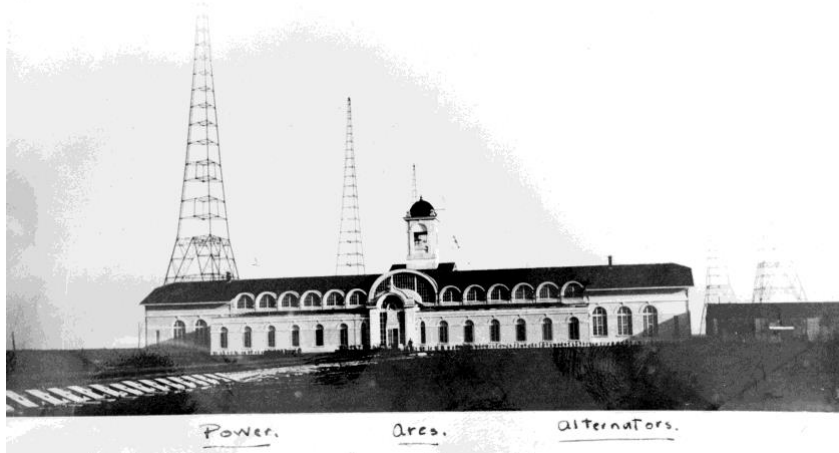




Lafayette Radio

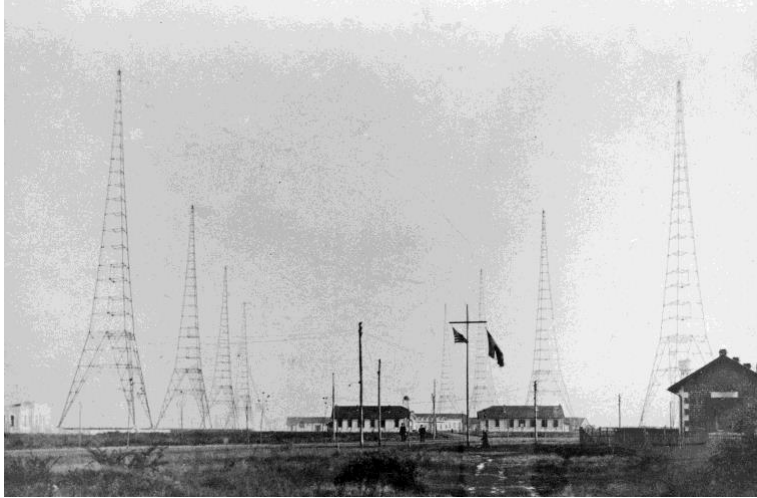
By Joe Hallock, 148-SGP

Transcribed by CHRS Deputy Archivist, Bob Rydzewski

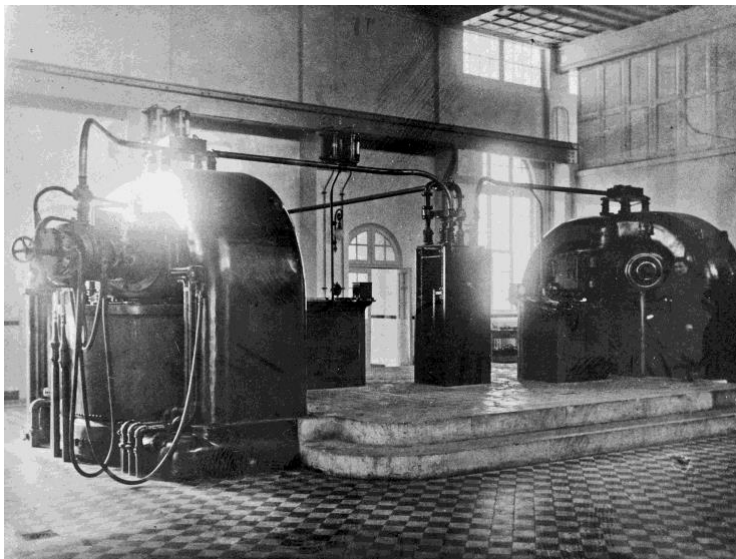


Fifty years have passed since the building of this great station, and (at least to my knowledge) none larger has been built. The 1000 kW CW transmitter at "Jim Creek" in Washington state is, however, of equal power if not in size and outlay. The duplicate 1000 kW arc transmitters at Lafayette weighed 83 tons each, and the huge antenna was 408 meters wide by 1200 meters long! Eight 820-foot towers supported the huge L antenna, directional toward Annapolis, Md—"NAA."¹

With the passing of these 50 years the writer has long since attained the dubious honor of "3 score and ten." Since, as many of you will attest, our memory varies inversely about "as the square" of our age, some of these "memoirs" of mine may well be a "bit off center," but I hope not too much so. Should this "manuscript" happen to be read by either of the two esteemed former bosses of mine (Comdr. Archie M. Stevens or Mr. Haraden Pratt) I hope they will be kind enough to drop a line to our good Editor² and correct any errors I may make. The same goes for Harold H. Buttner.



During the summer of 1917, primarily at the request of General Pershing, numerous conferences were held, with the result that it was decided to build a high power radiotelegraph station in France and on our east coast, to insure unbroken communications in case of enemy disruption of our cable system. Annapolis, Maryland was chosen, and construction was begun on "NAA." The transmitters were duplicate 500 kW arcs built by Federal Telegraph Co. of Palo Alto. In France the location chosen was a plain some 14 miles from Bordeaux, near the tiny hamlet of Croix d' Hins (which the French strangely called "Quan Dan" but in good old "AEF French" was generally called "Croix de Hines")!! Be that as it may, this great station, later called Lafayette Radio, was given twin 1000 kW arcs, the largest ever made by Federal (or to my knowledge by anyone else).



Construction of the station was assigned to the Navy, and no civilian American personnel was used till after the Armistice. I believe Federal drew up the designs for much of the station (beside the arcs) whereas Navy Bureau of Yards and Docks designed the 820-foot steel towers—8 in number.

I don't know just what officers were in on the original conference or early planning, but when I was there (late '18 to July '19) Comdr. Geo C. Sweet was our C.O. (and a very fine gentleman he was). Lt. Comdr. Archie M. Stevens was in charge of the radio station installation. Directly under him were Harold H. Buttner, Joseph Ryall and myself, all with the C.P.O. rating of "Chief Specl. Mechanic." Harold was in charge of power equipment, Joe Ryall the antennae, and yours truly of the radio gear. We worked very closely with the French straw bosses who had direct charge of the workmen.

Navy personnel, who first arrived in April of '18 to set up the camps, was a total, I believe, of some 625 officers and men. Eventually I think we had about 600 German prisoners and a few hundred Spanish and French laborers. Due to the language difficulties, as well as checking every measurement in the metric system, we had many, many headaches! Meanwhile, about 150 expert steel workers (all with Machinist Mate ratings, up three CPO) were doing a fine job erecting the eight 820-foot towers.

We had a fine, well-organized camp, with good "chow" and pretty fair accommodations as well as relaxation and entertainment at times. The German prisoners were well housed, well fed and well treated, and as I recall felt fortunate to be where they were, and turned in a fair day's work in return.

The signing of the armistice, of course, meant a re-appraisal of the entire program and the conclusion was reached to finish the job with civilian personnel. This was accomplished to a large extent by permitting Navy men to be mustered out and then re-hired as civilians attached to Brooklyn Navy Yard (theoretically). Joe Ryall and I, as well as many others, went back to the States and were paid off the last of June. Joe went back, as did Harold Buttner, and finished the job under Cmdr. A.M. Stevens, who had the cooperation of Federal Telegraph engineering personnel. (All this from memory after 50 years, and I'll be very glad to learn of any discrepancies in my recollections.)

The photographs pretty well tell the story,³ but a few highlights might be of interest. When the station was put in operation, one of the main waves was 23,600 meters (12.7 kilocycles). We heard it very well at Mare Island Navy Yard,⁴ where I was again working on shore station construction. My partner Cliff Watson⁵ could hear this frequency without a heterodyne, but my own ears wouldn't pick up above 10,000 kilocycles at all.⁶ This arc, as did all other large ones, used "compensating" keying, and the coupling to this single turn (broken by 79 keys) was adjustable to get the proper frequency change. Although I never saw this 1000 kW unit in operation, I did spend some weeks at NSS Annapolis (500 kW) and have seen direct flashover of more than 5 feet through the air, from the antenna lead going up the cupola to the side of a hatch through which it passed. This was remedied by changing the 2-1/2" copper lead-in tube to one of 6" diameter where it passed through the hatch! This broke down the voltage gradient to a point where no corona any longer appeared. The same thing happened where the antenna insulator was attached to the top of the tower. This was remedied by putting corona shields also on the "cold" end of the insulator!! Note this in the Lafayette photo. The Lafayette insulators were a one-piece glazed porcelain tube of 7" O.D., with a 2" hole through the center for firing. They were made by Ohio Brass and were designed for 20,000# strain!! The length was 7 feet.

This, I hope, has about covered the highlights of this great old station. It was sold to the French for cost, and was mostly demolished by the Germans in their WWII retreat.

Sic transit gloria...⁷

73

Joe Hallock

8/3/69

¹ Here Hallock refers to the Annapolis station as NAA, but later as NSS. The latter seems to correct.

² Refers to William Breniman, editor of Society of Wireless Pioneers publications. As far as we can tell, however, this piece was never published or came to the attention of the gentlemen named here.

³ Judging by their correspondence, Hallock had managed to retrieve his original album of large photographic prints of the equipment, which may have been captioned with details. This, unfortunately, has not been found in the Society of Wireless Pioneers Archives. Accompanying this hand-written manuscript instead are a series of small photographs of those original prints which lack any annotation and are presented here as such.

⁴ Near San Francisco, California.

⁵ Clifton Watson, Society of Wireless Pioneers member 403-SGP, who had been half of the "Hallock and Watson" company.

⁶ That is, the frequency of the radio wave would be detected and directly converted to an identical audio frequency, which was rather high and beyond the high frequency hearing range of many people, including Hallock. Heterodyning the signal could convert it to a lower, more easily audible tone.

⁷ "Sic transit gloria mundi," "thus passes worldly glory".