY OF A PIONEER.

The most significant feature of the celebration last evening of the fifth anniversary of the founding of the studio of KDKA, the radio broadcasting station operated jointly by The Post and the Westinghouse Electric and Manufacturing Company, was the revelation that this station, "the pioneer," is still pioneering. First to broadcast music by wireless telephony, first thus to transmit church services, and first to disseminate news, KDKA, now but one among many hundreds of broadcasting stations scattered throughout the civilized world, continues to lead the way. Not content to rest on its laurels, it has transformed its studio, utilizing the latest discoveries in acoustics and giving no less attention to esthetic than to scientific improvement. The result is that the new broadcasting rooms are the last word in modernness of equipment.

Millions of persons listen to the programs broadcast from KDKA. The vast audience is distributed throughout the globe. Navigators in the Arctic regions, explorers in the African jungle, armies campaigning in Asia, travelers in the interior of South America, have heard song and speech as flashed through the air from The Post's studio. The news, therefore, that the facilities for broadcasting have once more been bettered is of world-wide interest.

No fairy tale of science is more wondrous than the story of the development of radio, which is told in the history of KDKA. It is a remarkable commentary on the rapidity with which the art of broadcasting has grown that, although radio has become a gigantic industry, the founders of the enterprise, who took part in the exercises last evening, are only about six years older than when the first program was broadcast. None of the other remarkable scientific developments of the age, striking as many of them are, can show such rapidity of growth.

Americans may well be proud that their Nation was the leader in this development. Pennsylvanians should be just a little more proud, because their State was first. And Pittsburghers should be proudest of all because it was here that broadcasting had its birth. We are prone not to appreciate familiar things at their full value. Let not that mistake be made in regard to Pittsburgh's position as the birthplace of wireless telephone broadcasting. The Chamber of Commerce lists this among the city's claims to distinction.

Station KDKA has become historic. And it continues to pioneer.

N.Y. Herald Tribune  
January 3, 1926

Radio as a Service  
By H. P. DAVIS

Vice-President, Westinghouse Electric and Manufacturing Company

By a swift flight of technical advancement and development without parallel in history, radio, the plaything of the past, had been developed into a service of universal appeal. It now has arrived at a period of great moment but of considerable uncertainty where its future depends upon the wisdom used in the solution of its many problems.

These problems have to do with the organization of broadcasting, its financing and the development of better quality in reception and in the character of the programs. I refer also to the proposed governmental regulations and laws. The gigantic business that is radio will be affected directly as the development of broadcasting is furthered or hindered, because it is the foundation on which the industry is builded.

I believe, however, that the measures now being taken are constructive and along proper lines and it is my firm conviction that we soon will see broadcasting on a basis of excellent service and permanence and administered in a way which will satisfy and convince the public of these facts. With this established, radio as an industry and as a service will be free to expand without restriction and become an agency of a scope not fully realized at the present day.

### Last Night on the Radio

BY O. M. STATIC

Although it was not the most entertaining programme of the evening, the Worcester Tech Radio Dinner was one of those things that should be listened to, as sort of a tribute to radio itself. As H. P. Davis, vice-president of the Westinghouse Electric & Manufacturing Company stated, we are apt to accept these modern miracles in a very matter of sort way. But it was interesting to review the history of radio broadcasting from its birth a little over eight years ago with Mr. Davis, himself a graduate of Worcester Polytech in the class of '09 and known as the father of radio broadcasting.

1925

38

April 19, 1926

Mr. C. J. Fechheimer,  
Power Eng. Department,  
Westinghouse El. & Mfg. Co.,  
East Pittsburgh, Penn'a.

Dear Mr. Fechheimer:-

On account of the local holiday I have been  
unable to reply ere this to your telegram reading:

A STUDY HAS BEEN MADE OF PATENTS ON TURBOGENERATORS  
IN A BRIEF SEARCH NO PATENT ON THE PLATE ROTOR CON-  
STRUCTION WAS FOUND. DID NOT YOU OR FIELD GET A  
PATENT? CAN YOU GIVE ME THE NUMBER OR HOW TO LOCATE  
IT? PLEASE WIRE REPLY TO-DAY IF POSSIBLE ?

I sent you a night letter reading:

PLATE ROTOR WAS INVENTED BY ME IN 1909 STOP NO  
PATENS WERE APPLIED FOR BY COMPANY'S ATTORNEYS STOP  
LAMME IN CONFIDENTIAL REPORT TO GEORGE WESTINGHOUSE  
STRONGLY OPPOSED DESIGN OF FIRST TEN-THOUSAND KILOWATT  
UNIT WHICH H. P. DAVIS AND I PUSHED THROUGH STOP  
AM WRITING.

I invented the plate construction to get away  
from the almost uniform troubles which the Westinghouse  
Company had experienced with their solid forged rotors and  
cast steel rotors. Mr. Davis backed the idea as he saw  
its great commercial and engineering import.

In a conference which I had with Mr. Westinghouse  
at his request he bitterly opposed the radial slot type  
and the plate construction. Mr. E. M. Herr was present  
at this conference. Mr. Westinghouse repeatedly referred  
to a report, made jointly by Mr. W. L. Waters and Mr. Lamme,  
opposing both the radial slot and the plate rotor type.  
This report had never been submitted to either Mr. Davis,  
who was Mr. Lamme's chief, or myself, who had charge of the  
power engineering department.

But for Mr. Davis, the case would have been

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Mr. Carr, 1000 ...

been used and the obsolete ideas embodied in the solid  
rotor with parallel slot would doubtless still be used  
by the Westinghouse Company.

After the success of the type had been demon-  
strated, Mr. Field and I invented the end ring damper  
for single-phase turbo-generators on which a joint patent  
was taken out by the company upon the urging by Mr. Davis.  
Mr. Lamme then presented his paper in 1912 on the radial  
slot plate construction in which no reference to my invention  
occurs. Mr. Field, in discussing the paper, stated that  
it was entirely the work of myself and the editing committee  
trimmed down his remarks to what they now read in the Trans-  
actions.

Mr. Carr was repeatedly approached as to whether  
he did not wish to cover the idea of the plate rotor.  
Perhaps he can tell you why he did not take out patents on  
a type of machine which has become of the utmost importance  
to the industry. It may be that Mr. Terry can tell you  
about it also.

Please remember that I first used the radial  
slot construction in 1902 and that not until 1911 or 1912  
did the General Electric Company adopt this type after a  
number of fruitless attempts to develop a better type.  
With the exception of some two or three radial slot machines  
built by the Westinghouse Company, the radial slot type with  
the plate construction were introduced by me and it is  
one more credit to the great leadership of H. P. Davis that  
he pushed it through over the opposition of George Westing-  
house and Mr. Lamme. I alone could never have ~~it~~ done  
it. Perhaps some day the wilful and ignorant group of  
men who cannot see this will give him the undying credit  
he deserves.

Field proved through all this the extremely  
able and valuable engineer you all know him to have been.  
He did not invent or share in the invention of the plate  
construction proper and he was always the first to say so  
in his papers before the British Institution of El. Engineers  
and elsewhere. So far as I am concerned personally, however,  
I wish to feel that he shared in all the work I had an  
opportunity to do as finer type and cleaner manhood never  
labored in our industry.

Yours sincerely,

(signed) B. A. Behrend

Copy to Mr. Davis.

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sold, re-copied, or published without permission. Please note that this material may be protected by copyright (Title 17, U.S. Code.)

Pittsburgh Post  
July 18, 1926

**CITY'S RADIO ARM REACHES FAR.**

Pittsburgh's place in the history of radio broadcasting is secure. It is the pioneer, through KDKA, the world-noted station of the Westinghouse Electric & Manufacturing Company and The Pittsburgh Post, and its right to that honorable ranking cannot be questioned. But past performance is not enough. The modern world demands progress unceasing and continuing or the position of leader will be taken by some aspirant whose record is not so long but whose perseverance is greater.

There is romance in the feat most recently placed to the credit of KDKA and its sister-station of WBZ, Springfield, Mass. From Pittsburgh and from Springfield a message was sent which was received 17 degrees of latitude south of the North Pole and which saved the lives of a hardy group of hunters and trappers caught in an outpost of the Northern wastes foodless and all but hopeless. The Hudson Bay Company, lord of the manor over vast reaches of Canadian wilds, had sent a ship carrying supplies for Southampton Island. It was crushed in the ice. Another ship was at once dispatched. It was too late; the short Arctic summer had closed and the fur-gatherers were left without food to carry them over the winter.

It was at this crisis that the Hudson Bay officials appealed to KDKA and its sister station, a high compliment in itself and one won by the wonderful distance records made by the Westinghouse system. A "life and death" message was sent out into the air. Word has come from the Northern fastnesses that it was received at Chesterfield Inlet by Father Pigeon of the Oblate Fathers. Supplies and food were rushed and the rescue made. The messages were sent once each week without hope of knowing the result until months later, directions being given at the same time as to the course ships and supplies should take. In this story there is motion picture material for a "North-Western" that would satisfy the most avid seeker after sensation.

From the Steamship Cathemet comes a letter dated June 7, when the ship was at Sekondi on the Gold Coast of West Africa, informing KDKA of reception of programs in that distant plate of the Southern Hemisphere. On May 24, William DeMello, wireless operator, tuned in on KDKA, the ship being then at Matadi, 100 miles up the Congo river. The following day he also had the station. On May 31, the ship was riding at sea-buoy at Lome, French Dahomey, and fine reception of a Pittsburgh program sent out from The Post's studio was had. On other

days and at other places this ship sailing the outermost seas has been in direct contact with Pittsburgh.

It is odd that such wonderful results should come at this time when scientists are concerned over the effect of eruptive sun-spots on radio reception. Amateurs have noted the difficulty of gaining reception from stations only a few hundreds of miles away. Yet here are two instances, one from the far North and one from the distant South, where static did not count. In the one instance, KDKA proved itself an efficient public servant by performing a valuable service to suffering humanity; in the other it relieved the tedium of lonely hours on a ship. More than that, it gave a concrete demonstration of Pittsburgh's superiority. The pioneer remains the outstanding figure after lapse of a period of years, and that is achievement in itself.

# RADIO STUDIO TO OBSERVE ANNIVERSARY

**Pittsburgh Post and Westinghouse Company Rounds Out Five Years of Service.**

## SPECIAL PROGRAM TONIGHT

Westinghouse station KDKA, pioneer broadcasting station of the world, will celebrate its fifth anniversary of furnishing radio entertainment from the studio of The Pittsburgh Post tonight. It is nearly six years, however, since the station was established.

In observance of the anniversary a special program has been arranged that will give a review of the outstanding features presented by the studio since its beginning. The first offering will be by the Westinghouse Employees band, which played in the early days of radio broadcasting. The concert will continue from 5:30 to 6:15 o'clock.

Announcement of baseball scores after the musical program will recall that in the opening of the 1921 pennant race this station was the first to broadcast results of games. Late news items will be read after which a program by the Radio Entertainment Company will be put on the air.

### PIONEERS TO SPEAK.

Addresses will then be given by H. P. Davis, vice-president of the Westinghouse Electric and Manufacturing Company, and recognized as the father of radio broadcasting; A. E. Braun, president of The Post and The Sun; Dr. John G. Bowman, chancellor of the University of Pittsburgh, a pioneer in radio from the standpoint of promoting the broadcasting of educational lectures; Harry Davis, president of the Harry Davis Enterprises, the first theatrical man to grant permission for a broadcasting station to transmit a play direct from the stage, and Rev. Percival H. Barker, one of the early pioneer ministers on the radio.

These addresses will be followed by a sacred song concert presented by the First Presbyterian Church quartet, Miss Margaret Spaulding, soprano; Alberta Murray Barber, contralto; Will Rhodes, tenor, and Fred Ayers, bass, accompanied by Will Reger. This part of the program has been a Tuesday evening feature at station KDKA a year. At 8:30 o'clock, Eastern standard time, Ross Skinner, who has returned from an extended trip to foreign countries, will speak for five minutes, followed by the KDKA Little Symphony Orchestra, directed by Victor Saudek, the world's best known radio conductor, and the Symphony Choir, presenting a special program. This will be followed by a popular dance program played by Etzi Covato and his Flotilla Club Orchestra.

### RADI

**GROWTH RAPID.**  
The rapid growth of the telephone has been with which the radio of the world's day has become an integral part of life in history.

In 1905, the Westinghouse Company installed an experimental house transmitting and receiving station in a garage at the home of Frank Conrad, then a research engineer of the company. This station was in Wilkesburg. Shortly after the beginning of the World war it became the experimental headquarters for radio equipment to be used by the various allied combatants. Upon the entry of the United States into the war the work was done solely for the armed forces. Conrad designed the only American-made radio transmitter used in the war zone by American troops.

In the spring of 1919 Conrad began transmitting radio telephone service. It became his custom to transmit programs of phonograph records to those interested in radio. Before long the 8XK station known to amateurs became the entertainer of small audiences and it was not long before Conrad realized that his audiences nightly numbered several hundred. As a test he broadcast that he would send music from 8XK to those listeners who would send records and it was a gratifying surprise to receive over 400 selections. A Pittsburgh department store made arrangements for special programs and advertised the fact in newspapers.

Meanwhile Vice President Davis had watched with interest the progress of Conrad's experiments. To further the development of the service he directed that the experiment station be moved to the Westinghouse Works at East Pittsburgh and further that a system of radio broadcasting be started. Thus Davis is now known internationally as "the father of radio broadcasting."

To J. C. McQuiston, manager of the department of publicity of the Westinghouse Company, was assigned the task of arranging the programs. McQuiston's first move was the alliance between The Post and Station KDKA.

### FIRST STATION.

The first Westinghouse broadcasting station was installed on the roof of a nine-story building at the East Pittsburgh Works. Fall came and with it the preparations for the Presidential election. Strangely enough it seemed preordained that the first Westinghouse program should consist of the reporting of the Harding-Cox election returns. To broadcast the returns they were first collected at The Pittsburgh Post and by means of a direct telephone connection between the newspaper offices and the station, were broadcast by KDKA.

It is interesting to note that when application was made for a license the Westinghouse company was assigned the call letters KDKA which were taken from a list provided for ship radio stations.

The first programs were not perfect either in arrangement or transmission. There was no studio and the microphone was installed in the room with the transmitter. In the early days the phonograph provided the

music, although the broadcasting of news found considerable favor. So it was realized that in order to hold the public interest a variety of programs must be introduced. And this was done.

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# Anniversary Program Given By KDKA to Dedicate New Pittsburgh Post Studio

## Millions Take Part in Celebrating Fifth Birthday.

### PROMINENT MEN ON PROGRAM

The Pittsburgh Post's new radio studio was dedicated last night and the anniversaries of the studio and of broadcasting through Westinghouse station KDKA were celebrated with an elaborate program that included addresses by business and professional men who contributed to the initial and continuous success of broadcasting over KDKA.

#### MILLIONS TAKE PART.

Millions of persons in all parts of the world were able to take part in the observance through the operation

of the Westinghouse international relay system, which carried the program to foreign countries and made it possible for broadcasting stations to re-broadcast it.

Many visitors thronged the reception room which adjoins the broadcasting room in the studio, and listened to the addresses and music.

The program began with a dinner concert, played by the Westinghouse Employees' Band, directed by T. J. Vastine, the pioneer band in the radio field. This was followed by a summary of the day's sports and other news. The Pittsburgh Post was the first newspaper to release news over the air.

The studio observed its fifth birthday, and KDKA has been broadcasting for almost six years. The Pittsburgh Post was the first newspaper in the world to adopt radio and it has led the field ever since. Hundreds of telephone calls from the immediate vicinity and

(Continued on Page Ten, Col. One.)

# Anniversary Program Given by KDKA

(Continued From Page One.)

many telegrams were received from the unseen audience congratulating The Post KDKA upon the opening of the new studio.

#### ARLIN ANNOUNCES PROGRAM.

H. W. Arlin, the pioneer radio announcer, introduced the men who made the addresses. Mr. Braun, president of The Pittsburgh Post-Sun, the first speaker, said: "Almost six years ago radio broadcasting was born in the home of The Pittsburgh Post, when the voting results of the 1920 Presidential election were put upon the air."

"It was a new and unprecedented service for a newspaper to render, and hailed by some with grave misgivings. The Post believed that here was a field which could not ignore. It was the belief of The Post that a newspaper more than a commercial enterprise, that a metropolitan journal owes to the public a certain measure of unselfish service, that a newspaper to do great things, in short, conduct itself as a public institution. The Post felt that science in radio had placed before it an opportunity to make a contribution of magnitude to the social values of the time."

#### DEDICATED TO PUBLIC.

"So here we are tonight to dedicate to the public service a new and larger studio. It is not the second, but the third, that has followed since that night of memorable experiment in 1920. And it so happens that the dedication tonight marks the fifth anniversary of the opening of the first especially equipped studio in this building in 1921."

"The men who make The Post naturally are proud of the record of achievement that makes necessary this new studio. It is a direct response to your many expressions of approval of the entertainment that has been broadcast from this build-

ing. It will, it is hoped, make possible the presentation of ever more attractive programs in the future."

"But not only the management and employees of The Post have a share in the satisfaction of this evening. The honors and the credit go very largely to the ever-expanding circle of those who read The Post and honor it with their confidence. So, tonight from 160,000 firesides where The Post is a daily visitor, and from nearly 200,000 homes where the Sunday Post is a welcome guest, greetings go out—we are sure—to all the millions of listeners who throughout the wide world look nightly to KDKA and this studio for relief from the tedium of daily toil."

"Men of distinguished service to radio are to talk to you briefly tonight. Representing the widest aspects of broadcasting and the specialized fields of education, music, the stage and the pulpit, they will tell you what your appreciation has meant to them. In the hand regard you have for them and the fields they represent The Post joins right heartily."

"It gives me great pleasure to dedicate this studio to your service and your entertainment."

#### AIMS SIMILAR.

At the conclusion of Mr. Braun's address, Mr. Arlin then introduced H. P. Davis, vice president of Westinghouse and recognized as the Father of Radio Broadcasting, who said: "Broadcasting numbers among its most important collaborators the daily newspaper which, from the first, happily for all concerned, has given freely of its facilities to the all-pervading voice of the broadcasting station. Having similar aims with regard to public welfare, each is a natural supplement of the other and upon countless occasions each has rendered to the other some outstanding service. There has grown from this rela-

tion a mutual respect and a close cooperation from which the public, I am glad to say, has reaped the benefit."

"Since the beginning of broadcasting there has been a very close and happy association between The Pittsburgh Post and The Pittsburgh Sun and station KDKA, of the Westinghouse Electric and Manufacturing Co."

#### PIONEER PROGRAM.

"Those two newspapers, pioneers in their association with broadcasting, will always share in the history of our pioneer station because of their cooperation with KDKA in furnishing the news, which was broadcast, of the election on November 2, 1920, that resulted in the elevation of the late Warren G. Harding to the Presidency of the United States."

"This pioneer program will ever remain in history as the beginning of broadcasting."

"In the years that have followed because of their continued cooperation The Pittsburgh Post and The Pittsburgh Sun have added much of interest to the record of broadcasting."

"From The Pittsburgh Post studio which have preceded the one we are dedicating tonight have been transmitted many of KDKA's record achieving and pioneering programs, these including those first transmitted to the far North to Honolulu, Australia and other distant points."

#### NOTED PERSONS AT STUDIO.

"Many well-known figures from Government circles, the concert stage and theatrical world, financiers, foreign diplomats and others whose names are familiar wherever the printed word is read, have confronted KDKA's microphone from its Pittsburgh Post studio."

"The beautiful studio from which I speak attests eloquently to the progressive spirit of these newspapers and their close interest in the ad-

expended to, so perfect its details that programs here broadcast have a richness and clearness in total effect obtainable in few existing studios.

#### COMPARES OLD AND NEW.

"We have seen the development of broadcasting, with limitations to the knowledge and organization of the newspaper. In the beginning there were, of course, only a few broadcasting stations located in various parts of the country, each with a limited audience."

"Likewise the newspapers of many years ago were comparatively few and each had a limited circulation."

"As broadcasting developed, hundreds of stations were added to the original few, but among them were certain ones which were outstanding in program quality and transmitting efficiency, thus enabling them to reach and hold great audiences and so acquire national and even international reputation."

"Here again, we may make a comparison with the newspaper world, where in later years, as the population warranted and civilization required, newspapers increased in numbers and the development came about of certain outstanding publications growing to large circulations because of an editorial content that gave them leadership."

#### TELEGRAPH LINKS NEWSPAPERS

"Coincident with the growth in numbers of newspapers and collaborating with them has come the news associations, which gathering news from sources located in every part of the globe, are linked by telegraph with the public prints, so that an event of importance is received and published simultaneously by all newspapers associated with the service."

"Again we may compare this with the familiar linking of broadcasting stations, either by telephone line or short wave radio repeating, whereby a program emanating from a central source is broadcast simultaneously from many widely separated points."

"The purpose of these comparisons is to point out that the history of both the daily press and broadcasting shows them to have been developed and gradually organized to give service to as great a part of the public as possible and to give that service as efficiently and as timely as it can be done. In direct proportion, as they have accomplished this object, have they been successful and gained pre-eminence."

#### PART OF FAMILY LIFE.

"One more comparison and a differentiation. Both daily press and broadcasting reach the people in their homes and thus are an integral part of American family daily home life."

"It is upon this fact that their present high state of influence is based. But broadcasting goes a step further. It is colorful and personal as the printed word can never be."

"The ability to add an intimate personality to the program offering, the fact that it enables listeners to hear the actual voice of the speakers often that of famous personages of which one reads, or to hear details of events direct from the scene of actions, is the supreme and exclusive virtue of broadcasting."

#### RADIO BRINGS CONTACT.

"The listener feels a certain friendliness with the artist or broadcast speaker who may be representing the Government, a great corporation, a public utility, or association, which is not effected in any way except by direct personal contact."

"Thus we come to the source of radio's greatest effectiveness, its ability to create better understanding and fellowship between those separated by distance or conditions."

"It is my earnest wish that as the newspaper and broadcasting go on their way, increasing their effective-

#### CHANCELLOR BOWMAN SPEAKS.

Following Mr. Davis, Dr. John G. Bowman, Chancellor of the University of Pittsburgh, was then introduced. Dr. Bowman said: "Some days ago I had a chance to be idle. I like such days. On this one I got to thinking about who invented the first wheel. What did the person, man or woman, look like? How did he happen to discover the wheel? What did his friends think of his new invention? What did he do with it or try to do with it?"

"The more I thought about the wheel the greater the invention seemed to grow. I felt personally indebted to that inventor. There would be no Pittsburgh Post, you know, nor Post radio station, nor Westinghouse nor a great many other things if it were not for him. He lived away off yonder

before history began, but he was very useful."

#### FATHER OF BROADCASTING

"I have been thinking a great deal about that inventor in connection with this radio program. Perhaps a thousand years from now some one will ask who started broadcasting. What did he look like? How did he happen to do it? What do his friends think of it? Then, perhaps, they will look up the answers to these questions. If they do, they will find the name of H. P. Davis, who is on this program tonight, and the name of E. M. Herr, who quietly, back of the scenes, helped to put the radio into use."

"Radio was a great invention, not as great as the wheel, but still it takes its position among the small group of inventions to which the wheel belongs. In dedicating this Post radio this evening, it is natural to ask for the real bottom purpose of this studio."

#### NEWS NOT MAIN REASON.

"The answer is, of course, that through this station the Post will broadcast news. That is good, but to me it is not the main reason. In general, the radio is a means of transmitting through the world the best that man has thought and felt and said. Much of it comes as news, further, poetry, music, over the air. But, also, a good deal is not the main reason."

"The main value of this studio will be in the casting of good music. Music is the by which, more than any other, comes to us. Faith comes into us; but a musician casts faith into us. Faith is a belief in the good in man, and in things we feel rather than reason about. It seems to me that almost nothing is more important than a wide diffusion and increase of faith. The Post studio will help to keep us young, that any man or woman who keeps on learning will have a greater measure of faith in his life."

#### OWE DEBT OF GRATITUDE.

"But, you say, the radio sends out jazz music. It does not produce much faith. The answer to that is

that while you may not like jazz music, there are thousands of others who do. I suggest that these thousands will want to listen to jazz music perhaps for some years to come, but gradually they will want better music; then they will begin to write letters to The Post saying that they are tired of jazz, and asking for better music. When this happens, The Post will cut down on the supply of jazz, and send out better music. We know that people get about what they want. In time, radio programs will improve very much as the first wheel has been improved. Day after day programs of fine music will go out on the air, and tens of thousands of people will understand that music and perhaps, unawares, find their lives more full of faith and of happiness. It seems to me that we all owe The Post a debt

64:21

Scrapbook 1925

Box 3

FF 38

Davis, H.P. 1868-1931, Papers, 1915-1944

Electrical World  
December 25, 1926

### H. P. Davis Heads Radio Company Board

H. P. Davis, vice-president of the Westinghouse Electric & Manufacturing Company, in charge of manufacturing and engineering, has been elected chairman of the board of directors of the National Broadcasting Company, recently organized. In commenting on the choice of Mr. Davis, M. H. Amesworth, president of the company, said: "The selection of Mr. Davis is, perhaps, the best symbol of the fact that no effort will be spared to develop a broadcasting service which will permanently establish the primacy of the United States in the broadcasting art as pronounced as its leadership in the radio industry and international wire- less communication."

As a designing engineer and as a manufacturing executive Mr. Davis has held a prominent position in the electrical industry for a number of years. His affiliation with the Westinghouse company dates back to 1891, when he entered the detail engineering depart-



H. P. DAVIS

ment after a short connection with the Thomson-Houston Electric Company. In 1896 he was placed in charge of the department and in 1908 he was appointed manager of the company's engineering department. Three years later his promotion to a vice-presidency followed, the position he occupies at the present time.

The list of patents issued to Mr. Davis shows the breadth of his interest in the chain of apparatus that constitutes every electrical installation. In addition he has done excellent creative work with arc lamps and meters, to say nothing of his activity in the field of radio broadcasting. He is a member of the American Institute of Electrical Engineers, the Electrical Society of Western Pennsylvania and other technical associations.

The directors of the National Broadcasting Company now include the following: Owen D. Young, General Guy E. Tripp, General Swope, E. M. Herr, General J. G. Harbord, David Sarnoff, William Brown, E. W. Harden and Dwight W. Morrow.

New York Sun  
October 9, 1926

### Davis Lauds Press as Radio Booster

THE importance of the daily newspaper to the development and maintenance of broadcasting is acknowledged by Vice-President H. P. Davis of the Westinghouse Electric and Manufacturing Company, head of his company's broadcasting organization.

A statement in which he outlines the similarity of the growth in development of the newspaper and broadcasting, the importance of their collaboration and points that the personality of broadcasting is responsible for its success follows:

"Broadcasting numbers among its

most important collaborators the daily newspaper, which from the first, happily for all concerned, has given freely of its facilities to the all prevailing voice of the broadcasting station. Having similar aims with respect to public welfare each is a natural supplement of the other, and upon countless occasions each has rendered to the other some outstanding service.

"There has grown from this relation a mutual respect and a close cooperation from which the public, I am glad to say, has reaped the benefit.

"We may compare the development of broadcasting, with limitations, to the growth and organization of the newspaper. In the beginning there were, of course, only a few broadcasting stations, located in various parts of the country, each with a limited audience.

"Likewise the newspapers of many years ago were comparatively few and each had a limited circulation.

#### Stations Increase.

"As broadcasting developed hundreds of stations were added to the original few, but among them were certain ones which were outstanding in program quality and transmitting efficiency, thus enabling them to reach and hold great audiences and so acquire national and even international reputation.

"Here, again, we may make a comparison with the newspaper world, where in later years, as population warranted and civilization required, newspapers increased in numbers and the development came about of certain outstanding publications acquiring a large circulation because of an editorial content that gave them leadership.

"Coincident with the growth in numbers of newspapers and collaborating with them have come the news associations, which, gathering news from sources located in every part of the globe, are linked by telegraph with the public prints, so that an event of importance is received and published simultaneously by all newspapers associated with the service.

### The Radio Show

The Radio Show, sponsored by the Radio Chamber, is commented on editorially by the Pittsburgh Post as follows:

"Pittsburgh's place as the fountain head could not be challenged and the position of the city could not be improved, yet it is through the operation of a show such as will be held at Duquesne from October 4 to 9, inclusive, that continuing city as a serious radio factor can be guaranteed. The pioneer laurels can be permitted in these days upon the pioneer has to work as hard as the newest is to be maintained. For that reason, if necessary that every listener-in take interest in the con display, no less than those who are commercially involved in the business. It must never be forgotten in radio Pittsburgh men and Pittsburgh energy brought the industry into being; likewise the continuous progress of the must be fostered at all times.

"KDKA is now busy with one of the most programs it ever presented to celebrate the fifth anniversary of the opening of The Post studio. It is the fifth anniversary of the radio, as present day we know it. Hence the holding of the show only a few later has singular aptness. It is now time for the industry to give of their time and thought to the development of radio by means of the Pittsburgh show. The habit has been to receive the programs and enjoy them without care. Now they may do some little in return. The coming exhibition is worthy the support of all Pittsburghers; if its sponsors are assured they will receive it, it will be a credit to the city and the industry it is possible."

#### Comparison Holds.

"Again we may compare this with the familiar linking of broadcasting stations, either by telephone line or short wave radio repeating, whereby a program emanating from a central source is broadcast simultaneously from many widely separated points.

"The purpose of these comparisons is to point out that the history of both the daily press and broadcasting shows them to have been developed and gradually organized to give service to as great a part of the public as possible, and to give that service as efficiently and as timely as it can be done. In direct proportion as they have accomplished this object, have they been successful and gained preeminence.

"One more comparison and a differentiation. Both daily press and broadcasting reach the people in their homes, and thus are an integral part of American family daily home life.

"It is upon this fact that their present high state of influence is based. But broadcasting goes a step further. It is colorful and personal as the printed word can never be.

"The ability to add an intimate personality to the program offering, the fact that it enables listeners to hear the actual voice of the speakers, often those famous personages of which one reads, or to hear details of events direct from the scene of action, is the supreme and exclusive virtue of broadcasting.

Davis  
elected  
Chairman of  
NBC

Pgs. Chamber of Commerce  
Grenier's Pittsburgh  
Sept 25 1926

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# BROADCAST LISTENER

Comments on radio programs, methods and technique  
—from the point of view of the average fan

By RAYMOND FRANCIS YATES

## Will Broadcasting Become A "Public Utility?"

BROADCASTING, in the mind of this sanguine reviewer, is still a vast experiment that has almost entirely eluded the business acumen of its Pittsburgh progenitors. It is a good idea running amuck.

The problem of making radio something more than a free lunch has been carried to the college professors of finance and economy for diagnosis but they have shaken their academic craniums in grave doubt. Broadcasting is to them a curious new specimen about as entertaining as a four-legged louse might be to the entomologist. It electrifies the imagination but it gripes judgment and reason. It is fascinating and dynamic with possibilities but it is at the same time loaded with a new kind of business poison that has within the last few years laid low an astonishingly large number of victims.

Bombastic, enthusiastic, enthusiastic America, the business laboratory and booby hatch of contemporary civilization, was the only hot house in which a nebulous idea like broadcasting could take root and sprout. "Telling the cockeyed world" is profoundly and characteristically American. Broadcasting, as an instrumentality for use in informing the strabismic world was immense; a wampus kitty of the best sort.

What greater ally of pep could man invent? It was magnificently Rotarian.

America went into the broadcasting business wholesale. It was the spectacle of a duck discovering water upon emerging from a desert.

Here was a new business tonic, a new medium for propaganda, publicity, advertising and good will. Breathless representatives of furniture stores, hotels, chiropractic schools, colleges, universities, street railways, city governments, department stores, churches, laundries, and manufacturers of a long and sundry list of things ranging from tooth paste to playing cards, besieged the Department of Commerce with applications for wavelengths.

Hastily instituted conferences found the conferees unanimous in their belief that a kilowatt of advertising would help them sell more toothpaste and linoleum than eleven pages in the *Saturday Evening Post* and that in radio they had at last discovered a medium which would permit them to tell their "message" to the public smoothly, adroitly and effectively. The expense was reasonable, the results obvious. You had but to squirt your stuff into the unprotesting ether and before you could say "Jack Rabbit" it would leak into a million homes, percolate through millions of receptive intelligences and send them right out into the streets hell-bent for a drug store dispensing

your dyspepsia tablets or a soda fountain unloading your ice.

Five years have passed since this hysteria was in flood tide and these years have disillusioned many a rampagous adherent to broadcasting. Tidy fortunes have been thrown to the bowwows in the search for the new elixir of advertising and many red-hot and violent passions formerly located in the cortex have slipped down to the stomach to produce nausea and colic. The events of the first three years were somewhat gratifying. The public, fascinated by the novelty of this new colossus of communication, was liberal and ingratiating in its correspondence. It was not long, however, before the public began to write itself out of appreciation. Then it finally became indifferent and calloused.

Now it is fickle and positively critical.

It has long since stopped writing to the enthusiastic managers of WBX and WVC and those enthusiastic managers have shown symptoms of palpitation in presenting their reports to the directors of the Little Wonder Gas Lighter Company and the Imperial Hotel.

The figures and the results are not on friendly terms.

These notes are not the random jottings of an alarmist nor are they the frothy musings of an armchair statistician. Broadcasting is in a precarious position. That is an obvious and demonstrable fact.

Every ruse to get public reaction in something more than a puny measure has been unavailing; and advertisers paying fancy sums for the services of toll stations have, in many instances, been unable to reconcile the expenditure with results. As an object of exploitation, the announcer has become as barren as a desert. His puerile harangues of by-gone days have been supplanted with the tasty morsels of deep-dyed psychologists; but even these have failed to make the public express itself. If the public does not write, one cannot send out one's booklet, one cannot tell one's dealers of the great interest shown in one's product and one cannot, with any degree of certainty, determine what one has done for oneself in the way of creating good will.

While the improvements in broadcasting technique have not been overwhelming, they have been perceptible, and diligent investigation would reveal a still-growing list of listeners.

The trouble is that the public has grown tired of writing and that is the price the broadcasters ask. Why should the public write? The responsibility for this thing rests with its Pittsburgh papas; with those who started it. Certainly not with those who were induced to support it.

The simple truth of the whole matter is that broadcasters are losing their incentive. The game is not worth the

New York Times  
Sept. 22, 1929

N.Y. TIMES 9-22-29

By H. P. DAVIS,

Vice President, Westinghouse Electric and Manufacturing Company.

The most important development in radio during the next year will be one that will improve and extend the service rendered by the broadcasting station, increasing its scope so as to make its service more widespread and more beneficial to the greatest number of radio listeners.

One forward step should be an increase in the power level of a restricted number of the principal broadcasting stations until such broadcasters have sufficient power to allow the use of receiving sets in less sensitive condition. This power

level increase will result in the elimination of much of the annoyance now caused by static and other interference and will greatly extend the dependable service range of such stations.

Visual broadcasting is rapidly forging ahead and may prove to be one of the important advances of this art in 1930 if developments now under way are successful so as to provide more practical receiving equipment than is now in existence.

candle. There are no evidences of panic, but an observer with anything like a sense of proportions cannot help but discern a growing uneasiness in the ranks of even the most faithful. The pressure on the Department of Commerce for new wavelength assignments has been considerably reduced and a surprisingly large number of studios were abandoned during 1925.

If the present system of broadcasting, which at its best is a haphazard, unorganized effort, is showing unmistakable signs of decay, what has the broadcast listener to look forward to?

While this Department has never had a record for crystal gazing, it cannot help but feel that broadcasting will survive only as a public utility. This means that eventually radios will be rented like gas stoves and telephones and that the renter will be responsible not only for the entertainment but for the care of the instrument as well. The present situation cannot endure indefinitely.

That is as plain as your gold tooth.

# 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 with short 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 re-

laying 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 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."

# H. P. DAVIS TO SPEAK ABOUT BROADCASTING

## Vice president of Westinghouse company will address elec- trical jobbers.

# HEADS GREAT INDUSTRY

## Father of radio was instrumental in establishing pioneer sta- tion KDKA.

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

H. P. DAVIS



radio telephone was in public casting. KDKA brought rad certs directly into the homes public and within a few mo wave of interest greater th other in history swept ov United States. Radio was on tongue. Many broadcasti were started and thousands of receiving sets were manu and sold.

The list of 75 patents issued Davis shows the breadth of his interest in the chain of apparatus constitutes every electrical in tion. This list is made up of items as resistance coils, breakers, controllers, fuse solenoid brakes, trolley clamps similar devices. A trouble-less mission line has been his idea he has done much to remedy defects in details that were sspicuous in the early days of electrical engineering. In addition, he also done excellent work with lamps and meters. His arc lam standard in the days when form of illumination was domi and his alternating-current mete which Frank Conrad was co-in or) superseded the original Shamberger type. For the last five years he has worked in wider but his devotion to the perfect every part has always been obtained.

Mr. Davis is known not only as a designing engineer of high rank, but also a man who gets things done. It is a tradition in his organization that whatever work is assigned to him is certain of rapid completion. This ability to accomplish results regardless of overwhelming difficulties was 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 fell upon him. The quantities involved were enormous.

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Yellow #6

# WORCESTER POLYTECHNIC INSTITUTE

DEPARTMENTS OF CHEMISTRY, CIVIL, MECHANICAL  
AND ELECTRICAL ENGINEERING

IRA N. HOLLIS, President

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(On leave of absence)  
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RAYMOND L. WITHAM, Instructor  
HARRY B. LINDSAY, Assistant  
ALBERT B. R. PROUTY, Assistant

TELEPHONE CONNECTION

Worcester, Massachusetts, May 10, 1915.

IN REPLY REFER TO

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~~ Kappa for literary and classical work. Since that time there has been established twenty-eight chapters in the leading scientific <sup>and</sup> engineering schools in this country with a total membership at present of about ten thousand

5/10/15

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,

*Harold B. Smith*

Pres. Worcester Chap. Soc. of Sigma Xi.

HBS/ME

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.

64:21 Box 1  
FFS

Davis, H.P. Business Correspondence,  
1915, 1920

Davis, H.P., 1868-1931. Papers, 1915-1944.

Yellow #7

ILY  
NING

SUNDAY  
MORNING

PUBLICATION DEPARTMENT

# 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.

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

*Stewart M. Chaufey*  
National Advertising.

SMC.KML

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*S. M. Clatchie*  
Ingenieur

Telegramm-Adresse:  
Clatchie Stuttgart

Bank-Konto:  
Commerz- und Privat-Bank

Stuttgart June 26, '25.  
Benzhalde 45.

Mr. C. W. Horn, Supt. of Radio Operations,  
Westinghouse Elec. & Mfg. Co.,  
East Pittsburgh, Pa.

Dear Mr. Horn:

On the way from New York to Cherbourg I made receiving tests, with the following interesting results: With the extremely unfavorable aerial I was able to put up on board ship, KDKA on 309 meters was so weak at a distance of about 1000 miles from New York that speech was scarcely understandable on a 3-tube set using one R.F. stage, regeneration and one audio stage. However, on 63 meters, using but two tubes, the signals were far too loud for comfort with the phones, indeed, the signals were of full loud-speaker volume. In Cleveland, on the other hand, the 309 meter and the 63 meter signals were of nearly equal strength. In Stuttgart I tried to pick up your signals on the morning of the 24th, hoping to hear the Prince of Wales program, but was unable to find a trace even of your 63 meter signals, altho I tried from 4 to 6 a.m. Please let me know whether you were sending between 10 p.m. and midnight, June 23rd.

I find much enthusiasm here for the idea of putting up a short-wave sender which would make German radio heard in America. The erection of the new high-power station at Stuttgart has not as yet been commenced, altho all plans are laid. The sender will be one of the most powerful among regular European broadcasting stations, and may put something like 5 kw into the aerial. It has been proposed that the new station should include a short-wave set. In the middle of July there will be an opportunity to discuss this matter with high government officials, and I would like to have you cable some information for use at that time. My questions are:

1. Can the entire power-supply, rectifying, and modulating equipment of a standard broadcasting transmitter be used without serious modification to feed a short-wave set? My question amounts to this: If, at KDKA, the 309 meter and 63 meter waves were not broadcast simultaneously, could you not run the short-wave set proper with the filament and plate supply equipment and with the modulating tubes otherwise used for the long-wave set, by a simple process of switching over. To put the matter in another way, if you were reduced to a minimum of equipment and desired to run the short-wave transmissions only after the regular broadcast program had closed down, could you get along with practically no additional apparatus for short-wave purposes other than that directly associated with the high-frequency oscillations?

2. What would be the approximate cost of the apparatus needed in addition to the equipment of a standard 10 kw broadcast transmitter in order to convert the same to a 60 meter wave-length?

3. Is it probable that a short-wave transmitter of the character indicated could be put together of parts available in Germany?

4. If the transmissions of such a sender as above indicated were carried out exclusively in cooperation with KDKA, would the Westinghouse Company probably be inclined to send at its own expense an engineer competent to put the sender in service, and also to supply as a loan such parts as are unobtainable in Germany? The thought is, that in

cooperation with KDKA, the short-wave station in question should broadcast special programs of its own, special programs to be picked up up from other European stations, and regular programs from other stations, all of this for the purpose of rebroadcasting by Westinghouse stations.

5. Can short-wave transmissions be picked up by crystal sets successfully and over approximately the same distances over which crystal reception of two to six hundred meter stations of equivalent power is practicable? Probably most of the above questions can be answered with "yes" and "no". If you will kindly cable, I will understand your answers to apply to the above questions in the order in which I have put them, so it will not be necessary to repeat the subject matter of the questions in order to identify the answers. Your cable reply should be in my hands before July 15th, if at all possible.

It may be remarked that Stuttgart is centrally situated for picking up and relaying the programs of the following important stations: Rome, Zurich, Vienna, Munich, Leipzig, Dresden, Frankfort, Brussels, Paris. This includes the world's greatest musical and artistic centers. I take it that the bringing of programs from such points to America would be an achievement of historical significance. I would be glad to have some indication as to how far your company might be inclined to go in contributing to such a project.

Sincerely yours,

*Stanley McClatchie*

June 27, 1925.

Mr. Stuart M. 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 subject 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 <sup>we</sup> you arrange for a date and place to meet as soon as possible.

Yours very truly,

*Wm. H. P. Davis*  
Vice President.

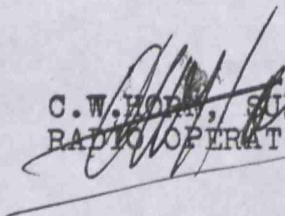
# Westinghouse Electric & Manufacturing Company

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 plan.

  
C.W. Hoby, Supt.,  
RADIO OPERATIONS.

CWH:O

# 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.

Mr. H. P. Davis,

Vice President.

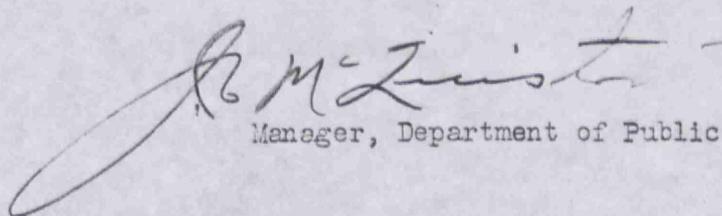
July 7, 1925.

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.

  
Manager, Department of Publicity.

M:E

July 8, 1925.

St. Louis Post-Dispatch,  
St. Louis, Mo.

Gentlemen:-

Attention of Mr. Chambers or Mr. Burbeck.

Apropos of the talk we had Monday and the questions raised relative to short wave transmission, I find on my desk on my return a letter which has been referred to me, written by the Fort Worth Star-Telegram which is one of the papers, as I understand it, in your chain. I am attaching a copy of this letter, from which it appears that Mr. Branch, Director of WBAP, ought to have information that will be helpful to you in sizing up what is possible at the present time with short waves.

Yours very truly,

~~W. P. D.~~  
Vice President.

Enclosure.

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

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.

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.

*M. P. Davis*

Vice President.

July 9, 1925.

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

*Papers filed  
with  
file*

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 owned 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-

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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 Referee 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 out-lying 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 Referee would confirm the right of the Radio Corporation to broadcast for pay.

It cannot be detrimental to the interests of the 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

**THE LARGEST CIRCULATION OF ANY NEWSPAPER IN TEXAS**

Afternoon and Morning

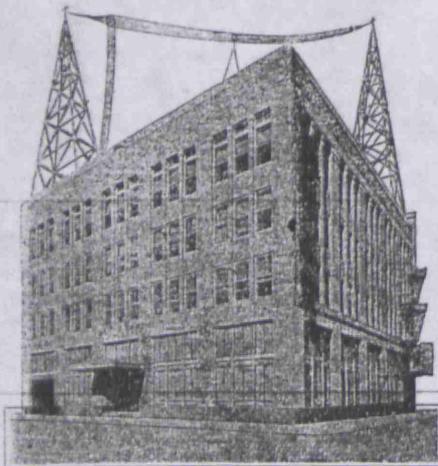
# Fort Worth Star-Telegram

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 & Manufacturing 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.

LARGEST CIRCULATION OF ANY NEWSPAPER IN TEXAS

Afternoon and Morning

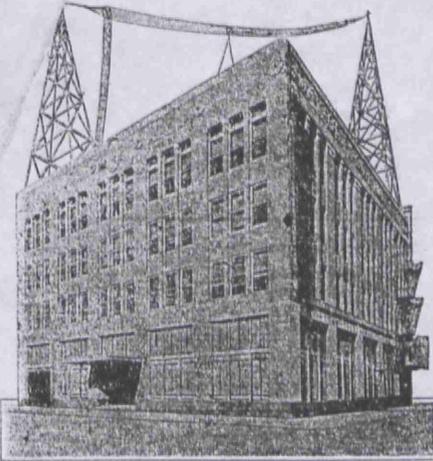
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HAROLD V. HOUGH,  
Treasurer and Circulation Manager

Fort Worth, Texas,

Page #2.

It might be possible that after learning more about us from this letter you will reconsider as to whether or not 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

JAMES W. H. WEIR  
Technical Editor

FRANK E. MULLEN  
Radio Editor

THE NATIONAL STOCKMAN AND FARMER  
"The World's Greatest Farm Paper"  
PITTSBURGH, PENNSYLVANIA

WESTINGHOUSE KDKA  
"The Farmers' Pioneer Radio Station"

July 20th, 1925

Mr. J. C. McQuiston  
Director of Publicity  
Westinghouse Electric & Mfg. Co.  
Pittsburgh, Pa.

Dear Mr. McQuiston:

We are now able to prove to you, in striking fashion, the influence which The National Stockman and Farmer is having on getting farmers to adopt radio. Proof is also afforded of the influence which KDKA is having in the farm field.

The attached report and analysis shows clearly that the broadcasting program of The Stockman through Station KDKA is having its effect.

I do not have figures for the state of Ohio but believe that the same situation probably prevails. In comparing our circulation figures with the number of sets per county, I found that with few exceptions the counties where we have the most circulation have the most radio sets on farms. We have considerable circulation in the eastern third of Pennsylvania and probably can take credit for some of the farm owned sets in that section too. As far as the Pittsburgh district is concerned or the western third of the state, we certainly can show real progress.

All of this means that the broadcasting work KDKA and The Stockman are doing is very much worth while and I think these facts vindicate our early stand that a real broadcasting service for farmers would pay.

As far as I know KDKA is the only station and The Stockman and Farmer the only farm paper that is today conducting any comprehensive market report service for farmers.

I know that you are interested in this matter and if I can give you any further information will be glad to have you call me.

Very truly yours  
THE NATIONAL STOCKMAN AND FARMER

Frank E. Mullen

Radio Editor

FEM-MKN



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ANALYSIS OF CENSUS RETURNS SHOWING NUMBER OF RADIO SETS ON FARMS

IN THE STATE OF PENNSYLVANIA

\*\*\*\*\*

	<u>Number of counties</u>	<u>Number of farms</u>	<u>Number of radio sets</u>	<u>Percent farmers having radio sets</u>
State of Pennsylvania	66	202,256	10,378	5.1 %
Western third of state	22	76,003	5,487	7.2 %
Eastern two-thirds	44	126,253	4,891	3.8 %
Eastern third of state	22	77,970	3,629	4.6 %
Western two-thirds	44	124,286	6,749	5.4 %
Western third of state	22	76,003	5,487	7.2 %
Eastern third of state	22	77,970	3,629	4.6 %
Western two-thirds	44	124,286	6,749	5.4 %
Eastern two-thirds	44	126,253	4,891	3.8 %

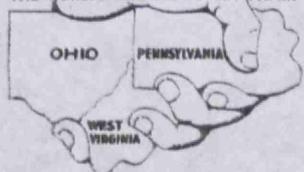
EXPLANATION

In affording definite proof of the influence of The National Stockman and Farmer on the use of radio on farms, the above statistics show clearly that in the territory where The Stockman has strong circulation and also where The Stockman's broadcast programs over Westinghouse Station KDKA are heard daily, farmers have purchased radio receiving equipment much more heavily than in other sections.

There are more radio sets on farms in the western third of Pennsylvania where The Stockman dominates, than in the eastern two-thirds of the state. This in spite of the fact that there 50,000 more farmers in the eastern two-thirds of the state. There are also more radio sets on farms in the western third of Pennsylvania than there are in the eastern third although there are more farmers in the eastern third.

There are more radio sets by 3,000 in the western two-thirds of Pennsylvania than there are in the eastern two-thirds, although there are more more farmers in the eastern two-thirds.

IN THE GRIP OF  
*The National Stockman  
 and Farmer*  
 THE WORLD'S GREATEST FARM PAPER



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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.

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, of course, 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.

July 10, 1935

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.

*Handwritten:* H. K. [unclear]

**Vice President.**

**Enclosure.**

In the following a proposal is made of one way in which a broadcasting service can be organized and placed in a healthy position, with a definite plan for future development, and which will eventually provide a service such as will enable broadcasting to be a necessary part of the everyday life of the people of the world.

It is felt that the organization of this service must start with the idea that the organization will be free from any form of monopolistic control, and that any locally present competitive stations in the field will be given consideration and assistance.

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July 24, 1925.

MEMORANDUM.

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

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.

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The method of reimbursement to the individual members of the Association for giving 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 Service 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

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 more than one organization of this kind, and competitive efforts will result in generally poor operation, and will develop a

July 24, 1935.

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

President.

I attach memoranda 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.

H. P. Davis.

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 am very glad to have you so worked out. I am satisfied, however, that it must be made on a broad, national basis, in which all the parties thereto are, so far as possible, equally interested and are partners, and that the plan must be broad enough so that competitive effort is impossible.

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. E. C. Company and ourselves would be exactly the same as any other member. Other broadcasting questions are concerned.

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HUDSON'S BAY COMPANY,

CLYDE,

August 15th, 1925.

The Manager,  
Hudson's Bay Company,  
56 McGill Street,  
Montreal.

Dear Sir:

Radio reception here the past winter was very good, broadcastings from U.S.A. stations invariably coming in loud and clear, especially the Westinghouse Company's stations KDKA, WBE and KFKX. On very few occasions during the winter nights have I failed to get clear reception when listening in from some station in the United States. Havana, Cuba, Oakland, California and Dallas, Texas are the most distinct stations from here which I have heard faintly on a few occasions only, no other Canadian Station has been heard. During the months of Nov. Dec. and January, broadcasting from the British Isles come in but not so loud as the American Stations. The Northern Lights seem to affect radio reception, as I have noticed they were bright on occasions when I failed to get tuned in.

I am, Sir,

Yours faithfully,

(Sgd.) J. Hall.

**Westinghouse Electric & Manufacturing Company**  
150 Broadway, New York

Office of  
**Guy E. Tripp,**  
Chairman

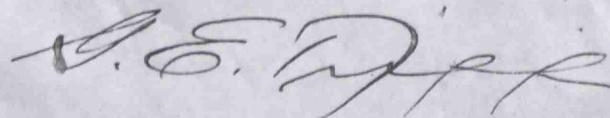
September 8, 1925.

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,



Chairman.

Enclosure.

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 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.

RH mirror

2 gratings

5' black top of header.  
on top of kn  
header plate.

September 9, 1925.

General G. H. 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.

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 undebatable.

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

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 go 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.

# Westinghouse Electric & Manufacturing Company

150 Broadway, New York

Office of  
E. M. Herr,  
President

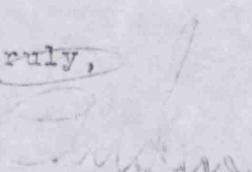
October 22, 1925.

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.

October 26, 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 connected 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

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 arrangement proposed, 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

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 the Postal, 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.

THE PITTSBURGH POST  
THE PITTSBURGH SUN

A. E. BRAUN, PRESIDENT

RECEIVED

NOV 28 1925

AM  
6 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31  
P.M.

PITTSBURGH, PA.

November 27, 1925.

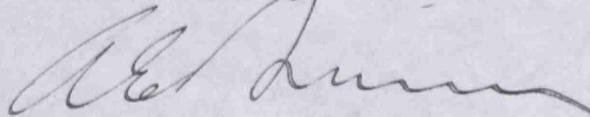
Mr. H. P. Davis,  
Westinghouse Electric & Mfg. Co.  
East Pittsburgh  
Pa.

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,



PRESIDENT.

AEB G

C O P Y.

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. E. 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.

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.

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,

*George F. Davis*  
Vice President.

Enclosure.

COPY

RADIO CORPORATION  
of America

New York, December 4, 1925.

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

Subject: NATIONAL BROADCASTING COMPANY

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 determine 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.

Mr. E. M. Herr

#2

December 4, 1925.

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.

# Westinghouse Electric & Manufacturing Company

150 Broadway, New York

Office of  
E. M. Herr,  
President.

December 5, 1925.

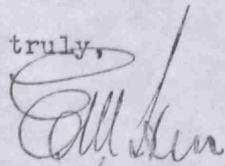
Mr. H. P. Davis, Vice President,  
East Pittsburgh Works.

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,

  
President.

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.

# Westinghouse Electric & Manufacturing Company

150 Broadway, New York

Office of  
E. M. Herr,  
President.

December 8, 1925

RECORDED

9-025

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

AM President PM  
8:17:00 11:28:45

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 me have your recommendation on this matter as promptly as possible.

Yours truly,

*E. M. Herr*  
President.

9

Enclosure.

Copies from an original in the Archives Service Center, University of Pittsburgh. This copy is for personal use only and may not be sold, re-copied, or published without permission. Please note that this material may be protected by copyright (Title 17, U.S. Code.)

December 10, 1925.

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

Dear Mr. Herr:-

Mr. Davis returned to the office Tuesday but was called east again Tuesday night on account of Miss Taylor. In talking with him today he advised that while she has rallied her condition is extremely critical and he does not feel that he will be able to return to the office before Monday. I have wired you to that effect today, advising that he can be reached either at the home of Mr. Forrest W. Taylor, 770 Main Street, Worcester, or at his office 438 Main Street.

Yours very truly,

Secretary to Vice President.

14-A  
**Westinghouse Electric & Manufacturing Company's**

STRAIGHT TELEGRAM

NIGHT LETTER

DAY LETTER

RADIOGRAM


(Indicate Method Desired)

Date 12/10/25 19  

private wire.

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

Mr. Davis called Worcester again account serious condition of Miss Taylor. Does not expect to be in Pittsburgh until Monday. He can be reached in care Forrest W. Taylor at home 770 Main Street or office 438 Main Street, Worcester, Mass, if you want to take any matters up with him.

E. B. Morse.

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.

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.

**COPY**

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

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.

# Westinghouse Electric & Manufacturing Company

150 Broadway, New York

Office of  
E. M. Herr,  
President.

December 16, 1925.

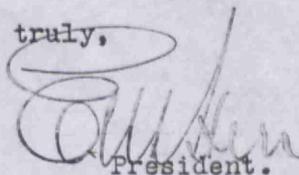
Mr. H. P. Davis, Vice President,  
East Pittsburgh Works.

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 me on 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.

13-A

# Westinghouse Electric & Manufacturing Company's

STRAIGHT TELEGRAM

IT LETTER

DAY LETTER

RADIOGRAM

(Indicate Method Desired)

Date 12/19/25 19.....

PRIVATE WIRE. PLEASE TELEPHONE. 

Mr. David Sarnoff,  
Radio Corporation of America,  
233 Broadway, New York.

Unless advised to contrary Mr. McQuiston and Mr. Horn who  
will substitute for Mr. Conrad will be New York Monday in regard  
broadcasting proposition.

H. P. Davis



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 from Chicago to Davenport — Iowa.

from Chicago to St. Louis.

" " 2nd " "

" " 3rd " "

the proportion of the above mentioned circuits are in-stitutes principally a rearrangement of facilities, ting service to the South Eastern portion of the





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.

*Handwritten:* mad  
*Large handwritten signature:* For proper monetary consideration

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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, 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 spare 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
<u>ESTIMATED INCOME:</u>			
Tolls from Advertising, etc.	\$1 000 000	\$1 250 000	\$1 500 000
<u>ESTIMATED EXPENSES:</u>			
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
<u>ESTIMATED OPERATING DEFICIT</u>	410 000	350 000	250 000

II. - INVESTMENT (FIRST YEAR)

Broadcasting Rights and Physical Equipment of American Telegraph & Telephone Company	\$1 000 000
<u>ADDITIONAL EQUIPMENT:</u>	
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
<u>TOTAL INVESTMENT (FIRST YEAR)</u>	\$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 ~~considerable~~ 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  
ff6

Davis, H.P. Business Corresp June-Dec 1925

Davis, H.P., 1868-1931. Papers, 1915-1944.

Yellow #8



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 }

January 8, 1925.

*Handwritten:* P.D. return to C.W. Horn

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. C. B. Pevence, 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.

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 Savenport, Iowa.
- A circuit from Chicago to St. Louis.

The expenses of the A.B.C. based upon extremely inadequate data, will be greatly reduced by the various local arrangements.

A large proportion of the above-mentioned circuits are in existence, 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	WGAE
New York	WEAF	Buffalo	WGR
Washington	WRC	Cleveland	WTAM-WEAR
Washington	WCAP	Detroit	WWJ
Schenectady	WGY	Cincinnati	WLX-WCAJ
Springfield	WEEL	Akron	WABC
Worcester	WTAG	Chicago	KYW
Boston	WEZA	Chicago	WGN-WLIB
Boston	WBEI	St. Paul-Minneapolis	WCCO
Providence	WJAR	St. Louis	KSD
Philadelphia	WOC-WIP	Davenport	WOC
Baltimore	WBAL (?)		
Atlanta	WSB (?)	Hastings, Nebr.	WPKY
Pittsburgh	KEKA	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 -	\$ 850,000.
" " 2nd " " " " " " " " " " " "	1,100,000.
For " 3rd " " " " " " " " " " " "	1,500,000.

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(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 " " " " " " " " " "	" " "
" " 3rd " " " " " " " " " "	1,500,000.
	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 " " " " " " " " " "	" " "
" " 3rd " " " " " " " " " "	500,000.
	450,000.

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 re-entrance 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 \$230,000. 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 in 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 considerably 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

*Hau*

#### 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 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 WEAJ at 463 West Street, New York City:

Corresponding "listening watch" receiver of WEAJ wherever located.

Studio furnishing and equipment of WEAJ 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 WEAJ, 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 WEAJ and Telephone Company's broadcast business at 195 Broadway, New York.

Similar equipment to above but for Station WEAJ 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 spare 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
<b><u>ESTIMATED INCOME :</u></b>			
Tolls from Advertising, etc.	\$ 850 000	\$1 100 000	\$1 300 000
<b><u>ESTIMATED EXPENSES :</u></b>			
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
<b><u>TOTAL EXPENSES</u></b>	<b>1 410 000</b>	<b>1 600 000</b>	<b>1 750 000</b>
<b><u>ESTIMATED OPERATING DEFICIT</u></b>	<b>560 000</b>	<b>500 000</b>	<b>450 000</b>

II. - INVESTMENT (FIRST YEAR)

Broadcasting Rights and Physical Equipment of American Telegraph & Telephone Company	\$1 000 000
<b><u>ADDITIONAL EQUIPMENT:</u></b>	
30 Outside Amplifiers	50 000
25 Control Room Amplifiers & Equalizers	50 000
New York - Additional Studio, Office and Technical Equipment	100 000
Chicago-Technical and Office Equipment	50 000
	<u>\$1 250 000</u>
<b><u>TOTAL INVESTMENT (FIRST YEAR)</u></b>	

COPY

January 14th, 1926.

Mr. W. W. Rodgers,  
Dept. of Publicity,  
Westinghouse Electric & Mfg. Co.,

Dear Sir:

Find attached hereto copy of a letter received from the Hudson's Bay Post-River Clyde, Central Baffinland. This point is several degrees above the Arctic Circle, and is accessible for a few weeks only in mid-summer. If you will take a map of Baffinland and look half way up the Eastern Coast, you will find River Clyde. I have a diary from this Post, but it is very large, and is written in long-hand on all sorts of pieces of paper. Some big and some small, and sometimes on both sides of the paper. I will pick out some of the high lights and will forward them to you. They use a Canadian Westinghouse R. C. Receiver, and the results obtained in receiving England, Ireland as well as the Eastern, Western and Southern portions of the United States are nothing short of marvellous.

Yours very truly,

U.S. DEPARTMENT OF COMMERCE, BUREAU OF STANDARDS

*G. A. Wendt*

G. A. Wendt/DJL

COPY FOR: MR. H.P. DAVIS-EAST PITTSBURGH, PA.

GAW/DJL

# CANADIAN WESTINGHOUSE COMPANY LIMITED

To EAST PITTSBURGH, PA. From Montreal Date Jan. 15th, 1926.

For Mr. H.P. DAVIS, Attention of Mr.  
Vice-President.

File

Customer

Material RADIO.

There has just arrived from way up in Baffinland, a place called River Clyde, a diary from one of the factories of the Hudson's Bay Company. I quote herewith from their log of November 3rd, 1924:

KDKA: - - Daddy Winkum.  
Market reports.  
Orchestra.  
Quartette.  
Speech by Mr. Davis, Vice-President of the  
Westinghouse Electric & Mfg. Co. on the  
fourth anniversary of the first radio  
programme broadcast by KDKA.

Speech by Mr. Frank Conrad, Radio Engineer  
of the Westinghouse Electric & Mfg. Co.

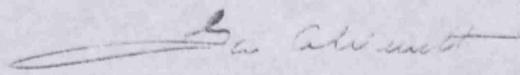
Band Music.

Speech by Dr. Van Etten.  
Speech by Victor Saudek.

This diary is so large that I have picked out simply this one item alone and will forward the stations later a more complete report.

I also have a copy of their log of November 15th, 1924, in which is recorded an address by you on the anniversary of KFKX, and this was followed by details of the rest of the programme.

Very truly yours,



GAW/DLL

## RADIO CORPORATION OF AMERICA

*M. H. P. Davis*

January 22, 1926.

*[Handwritten signature]*

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            | <i>See How</i> |
| For the Radio Corporation        | - | Dr. Alfred N. Goldsmith |                |
|                                  |   | Charles B. Popence      |                |

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.....	<u>476,500.</u>
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,

1933, ...  
a Technical ...  
follows:

The purpose of this ...  
part of the Radio Corp. is ...  
and work of these ...  
preparation to its ...

It will ...  
revenue to ...  
share companies ...

It will ...  
will ...  
and ...  
to ...  
stand ...  
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The ...  
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# Westinghouse Electric & Manufacturing Company

East Springfield Works,  
Page Boulevard,



SPRINGFIELD, MASS.

IN REPLY PLEASE ADDRESS THE COMPANY  
AND REFER TO \_\_\_\_\_

January 28, 1926.

\*

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

Dear Mr. Davis:

I have your letter of January 26, informing me about Mr. Behrend's separation from the Company. It seems to me that the Company is going to suffer a great loss by this action, as Mr. Behrend's experience is one which is hard to duplicate, and you know from past experience how often he has helped out, particular in design of heavy machinery.

I have written Mr. Behrend as you suggested expressing my deep regret that this action has come about, and assured him that many of his friends of the Company feel the same way.

Without knowing any of the details I hope it will be possible to have a change in the decision and his services retained, even tho they are purely of a consultant nature. I presume, however, this has already been given consideration.

Sincerely yours,

Works Manager.

B. A. BEHREND

MEMBER AMERICAN SOCIETIES OF CIVIL AND OF  
MECHANICAL ENGINEERS AND FELLOW OF THE  
AM. INSTITUTE OF ELECTRICAL ENGINEERS

ENGINEERING CONSULTATIONS  
EXAMINATIONS & REPORTS  
CABLE "BEHREND" BOSTON

OFFICE 1001  
WM. LAWRENCE BUILDING  
85 DEVONSHIRE ST.  
BOSTON, MASS.

Jan. 25, 1926

Mr. H. P. Davis, Vice President,  
Westinghouse Electric & Mfg. Co.,  
East Pittsburgh, Penn'a.

Dear Mr. Davis:-

I have accepted Mr. Rugg's proposal to terminate our contract on March 1st, 1926. I, therefore, return to you my pass for the year 1926.

It is a great wrench thus to break off an old tie. Seventeen years are a long time. You have been a great leader and a chief of whom I am quite inordinately proud. If I rendered you any service during that long time, I should be proud and happy to think so. I wonder, and I wish it to be true, that these persons could see the degree of loyalty I have always felt for you and for you alone. Now I can tell you this as I have nothing more to expect and you cannot think that it may be flattery. That is one of the good sides of the issue. Another is that I shall not have to advise with such inferior people as are filling or going to fill, the post in which you began to rehabilitate the Company when I first joined your staff. I should have been unfaithful to my convictions if I had remained and I am grateful to Mr. Rugg for having thus impressed on me my real duty which I was too dull to see. But I know little about the conditions at East Pittsburgh and my recollection of the Allis-Chalmers episode under Whiteside is somewhat dim. This all seems like a counterpart to it.

I have not heard, nor do I expect to, from Feicht or Newbury. I cannot help but feel that both are glad. I have never succeeded in getting under their skin.

There are two men whose loyalty to you, and, therefore, friendship for me, I feel quite certain of. From these I should like to hear. They are Reynders and

Mr. Davis, p. 2

Eaton. And, then, of course, Miss Morse. I can think of no others at the time whom I knew closely and who felt as I did.

As I said before, I know nothing about East Pittsburgh. But the fact that the engineering department is no longer under your direction, made me thoughtful. Perhaps a former salesman will do better, who knows? To me, who have seen the department develop and grow, not to mention the magnificent creative labors in the radio field, with most of your associates skeptical, you stand out head and shoulders as the greatest chief engineer the Company ever had. Poor Lamme appears like a schoolboy compared with your vision and energy. I was fortunate indeed to have had you as my chief and not the little men who thought they could do better.

Now, my dear Mr. Davis, in saying good-bye to you my mind goes back to the events of the last seventeen years and it seems unreal that, though still alive, I should have to sever this tie. There is such a thing as living too long.

I am going to ask Miss Morse to secure from you your photograph and to ask you to write on it your name and a line to remind me that, from March 1st, 1909, to March 1st, 1926, you were my chief. I am sure you will do this.

As to myself I have been somewhat better. My doctor believes that I have gotten the best of a tubercular infection but suggests my moving into the country which I am preparing to do. He never told me about it until recently.

Yours sincerely,

B. B. Shred

Encl. Pass.  
BAB/B

glowing words  
about HP  
from a former  
employee

←  
← p3

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January 26, 1926.

CONFIDENTIAL.

Dear Mr. Reynders:-

I have learned with very sincere regret that Mr. Behrend has severed his connection with this Company, or will do so at the expiration of his contract which I understand is March 1st. Mr. Behrend has been with us for seventeen years, and I have always had a very close personal feeling for him in addition to his standing as an engineer.

I know he feels this separation keenly, and that he has always had a very high regard for you. I believe it would be very much appreciated by him if you would casually drop him a note indicating your regret on hearing this information.

I cannot say how sorry I am about this but it is a matter over which I have had no control.

Sincerely yours,

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... a lot to be ... your old ... about it. ... and

February 2, 1926.

Mr. B. A. Behrend,  
Wm. Lawrence Building,  
Boston, Mass.

Dear Mr. Behrend:-

Thank you so much for your letter of January 25th. My delay in replying has been caused by the necessity for me to get a photograph printed, since I did not have one available that I considered good enough to send to you.

I am unable myself to express in words my feeling towards you, and the gratitude that I have for the way in which you have always supported me and helped me in the arduous duties that fell to me in the early days of my connection with the engineering work of this Company; and you know that I know that much of my success - if I may so claim - in certain lines of this activity was due to assistance from you.

I have had, and still have, the highest regard for your engineering acumen and ability, and have always rated it in the highest manner. I am quite sure that Mr. Lamme, in his later years, came to agree entirely with me in this opinion.

It is regrettable, of course, that your health in the last few years has been such as to limit your activity, but I am delighted to know that you are on the road to complete recovery, and I am quite sure, from the way you are going about it, that it will not be long before you are your old self again, and I know there is yet a lot to be heard from you in the engineering world.

# Electric & Manufacturing Company

West Springfield Works,

Page B-2-ward



WRITE PLEASE ADDRESS THE COMPANY  
ANY CORRESPONDENCE

WEST SPRINGFIELD, MASS.

Please do not consider this in the sense of "good-bye".

I still want to hear from you from time to time, and I hope I shall see you oftener than has been the case in the last few years.

I am sending you a photograph as requested, and I would appreciate it greatly if you would do me a like favor, as I would prize a photograph of you most highly.

Sincerely yours,

*(Stamp) H. P. Davis*

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April 1, 1926.

PERSONAL

Mr. R. A. McCarty,  
Power Eng. Dept.,  
Westinghouse El. & Mfg. Co.,  
East Pittsburgh, Penn'a.

Dear Mr. McCarty:-

I very much appreciate your kind letter of the 29th March but I am not yet quite fit to go to Pittsburgh and, therefore, I ask you, in compliance with your request, kindly to read in my behalf the following remarks:

"It is indeed a pleasure and privilege to be asked to contribute a few remarks on the occasion of saying farewell to Mr. Hall.

"It is a little more than seventeen years ago that Mr. Hall came to the Westinghouse Company. Mr. Hall and I had been associated together for almost ten years prior to this time. He was assistant chief engineer of the Bullock Electric Mfg. Co. and of the electrical department of Allis-Chalmers Co., a position he relinquished not deeming it compatible with his sense of right and honor to remain connected with an organization, or a re-organization, which appeared clearly to any thoughtful person to be headed for a receivership. Those of you old enough to know the conditions of the period may remember that this receivership actually came two years after Mr. Hall had left the company.

"It was Mr. H. P. Davis, who, at that time as assistant chief engineer and a little later as manager of engineering, engaged Mr. Hall at a time when the Westinghouse Company was in the hands of the receiver. To most of you Mr. Davis' brilliant record through the most stirring years of your Company's existence, from the depth of the calamity of 1907 to the Company's great present prosperity, is only too well known. His leadership has been so evident, his success and vision so palpable that, but for my deep admiration for and devotion to Mr. Davis, I would not now mention these facts.

"To Mr. Hall and principally to myself who, for nearly three years was Mr. Hall's chief in the power engineering department,

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more glowing  
about HP's  
vision +  
leadership

←

Mr. McCarty, p.2

Mr. Davis' indisputable leadership, high integrity, and sacrificing example, formed an unforgettable inspiration. This man did not talk of duty, he just showed you by his own act and action what duty meant to him. If ever great effort brought commensurate results, the re-organization of the engineering department from a pretty hopeless tangle, by Mr. Davis, is an example worth dwelling upon.

"It will ever be to the credit of the Westinghouse Company that it has rewarded great effort and achievement. It has been the coveted aim of all of us to win membership in the veteran association and Mr. Hall has almost achieved this much desired honor. I have known corporate organizations which, sometimes to escape a small salary burden, at other times to escape the payment of a pension, on the ground that business economics demand it, have dispensed with their employees' services just barely before they would have qualified through years of service. You are fortunate indeed that you are in no need of anxiety on such a score. No one is going to tell you that your past record does not count as you were paid for past work and that such things are comparable to water that has run over the mill so long as Mr. Davis' example and principle continues to be followed. But I must speak about Mr. Hall and not about our great chief.

"Mr. Hall has almost thirty years of electrical experience to his credit. During this period he has designed so many large and small electric machines that, were they to appear to him as Banquo's ghosts, appeared to Macbeth - by which simile I do not wish to suggest that Hall murdered these electric creatures of his - this banquet feast will lie heavily in his frame. May he be spared such visitation!

"Let us do a bit of thinking: Mr. Hall has been at it for thirty years yet he does not know how to design a commutator. Is it therefore to be wondered at that, with this obvious failure to the credit of an engineer, we resort or should resort to asking the almighty salesman how to do it? Whether he knows it or not, he will tell Hall how to do it.

"Here lies, my friends, the reason for my lack of appreciation of the engineer however much I appreciate his profession. The engineer is in the class of creatures which, in Hall's native state of Tennessee, are not supposed to be related to us. When I look back upon the thirty odd years during which I have attempted to contribute to the electrical engineering profession even as you and I but a little earlier perhaps, it pleases me to think of the greatness of the men who, in spite of our obvious creative work, succeeded in obliterating all but their own frequently somewhat shady performances.

MrMcCarty, p.5

"Now Mr. Hall need not worry lest, in going to California, he may not be known or his work may not have preceded him. An able sales organization, ever friendly, encouraging and helpful to the engineers, will soon enough introduce him to his own commutators, brushholders, and sparking constants, so that he may arrive at the conclusion that sparking constants received their name from the fact that the machines sparked constantly.

"It will be a broadening experience for our friend. For well-nigh thirty years he has <sup>been</sup> on the inside of the engineering profession, but now he is going to be on the outside of it. He will soon write letters home which, but for his authenticated signature, might as well have been written by some of the most devoted friends or critics of the engineering department. It will be truly a change of life for him. I daresay I feel a little sorry for those who will receive his reports.

"California is a long way from Pittsburgh. Whether this is the worse for California or for Pittsburgh I am unable to say. But California has been a haven for some who could not stand, or did not like, the atmosphere of East Pittsburgh. Such exiles have prospered in California and Mr. Hall will find several old friends and associates there who will receive him hospitably. Thus he will ever be reminded of his old associations and, if you do not send him too many hot machines or sensitive ones who cannot stand the climate, he will bear you all a pleasant memory and perhaps think of you when he sees the vision of the fruits and vegetables reared by the warm and sunny atmosphere. Should he turn a vegetarian he will not hanker for the flesh-pots of East Pittsburgh but otherwise I am sure he will miss his associates to whom he has always been a loyal friend.

"I myself regret deeply that thus an old friend of mine puts three thousand miles between himself and me and I close by wishing him God-speed and expressing my own loyalty and appreciation to him and his old associates who were also mine.

"May you always have as great a chief, as honest and conscientious a leader, as it has been a good fortune to have had in Mr. H. P. Davis whose name is synonymous with the greatness of the Westinghouse Company."

Yours sincerely,

E. A. Behrend

B. A. BEHREND

MEMBER AMERICAN SOCIETIES OF CIVIL AND OF  
MECHANICAL ENGINEERS AND FELLOW OF THE  
AM. INSTITUTE OF ELECTRICAL ENGINEERS

ENGINEERING CONSULTATIONS  
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CABLE "BEHREND" BOSTON

OFFICE 1001  
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85 DEVONSHIRE ST.  
BOSTON, MASS.

April 17, 1926

PERSONAL

Miss Edith B. Morse,  
c/o Mr. H. P. Davis, Vice Pres.,  
East Pittsburgh, Penn'a.

Dear Miss Morse:-

Two weeks ago Mr. McCarty of the Power Eng. Department asked me to say or write a short speech to be presented at the leaving of Mr. David Hall on the occasion of a dinner to be given him.

Mr. Hall, you know, was with me in Cincinnati about 26 years ago, and in one way or another he has been associated with me until Mr. Rugg recently severed this tie.

I enclose a copy of the remarks which I sent to Mr. McCarty. The dinner took place on the 12th April and I sent Mr. Hall a copy in regard to which I received to-day a comment from Mr. Hall saying that all remarks concerning Mr. Davis had been omitted from the reading Mr. Rugg having been one of the guests.

If you like to show my letter to Mr. Davis, I would like to have you do so. Perhaps I can see better from a distance how he stands out head and shoulders above his associates.

Yours sincerely,

*B. A. Behrend*

Pers. Typed.

## 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 gain from 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

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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 possibly 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.

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4/17/26

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

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

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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 the motion 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 hesitation or sudden change, it may fade into a comedy or perhaps the screen disappear and a stage scene 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 create a show, appealing to the ear in his case, just as the movie director appeals to the eye. He would run the continuous thread of thought and create plays 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.

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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.

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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# 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

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Mr. H. P. Davis

tube cost for two stations of 500 watts and 2500 watts respectively. In the 500-watt station it will require 5 tubes, and at a cost of \$100 a tube and 1000 hours' life, this would amount to a cost of \$500 for 1000 hours. For the 2500-watt station it would require 18 tubes, which at a cost of \$400 a tube and 1000 hours' life would give a total of \$7200 for 1000 hours. On the basis of power, the 2500-watt station gives the lowest unit rate, that is, fifty times the power at about fourteen times the cost; but as the area covered is probably not greater than the square root of the power, the large station gives about seven times the area at fourteen times the cost.

The factors which affect the above assumptions are the lack of available wave channels and the cost of connections between stations. Within the limitations of wave channels, the wire communication companies have an advantageous position, being able to utilize existing wire facilities for distribution purposes, and particularly as the greatest demand for this purpose will occur during a period when existing lines are least required for their primary commercial purpose.

It is probable that the wire communication companies' facilities will permit of the general distribution of only one program at a time, and there is also no reason why these companies could not deliver this program direct through subscribers' local

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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

Mr. H. P. Davis

April 19, 1926.

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.

(C) 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 <sup>long distances</sup> 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

Mr. H. P. Davis

April 19, 1926.

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

# Westinghouse Electric & Manufacturing Company

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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 reels 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

# Westinghouse Electric & Manufacturing Company

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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 lines rather 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

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May 6, 1926.

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 a plot, 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.

# Westinghouse Electric & Manufacturing Company

Mr. H. P. Davis

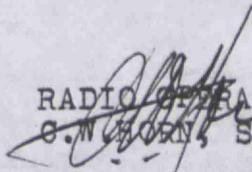
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May 6, 1926.

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 individual companies.

  
RADIO OPERATIONS,  
C.W. HORN, SUPT.

CWH:O

# Westinghouse Electric & Manufacturing Company

150 Broadway, New York

Office of  
E. M. Herr,  
President

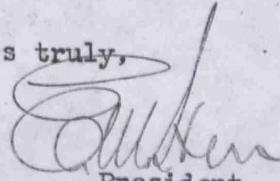
May 11, 1926.

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,



President.

64121 Box 1  
ff 7

Davis, H.P. Business Corresp

Jan - May, 1926

Davis, H.P., 1868-1931, Papers, 1915-1944