



R E P O R T

Upon the Installation of the Wireless Telegraph Stations

In San Francisco Harbor.

July 23, 1900.

Chief Signal Officer,

Sir:

I have the honor to report that in accordance with my instructions I have established two wireless telegraph stations in San Francisco Harbor, one at Fort Mason and the other on Alcatraz Island.

In order to have two stations in operation by June 30, it was decided to have the necessary men and apparatus at the stations by June 15 as the conditions existing there could not be obtained at our experimental stations. I started from New York so as to arrive there at that time.

While in Washington word was received that the poles at the stations would not be ready before the 26th. On the afternoon of the 26th the poles were completed and the apparatus had just been received. The completion of various essential parts had been delayed so that they had not been assembled, nor the base boards wired, before leaving the East.

On the 27th and the 28th the wiring and installations of the two stations were completed. Six storage batteries broken in transit were repaired and the whole battery charged. The grounds were most carefully made. Local tests were finally applied

which indicated that the installations might be expected to give good service.

On the 28th the first working test between stations was made. The results were entirely satisfactory, as there were no unforeseen complications. On the afternoon of the 29th therefore, a complete test was made in the presence of Captain Dyer, acting signal officer, and of Captain Pratt, post commander of Fort Mason. Messages were exchanged between Alcatraz and Fort Mason throughout the afternoon. Captain Dyer ~~transmitted~~ wired the Chief Signal Officer that the wireless telegraph stations were in successful operation. Corporal Andrews was in sole charge of the station on Alcatraz Island, while Sergeant Ray, Artillery, manipulated the key at Fort Mason.

Samples of the tape received at both stations accompany this report.

The accompanying photograph gives the general appearance of the installation at Fort Mason. It is to be noted that only one battery (five cells of storage) is used for both the transmitting and receiving apparatus, instead of the three batteries, (eight cells of storage, seven dry cells and one dry cell) used by other systems. The circuits also are so arranged that the careful and difficult shielding of the receiving apparatus, usually employed, is entirely unnecessary.

It might be further said that the way in which the elements, coherer, relay, printer and tapper are used is different from that hitherto employed by others. The potential differ-

ence on the terminals of the coherer is therefore never more than 0.4 volts, instead of the usual 1.4. This makes it possible to use an extremely sensitive coherer without trouble. The arrangement also makes the difficult operation of automatically deciphering easy and certain. The printer may also be made to give dots and dashes with any degree of definition desired. The installation was carefully completed. It was tested on four different days. Samples of the tape obtained are submitted.

As complete instructions as possible were given to the operators, one of whom had never seen a set of wireless telegraph apparatus before he arrived in San Francisco on July 1. In order to operate wireless telegraph stations satisfactorily it will be necessary to have both of the men in charge thoroughly trained by a competent instructor. The modus operandi is quite different from that employed by any other method of transmitting intelligence.

Wireless telegraph messages have now for the first time been exchanged on the Pacific slope. The above report shows that the wireless telegraph may be made an efficient means of communicating between army posts.

Respectfully submitted,

Electrical Expert,

Signal Corps, U.S.A.