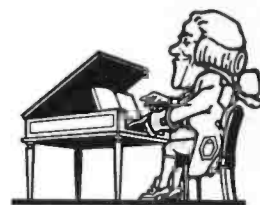




Pioneer Broadcasting

By GEORGE H. CLARK, RCA Historian



RCA is today the proud grandfather of considerably more than a hundred highly vocal descendants, poetically called "Children of the N. B. C." Their voices are heard, when conversing in their customary bass, from coast to coast, including the Canadian on the north and the Mexican on the south; and when they fly into excited soprano, only the modest initial design of this globular conductor to which they are restricted—as far as we know—prevents them from exceeding the present maximum of twelve thousand five hundred miles. The Voice of the World!

But there was a moment, young radio gentlemen, in a certain year B.C. (before Camden), when RCA became a father for the first time. This first-born broadcasting station would look strange indeed to our modern eyes with its five hundred watt panel, its non-inverted towers, and its horizontal aerial. But to the young father, Baby 'DY (WDY, Roselle Park, New Jersey, to you) represented the first and last word in speech transmission equipment, even down to the fuse links on its power panel—safety pins, they were called.

Despite paternal pride, however, there had been prior stations of the kind, and, even before them, pioneer efforts which were destined to culminate later in the World-Listening-In. WDY's playmates, and their predecessors, were several, and deserve record in this encyclopaedia.

The first speech through the American ether may be with fairness dated 1906, when Professor Reginald A. Fessenden radiophoned a Christmas message from Brant Rock station, "BO."

Radiograms had been sent several days in advance to operators of the United States Navy and of the United Fruit Company, suggesting that they listen in to this program, and many of them, doing so, heard phonograph music, and a violin solo



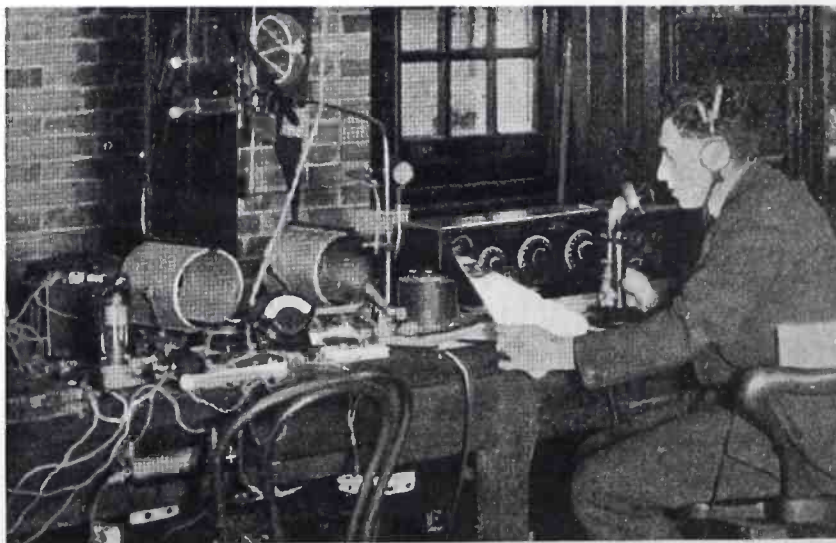
GEORGE H. CLARK, RCA

and a song by Professor Fessenden. (Incidentally, the Professor established a precedent which has, unfortunately, not been followed up. He says of his vocal selection: "... although the singing, of course, was not very good.") This, and a succeeding New Year's program, were heard as far south as the West Indies. However, this should be

classified as a test of radio-telephony, received by professional operators, and was not broadcasting as the term is defined today.

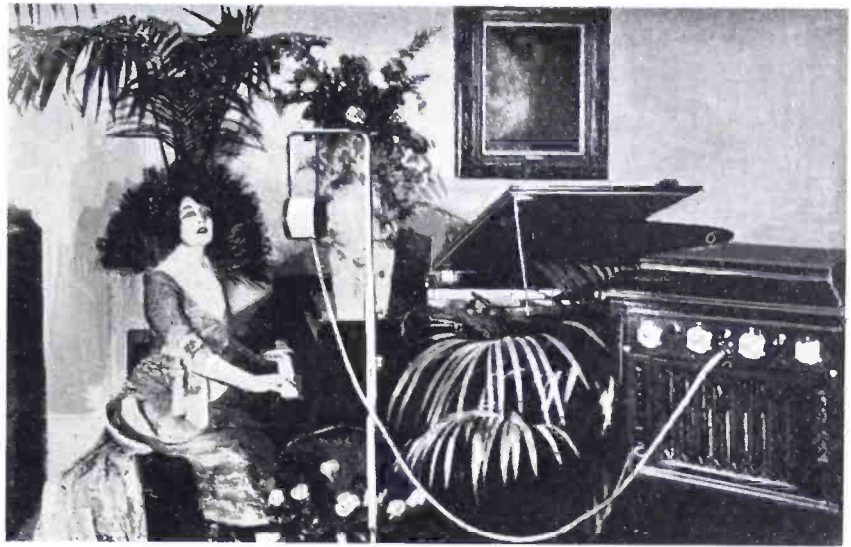
Dr. de Forest came closer to the goal, by concerts from High Bridge and other points in New York City, listened to by a restricted and highly technical group. But even this, and the similar work of some of the earlier amateurs, does not qualify as broadcasting. Of course, it is admitted that we are making the definition, but it is the one in general use today. This definition is that broadcasting means sending out voice, and music, and incidental sound effects, in a general program; maintaining it for definite and advertised periods; and having for its reception an audience of home listeners whose interest in receiving the program is solely for the entertainment and educational value which it possesses.

Is it forcing the issue to insist that we have a listening audience which is neither professional, semi-professional nor amateur, as well as a transmitted program and newspaper announcements to connect the two, in order to have "modern broadcasting"? Not if we are to differen-



A TEMPORARY RADIOPHONE STATION, OPERATED BY RCA AND THE NATIONAL AMATEUR WIRELESS ASSOCIATION, AT THE 71ST REGIMENT ARMORY, IN 1921. THE ANNOUNCER, HENRY KASNER, IS NOW IN CHARGE OF SHOWS AND DEMONSTRATIONS FOR RCA VICTOR. AMONG THE PERFORMERS AT THIS STATION WERE SOPHIE TUCKER AND ANNA CASE (WHO BLEW OUT A TUBE WHEN SHE TOOK ONE OF HER FAMOUS HIGH C'S)

tiate between radio-telephony and broadcasting. A somewhat similar situation exists in the dissemination of printed news. Typing a letter to an individual corresponds to "point-to-point" telephony, as Fessenden's tests between Brant Rock and Jamaica. Multigraphing a form letter to be sent to a mailing list is much the same as the "limited broadcasting" of de Forest, Fessenden and others to a special audience. Publishing a newspaper is in the same class with unlimited broadcasting, to the general public, which is what we know as "broadcasting" today. This does not evade the fact that even in the good old spark days the sending of a message "blind"

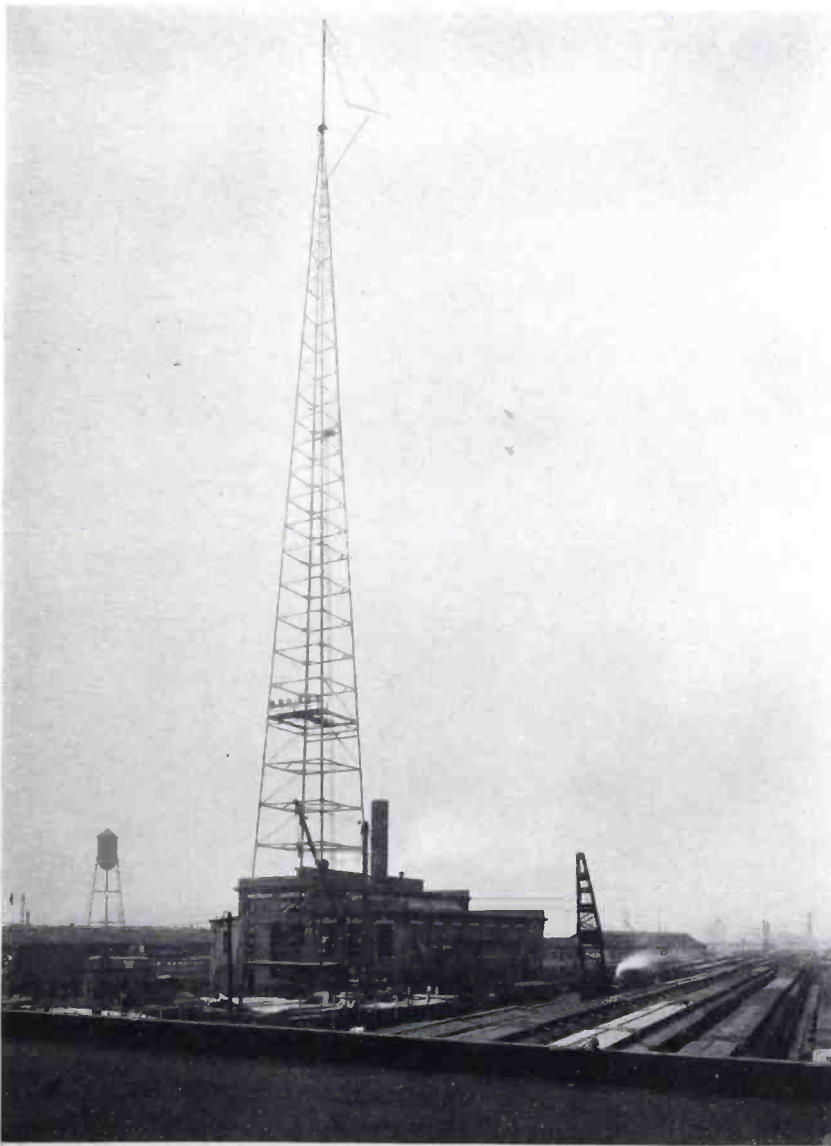


OLGA PETROVA, FORMALLY OPENING THE STUDIO AT WJZ, NEWARK, N. J.

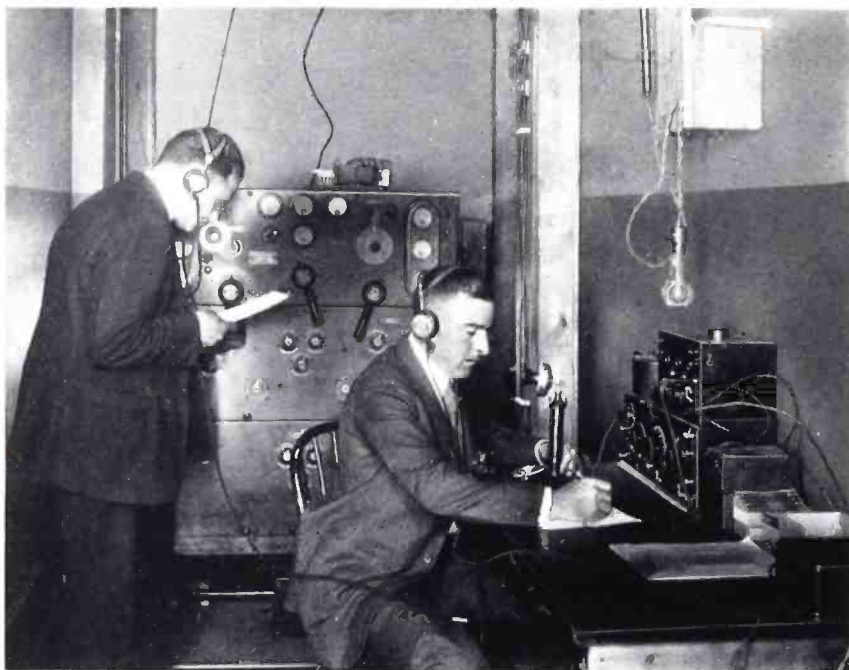
had the broadcast tag applied to it. It just happens to be too bad that the modern use of the term blithely ignores all that has gone before, but it does, and you know it, and even Jay Quinby knows it.

Passing now from radio-telephony to broadcasting, the first station to send out regular, advertised programs, to simple receiving apparatus capable of operation by the non-technical hands of Mr. and Mrs. John Citizen, was KDKA, Pittsburgh, of the Westinghouse Company, and it fully deserves the title of pioneer. All the more so because it was through its own rare foresight that these receiving sets were to be had. The Aeriola Junior and the RC receiver had as much to do with actually creating "broadcasting" as did the sending set in Frank Conrad's home.

Not that this was recognized at once by everyone, however. These receivers had but a single circuit, for the Westinghouse designers figured that reception in the home must be simplified down to the utmost, if home-folks who could not even replace a burned-out fuse were to be able to operate the devices. No "forest of knobs" here; no complicated table of settings; merely one circuit and one handle to vary it. I can recall the personal scorn with which this single-circuit receiver was viewed by "old-style" radio engineers, i. e., myself, for it was held that this was going back to the days of 1900. But later, we—I—realized that the new transmitters were so much more



ANTENNA OF STATION WJZ, AT THE LACKAWANNA RAILROAD TERMINAL IN HOBOKEN, N. J. THE RADIO TOWER, WHICH IS STILL STANDING, WAS ORIGINALLY BUILT AS PART OF THE LACKAWANNA'S RADIO TRAIN DISPATCHING SYSTEM, AND ENABLED THE ROAD TO KEEP TRAINS RUNNING DURING BLIZZARDS THAT CRIPPLED WIRE COMMUNICATIONS AND COMPLETELY PARALYZED OTHER ROADS IN THE DISTRICT. SIMILAR STATIONS WERE LOCATED ALONG THE LINE AT BINGHAMTON, SCRANTON AND BUFFALO



PIERRE BOUCHERON, WHO IS NOW ADVERTISING MANAGER, RCA VICTOR, ANNOUNCING AT THE BROADCASTING STATION WJY, HOBOKEN, IN 1921, AND GEORGE HAYES (AT RECEIVER), WHO IS NOW MANAGER OF RCA ARGENTINA, AT BUENOS AIRES

sharply tuned than the old spark sledge-hammers that a single circuit receiver was in 1921 actually workable! Little by little, actual use showed that for handling by people who knew nothing of radio's technicalities the single circuit was just what had been needed. It was a bold psychological move in the struggle to bring radio out of the attic into the sitting-room, and it worked. How well it worked I can realize today as I stroll home from the office at seven p. m., and find that, as I pass house after house, I am never out of touch with what Amos is saying to Andy.

That's how playmates were born. KDKA's little sister WJZ soon came into being, in Newark, N. J., and her voice reached to the Woolworth Building, where RCA by that time was busily engaged in selling tubes, telephones and tele-receivers. In less time than it took to erect a tower and antenna, RCA was in the broadcasting game for itself. Shortly after, WDY was born.

WDY had its genesis in a one-day experiment of RCA in broadcasting, over in Hoboken, N. J., on July 2, 1921, with the call letters WJY. This station was installed, in a hurry, at the D. L. and W. terminal in with that of its sister program, WJZ, of Newark. In between, it

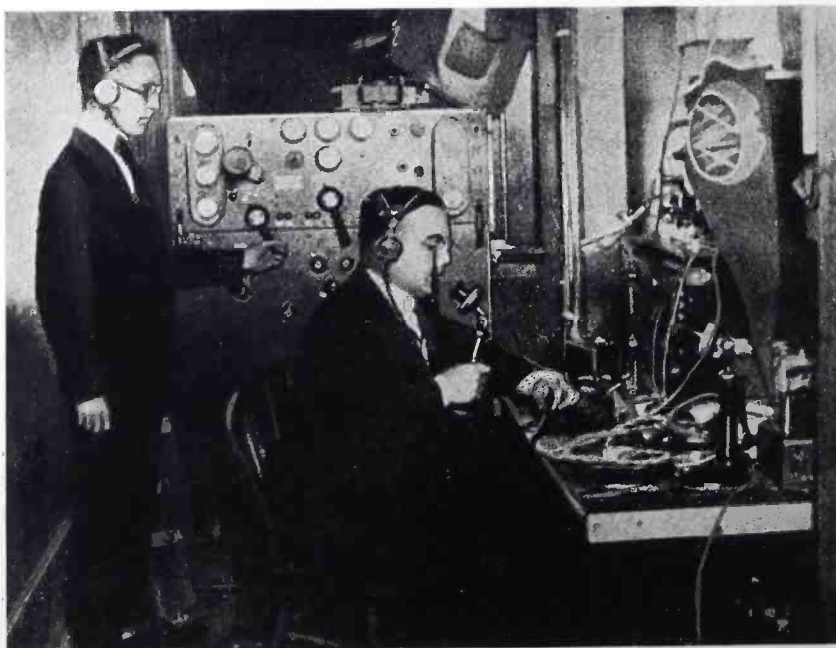
grew from rather humble beginnings to a position in which the press referred, quite casually, to "the two giant broadcasting stations, WJZ and WDY." During that short period, RCA learned to love its little daughter, and still smiles indulgently and with becoming pride when one of the announcers signs off with "This is the National BROADCASTING Company."

WJY was installed, in a hurry, at the D. L. and W. terminal in Hoboken

so that RCA could broadcast the Dempsey-Carpentier boxing match for the heavyweight championship of the world, which took place at Boyle's Forty Acres, in Jersey City. The antenna was strung between a steel tower and the clock tower of the Lackawanna terminal, this steel tower having been used some years previous in tests of train-radio by the railroad company. The wave length used for broadcasting was sixteen hundred meters, and the General Electric Company's 3½-kilowatt base station set which was used as transmitter radiated fifteen amperes.

Pierre Boucheron, now Advertising Manager for the RCA Victor Co., Inc., at Camden, N. J., was master of ceremonies and handled the microphone. George Hayes, who is now manager of RCA Argentina at Buenos Aires, acted as operator, and WJY immediately assumed great importance to the listening public.

This broadcasting stunt was staged for the American Committee for Devastated France, and the Navy Club of the United States. The latter organization, as shown by the accompanying illustration of a pamphlet describing the forthcoming broadcast, was headed by no less illustrious a personage than our country's President of today. The fight itself was under the management of Tex Rickard. The National Amateur Wireless Association, whose



J. ANDREW WHITE (AT RIGHT) AND H. L. WELKER, CONDUCTING A PRELIMINARY TEST OF STATION WJY, HOBOKEN, 1921

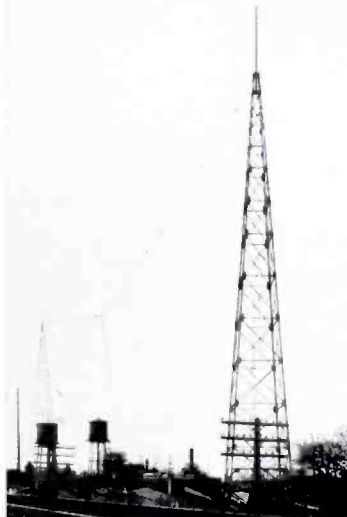
president was Guglielmo Marconi, was asked to take care of the reception and the loudspeaker installations, at various halls, theatres, sporting clubs, Elks, Masonic and K. of C. club-houses, and other public meeting places. About one hundred such gatherings were arranged, the proceeds from the admissions to these to be divided equally between the two benefiting clubs. Participating amateurs received certificates signed by Tex Rickard, Georges Carpentier, Jack Dempsey, Miss Anne Morgan and Franklin D. Roosevelt.*

Remote control was not in the picture in those days, hence it was necessary for the "sports announcer" at the ringside to describe the fight over an A. T. & T. private wire to the radio station, where it was typed directly from the telephone and handed to the radiophone operator. Major J. Andrew White, "radio's pioneer impresario," was the ringside announcer, and J. O. Smith was the relay describer whose voice was heard by the three hundred thousand "ear-witnesses" to the fight. The event was a tremendous success scientifically, having been heard as far away as Florida, but financially it benefited the two club organizations in name only.

*For this occasion, we recall having organized, in company with Laurence M. Cockaday (now Editor of *Radio News*), a temporary receiving station located at the roof garden of the Bunny Theatre on Broadway, New York. The public jammed the place, and marveled at the clarity of the program emanating from our "powerful" Magnavox loudspeaker. Mr. Cockaday still has the scroll of the N. A. W. A. which he received for these efforts.—Ed.

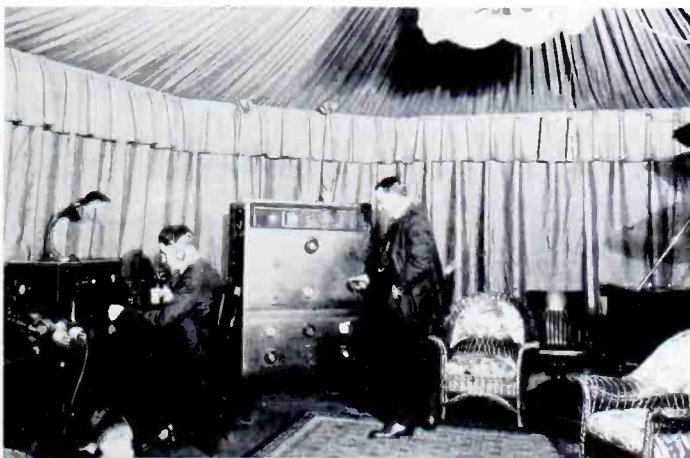


PAUL GODLEY BROADCASTING HIS STORY OF THE TRANS-ATLANTIC AMATEUR RADIO TRANSMISSION TESTS, AT STATION WDY, ROSELLE PARK, N. J., 1922



ANTENNA SYSTEM AT WDY, ROSELLE PARK, N. J., ORIGINALLY THE MARCONI FACTORY, LATER TAKEN OVER BY RCA.

The event was also a huge success insofar as inoculating RCA with a permanent broadcasting urge was concerned. Plans were made for letting the broadcasting installation stay at Hoboken for six or eight months . . . for retaining the installation permanently and starting a regular broadcasting program as soon as a Government license could be obtained . . . for locating the station at some point farther from New York. Finally, the idea of installing the station in the General Electric factory at Roselle Park, N. J., was considered, and this won out, partly from sentimental reasons, as this factory had formerly been under the old Marconi Wireless Telegraph Company of America. To this location, sixteen miles west of New York, the transmitter of the Hoboken experiment was moved and George Hayes, Henry Kasner, Ernest Amy and Fred Kroger, together with W. J. Purcell and other engineers of the General Electric Company, placed radio apparatus and power machinery, and erected a special antenna system, under the direction of Lee L. Manley, of the M. R. I. department of RCA. Noisy generators, leaky circuits were eliminated one by one, and finally, on December 14, 1921, station 2XR—soon changed to WDY—was on the air. J. Andrew White, "whose keen humor serves to brighten the long winter nights in thousands of homes," J. O. Smith, "who draws on his fund of wit to make his



STUDIO AT WDY, ROSELLE PARK, N. J. 3 1/2 KW. BASE STATION SET IN CENTER. NOTE WICKER FURNITURE AND ELECTRIC HEATER AT EXTREME LOWER LEFT. AN UPRIGHT TELEPHONE TRANSMITTER, SUPPLIED WITH THE SET, WAS USED AS A MICROPHONE



THE EVER POPULAR VAUGHN DE LEATH, "ORIGINAL RADIO GIRL," WHO APPEARED FIRST AT WJZ, NEWARK, IN 1921, AND WHO PROBABLY TODAY FEELS THE SAME WAY ABOUT THE HAT AS WE DO ABOUT THE "MIKE"

announcements keen and snappy"—I quote from the Newark *Sunday Call*, and certainly not from any records of my own—made up, with technical engineer Ernest V. Amy, the station staff. This was long before N. R. A.

The station depended on ex-temporaneous announcement and spontaneously inspired artists to a very great extent. Partly because it was organized hurriedly, and did not have time to work up a regular program fabric before going into operation. Partly because of the difficulty of getting talent to traverse the almost inseparable barrier between Broadway and the hinterland of Roselle Park. Once there, the rigors of a New Jersey winter had to be neutralized by a few pitifully overworked electric heaters. No wonder that portable heating had to be provided. No wonder that the announcements were made, to a great extent, on the spur of the moment. Full credit is due to Messrs. White and Smith for almost always having a room full of guests, in spite of all these difficulties.

"We are now going to have a little informal party, and you are all invited to be present, through the air." So said a new voice by radio last Wednesday night from station WDY. The character

(A)

The Mayor of New York says: "A star of the American flag has become detached and lowered above the Alps. It is that star of the Blue Valley which was the home of the Lafayette Escadrille and where the roads were thronged with the automobiles of the American Field Hospital. The patient outlines of this wilderness are now working, there the miracle of rearing life and nourishment are being shown. A force of American workers is still pulling up potatoes, say. The peasants offering the requisitioned cut and striving to rebuild their own destroyed houses. American volunteers are daily carrying the doctors and nurses and schoolbooks and books and household supplies which make life there more possible."

WHAT IT MEANS TO THE NAVY CLUB

THE NAVY CLUB

- OFFICERS**
 Franklin D. Roosevelt, President
 Herman Whitberg, Vice-President
 Earl D. Schmidt, Secretary
HONORARY VICE-PRESIDENTS
 Major General John A. LeJeune,
 Commandant U. S. Marine Corps,
 Rear Admiral Harry P. Howe,
 Commandant Third Naval District
 Rear Admiral John D. Harbord,
 Commandant New York Navy Yard
 Capt. G. L. E. Starr,
 Commanding Destroying ship at New York

WHAT NAVY OFFICERS SAY

- "The Club has splendidly demonstrated its usefulness in the Navy."—Vice Admiral Albert Gleaves, U. S. N.
 "The valor of the Navy Club in the Navy and to the country cannot be overestimated."—Capt. William Woodward Phelps, U. S. N.
 "You are undertaking a great work along absolutely correct lines."—Commander Charles G. Blyss, U. S. N.

QUESTIONS AND ANSWERS

1. Q. When was the Club started?
 A. July 2, 1917.
 2. Q. Why is it needed now?
 A. To provide a home land and club-in-one for the enlisted men of the U. S. Navy and Marine Corps who come from every part of the country.
 3. Q. How is it covered?
 A. By an Executive Committee composed of Officers of the
1. To create an endowment fund for defraying current expenses.
 2. To fund less expensive and equally desirable property to be owned.
 A. Nobody claims that the present clubhouse is ideal. In fact, to raise we shall undoubtedly have a five-story building in some locally equally central but whose real estate is not so valuable. We need a place with a swimming pool, bathing and sunbathing, billiard and pool tables, etc., but until the present mortgage is paid off and we have an adequate endowment fund it is impossible to proceed with any chance which would necessarily involve expensive alterations in the present building.
 3. How can I help?
 A. By participating in the big event on July 2nd.

(B)

1. To provide a home land and club-in-one for the enlisted men of the U. S. Navy and Marine Corps who come from every part of the country.
 2. Q. How is it covered?
 A. By an Executive Committee composed of Officers of the Club, the Chairman of the Endowment Committee, and two representatives of the men in active service.
 3. Q. How is it covered?
 A. No. The endowment fund for 1917 calls for \$10,000 of which the Navy's contribution will pay about \$6,000 for land and building. The balance of about \$4,000 must be raised through separate membership drive.
 4. Q. Why does not the Government support it?
 A. The men need a chance from official restraint and discipline out of the same time are glad to have a well conducted, orderly place where management does share in to give them a

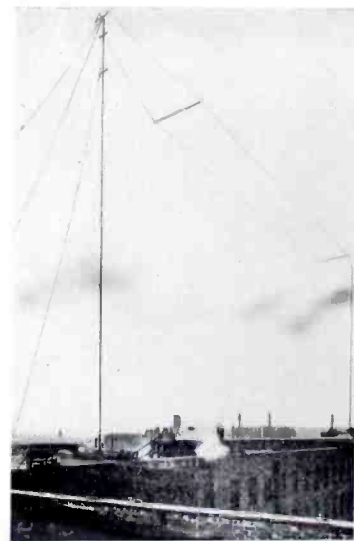
THIS BROADCASTING AND RECEPTION IS UNDER THE DIRECTION OF

- NATIONAL AMATEUR WIRELESS ASSOCIATION**
 Founded to promote the best interests of radio communication among wireless amateurs in America
- | | | |
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| J. ANDREW WHITE, Acting President | GIULIEMO MARCONI, President | HARRY L. WELKER, Secretary |
| PROF. A. E. KENNELLY
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U. S. N. |
| PROF. ALBERT S. DRUENOWITZ
College of the City of New York | PROF. CHARLES E. CROSS
Massachusetts Institute of Technology | R. E. HITCHER
Instructing Engineer |

HEADQUARTERS: 326 BROADWAY, NEW YORK CITY

EXTRACTS FROM FOLDER SENT OUT TO AMATEURS BY J. ANDREW WHITE, TO GET THEM TO ARRANGE LISTENING AUDIENCES FOR THE EVENT: A—FEATURES NAME OF FRANKLIN D. ROOSEVELT. B—FEATURES NAME OF MARCONI, SQUIER, ETC.

and warmth of the voices which came through the air held an intimate quality from which was entirely removed all semblance of the customary methods of announcement." (Thus the Newark *Sunday Call* as to WDY's opening program.) Besides the announcer, who seemed to draw most of the reporter's enthusiasm—or maybe the reporter drew it from him—there was Harry Howard, of Hitchy Koo, who sang "Anna from Indiana" in a way, so the newspaper said, that brought "spontaneous applause from the little gathering in the radio room, which was carried out over the air in a manner which was most unusual, and which gave a 'we're present' sensation to the listeners." Also there was Nat Saunders, who sang a song new to the air, "Swanee Mammy," then Jack Cook entertained with vaudeville. "The night



ANTENNA OF THE PIONEER BROADCASTING STATION WJZ, NEWARK, ON THE ROOF OF THE WESTINGHOUSE FACTORY, 1921

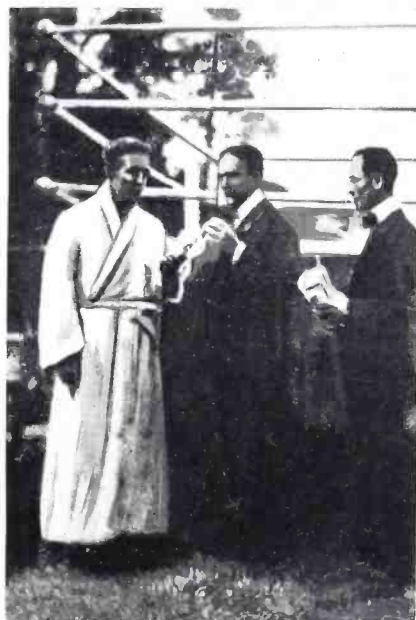
was cold outside," says our contemporaneous commentator, "but it was certainly summertime on the air. Everybody had a good time, including the entertainers, the guests of the station, and the radio public at large. This type of broadcasting is bound to be popular."

He was right. It was. Although at times, from the very nature of the preparation, or lack of preparation, of the program, the offerings verged on the crude (and I quote from my notes of those days, for "I was there"), yet this very informality seemed to please many people. It certainly pleased the radio editor of the *Newark Sunday Call*, who, while keeping one arm

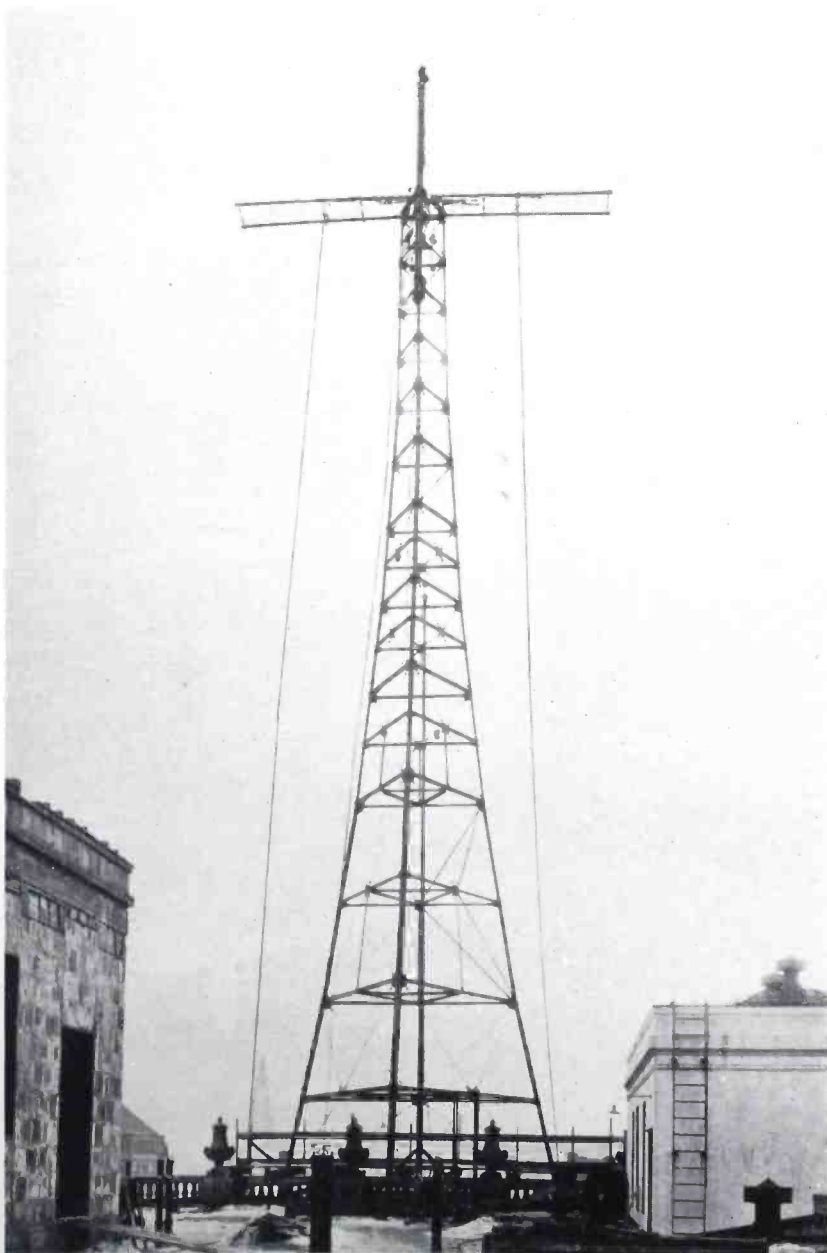
around WJZ and KDKA, reached out with the other and patted Baby 'DY on the back, not once but often.

Burlesque and good-natured joshing seemed to be a favorite feature of the new station.

But it was on Friday evenings that WDY, "that cute castle of cordiality," excelled itself. That was "Radio Party" night, when theatrical stars from Broadway gave their all, without money but with benefit of dinner and wine, for radio. Never were these party programs announced in advance, chiefly because the program director never knew, until the moment of going on the air, who would be his



JUST PRIOR TO THE EPOCHAL BROADCAST. J. ANDREW WHITE, TALKING WITH MONSIEUR CARPENTIER—LATTER AT LEFT, HOLDING ONE OF THE "GIANT" 950-WATT TUBES. (FROM WORLD-WIDE WIRELESS, JULY, 1921)



ONE OF THE TWO TOWERS OF WJZ, AFTER THE STATION HAD BEEN MOVED TO AEOLIAN HALL, NEW YORK CITY, 1922—PROBABLY THE FIRST PERMANENT STEEL TOWERS TO BE ERECTED EXCLUSIVELY FOR BROADCAST PROGRAMS

performing guests of the evening, and even then he wasn't always sure. Despite the handicaps of transportation, temperature and temperament, the program always went on the air and stayed on. During one of these Friday evening specials, on February 10th of 1922, Eddie Cantor was the leader of the "gang." I wish I had heard J. O. Smith leading the chorus of "We want Cantor."

There were serious events as well. Dr. Richard Strauss, "the world's greatest living musician," gave a recital on December 22, 1921, piano-player rolls prepared by him especially for this occasion providing the music from WDY. It was planned originally to have Mme. Elisabeth Schumann sing, in the Knabe studios in New York City, to the accompaniment provided by WDY, via receiver and loudspeaker, but an electric motor in the building interfered, so this interesting stunt failed. On another program, Sigmund Kentner, twelve-year-old xylophonist, was the feature. Paul Godley, amateur and professional radio man all in one, gave a talk on transatlantic reception, on January 25, 1922, telling of his experiences on the Scottish moors, receiving signals from American amateur stations, under the auspices of the A. R. R. L. There was no lack of program material, serious or gay.

(Continued on Page 64)

PIONEER BROADCASTING

(Continued from Page 15)

Perhaps a few words of description of the station itself, "which abounds in chic and cozy atmosphere," would not be amiss. The studio, which was located in the station building, was a hexagonal-shaped little room, artistically finished with draperies of blue and gold. A large hanging lamp in the center of the room was reflected in the bright colors of the Oriental rugs, the wicker furniture, the red glow of the electric heaters. On one side of the room was a Knabe-Ampico piano, and opposite it stood an Edison Re-creation phonograph. (Apologies to Nipper!) No pick-up mikes were visible, until one looked closer and noticed a tiny disc suspended by a thin wire. The general appearance of the studio was gay and friendly.

In the foyer hung a large map of the United States, with colored tacks indicating reports of reception. Eastern Canada and Cuba were the up-and-down limits, and westward the station reached as far as Omaha. This was not bad for five hundred watts at 360 meters.

Coming to crude technical data, the transmitter was rated at 1000 watts C. W., 500 watts 'phone. Four 250-watt tubes were used, two as voice modulators and two as oscillators. A 50-watt tube served as voice amplifier. A multiple tuned antenna swung above, from the old Marconi towers. The antenna current varied between eight and ten amperes. This was the equipment which drew the rating of "giant broadcasting station" from the press of the day! Shades (shadows cast before) of WLW!

The last program of WDY was, appropriately enough, a local one in part. The "first radio dance ever given in Roselle" was scheduled for February 24th, in the Robert Gordon school, the dance music to be provided by WDY. This is the last recorded offering of the station on the air. WDY signed off for eternity.

Roselle Park was, thus, only a transition station, almost the equiva-

lent of a tryout of a Broadway play in the provinces. Its handicaps were many, but in overcoming them the RCA engineers learned many valuable things. There was the inaccessibility of the station, making it hard to obtain—and retain—entertainers. There was the variable condenser formed by freight trains of the Lehigh Valley and the C. R. R. of N. J., which, passing almost directly under the antenna, changed its capacity and made unescapable variations in the radiated output. Finally, there was the insulation problem, for these same engines coated the antenna insulators with carbon, making leakage and not insulation the major characteristic of the overhead system. It is a wonder that even two months of this was endured.

Nor were these two months wasted from the standpoint of popularity. WDY made, and kept, its friends. As one fan wrote: "Allow me a wave-length. . . . Let us have a look at you, the first real radio actor. Is there not some window we can look into? Have two doors and let the public file past the studio. . . . Hail to the

Radiant Radio Rajah of Roselle!" If the writer of this happens to be reading me at this moment, I wish he would drop me a line, so I could get him a pass for one of the broadcasts in Radio City.

Not long after the demise of WDY, RCA became the father of twins, WJZ-in-New-York, and its sister WJY (not named after the Hoboken experiment!). And now, as I said before, it is over a hundred times a grandfather, and has to divide its grandchildren into different colors in order to tell them apart. In the nomenclature of today, when WJZ heads the blue clan and WEAJ the red, I suppose that we could be retroactive and, recalling the carbonizing action of the locomotives, say that WDY was the key station and associated stations all in one of the black network.

KDKA, WJZ-in-Newark, WJZ-in-New-York, spell, in the call letters of the Department of Commerce, the early progress of broadcasting, but between the last two there must remain, if only for a moment, the name of "Baby 'DY,'" RCA's first broadcasting station.



WORLD-WIDE TOURS IN YOUR OWN ARMCHAIR, WITH THE NEW RCA GLOBE TROTTER "ALL-WAVE" RADIO. THE ENTIRE RANGE OF FREQUENCIES IS AVAILABLE ON ONE DIAL. A GLOBE IN THE LIVING ROOM HELPS ONE TO VISUALIZE THE SOURCE OF EACH FOREIGN PROGRAM