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by Gordon Bussey.

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The First Transatlantic Wireless Signal

Poldhu, Cornwall to St John's, Newfoundland

George Kemp's transcript of his diary for 1901

[from the original held at Bodleian Library]

January 1st, 1901 - I went to the Works and arranged for a man to make, on our topmast, a new mast head. The carpenters came to inspect the spars when I decided to have a new 100ft. mast made on the spot.

January 2nd - the man started to make the new mast head for the topmast and then I arranged for the construction of a new set of cast steel caps for the new mast.

January 3rd - I engaged a second man to make a mast head on one of the sheer legs and so use both sheer legs for our new mast. A carpenter was employed to prepare a batten which was to be fitted into the middle of the topgallant mast.

January 4th - I fitted caps on the new lower mast and old topmast also the batten of elm on the topgallant mast.

Topgallant Mast

I bought from Brown, Chelmsford the following:-

2 - 41ft. Pitch pine spars (1 - 10" x 9"
(1 - 10" x 10"

the latter with the corners taken off, for which I paid £7. 15. 0d

January 5th - I cut the first spar and had it transferred to the field and then the upper cap was fitted. We had finished by 4.30 p.m.

January 6th - I spent Sunday at home.

January 7th - This morning there was snow on the ground to the depth of several inches. I fitted up a rick cover, as a tent, in the field for the men who was making the new topmast when I received a telegram informing me that the mast fittings had arrived. I telegraphed to Groves and prepared to leave.

January 8th - I left Chelmsford at 8.5 a.m. for Helston, Cornwall, meeting Mr. Groves at Exeter, and arrived at my destination at 7.30 p.m. We went by bus to "The Angel" Hotel where we met Mr. R. N. Vyvyan who had brought a carriage to take us on to "The Poldhu" Hotel, Mullion, where we dined at 10.30 p.m. The ground in the vicinity of the Hotel was covered

with snow to the depth of 6"

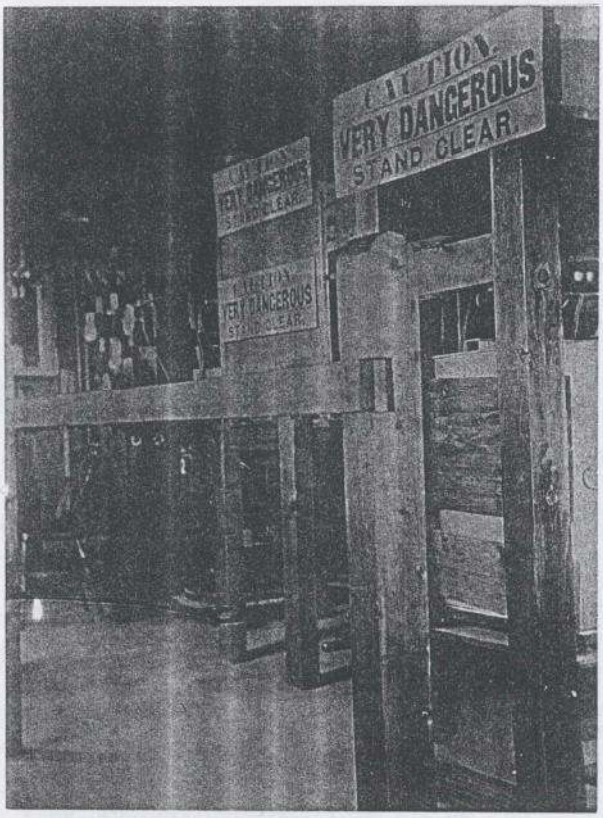
January 9th - I walked to the village of Mullion where I saw Messrs. Mathews & George who loaned me a pair of sheer legs 46ft. long. I hired a conveyance in which I was taken to the Lizard Point where I inspected the spot upon which the mast was to be erected. I then gave George & Sons instructions to finish the hut as soon as possible. In the afternoon I went with the Coastguards to Gunwallow Cove to examine some spars that had been saved from a wreck, when I decided that the old topmast would be worth buying as it could be used as a derrick for erecting masts at Poldhu Station.

January 10th - I left Poldhu Hotel at 11 a.m. and went to the Lizard village putting up at Hill's Hotel. Upon engaging the Coastguards I took them to the hut on the Lizard Point where the remainder of the day was spent in digging the mast hole also the holes for stakes and reeving two tackles for hoisting the mast.

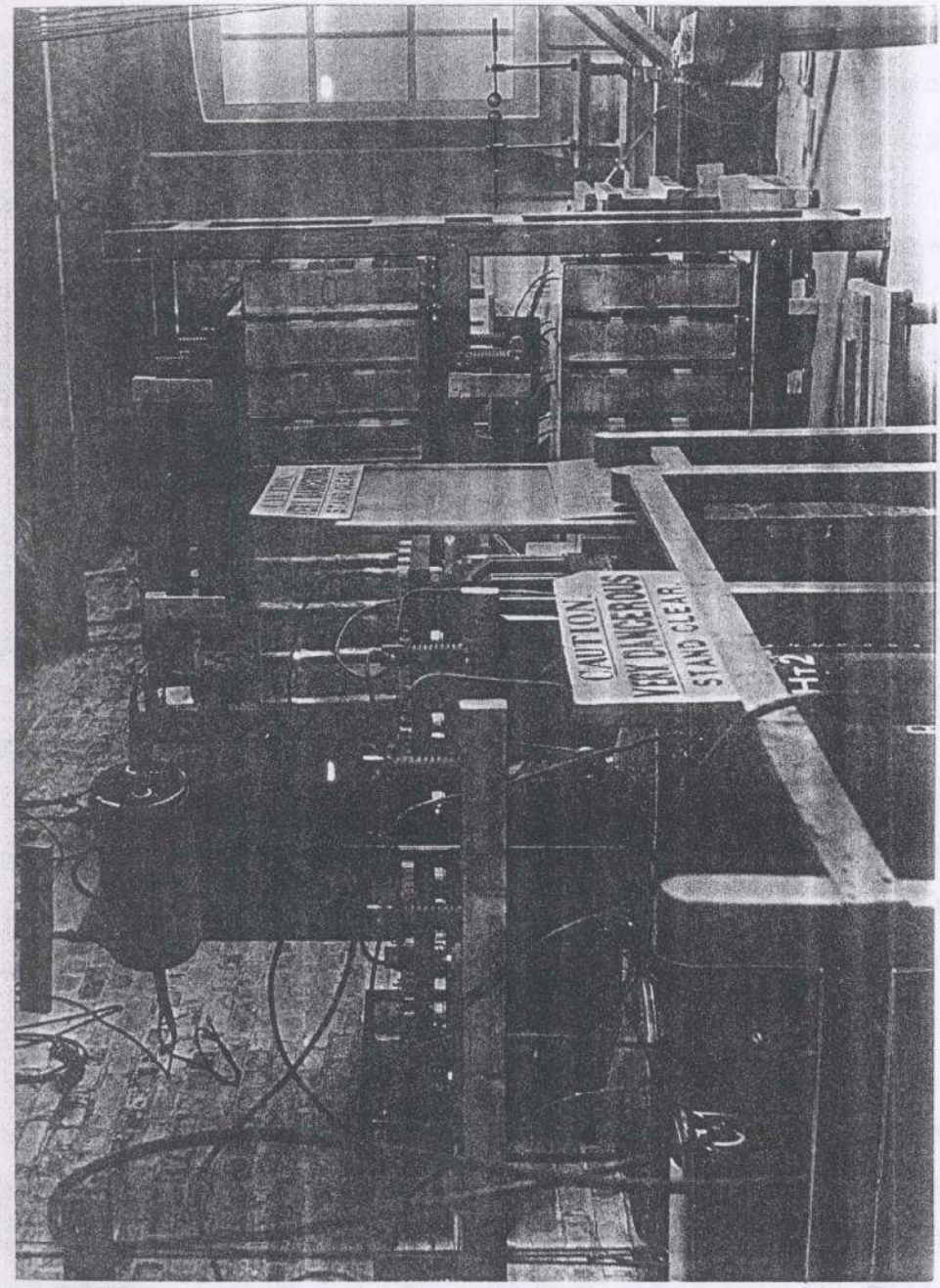
January 11th - We managed to drive in 4 stakes but the other 4 had to be fixed with concrete. I prepared the sheers having to "fish" the upper part of the weak pole. I fixed the rope topmast stays for staying the sheers and fitted two jiggers also a back stay for hoisting.

January 12th - I went back to Poldhu to get the spare Ring bolts, after which I went to Helston Station to see the spars that had arrived on one machine trolley with two small trolleys, one at each end. The men. from the Gweek Co., promised to carefully load the spars on the timber waggons and convey them to the cross roads that night. They rested their on Sunday and with the spars continued their journey to the Lizard early Monday morning. I returned to the Lizard and erected the sheers.

January 13th - I went to Church Cove and attended morning service at Landwednach Church given by the Rev. Vyvyan. This was the last church in Cornwall to discontinue preaching



Poldhu Station 1900 - 1901.



5583. Some of the early apparatus at the Poldhu Wireless Station. On the extreme left are the transformers. The banks of condensers are carried in metal containers in the wooden rack. On the extreme right is the spark gap consisting of two steel spheres mounted on insulating rods.

In the Cornish language. In the afternoon I wrote letters and orders to the London Office.

January 14th - The masts arrived at 8.30 a.m. and these were placed in position on our ground. The lowermast was raised and lowered also the sheers to the ground, after which I set up all the stays with straining screws and secured everything before darkness set in.

January 15th - I fidded the topmast; raised the topgallant mast and lowered it and, after lashing it, set up all the rope topmast stays in the forenoon. In the afternoon I sent the sheers away and cleared the ground.

January 16th - As I could not engage the Coastguards I hired Hendy's two sons with a few labourers, also two horses. In the forenoon I fidded the topgallant mast and set up the rope stays leaving the tackles on in case of a gale. In the afternoon I piled 4 loads of stones on the corner stakes and around the heel of the mast.

January 17th - In all the stays I fitted 2" new rope lanyards and set the mast vertical. I fitted a 4" spare stay to the west side of the lowermast and a new 2" gantline to the west side of the topmast, and then I started to dig the trenches for the zinc sheets.

January 18th - I fixed the zinc sheets into the trenches and connected them with 9" strips of zinc. I made earth connections with 18 18 copper wire, after which arrangements were made with Mr. George to have a stove fixed into the corner of the hut, the hat and coat hooks to be placed in the vicinity of it. The trenches were filled in and the ropes, blocks and tackles etc. were conveyed to the Stable at "Hounsell Bay" Hotel.

January 19th - I cleaned and whitened all the windows in the hut bringing the earth wires through the floor into the hut which was cleaned and the sprit prepared for hoisting. Then followed my journey to Helston where I bought lamps and, on my

return, brought back with me in the bus 4 cases; the first contained Leyden jars; the second, a condenser; the third, 4 accumulators and the fourth, 2 induction coils all of which I packed in the Stable for the night.

January 20th - I unpacked all the cases and transferred the contents to the hut. I cleaned, trimmed and lit the lamps; tested the receivers, inkers and induction coils and sent Groves to the Poldhu for solder, soldering bit and pliers.

January 21st. - I collected all the stationery; fitted the linoleum on the floor of the hut and the leading-in insulator through the side of the hut. I set up all the rope stays and hoisted the sprit. I fitted and lit the stove in the hut and then went back to "The Poldhu" Hotel to see Mr. Marconi. We arranged to see the Poldhu Station in the morning or as much of it as Mr. R. N. Vyvyan had been able to put in the two brick sheds.

January 22nd - I watched the start of the alternator which worked by means of an oil engine, after which I went on to the Lizard where I fitted up the aerial. I made a jigger on circles of wood but did not get signals, I therefore went back to Helston and returned with a case of jiggers left there by Mr. Marconi last night, also pliers, solder, soldering bit, 2 screwdrivers and 1 quart of spirit etc. which I purchased there.

January 23rd - I made and hoisted the new 4 part aerial, 14ft. across the top and 11ft. across the bottom, each wire being 179ft. long when we received from Niton with 3, 4 and 5 quarts between 3 and 4 p.m. I then unpacked the Obach Cells putting them inside the hut and, later, I received on Nos. 140N and 268 Jiggers with 3 and 4 quarts at Niton.

January 24th - I arranged with Niton to send with 5 quarts, consequently we received the five dots on several jiggers and receivers. We then joined up the Obach Cells, 7 in parallel and 14 in series. Mr. Marconi went to the Poldhu in the evening when we received from Niton on Nos. 112 and 240N.

January 25th - We received part of the communication sent from Niton to the Haven and vice versa and the last word that came through from the Haven was "goodbye". In the afternoon signals were received from 2 and 3 jars on Jiggers 284 and 292, also from 4 jars on 284. On the 112 Jigger we received from 9 and 10 jars; the primary wires, inside the Jigger, strengthened the signals.

January 26th - To-day there was a great gale. I asked Niton to send on 3 quarts all day and, when we had finished we received "full stop" and "goodnight" perfectly on No. 328.

January 27th - The gale continued. The weather rope stay on the topgallant mast had stretched, and two jiggers had therefore to be kept on it in order to save the topgallant mast. Professor J. A. Fleming came with Mr. R. N. Vyvyan and both were surprised to see the good signals we were receiving on Jiggers 267, 301 and 328. Niton transmitted with a No. 5 T. Jigger and 3 quarts and the Jiggers upon which we received were 199, 310 and 311, but these were not reliable.

The Third Day of Earth's Steady Electric Medium

January 28th - The great gale from the S.W. continues. I had to shorten the weather topgallant stay. Niton used T. Jigger No. 11 and from 1 to 10 quarts.

328 = M on 3 and near M on 5 quarts
267 = M on 3 and near M on 4 "
284 = Near M 2, 4, 5 and 6 - Q 7
293 = Near M 3

The First Day of a Great Change in Earth's Electric Medium.

January 29th - The gale has now changed to the North West and I had to shorten the N.W. topgallant stay. Niton transmitted with T. Jigger No. 16 and 1 to 10 quarts.

328 = Q with 5
284 = Near M with 4 and 5 - Q with 6 and 7
323 = S with 5 and Q to S with 6

The Earth's Electric Medium Changing

January 30th - I set up all the stays on the top and

topgallant masts. Niton used T. Jigger No. 13 and 1 to 6 quarts.

328 = S 2, near M 3, 4 and 5
284 = S 3, near M 4 and 5
267 = S 3
112 = S 4

Another Change in the Earth's Electric Medium.

January 31st - The weather has been quite calm to-day. I received signals from the Navy at Plymouth and Portland, also stations on the French coast. Niton used T. Jigger 1ft. square, ratio 1 to 6 and 292 = S 2, near M 3 and 4, S. 6, near M 7, M 9 and M 10. I had to use a small condenser from the junction of the tube to the air and earth terminal in order to intercept the French stations, after which I went to the Poldhu Station for the night.

February 1st - We have had another calm day. I returned to the Lizard where I received signals from the French stations again on No. 292 but the small condenser was omitted. Niton did not commence work to-day on account of H.M. Queen Victoria's funeral.

February 2nd - The weather continues calm. Niton Station has not yet commenced work. We visited Kynance Cove and then went to the Memorial service at Landwednach Church, after which I returned to the Lizard Station and called Niton with whom I arranged to work on the following day.

February 3rd - The weather is still the same. Niton tried the T. Jigger No. 9 when we received no signals but, in the afternoon, Niton used 1ft. T. Jigger No. 331 and this gave good signals for the testing of tubes.

February 4th - Niton sent on a 1ft. square T. Jigger and from 10 - 18 quarts. We managed to get 10 quarts on No. 331 Jigger by which a most easy transmitting tune was formed.

February 5th - Distance Matters Very Little. We received from the Navy on 331 in the forenoon and, in the afternoon, from Niton on 10 quarts and a 1ft. square T. Jigger. Later we received on No. 332 with 2 primary coils, each 9ft. long,

fitted over each end of the secondary 240ft.

February 6th - I wound another 332 reception Jigger and received M from Niton, after which I put 2 extra secondary coils of 60ft. upon 331 secondary making it 60 + 180 + 60 = 300ft. and used two 12ft. primary coils, this made it O.K. for 10 quarts whereas, before it took only 8 quarts. It appears to me that the greater the number of quarts used the longer must be the secondary, and that distance matters very little.

February 7th - The short Jiggers viz. 199 and 310 received signals well on 3 quarts and, considering the distance, this was good. I joined up the 10" coil and made a 1ft. square T. Jigger. One coil I found not good enough for the 8 mm. spark, I therefore put on 2 coils in series and worked with 16 volts L.T. but I obtained better results from 32 volts.

February 8th - Signals were received from Portsmouth and Portland on No. 322 Jigger and, in the afternoon, M from Niton was received proving that we were getting th signals as good from a greater distance, say Portsmouth, with less energy than was being used at Niton and on the same Jigger. Note that Portsmouth uses only 2 wires for transmission with not such a long aerial.

February 9th - I found two Jiggers,viz. 330 and 314 in series with 216ft. primary coils in parallel, recorded M in every position, and it is quite possible that a more sensitive tube is all we require. I charged accumulators for 1½ hours and, in the afternoon, transmitted to Niton from 5 to 5.15 with 9 quarts and 10 and then I stood by until 9 p.m. to make tests with Xs.

February 10th - Transmission and reception commenced with 10 quarts using a 6 mm. spark, after which I put on 12 quarts reducing these later to 11 quarts. Then I tried the plain aerial with a 3 c.m. spark when Niton received Q and, finally, I returned to the tune when I received M each way.

February 11th - Portsmouth and Portland caused us to stop until 3 p.m.. I received orders to proceed to Poldhu and left

the "Hounsell Bay" Hotel for "The Poldhu" hotel at 2.30 p.m. I asked Mr. P. W. Paget to call at "The Poldhu" Hotel on his way to the Haven Station at 8.30 in the morning.

February 12th - I received instructions from the London Office to start making a circle of 20 = 200ft. masts to support the aerials for tuning the Poldhu transmitter. I wrote to the London Office in answer to this, after which I went to the village of Mullion and then to Mullion Cove to see Mr. George, the Builder, re employing some men to assist me with the construction of the masts. At the Cove I was fortunate in securing an old navy man capable of splicing steel wire, also a Norwegian Merchant seaman for working aloft.

February 13th - I measured and marked the ground for the circle of 200ft. masts in four parts viz. lowermast, topmast, topgallant and Royal masts. I started digging the holes in which would be formed a concrete base for the lowermast. I engaged Mr. George, the son of the builder, as my foreman for this work. Mr. Carter then arrived from the Lizard.

February 14th - The men started their work yesterday. A drawing of the installation was made with Mr. Taylor in the Instrument room, after which I talked with Mr. Carter.

February 15th - I conveyed, from the beach, the spar that I had bought from the Coastguards. This topmast was made of Oregon pine 58ft. long, 12" square at the heel tapering to 8" in diameter at the top. It was marked considerably by the sea, rocks and sand but a few scrapers and planes soon made it look respectable.

February 16th - I finished cleaning the old mast and prepared to erect it as a derrick for lifting the first lowermast. I had a trolley and planks, that had been borrowed from the village of Mullion, conveyed to the Poldhu Station and, in the afternoon, I went to the Lizard from which place all the spare tackles and erection gear were also forwarded to the Poldhu.

February 17th - I went to Gunwallow Church in the fore-

noon where I took the Sacrement and, in the afternoon, I inspected the cliffs tobe used for the wire in the vicinity of the Station.

February 18th - A diagram was made of connections in the Instrument room after I had started the men on their excavation work.

February 19th - The work carried out was similar to that of yesterday.

February 20th - The same work with power experiments.

February 21st - Power experiments were continued with Mr. Taylor, and the belt was fixed to the oil engine. I visited Helston. When I returned I found that Major Flood Page had sent me the Occasional Paper No. 4. The men are still excavating.

February 22nd - I wrote to Major Flood Page's Managing Director and Mr. Pochin, the new Engineer of the Company, after which I went through the experiments carried out in the Power House and Instrument room during the past month. The men are still continuing their work.

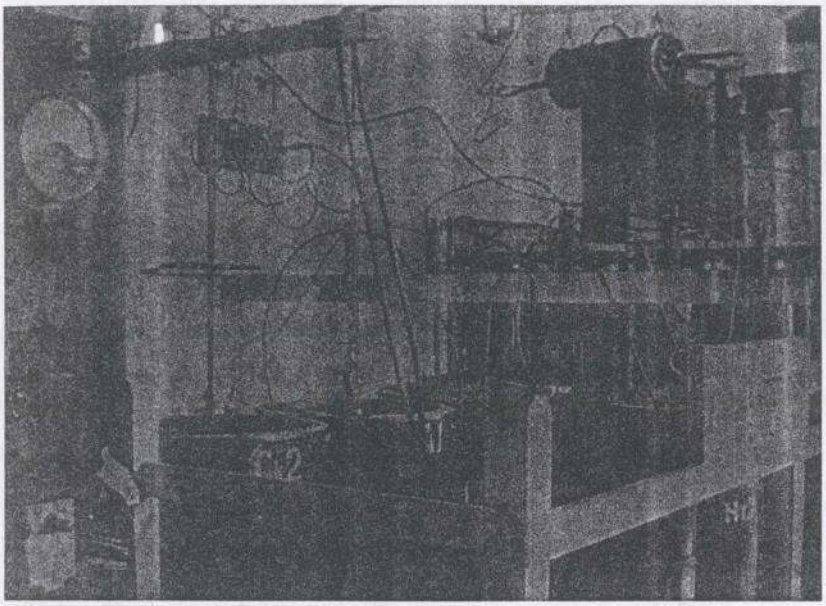
February 23rd - I received a telegram from which I learned that the spars, masts and stakes had arrived at Helston Railway Station. I went to Gweek where I arranged for the conveyance of these to the Poldhu.

February 24th - Sunday - I went to Gweek again on my bicycle and arranged with Mr. George for the conveyance of the masts and spars, and asked him to send a van for the ironwork and stakes etc.

February 25th - The masts and stakes were delivered in the afternoon and, by the evening, the stakes had been fitted in the holes.

February 26th - I filled up the holes with rock and painted the ironwork of the stakes; I coated the lowermast with boiled oil and arranged for theholes in the caps to be made larger.

February 27th - I made holes in all the caps to take the coach screws. The men are at work digging.holes.



Transformer room, Poldhu Station, 1900 and 1901.

February 28th - Messrs. Bullivant & Company sent shackles with $\frac{3}{4}$" and $\frac{7}{8}$" pins instead of $\frac{5}{8}$" and 7/16" ones.

March 1st - I made spunyarn and filed holes in the caps. The men are doing excavation work.

March 2nd - I received from G. W. Collins, Mast and Block Maker, 11, Upper Smithfield, London E., 500 fathoms of $\frac{5}{8}$ plough steel wire and 36 helm dead eyes for making rigging and stays for masts.

March 3rd - In the forenoon I went to Gunwallow Church and, in the afternoon, to Mullion Church.

March 4th - I opened a coil of wire and cut it into lengths of 50 and 62ft. to form the lower stays; spliced a dead eye in one end and a thimble in the other. The two dead eyes were connected by a lanyard of the best tarred hemp bolt rope and the whole passed through boiling tar. This formed an insulated break in the steel wire stays.

March 5th - I sent timber waggons into Helston to bring out two 50ft. poles and these were going to be made into Royal masts but, unfortunately, they were of pitch pine wood and, according to my specification for 200ft masts, would have been better had they been of Oregon pine.

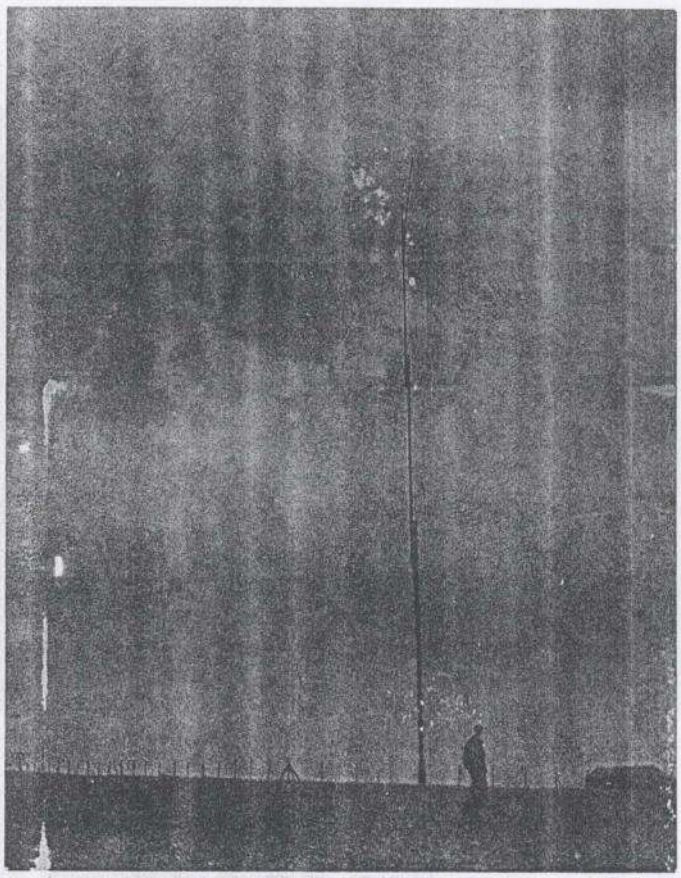
March 6th - The men have been splicing the dead eyes and thimbles in the steel wire rope and have been cleaning the poles sent here to be made into Royal masts. The Gweek Company sent out a log of Oregon pine to be made into lowermasts.

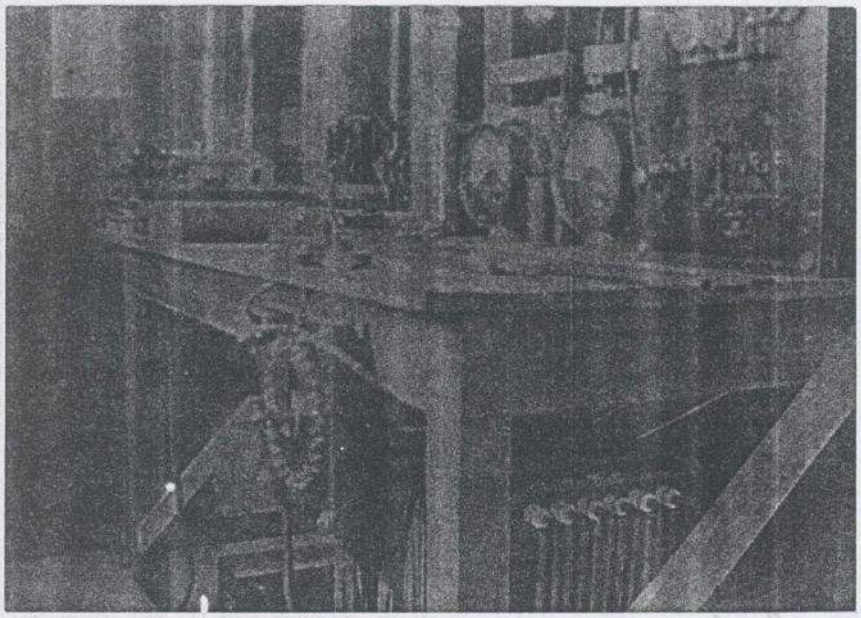
March 7th - To-day the men made wire stays and cleaned the log of timber for the lowermast.

March 8th - The Gweek Company sent out two logs of Oregon pine to be made into topmasts. The men's work was the same as yesterday.

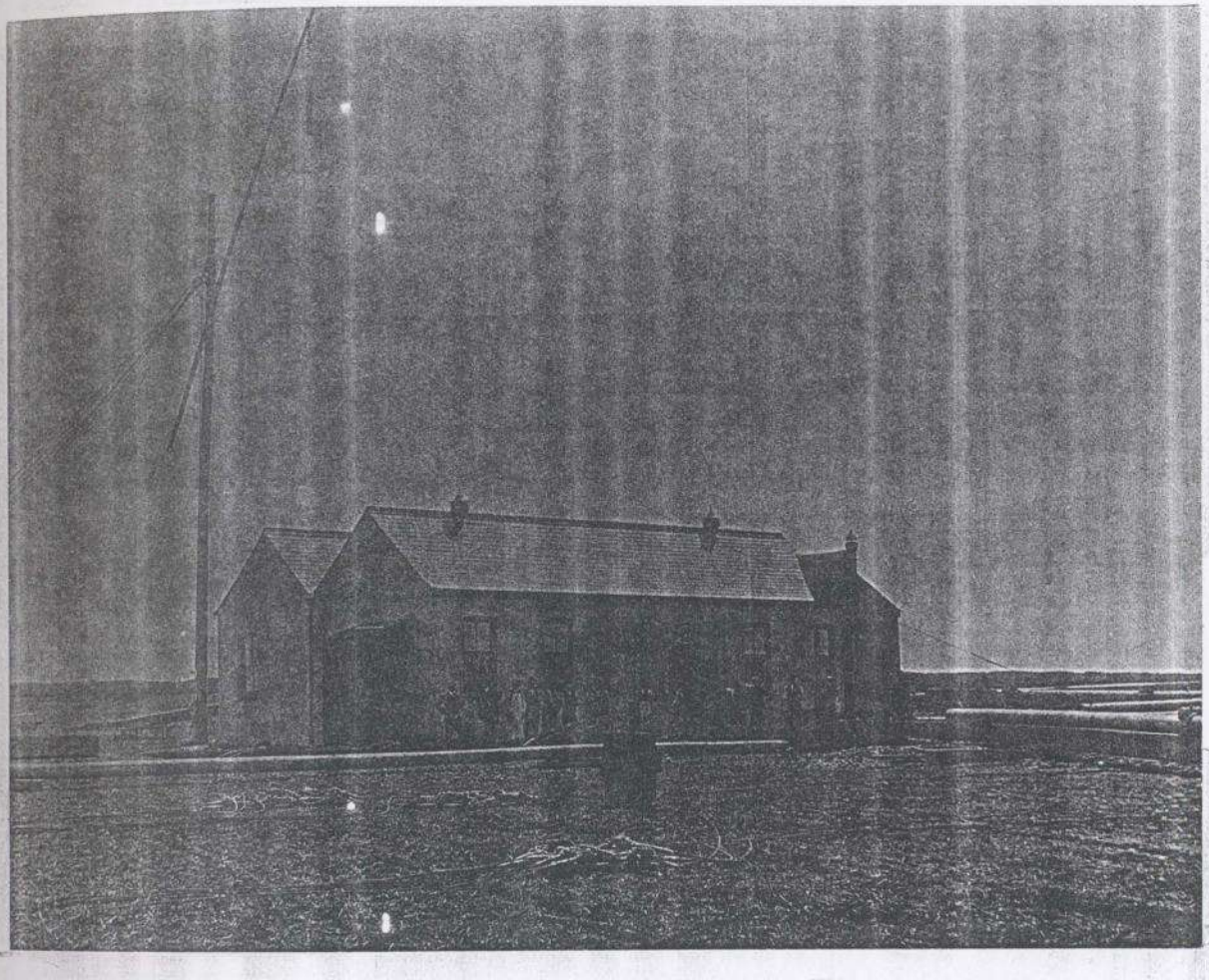
March 9th - The men continued the same work as on the 8th. I went to Harvey & Co. at Hayle and arranged for the construction of two lower caps to take the 12" diameter new topmasts

The Lizard Station with mast Transferred from Hoverscourt. And Erected Jan 14 15 & 16 1901





5580 The Operating table at the Poldhu Wireless Station in 1901. This is the first wireless telegraph operating table.



5582 An early photograph of the Poldhu Wireless Station showing the first experimental aerial for working with high power. This aerial took the form of a metal can suspended from the end of a pole which was hoisted to the top of the derrick, used for erecting the 200 feet high masts and which later carried the aerial. Parts of these masts are seen in the picture.

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that I had made leaving the forged iron caps of the 10" topmast - sent by mistake - as a pattern.

March 10th - Sunday - I attended the service at Mullion Church.

March 11th - The men's work to-day was the same as that carried out on Saturday. I received a telegram from Mr. Paget to the effect that he was going to the Lizard Station.

March 12th - The men continued yesterday's work.

March 13th - Lengths of steel wire were cut to make into topgallant stays.

March 14th - The log of Oregon pine was raised on blocks and the 10ft. hounds were cut for the lower cap, also the masthead and square for the upper cap. Sheaves were fitted in the heels of the topmast for hoisting with steel wire mast rope, and fid holes were made for fidding them on top of the lower cap.

March 15th - I erected the mast that I bought from the Coastguards for lifting the first lowermast, and fitted steel wire strops into the heels of the masts to assist in fidding with a tackle.

March 16th - The men have fitted steel wire stays and strops to-day. I went to the Lizard on my bicycle to see the messages as they came through from Niton.

March 17th - I went to Gunwallow Church in the forenoon where I took the Sacrement and, on returning, I wrote to the London Office.

March 18th - I received 36 dead eyes also two vices for breaking in the steel wire. I condemned the first topmast sent here as not sufficient to carry the heavy topgallant and Royal masts.

March 19th - I made steel wire stays and filled in the Tower pits.

March 20th - The same work was continued.

March 21st - The wind blew and the rain fell heavily

and this prevented continuation of the outside work, I therefore fitted the Poldhu Stable for making splices in the steel wire stays. Mr. Pochin arrived and I was able to show him the defects in the material sent here.

March 22nd - The weather to-day has been very unfavourable, but I was able to work on the lee side of the Power House. I received news, concerning the erection of the masts, from Mr. Marconi in New York.

March 23rd - I went to Mullion Cove in the forenoon to enquire about timber and chain moorings. Having seen Mr. Pochin off by train, I wrote to the Storekeeper of the G.W. Railway re sleepers.

March 24th - I went to Gunwallow Church.

March 25th - I received 3 logs of timber for making topmasts and arranged to purchase from Mr. Thomas 150ft. of 3 x 9 planks. I measured a circle starting from the sea side of the Power House.

March 26th - Excavation of new pits for the stakes was started and masts fixed to the west side of the Power House.

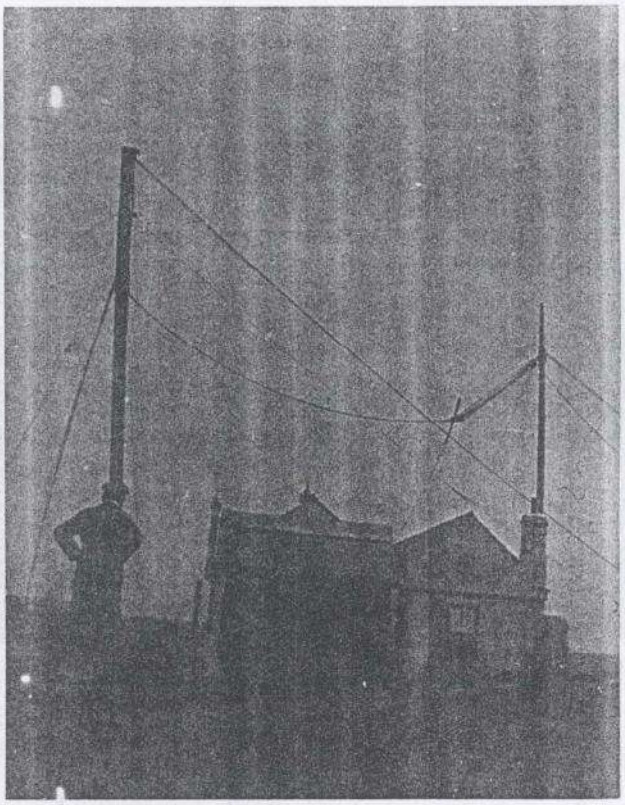
March 27th - Another log of Oregon pine was delivered and then I removed the first two lowermasts to the sea side of the Power House.

March 28th - I received another log of Oregon pine also 3 x 9 planks from Mr. Thomas at the Polurrian Hotel.

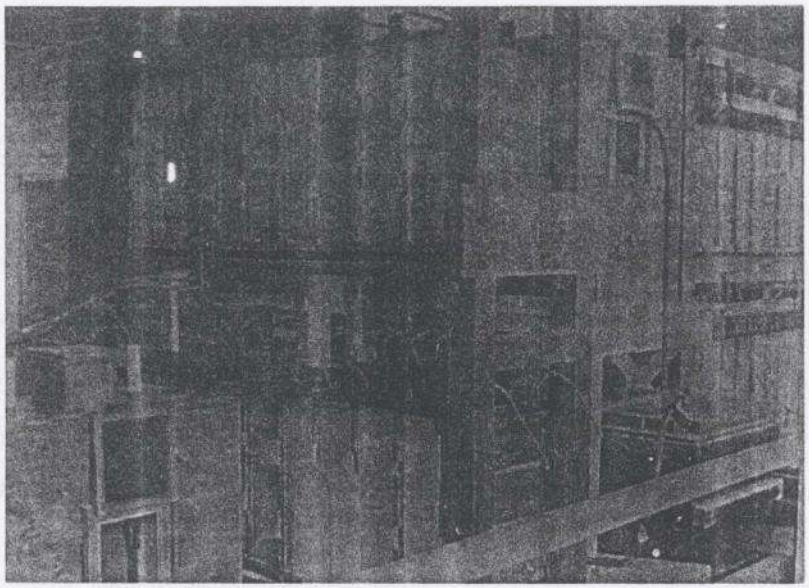
March 29th - A further two logs of Oregon pine were delivered for making the topmasts, after which the large crane at Mullion Cove was lowered and 200ft of timber 9" x 12" square were conveyed from the Cove with 4cwt of chain and two poles with which to make sprits for the new masts if necessary.

March 30th - I went to Helston to get the new choking coils and purchased a new bicycle from Mr. Lory for £6. 17. 6.

March 31st - Sunday - The weather to-day has been milder. I went to Gunwallow Church in the forenoon and, in the



The first lowermast erected at Poldhu
Station by means of a derrick in the year 1900.



Poldhu Station 1900 and 1901. Bank of Condensers.

afternoon, Mr. Entwistle arrived via Penryn and, during the evening, I wrote.

April 1st - The men have been making the lower stays and the carpenters the topmast out of Pitch pine log 65ft. 12" in length. Mr. George started to make a shed 70ft. x 15ft., near the wall of the Stable, in which the making of new masts would be carried on when the weather was wet or during a strong easterly gale.

April 2nd - The topmast stays are being made by the men while the carpenters are making the masthead upon the topmast and fitting the caps. I received two 12" logs of Pitch pine and arranged with the village blacksmith to make 12 -$\frac{2}{4}$" rings at 4/- per dozen and fix rafters upon a 70ft. shed etc.

April 3rd - Dr. J. A. Fleming arrived at 12.30 p.m. There was no wire to splice and the carpenters had to cease work on account of the westerly gale.

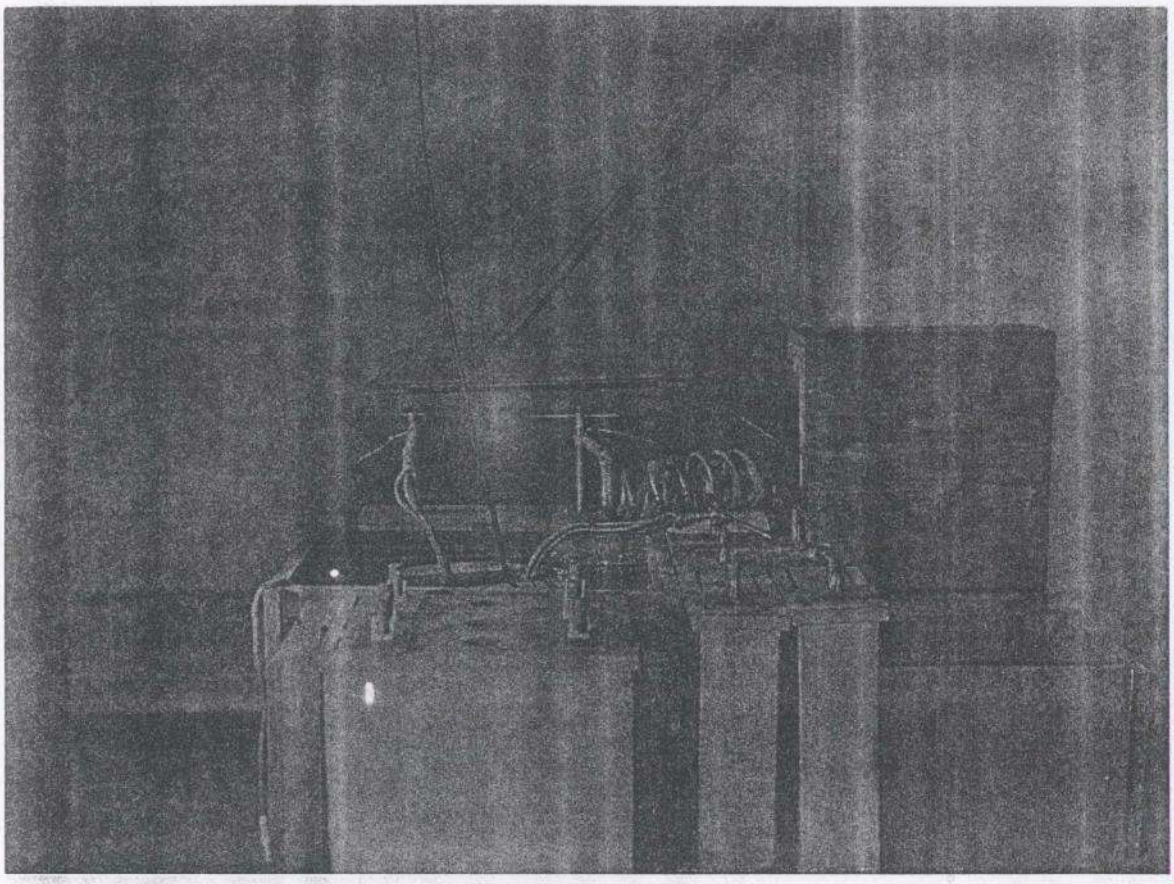
April 4th - I left for Chelmsford at 6.30 a.m. and arrived there at 8.3 p.m. where I remained until

April 9th - I left here at 2.30 a.m. and arrived at Liverpool Street at 3.45 a.m. I walked through London to Paddington in 2$\frac{1}{4}$ hours and, by 4.30 a.m it was daylight. I left Paddington at 8 a.m. and arrived at Guinea Road at 6.30 p.m. and, from here, I travelled to Helston and on to "The Poldhu" Hotel.

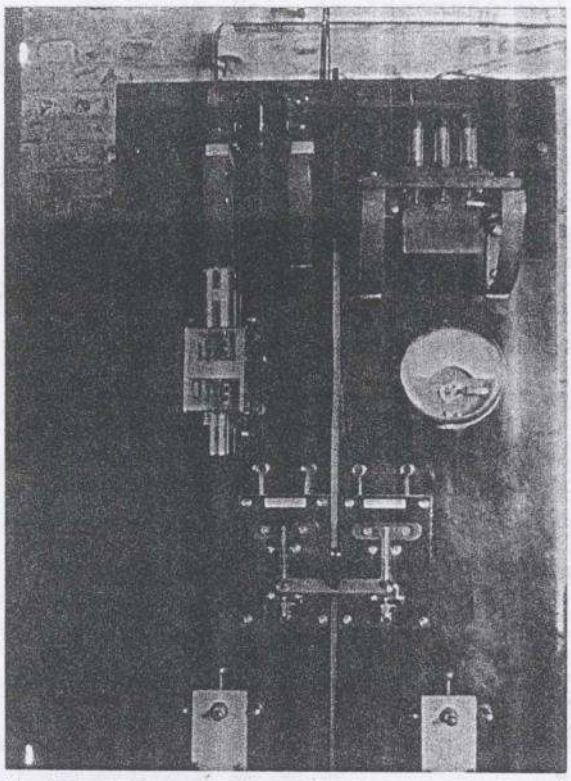
April 10th - During the day the carpenters have been employed making two small spars for the purpose of hoisting the aerials upon 200ft masts.

April 11th - The various parts of 2 - 200ft. masts I assembled on the ground, after which I went into the Instrument room and put the first oscillating coil into the oil tank. This coil was made with the best indiarubber 7/16" insulated wire for the primary with 16 sections of the secondary over all.

April 12th - 2 - 12" logs for making the topmasts were unloaded from Chenouth's timber waggon, Helston. I then carried



The experimental transmitter, Poldhu Station, 1901.



The Switchboard, Poldhu Station
1900 and 1901.

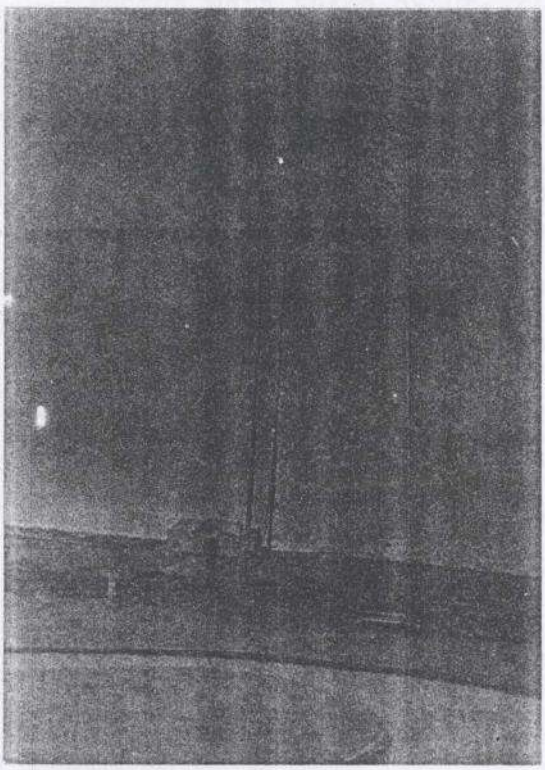
out experiments in the Power House with sparks in order to test the transformation of the first oscillating coil, after which I experimented with "Tangye Jack" having to send for a new cap leather.

April 13th - The rain fell in torrents all day. Six men have been splicing steel wire and 4 carpenters have made masts under cover. I carried out experiments with the tertiary spark; the primary 6 c.m., secondary, 2 c.m. and the tertiary 1¼ c.m. I found that 8 condensers in series were better than two in parallel and 4 in series.

April 14th - Sunday - In the forenoon I went to Gunwallow Church and, in the afternoon, I inspected Poldhu and the Polurrian Coves with Dr. J. A. Fleming in the hope of finding a good site upon which to build a bungalow.

April 15th - I engaged another labourer and another new topmast was started, after this sections of stays were fitted together, by means of lanyards and dead eyes, in order to make Royal stays. I carried out experiments with the three sparks when I came to the conclusion that No. 1. choker was not required. This was taken out when we found there was more power. I then made an aerial with a zinc cylinder at the top which I hoisted on to the end of the sprit at the top of the derrick that had been already erected for lifting the lowermast. This was done in order to give Dr. Fleming an opportunity of testing with me the transmission power at the Lizard and checking the results on several receivers.

April 16th - To-day I tested with a T. Jigger and 2 primary coils in series and, now that the power has increased, the two transformers were also tested in series. Then followed my journey to the Lizard where the experiments were repeated in the evening. On my return I brought back the tapes for Dr. Fleming to compare with each experiment and these he considered quite satisfactory.



Poldhu Station 1900 and 1901.
The first two 200ft. masts were
erected here for experiments.

April 17th - I went to the Lizard Station again; hoisted the sprit and the aerial and received messages from Poldhu from 12.50 - 1 p.m. and 2.30 - 4.30 p.m., after which I returned to the Poldhu and compared notes with Dr. J. A. Fleming.

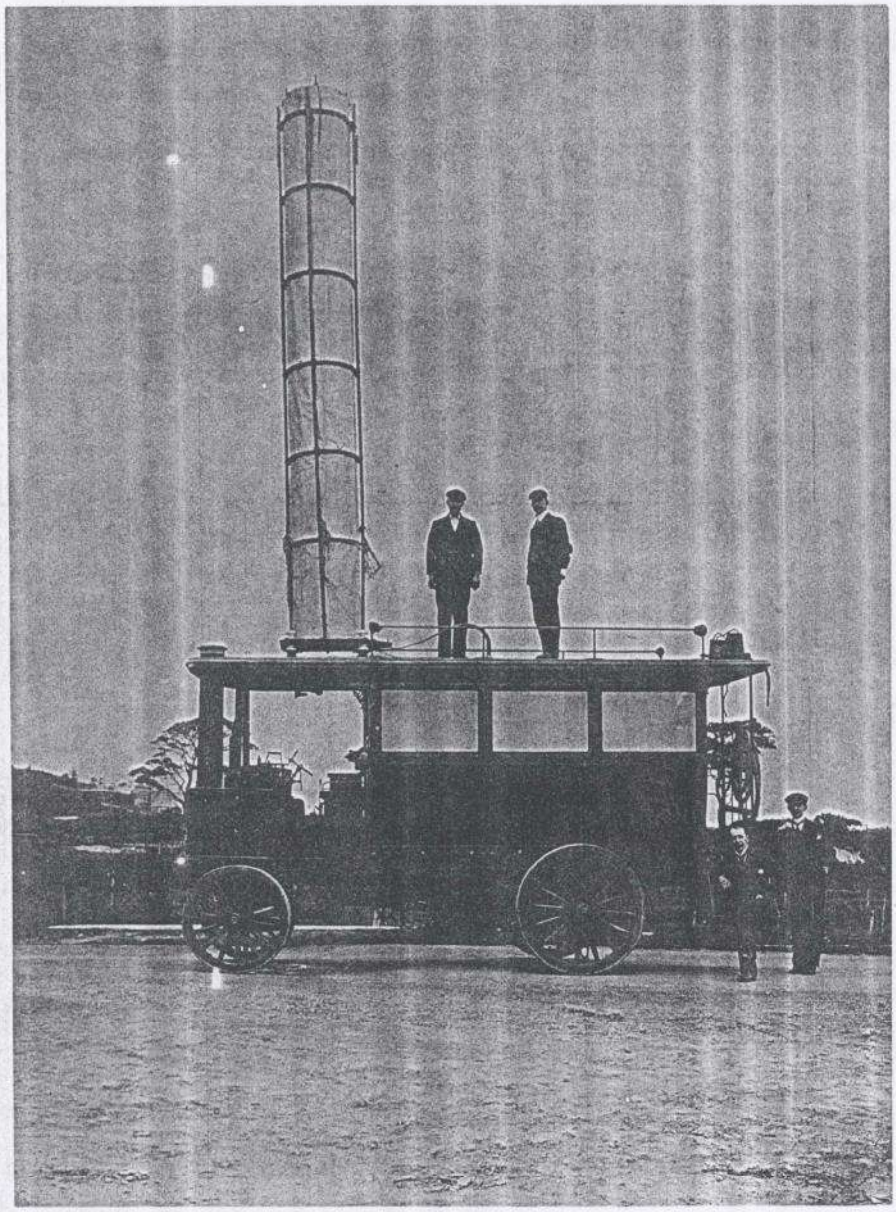
April 18th - Photos were taken by Dr. Fleming of the outside of the Power House including the aerial which we used for the first experiments. The sprit was lowered and the aerial measured which was 54·4 ft. above the lower insulator and this was 10·8ft. above the ground, I received 14 stakes, 40 ring bolts and 60 rings and then I started to fix the stakes for the first two 200ft. masts. I prepared 2 - 16" lower masts for erection by means of the derrick.

April 19th - I fixed the stakes with concrete. The carpenters have been making topmasts and cutting mast heads on the lowermasts. Dr· Fleming carried out experiments with the primary sparks and reduced the condensers.

April 20th - Dr. J. A. Fleming left here in the morning while I was erecting, with the derrick, No. 2 mast. After this I went to the village Post Office to forward a book and get details of a telegram that had been sent to the Haven , therefore I had to write to the Secretary of the G.P.O., London for the original telegram that had been sent from Mullion. In the afternoon I prepared No. 1 mast through the lower caps and this meant the erection of both together.

April 21st - I went to the Lizard in search of a fountain pen that had been lost by Dr. Fleming and, upon arriving there, discovered that Miss Davis, the daughter of the Lighthouse Engineer, had found it. In the afternoon I went to Church and, in the evening, I wrote to Dr. Fleming and Mr. Pochin.

April 22nd - I tried to lift No. 1 lowermast and topmast together using No. 2 lowermast as a derrick, but I was delayed by the stake of No. 2 mast breaking consequently a new one had to be used and this was supported by a 12" baulk of



Motor car for the Haven experiments, 1901.

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timber and a chain 12ft. long and ¾" thick. For three other stakes I prepared similar supports.

April 23rd. - I erected No. 1 lowermast with the topmast and fitted a triatic stay between the heads of No. 1 and No. 2 lowermasts. I then fidded and stayed No. 1 topmast and wrote to Dr. J. A. Fleming, after which I received news from the Secretary of the G.P.O. concerning the telegram.

April 24th - I fidded No. 2 topmast and fitted a triatic stay between the heads of No. 1 and 2 topmasts. I sent the broken hook of the tackle to Mr. Pochin and informed him that all the blocks he had sent were made of bad material.

I received a letter from Dr. Fleming to the effect that Mr. G. Marconi was coming home in the "Campania."

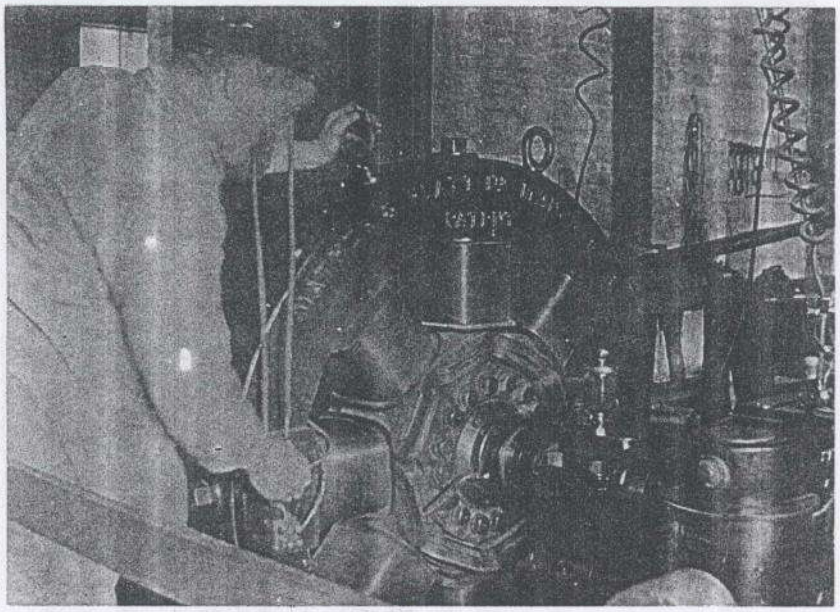
April 25th - Mr. G. Marconi's birthday. I fitted wire suspenders to the topmasts. Mr. Chenouth brought with him 4 logs of Pitch pine out of which the Royal masts were to be made. I sent a specimen of rope to the London Office and "fished" No. 2 lowermast with the derrick that was used for erecting the mast, and then I wrote to Mr. Marconi.

April 26th - I hooked tackles to the topmast head in a strong breeze and raised the topgallant masts ready to fid when the weather moderated. I fitted a wire strop to the upper topmast cap for hooking the second tackle and for fidding the topgallant masts.

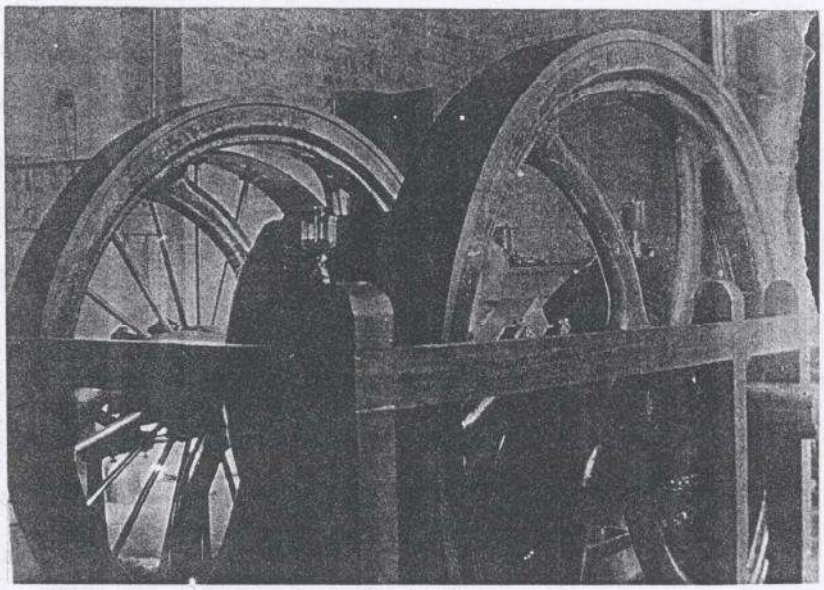
April 27th - I fidded and stayed both topgallant masts and fitted the triatic stay between the two mast heads. We worked until 8 p.m. to finish this giving the men tea from the Hotel. We unloaded the timber waggons, belonging to Mr. Chenouth, which contained the following:- 4 logs of timber - 1 for the topmast, 1 for the topgallant mast and two for the Royal masts.

April 28th - Sunday forenoon I went to Gunwallow Church and took the Sacrement after the service.

April 29th - Suspension strops were fitted to the top-



5576 The 25 Kw. Mather-Platt 50 cycle alternator providing current for two 20 kw Berry transformers; stepping up voltage from 2000 to 20,000. This was the generator at the Poldhu Station; the first high power wireless. 1900.



5579 The 32 H.P. Hornsby-Ackroyd oil engine installed at the Poldhu Wireless Station (early 1901) for driving the alternator (see photographs 5576) to generate power for the first comparatively high power wireless station.

gallant masts and the timber waggons were unloaded, belonging to Mr. Chenouth, the contents of which were 5 logs of timber and 1 topgallant also four Royal masts were going to be made from these.

April 30th - I prepared No. 1 Royal mast for erection when the weather changed to very wet and a strong S.W. wind blew which prevented the continuation of the outside work. Thimbles and shackles were delivered and, as the former arrived round I had to return them.

May 1st - I hoisted No. 1. Royal masts through the topgallant caps but the wind and rain kept us from fidding it, consequently the men had to take up their mast making and wire splicing. In the afternoon I received 12 sheaves, 24 cheeks and50 pairs of insulator shackles each of which had 2 straps and two pieces of ⅜" iron for suspension.

May 2nd - Both the Royal masts were hoisted ready for fidding and the stays temporarily set up. Then the work of fitting the stays from the new flexible steel wire was continued. I made out the Accident form and telegraphed to Dr. Haswell.

May 3rd - I fitted the stays with 2" new flexible wire and had the 10 acre field cleared, after which I sent the Accident form to Dr. Haswell to be filled in.

May 4th - I lashed the other Royal mast and fitted the tackles for hoisting the large aerial. Mr. Chenouth's timber waggon was unloaded which contained 4 logs of timber and, from these, the topgallant masts were to be made and the condemned blocks sent away to Johnson & Phillips.

May 5th - I went to Gunwallow Church in the afternoon and from here to Hellzephron in the evening. The weather had changed to wind and rain.

May 6th - To-day the men have been getting the masts into position into which the caps were to be fitted. I received two lowermast caps, 8 topmast caps and 2 Royal also 600 fathoms

of 9/16" wire. We have had little rain to-day but there has been a strong wind.

May 7th - I fitted the caps on the lower and topmasts and spliced the thimbles and rings for the lower and the topmast stays.

May 8th - Flora day at Helston. Half the men on leave and the remainder fixed the lower caps; they also remade the ground in the vicinity of Nos. 1 and 2 lower masts and spliced the steel wire.

May 9th - The men's work was similar to that of yesterday. I went to Helston Railway Station with an invoice for iron thimbles but the man I wished to see was not there. I then went on to Porthleven to purchase blocks but returned with only a price list.

May 10th - I went to Falmouth and purchased of Stephens and Sons 2 dozen galvanised iron thimbles and of Deeble & Sons 6 dozen galvanised iron thimbles and I arranged to have clump blocks made for 6" rope to my specification. On my return I found that six fids, 6 sets of topgallant caps and 6 dozen thimbles had been delivered from Helston Station.

May 11th - I received the rope from Stephens & Sons, Ashfield, and fitted the topmast on the ground into the caps of No. 3 lowermast. In the afternoon I went to Godolphin where I saw Mr. Toy in connection with the making of ring bolts and stakes.

May 12th - I took the Sacrement in Gunwallow Church and, in the afternoon, I checked all the mast material etc. in the Store.

May 13th - I fitted the topgallant mast into the caps and prepared another topmast and topgallant mast for No. 4 lower mast and then I went to Helston to meet Carter at 7 p.m. I signed the account for Christy & Norris in connection with the supply of iron work for the Dovercourt mast.

May 14th - Sir Richard and Lady Poore left here to-day

I stretched all the new rope and rove the main purchase for the erection of the mast to follow.

May 15th - All the stays were passed with their dead eyes and lanyards through a bath of boiling coal tar, after which I fitted the stays for Nos. 3 and 4 Royal masts and measured the ground for the 20 - 200ft masts.

May 16th - The carpenters fitted the cheeks to the masts and laid out the fifth lowermast with its topmast, topgallant and Royal masts.

May 17th - The heads of the lowermast were raised in order to cut the 10ft. hounds while others were lowered for setting into position also for fitting and erection. Mr. Young left for Hornsby's at noon and then followed the fitting of sheaves to the heel of the topmast.

May 18th - Triatic stays were fitted for the next two masts and the carpenters made a new topmast and a new topgallant mast.

May 19th - Sunday - In the forenoon I went to Gunwallow Church and, in the afternoon, I examined a wrecked ship in the Cove.

May 20th - I set up all the stays of Nos. 1 and 2 masts and wrote to London for porcelain shackles for the second aerial insulators.

May 21st - The carpenters made new masts to-day and the splicers Royal stays. I went to Helston concerning the iron work for the masts etc.

May 22nd - I fitted No. 5 topmast, topgallant and Royal masts on the ground. after which I tested the aerial spar fitted for connecting Nos. 1 and 2 Royal caps by means of insulators. This supported 10 men = about 13 cwt distributed along the spar. I received 8 - 8" blocks, 3 double 6" blocks, 3 single 6" blocks and 2 ironbound hook snatch blocks. Dr. J. A. Fleming arrived in the evening.

May 23rd - I fitted the Royal caps with strops for lifting the aerial spar and rove two double whips for hoisting this. I also rove 2" rope for tackles and fitted the fids for the topmasts.

May 24th - The carpenters pay was raised to 6d per hour extra and a labourer was discharged for exciting the carpenters to strike for more. Steel wire was then spliced for for the royal stays.

May 25th - Pits for the stakes were started in connection with No. 3 mast. Mr. G. Marconi arrived with his Secretary Mr. Blades, also Mr. Paget. I then went to Helston to order coach screws and screws for heel stops on the topmasts.

May 26th - Mr. G. Marconi and I journeyed to the Lizard where arrangements were made for Carter to convey all the Leyden jars and aerials etc. to Poldhu. Having returned I went through all the details of the masts etc. at Cape Cod.

May 27th - I fitted 4 wires, 10 feet apart, to a 33ft. aerial spar insulated with 2 ebonite rod insulators when they were hoisted between Nos. 1 and 2 royal caps. The lower part of the aerials were drawn out to a spar, on the inside stakes 95ft. from the masts and 6ft. 6ins. above the ground, and then by a single wire to the Power House. I sent a telegram to the Haven asking them to start communication but they did not receive it.

May 28th - I sent another request at 3 p.m. to the Niton and Haven Stations. Dr. Fleming managed to get 1⅛" spark on 1/60 Microfarad. Using 9 - 16 quarts we received tunes but the best ones were obtained from 14, 15 and 16 quarts. From Niton we received one short message as the Xs were troublesome between the hours of 3 and 5 p.m. but, after this, they disappeared.

May 29th - I requested Niton and the Haven to send from the 1ft. square T. Jigger tunes 16 - 22 quarts. We received very few messages on account of the Xs.

May 30th - To-day Dr. J. A. Fleming left here. In

the morning the weather was fine and the wind was S.W. but, at noon, this had increased and the rain fell. Our reception was not so good to-day and, after 16 quarts we began to lose the signals, we therefore concluded that turns of large "Henry" would imprpove matters and this we decided totry on the following day

May 31st - Mr. Bannatyne left us in the forenoon and I went to Helston on my bicycle where I purchased a drum of aerial wire which I brought with me on my return. The signals in the afternoon were very good when we used from 0 - 20 large "Henry" and 16 quarts, after which the signals faded. I transferred 4 wires to a wooden cross and started again at 9 p.m. when I had very little luck.

June 1st - I packed most of the apparatus for transmission and reception at the Lizard. I left Poldhu at 8.30 a.m. and hoisted the aerial at the Lizard but the Navy and Xs prevented us from getting signals and messages clearly, consequantly the day has been an unfavourable one in this respect. We then had tea and left Mr. Paget, who resides at the "Hounsell Bay" Hotel, in charge of the Lizard Station. We returned to "The Poldhu" Hotel.

June 2nd - I went to the Lizard again where I at once received good signals. Having put 4 wires at the top of the insulators the signals received were still good. After this I lowered the aerial until it was in line with the topmast head when the signals still came through. A horizontal wire 48ft. was fixed and, with a single coil, reception was at once good.

June 3rd - We went to the Lizard Station at 8.30 a.m. taking with us new wire stays for the topmast and topgallant mast also a chain and wooden logs for supports; after these had been fitted we received very good signals. We used a 7 mm. spark while Niton used a 4 mm. one with 14 quarts. I bought 9 pieces of timber at the Lizard and gave Carter £2 for expenses and then I returned to the Poldhu Station.

June 4th - I hoisted a new aerial of 7/22 bare wire;

25 wires each 200ft. long and 1ft. apart at the top while, at the bottom, they were 3ft. apart. In the afternoon we received only NNN from Niton which was clear but, at night, the reception of signals was bad on account of the Xs.

June 5th - Mr. Marconi returned to London. Eight more timber logs arrived when I wrote a new Stock list. Mr. Paget received signals from Niton also a few Xs Niton using 14 quarts.

I went to Cadgewith in the evening and bought 40 fathoms of chain and a quantity of timber for supports.

June 6th - I sent the Stock list to London and a requisition for castings to Mr. Toy, Helston Foundry.

June 7th - I received three logs of timber to make lowermasts - two from Mr. Tyacke and one from Mr. Chenouth.

June 8th - A further three logs were delivered - two Mr. Tyacke sent and Mr. Chenouth forwarded the other.

June 9th - From 9 a.m. to 1 p.m. I worked with Niton also from 3 to 5 p.m. The messages at 1 p.m. were quite readable.

June 10th - I went to the Lizard Station and repaired the fence. Readable messages were received from Niton at 3 p.m. and this was continued till 7 p.m. This day's work has been the best so far at the Lizard Station. I returned to Poldhu when two extra logs of timber were unloaded - one came on Mr. Tyacke's waggon and the other was sent from Mr. Chenouth - and these are going to be made into lowermasts.

June 11th - To-day we have not been working with Niton but the names "Defiance"and "Revenge" came through on the tape. Later we saw the "Defiance" steaming into Penzance. The Navy have been carrying out Wireless experiments and these caused us trouble in our reception from Stations.

June 12th - Mr. Paget returned to the Haven Station. From Mr. Toy of Helston I received 1 topgallant mast, cheek and fittings.

June 13th - Mr. Chenouth arrived with 4 logs of timber

from which topgallant masts were to be made; the accumulators also arrived.

June 14th - He arrived with 4 more logs to be made into topgallant masts. At 9 a.m. I went to Falmouth to see Mr. Deeble from whom I ordered clump blocks, old timber and chain and then I went to Stephens & Son and ordered a rope which had to be made according to my specification. Each yarn had to be the same size throughout and capable of lifting 1 cwt. I returned to Poldhu at 6 p.m.

June 15th - On the outside circle I marked out the place for the pits to be used for the stakes after which I received a telegram requesting me to send a message to the "S.S. Lucania". I waited for the reply from this ship, standing by the receivers until after midnight, but no message came through.

June 16th - I spent the whole day at the receiver but there was not the slightest sign of a signal from anyone. Mr. Fox came to breakfast.

June 17th - I made royal masts and the pits were dug for the outside stakes.

June 18th - The same work as yesterday was carried out.

June 19th - I prepared two further masts for erection according to Mr. Marconi's letter of June 17th.

June 20th - I erected the derrick, at the opposite side of the circle, on to No. 1 mast. Royal masts were made and mast caps etc. fitted, after which I went to Helston to telegraph for more stakes.

June 21st - I fitted the topmast into the lower caps; a pit was dug also a trench for the lowermast. Mr. Paget arrived at 7.10 p.m. when I received news of another 700 fathoms of 9/16" flexible steel wire.

June 22nd - The rain fell in torrents to-day. I put Nos. 11 and 12 lowermasts and topmast together on the ground. I fitted the lashing for the upper ends of the royal stays viz. 5

parts of 1½" rope rove through ¾" ring and then I went to Helston to meet Mr. Densham.

June 23rd - I sent dots to Mr. Marconi who was receiving from 10 O'clock till noon at Crookhaven. I had to force a window fastening in order to enter the Power House, after which I wrote to Mr. Marconi re salary etc.

June 24th - Dots again were sent to Crookhaven in the morning and afternoon and then I went to Kenwick & Poltusco for logs out of which supports were to be made.

June 25th - I received 21ft. of elm 18ft. x 12" from Kenwick for five shillings and nine pieces of timber from Kuger for eight shillings. These were fixed into the pits to act as supports for the stakes and then No. 11 lowermast was raised on chocks by hydraulic jacks ready for erection in the morning.

June 26th - No. 11 lowermast was erected at 8 a.m. after which No. 12 lowermast was prepared and hoisted; I also fitted together Nos. 3, 4 and 5 masts on the ground.

June 27th - The ground was cleared and the derrick put aside; Nos. 11 and 12 topmasts were pointed through the lower caps, after which No. 6 mast was fitted on the ground.

June 28th - Royal stays were made with lanyards at the upper ends. I went to Porthleven and Helston where I found 28 railway metals and 6 logs of pitch pine, two of which were taken to Poldhu by Mr. Chenouth.

June 29th - At noon I discharged all the carpenters and received 28 railway metals and then 15 stakes were cut.

June 30th - I spent Sunday seeing to accounts.

July 1st - The stakes that were cut on Saturday I fitted into the ground.

July 2nd - I fidded and stayed Nos. 11 and 12 topmasts and then followed my journey to the Railway station to meet Mr. G. Marconi. I drew his attention to the pitch pine logs that had arrived to be made into topgallant masts but we discovered that

six of these were rotten at the heels. I received the best tarred hemp bolt rope from Stephens & Sons, Falmouth, also 36 iron boxes and I dispatched 12 carboys and 1 jar.

July 3rd - Nos. 11 and 12 topgallant masts were raised and lowered also their lower masts and the mast ropes were rove. I received two pitch pine logs from Mr. Chenouth for making into topgallant masts and told him to send to the Poldhu the two rotten logs also the thimbles and shackles.

July 4th - I fidded the topgallant masts and stayed them, after which the two royal masts were raised and I rove their mast ropes. Mr. Marconi used the Power plant to signal to Crookhaven.

July 5th - I fidded and stayed Nos. 11 and 12 royal masts and raised the cross bar with 1-7/20, 1-7/22 and 4 - 7/22 and measured their capacities.

Condenser	=	50
Horizontal wire	=	50
1 - 7/22	=	120
1 - 7/20	=	130
4 - 7/22	=	205

July 6th - The royal stays were put into position and the cross beam hoisted with 40 - 7/22 wires, the lower ends of these being 10ft. above the ground, and then I brought it out to a point 25ft. from the centre of the circle but the signals were not much stronger.

July 7th - We experimented with Crookhaven. I asked them their to transmit using 21 quarts. We tried reception, on one aerial first of 25 wires, and then on the aerial composed of 40 wires and, lastly, on both. I tried an adjustable condenser in circuit also a little "Henry". I wrote down a list of the Stock and then went to the Lizard Station with Mr. Marconi.

July 8th - I lowered the aerial of 25 - 7/20 wires and hoisted one of 40 wires = 7/22 to get into tune, and then I experimented with sparks.

July 9th - I stayed No. 2 mast which was on the right

of No. 1 when looking at them from the centre of the circle. In the forenoon the alternator ceased to work. The fidding of No. 3 topmast into No. 3 lowermast followed and, when completed, the two were erected together with hoisting tackles at the heads of No. 1 lowermast and topmast and 2/3 up the No. 3 lowermast and topmast. This was raised with men on the lower purchase and horses on the upper purchase between 6 and 9 p.m. At the conclusion of this I went into the Power House to keep watch on the alternator during experiments.

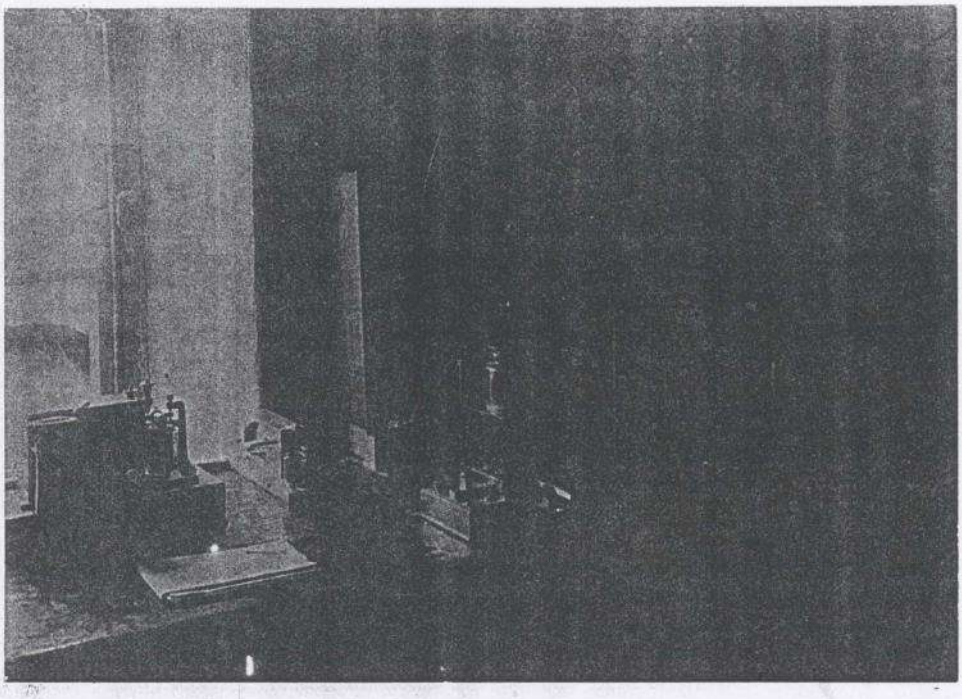
July 10th - The lowermast and topmast No. 3 were stayed and a foundation made for No. 4 mast. Sheaves were fitted into the masts and 5 new topgallant masts were made. Mr. G. Marconi and Dr. J. A. Fleming when using a lower voltage carried out some good experiments.

July 11th - After Dr. Fleming had left the stays were placed into position and the stakes fixed also No. 3 topgallant mast was prepared for hoisting. No. 4 lowermast was erected also the topmast which was fidded with 2 purchases; the horses and men the same as No. 3 mast. Mr. G. Marconi received signals at the Lizard with long jiggers but not on 301 or 306. The condenser in the aerial was used and high power was used here on two 40 wire aerials of 7/22 bare copper wire, one from the top of Nos. 1 and 2 masts and the other from the top of masts 11 and 12 on the opposite side of the circle.

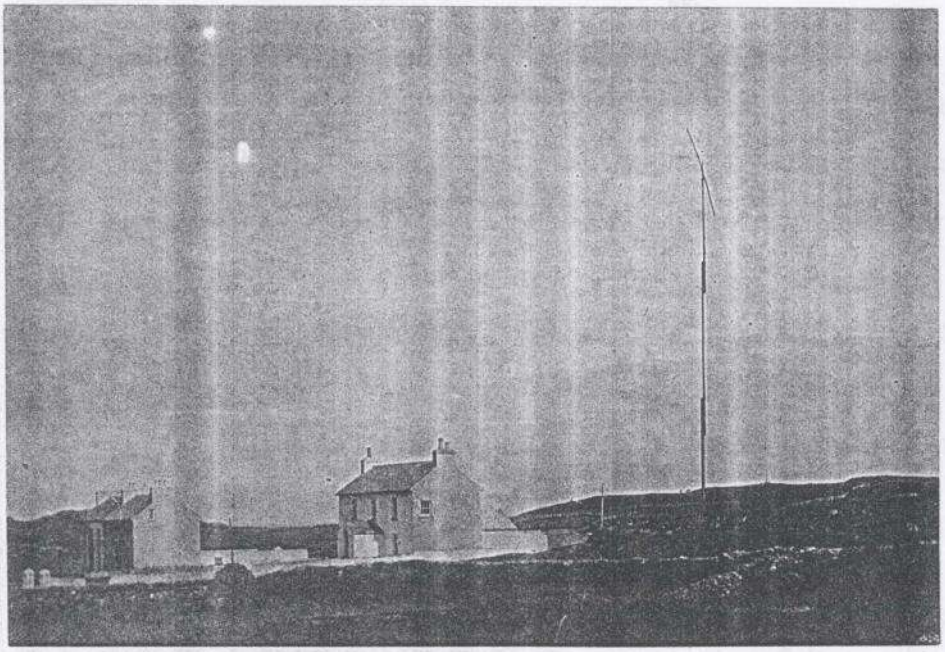
July 12th - I prepared No. 5 lowermast and topmast for erection while the stakes and supports were fixed into the ground. Mr. G. Marconi received with a 7½ mm. spark on the primary and a 14 mm. secondary spark, using the new oscillating transformer in place of the drum, and the same T. Jigger for the secondary spark.

July 13th - I went to Helston in the morning with Mr. Marconi where he left by train, after which I went to the bank and, on my return, dispatched accounts. In the afternoon,

Interior of The First Crotchaven Station



Exterior of Crookhaven Fort Station



after the topmast had been fidded the same as Nos. 3 and 4 masts, No. 5 lowermast and topmast were erected. I went to the Lizard on my bicycle where I arranged for the delivery of timber to be used as supports for the stakes.

July 14th - I made out a requisition for additional sheaves and fids to be made at the Helston Foundry and studied the specification for the Reception room

July 15th - Nos. 11 and 12 masts were put into position; triatic stays were made and No. 6 lowermast and topmast were prepared for erection. Upon the completion of this I transmitted to Mr. Marconi at Crookhaven.

July 16th - No. 6 topmast was fidded and this with No. 6 lowermast were erected exactly the same as Nos. 3, 4 and 5 m masts when I again transmitted to Mr. Marconi at Crrokhaven.

July 17th - Nos. 3 and 4 topgallant masts were hoisted and the topgallant stays placed into position, after which the stakes with their supports were fixed.into the ground.

July 18th - A fresh water supply pipe was cut to enable me to erect No. 7 lowermast with the fidded topmast similar to Nos. 3, 4, 5 and 6. After the stays had been put into position, the fresh water supply pipe was repaired.

July 19th - three tons of logs were transferred to the spot where the lower masts were to be made and then the first half circle of masts will be completed. Then followed the preparation of the topgallant masts for Nos. 5 and 6 masts.

July 20th - Nos. 7 lowermast and topmast were stayed after which No. 8 lowermast and topmast were prepared for erection. the Stays for the lowermast, topmast and topgallant mast were then made.

July 21st - To-day being Sunday, I went, in the forenoon, to Gunwallow Church to take the Sacrement.

July 22nd - No. 8 lowermast was hoisted with the fidded topmast similar to Nos. 3 and 7. The stays were then placed into

position and the carpenters made the masts.

July 23rd - I went to the Lizard and paid Joseph Watkins for timber and Mr. Hendy for the loan of the horse and van to convey the timber to the Poldhu. I then went on to Cadgewith to see the crane which we intended should be used for hoisting the serpentine rock out of the quarry. I met Mr. Nicholls the Agent for Squire Hawkins who owned the land under Lord Roberts. The weather was wet during the afternoon and evening.

July 24th - Having fidded No. 9 topmast this, with No. 9 lowermast were erected similar to Nos. 3 and 8, after which the stays were placed into position; the trench was then filled in and the ground around the mast levelled. Then followed my journey to Helston to see Mr. Toy concerning the iron of the old crane. There was rain in the evening and, as the wind was increasing, I sent the men home.

July 25th - It has been a boisterous day.. The men have been busy splicing in the stable and the carpenters have been making aerial poles in the shed. I received new logs out of which the new topgallant masts were to be made in place of the two insufficiently stayed and the one with the rotten heel.

July 26th - No. 10 mast was prepared for erection and the new 4" best tarred hemp rope, which was made to the specification, was stretched. I arranged for a boat to go into the Channel to fetch Mr. Marconi from the Irish steamer.

July 27th - Stays were fitted and masts made and the 4" rope from Stephens & Son was stretched.

July 28th - I went at 6 a.m. in a boat from Mullion Cove to the Channel to meet Mr. Marconi. We went to 7 miles west of the Lizard and, at 9.15 a.m. sighted "The Killarney" which came alongside. We landed at the Cove at 11.15 a.m. and, in the afternoon went to Gunwallow Church.

July 29th - When No. 10 topmast had been fidded this, with No. 10 lowermast were erected the same as Nos. 3 and 9 masts.

This completed the half circle, after which we stayed all the masts. In the afternoon Mr. Marconi experimented with a 14 mm. spark on 1/10 MF = 10 quarts and, later, with a 15 mm. spark. The men started to dig up the earth plate on the south side of the Power House and then we fitted it to the great cross of plates which I had prepared for reception.

July 30th - I stayed the masts and the foundations were made for the new Reception house. Nos. 5 and 6 topgallant masts were erected and I gave orders to Mr. Rowe of Helston for the delivery of 21 yards of zinc sheet 1 yard wide, also 3 dozen 4" x ½" coach screws and 21ft. of 1ft. sheet copper.

July 31st - Mr. Marconi increased the spark to 22 mm. on 1/20 MF with 400 volts and 14 amperes, using a 7½ mm. spark on the primary, after which the topgallant masts Nos. 7 and 8 were erected.

August 1st - The topgallant masts were stayed and No. 3 lowermast and topmast were prepared for erection. I went to Ruan Minor where I arranged for a crane to be taken to pieces, the timber and chain being useful for supports.

August 2nd - Nos. 9 and 10 topgallant masts were hoisted also No. 13 lower and topmasts and this was a good day's work.

August 3rd - To-day No. 14 lower and topmasts were prepared for erection.

August 4th - I went to Gunwallow Church in the forenoon and took the Sacrement and the afternoon and evening I spent in making up accounts etc.

August 5th - The erection of No. 14 lowermast and topmast took place. Mr. Marconi went to the Lizard Station concerning the Manoeuvres.

August 6th - The skeleton of the Reception house was erected on new foundations; the stays were placed into position and a pitch pine spar was tested with 16 men = 27 cwt, also a

Swedish pine spar with the same number of men but this proved not so strong as the bend in the middle almost broke the spar.

August 7th - I went to Helston with Mr. Marconi after which I erected two further topgallant masts and prepared the lower and topmasts for hoisting.

August 8th - After putting the stays in position, the stays on No. 1 mast were removed and additional masts and stays were made.

August 9th - The royal triatic were fitted to Nos. 1 and 2 masts also the aerial halyards for Nos. 1, 2, 3 and 4 masts when Mr. Marconi arrived. We had an electric phenonomen - it was like a terrific clap of thunder over the top of the masts when every stay sparked to earth in spite of their insulated breaks. This caused the horses to stampede and the men to leave the 10 acre enclosure in great haste.

August 10th - No. 15 lowermast and topmast were hoisted and another 5 were placed into position for erection, after which loads of rock were conveyed to the centre of the mast circle where the new foundations were to be made for the erection of the new Transmission and Reception house, and copper sheet 2l x 1ft. connected the large cross of zinc earth plates to the inside of the building.

August 11th - Sunday - I made a specification for the new Transmission and Reception house in the centre of the circle of masts, the foundations of which were to be made of a special raised concrete.

August 12th - I prepared and arranged to erect No. 16 lowermast and topmast, but the weather was unfavourable and I could not erect them. The royal stays were made and I telegraphed to Stephens & Son, Falmouth, for the 400ft. of 1" cir. special flexible steel wire, not galvanised, with a breaking strain of 4·5 tons.

August 13th - No. 16 lowermast and topmast were hoisted

and the stakes fixed for Nos. 6, 7, 11 and 12 masts. To-day the weather has been most unpleasant; the wind was strong and the rain fell in torrents and there were squalls at intervals. I engaged more labourers to hasten the erection work.

August 14th - The weather is still boisterous. The men could not work outside to-day and 10 of them were away. Stays and aerial spars were made under cover.

August 15th - No. 17 lowermast and topmast were prepared for hoisting and the aerial spars were tested.

August 16th - Nos. 15 and 16 topgallant masts were erected but we did not fid them as all the men wished to see the Regatta at Mullion Cove.

August 17th - Nos. 15 and 16 topgallant masts were fidded and No. 17 topgallant mast was prepared. Mr. Marconi returned to the Haven.

August 18th - Sunday - I went to Gunwallow Church and, for the remainder of the day, I rested.

August 19th - No. 17 topgallant mast was fidded and Nos. 3 and 4 royal masts were prepared for erection.

August 20th - Dr. J. A. Fleming left us in the morning, after which I fitted two 1". steel triatic stays, 200ft. long with a break at every 50 ft., and fixed them between Nos. 1 and 11 and 2 & 12 masts. There was a strong wind blowing and, at intervals, there were heavy squalls. Insulators were fitted with manilla rope and aerials were made of 100 - 7/22 wires suspended from aerial spars and hoisted between each pair of royal masts. It was necessary to bring all these aerials, each 200ft. long, to a small circle around the leading-in insulator which was at the top of the new Transmission House. These spars, made from Swedish pine, were just strong enough to stand the strain, consequently I was obliged to "fish" these by the use of elm battens when they stood the distributed strain of 27 cwt without bending.

August 21st - The triatic stays were placed into position and the new rope stretched. Leading-in insulators were made, by fitting a number of my flexible insulators inside a porcelain pipe when the pipe was filled with pitch similar to the leading-in insulator that I made for the 6ft. of stone wall at the Dover Town Hall. The squalls were too strong to-day to allow us to erect the royal masts or for the men to work at the mast head.

August 22nd - In the forenoon the wind was the same as yesterday. I made 100 wire aerials, but when the wind was calmer in the afternoon, I was able to get Nos. 3 and 4 royal masts hoisted.

August 23rd - Royal masts Nos. 5 and 6 were prepared and additional aerials and insulators made. The carpenters made a topgallant mast out of the condemned topmast and, in the evening, Nos. 5 and 6 royal masts were hoisted.

August 24th - Nos. 7 and 8 royal masts and No. 18 lowermast and topmast were prepared. Mr. G. Marconi and Mr. Paget arrived with Mr. Densham in the evening, also Dr. J. A. Fleming.

August 25th - To-day being Sunday I made up accounts in my room.

August 26th - No. 18 lowermast and topmast were prepared but they could not be raised on account of the inclement weather.

August 27th - No. 18 lowermast and topmast were erected.

August 28th - No. 19 lowermast and topmast were hoisted, after which Mr. Marconi left with his Secretary, Mr. Blades, also Mr. Densham.

August 29th - No. 20 lowermast and topmast were raised and Nos. 7 and 8 royal masts were prepared for fidding.

August 30th - I fidded Nos. 7 and 8 royal masts and prepared Nos. 9 and 10 royal masts.

August 31st - Royal masts Nos. 9 and 10 were fidded

and Nos. 13 and 14 royal masts were prepared.

September 1st - Sunday - In the forenoon I went to Gunwallow Church and, in the afternoon, I made up accounts in connection with the aerial wire supplied.

September 2nd - The weather has been too stormy to allow the work to be continued outside, consequently I was compelled to send some of the men home. I bought a boilder and treated all the lower insulators with paraffin wax.

September 3rd - The weather is still the same and work has not been commenced at the mast head. The stays were placed into position and the aerial spars made, the lower insulators being again treated with paraffin wax. Dr. J. A. Fleming left for London.

September 4th - The weather is still stormy. Additional stays have been fitted; aerials made also insulators, while the carpenters have made cleats for the heels of the masts.

September 5th - Boisterous weather continues. The royal stays have been arranged and placed into position.

September 6th - Nos. 18 and 19 topgallant masts have been hoisted and the aerials made.

September 7th - I had No. 20 topgallant mast erected also the aerials between 1 and 2 and 11 and 12 masts. Mr. G. Marconi arrived at 7.30 p.m.

September 8th - Sunday - Experiments with the Mercury sensitive tube have been carried out. This tube works with a buzzer also at a distance of 20 yards from the new Reception House to the corridor near to the first window.

September 9th - Nos. 18, 19 and 20 topgallant masts were fidded also Nos. 13 and 14 royal masts and the aerials between Nos. 1 and 2 masts were raised. Mr. Marconi received with an Italian Mercury sensitive tube in the split of the jigger where there is the most current, the outside ends giving more E M F.

September 10th - Nos. 15 and 16 royal masts were

prepared and the aerials raised between 2 & 3 masts. Mr. Marconi received on each aerial first after which they were used as wings to the receiver, one aerial on each side of the primary.

September 11th - The stays were hoisted into position and another aerial raised between Nos. 3 and 4 masts, while Mr. marconi received on the receiver and the telephone. He received also using one aerial on the earth side of the primary of the jigger and nothing on the aerial side. While he was at the instrument signals from two Navy stations came through.

September 12th - Royal masts Nos. 17 and 18 were erected and another aerial was raised between Nos. 13 and 14 masts. This is the sixth aerial that has been hoisted and, in the forenoon, Mr. Marconi received upon five connected together.

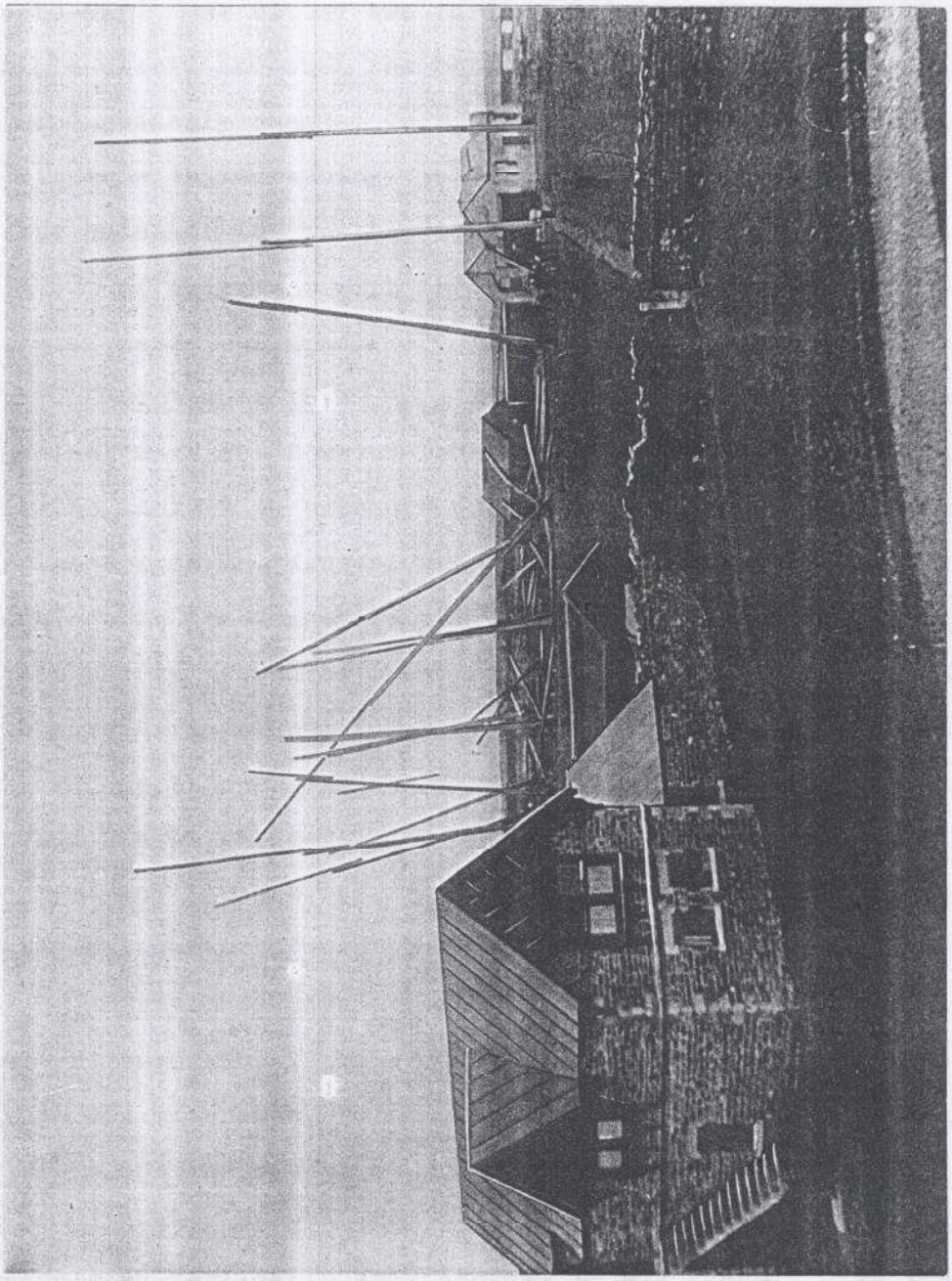
September 13th - Additional aerials were made with 100-7/22 wires and the lower stays were fitted upon 6 and 7 lowermasts. Mr. Marconi received upon six aerials.

September 14th - Mr. Blades arrived to-day and I connected the 7th aerial for Mr. Marconi to use with his receiver. He found that 30 turns of large "Henry" and 20 quarts at Crookhaven were not so satisfactory as 30 quarts and 25 turns. This appears to prove that the lower period is better for this large aerial.

September 15th - Sunday - In the forenoon I walked to Gunwallow Church after which I wrote letters.

September 16th - We experimented with sparks from a 10" induction coil on 7 aerials and managed to get a ¼" spark using accumulators and 24 volts. The inclemency of the weather has been unfavourable for the progress of outside work. I had great trouble in keeping the masts vertical and was obliged to pull the topgallant masts under the royal masts with topgallant stays, on the weather side of the circle. In the afternoon I went to Helston.

September 17th - In the forenoon experiments with



5667. A photograph showing the wreck of the circle of masts at Poldhu after the gale in September, 1901.

sparks on the voltmetre were continued and this was fused. We then tried sparks on the ammeter and managed 4 amperes using three large condensers and 21 quarts. There has been a S.W. gale to-day. We fitted two further triatic stays using 1" flexible steel, and then the condensers were joined up. At 1 p.m. the wind suddenly changed to N.W. with a heavy squall which struck the circle with increasing violence until it tore out one of the lug holes in the weather topgallant cap and the mast head was moved out of alignment with the lowermast and topmast, and the circle of masts collapsed.

September 18th - I picked up the broken lug of the topgallant mast No. 2 which caused the mast to bend and break under the increasing pressure of the N.W. squall. I then went to Helston with Mr. Marconi and saw his departure by train to London. The men meanwhile stayed the masts with gantlines and tackles and so prevented them from falling. Nos. 3 and 4 topmasts were unfidded and lowered, after which they were housed.

September 19th - I unfidded and lowered No. 1 topmast and stayed the remainder of the lowermasts vertical. No. 4 lowermast and topmast were raised from an angle of 45° and Nos. 11 and 12 lowermasts were placed in a vertical position,

September 20th - Mr. Blades has left here for London. In the forenoon No. 13 lowermast was stayed in an upright position and, in the afternoon, No. 10 lowermast was stayed, after which No. 13 topmast was prepared prior to erection.

September 21st - The remainder of the 12 lowermasts were hoisted vertically and then No. 13 was fidded. In the evening I wrote to Mr. G. Marconi

September 22nd - The weather has been wet and the wind blusterous. I wrote again to Mr. Marconi.

September 23rd - The weather has been squally with rain at intervals. I managed to get the aerial made and the topgallant mast fidded upon No. 13 topmast.

September 24th - The aerial was raised at 11 a.m. and I telegraphed to Mr. Marconi that all was in readiness for him to start experimenting. I lowered the broken topmast and cleared the ground of damaged material.

September 25th - The broken topmasts that remained were lowered and the carpenters started to make new mast heads when Mr. Jamieson Davis arrived.

September 26th - Mr. Marconi arrived here to-day. I went with Mr. Davis to the Lizard Station and later to Helston with him. I dispatched to the London Office, per Goods train, one topmast cap and one topgallant cap.

September 27th - Major Flood Page is here. The masts were stayed and, from the damaged spars, perfect topmasts and topgallant masts were made.

September 28th - Mr. Davis has left the Station. A sprit was hoisted and the carpenters have been busy making a topmast out of the derrick that was used to erect the first lower mast.

September 29th - I assisted Mr. Marconi to prepare his new front driven motor cycle, after which the remainder of Sunday was spent in making up accounts and correspondence.

September 30th - Mr. Marconi left here to-day. Arrangements were made for placing a fence and Nos. 9 and 10 topmast and topgallant mast were prepared for erection.

October 1st - Major Flood Page left here to-day. The stays were placed into position on Nos. 2 to 13 masts and a topgallant mast has been made from an Oregon pine log.

October 2nd - Nos. 9 and 10 ropmast were hoisted. In the evening a Charity entertainment took place in the village of Mullion.

October 3rd - Topmasts Nos. 9 and 10 were fidded and mast ropes rove for the topgallant masts.

October 4th - The ground has been cleared of damaged

aerials. The carpenters finished the Oregon pine topgallant mast and, in the evening, the piston was taken from the Poldhu engine.

October 5th - Topgallant masts Nos. 9 and 10 were erected and stayed with extra stays, after which an aerial composed of 100 wires was prepared and hoisted. When this was completed I wrote to Mr. Marconi.

October 6th - Sunday - This has been another boisterous day. The heavy squalls damaged the 4 wire aerial on the 16ft. crosses.

October 7th - Mr. G. Marconi has arrived. The aerial was raised with 12ft. crosses in place of the 16ft. crosses. The topgallant masts were stayed half way and the 100 wire aerial was hoisted.

October 8th - The weather is still very unfavourable for work. Six men only came and these I had to employ under cover. The rigging has been repaired and the aerial wire was made from the damaged 7 aerials. Mr. Marconi experimented on all the condensers and produced sparks with one jigger in the transmitter.

October 9th - Mr. Bannatyne visited us to-day. No. 6 topmast was erected and the aerial was made on the steel wire triatic. Mr. Marconi produced sparks on one set of condensers only, the arrangement being the same when he used the 10" coil and the Leyden jars.

October 10th - Mr. Hall arrived from the London Office. The topgallant mast was fidded on No. 6 mast and a 50 wire aerial was prepared on a span of 200ft.

October 11th - No. 2 lowermast was laid upon the ground which was put aside as insufficiently large to take the caps that required in the end a 17" mast. The work of blacking stays, oiling masts and the staying of same was completed.

October 12th - Mr. Bannatyne and Mr. Hall left here to-day. Mr. Marconi continued his experiments on an aerial of

100 wires and one of 4 wires producing sparks. In the afternoon he tested on the 4 wire aerial alone as the 100 wire aerial had been taken down.

October 13th - A drawing was made of the masts in a square instead of a circle with a span, between the masts at the corner of the square, of 200ft. I went to the Lizard Station where I tested the Italian Mercury sensitive tube with the telephone, and then I made a chart showing the route of communication from the Lizard Point to Cape Cod, Massachussets, U.S. America.

October 14th - The masts to-day were coated with boiled oil and small wooden drums were made for making up 7/22 wire that had been recovered from the damaged material. Mr. Marconi received at the Lizard from Crookhaven using a 4 wire aerial, after which he returned and started reception on a 4 wire aerial from Crookhaven.

October 15th - The lowermasts were transferred and placed into position and the 60 wire aerial was extended between Nos. 6 and 13 masts. I managed to get sufficient energy into this aerial to fuse 6 platinoid wires in parallel. Supplementary masts were then arranged for erection.

October 16th - Mr. Marconi left with Mr. Blades and his wife. I journeyed to Porthleven in order to get extra timber and chain. The men have been busy digging stakes up to be used for securing the new half circle of masts and the carpenters have cleaned the royal masts.

October 17th - To-day two patent ventilators, No. 171D, were fitted one at each end of the new Transmission House. The splicers have been engaged in making double wire strops for staying the new half circle of masts, 4 = 15ft. and 4 = 17ft., using 2" steel wire rope, after which an additional 8 were cut and fitted.

October 18th - Ladders were made and rick covers repaired. The holes were dug for the masts at the corners of the square, when I found that quarrying had to be carried out.

remove the rock.

October 19th - To-day Mr. Marconi arrived. The aerial has been refitted and a mast of 150ft. has been made.

October 20th - Mr. Marconi went to Penzance on his motor cycle while I made up accounts.

October 21st - Mr. Blades and Mr. Hemming have arrived. I sent Roberts to the Lizard to fit permanent steel wire stays to all the mast heads and I received iron from Mr. Thomas at the Polurrian Hotel.

October 22nd - Mr. Marconi, Mr. Hemming and myself conversed upon the advantages and disadvantages of towers compared with masts when arrangements were made for Mr. Hemming to erect towers 200ft. high as he maintained that these towers could be made to hold 4 aerials without stays. I told him that I did not believe this to be possible, neither did I believe that he could do it but time would tell.

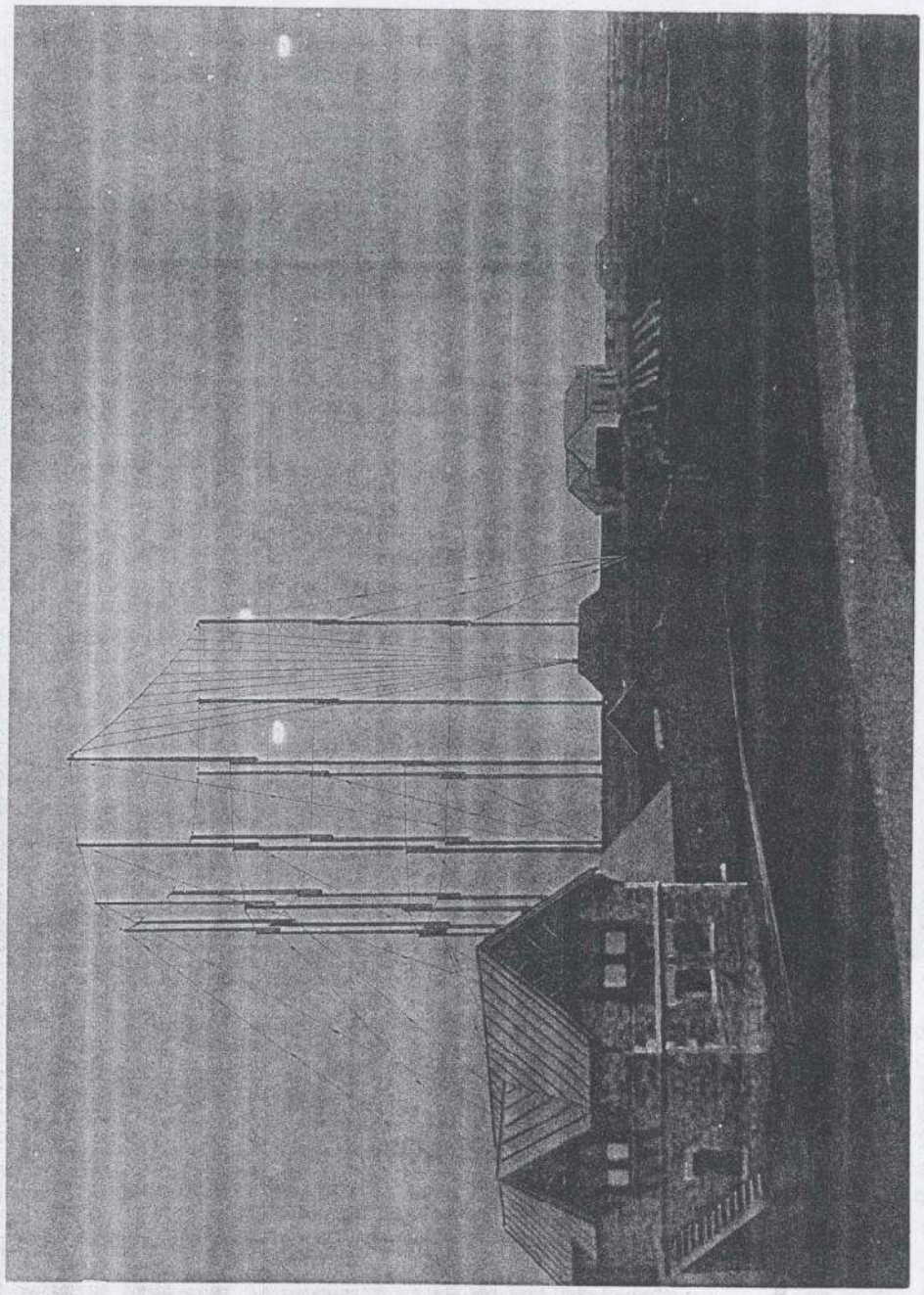
October 23rd - I wrote to Messrs. Fox & Co. also Harvey & Company for timber with which to start the construction of 4 towers, each 200ft. high, forming the corners of a square with 200ft. sides, to support 4 aerials similar to the one I have erected between Nos. 6 and 13 masts, after which I made an inventory.

October 24th - The foundations have been made also ladders etc. and small steel wires have been served. Mr. Marconi stopped the electric energy from the Power plant on its way back to the alternator, by inserting choking coils between the first spark gap and the Worten Protector coils.

October 25th - I saw Mr. James, Havey & Co's Manager of the Yard at Truro, in connection with timber. I was informed that they could supply timber in red pine for towers at the cost of £300.

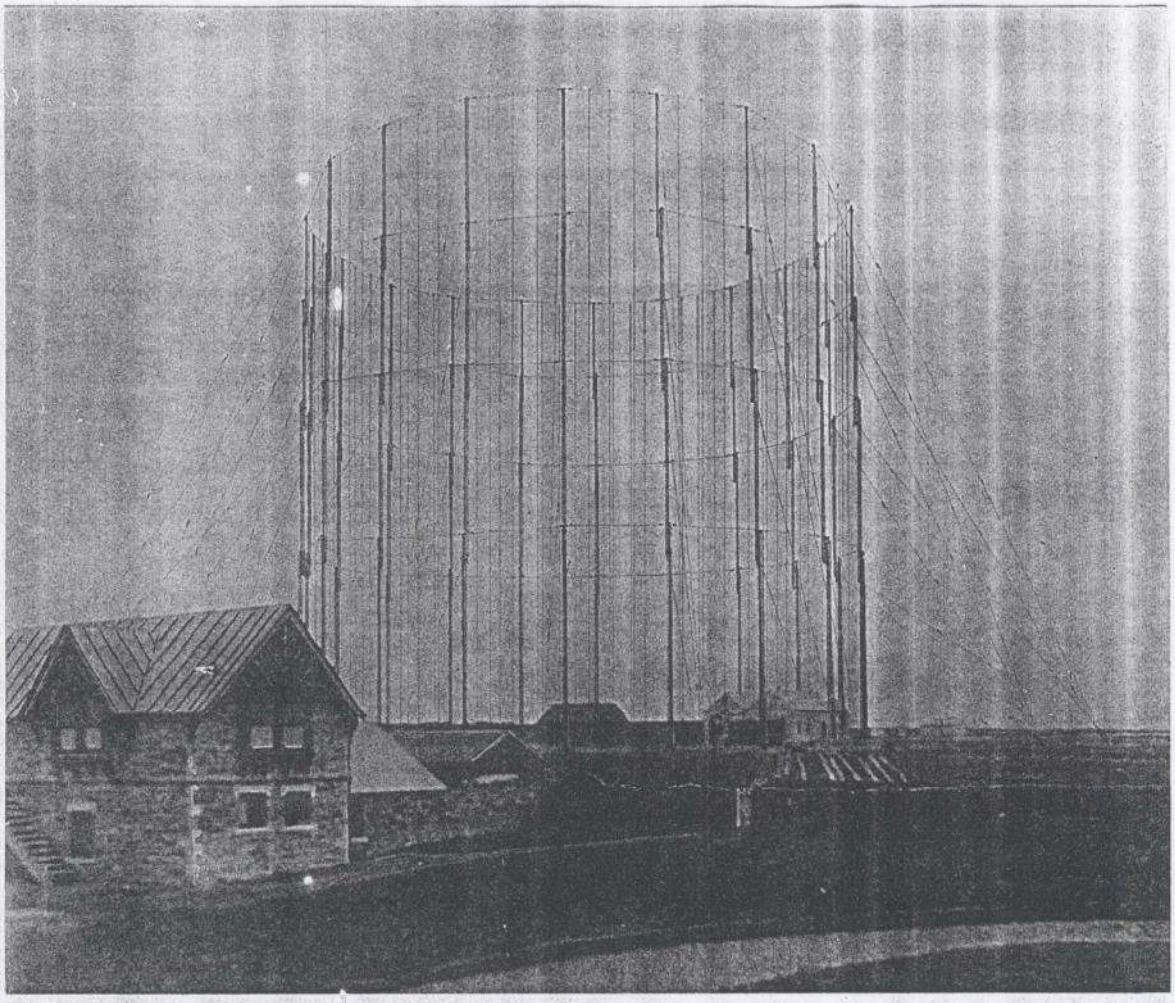
October 26th - The men have been excavating and aerial wires have been connected for aerials. The top of the new Power House has been treated with a coat of tar and an inventory of the

Transatlantic experiments. The building in the foreground belonged to the Poldhu Hotel and was used as a workshop. The buildings in the centre of the masts are (left) Transmitting house with covered passage leading to the Engine house (right.)



A reconstructed picture of the half circle of masts and aerial erected at Poldhu in 1901 after the original circle of twenty 200 ft. masts had been brought down by the gale. These masts were 170 feet high and the half circle faced across the Atlantic. The aerial actually consisted of 60 wires in the form of a fan suspended from the triatic stay and slung between the two end masts of the half circle. It was originally intended to erect the type of aerial shown in the photograph of the full ring of masts but, as there was not time for this to be done, tests were carried out with this more simple aerial. The results were satisfactory, consequently it was used for

still evidence tends to prove that this unpracticable arrangement as drawn in never existed in fact. The fan aerial was suspended from a Triatic between two masts only. See Photo No 82238.



5866. This is the huge aerial which was erected at Poldhu in Cornwall, in order to transmit Wireless signals across the Atlantic. The circle contained twenty masts, each 200 feet in height; 100 wires were suspended from the triatic stay between each pair of masts making a total of 1900 wires. Before the experiments were completed a gale brought down the whole of this structure which was then re-erected in a different form. The building in the foreground belonged to the Poldhu Hotel and was used as a workshop. The buildings in the centre of the masts are - left, transmitting house with covered passage leading to engine house, right. (see also 5867 & 5868).

? 2000 wires, as its a circle, not a line, of masts. The facts are wrong in any case, for 2,000 wires on a 200ft diam. circle would be only 3.76 inches apart!

done likely to be 100 wires in all = 6ft 3.36 ins apart.

stores has been made. Mr' and Mrs. Blades have left also Mr. Paget.

October 27th - In the forenoon I went to Gunwallow Church and an inventory of the stores was made in the afternoon and evening.

October 28th - I sent pipes to the village of Cury to be repaired, also a coil box and half of a coil and rope 2½" thick to the Lizard Station to be used for sprit halyards.

October 29th - The hedges were neatened around the field; small steel wires were served and two masts etc. were made.

October 30th - N. Type insulators were disconnected and stored away in a barrel and rock was collected on the beach to be utilised for the foundations of the new towers.

October 31st - Insulators were disconnected; rock and gravel were conveyed from the beach for the making of concrete.

November 1st - Work has commenced in connection with the foundations for the towers.

November 2nd - I went to Helston and ordered 10 tons of cement also timber for making the four towers, when Mr. Paget arrived.

November 3rd - I sent the requisition, for the cement and timber that I ordered at Helston, to the London Office with a letter. In the afternoon I went to Gunwallow Church and, in the evening, I made up my accounts.

November 4th - The water was turned on for concrete making. I went to Truro to inspect a load of timber that had just arrived in the steamer which was anchored in the river and then I received the following telegram -

Kemp, Mullion.

"Please hold yourself in readiness to accompany me to Newfoundland on the 16th inst. If you desire holidays you can have them now." Marconi. Mr. Hemming arrived to relieve me

by taking charge of Poldhu, and undertake the responsibility of the construction of the 4 towers. The aerial that had been extended between Nos. 6 and 13 masts were not to be disturbed.

November 5th - I relinquished the Stores to Mr. Hemming.

November 6th - I left Poldhu at 8 a.m. for Chelmsford where I made preparations for Newfoundland.

November 7th - I have been at the London Office.

November 8th - I went to the London Office.

November 9th - I journeyed to the London Office, Finch Lane, where my four children witnessed the Lord Mayor's Show from very good position.

November 10th - 14th I spent at home.

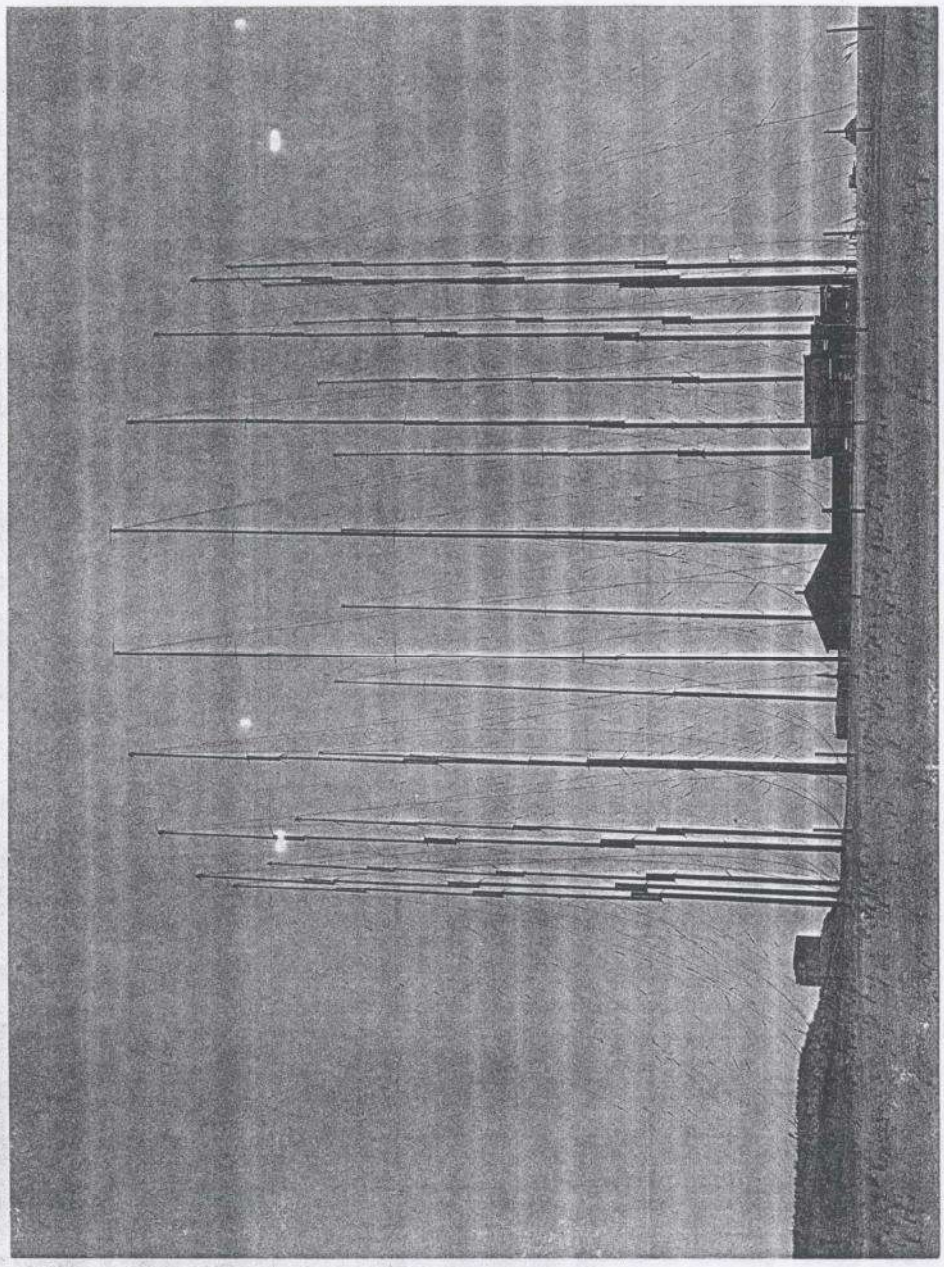
November 15th - 22nd I went daily to the Office

November 23rd - I packed my luggage and took it to the Station.

November 24th - I left Chelmsford at 11.16 a.m. and Euston at 5.30 p.m. I arrived at Liverpool at 10.15 p.m. and slept at the Alexandra Hotel with Mr. Paget.

November 25th - I left the Alexandra Hotel and from the L. & N.W. Railway Station the luggage was conveyed to No. 3 Branch, Alexandra Dock, where it was deposited in the Baggage room. I returned to the L. & N.W. Hotel for lunch and met Mr. Marconi. I booked a room at the Hotel for the night.

November 26th - I took Mr. Marconi's baggage to the "S.S. Sardinian" after breakfast, the ship being the one to take us to St. John's, Newfoundland, with the kites, balloons, hydrogen gas, iron filings and sulphuric acid for making more gas if necessary, also our reception instruments and aerial wire. Most of this I had arranged for Mr. Spencer, the Balloon expert, to supply while I was at the London Office from the 18th to the 22nd of November. I visited the Allan Line Office and Dawson's Office, by the overhead electric railway, in connection with the shipping of carboys of acid, after which I returned to the L. & N.W. Hotel



The Station,

South Wellfleet, Cape Cod, Massachusetts.

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for lunch. At 7.30 p.m. we dined on board the "S.S. Sardinian" which left the Dock at 9 p.m. and, during this meal, Captain Daly arrived with a telegram to the effect that the circle of masts at Cape Cod had fallen during a gale.

November 27th - We passed Tor Head at 1 p.m. and Rathlin Island Lighthouse at 2 p.m; Instrahull at 6 p.m. and Tory Island at 9 p.m. The weather was squally but on deck everything was illuminated by the moon. I slept part of the night in the Deck house and the remainder in a bunk on the opposite side of the main deck cabin, while Mr. Paget slept in a bunk on the opposite side of the same cabin. Mr. Marconi had a cabin to himself and there were few passengers on board.

November 28th - We are 237 miles out. The day is fair with less wind and only a few showers,which followed a perfectly calm night during which the moon shone brilliantly. Everyone had a good night's restful sleep after having walked on deck all the day.

November 29th - The morning has been very fine. Everyone has been taking the air on the deck, but the wind freshened later and the ship started to pitch badly.

November 30th - The weather to-day has been similar to that of yesterday but the wind has changed from N.W. to S.W. and freshened, and the waves have been thrown fore and aft. on the upper deck, forcing us to take shelter in the deck house where we soon felt the cold. The ship covered a distance of 270 miles from noon of yesterday.

December 1st - The day has been a sunny one, but the pitching of the ship was not appreciated. From noon yesterday the distance covered was 180 miles. The night was clear and starry.

December 2nd - In the forenoon we had intervals of sunshine and fog. At noon to-day the Captain said we were 700 miles from St. John's, and that we had gone another 230 miles

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from noon yesterday.

December 3rd - There has been a terrific gale and the huge waves rose to a great height. We passed "The Tunisian" in the afternoon. This ship left Liverpool two days later than ours bound for Halifax, Nova Scotia, British North America. From noon yesterday the ship's mileage was 160.

December 4th - The weather has been much better to-day; the wind and the sea being calmer but, in the afternoon, there was a fall of snow. We covered another 160 miles from noon yesterday.

December 5th - The weather to-day has not been pleasant and the wind has increased to almost a gale, later, however, it moderated and, at night, the sea was not quite so rough. The ship's speed was increased to 10 or 11 knots.

December 6th - We saw at daybreak this morning that there had been a hard frost during the night. We sighted the Block House at St. John's. To the North there were icebergs while, to the South of the Harbour, the spouting of whales was seen. We landed at Shea's Wharf and put up at Cochrane House where Premier Bond had apartments. In the afternoon we went to Block House and to the Club in the evening.

December 7th - All the cases of instruments and some of the Gas cylinders were conveyed to Signal Hill, and we arranged with Mr. More to provide us with 20 sheets of zinc. The room given to us, for the purpose of storing our kites and balloons, by the Marine Minister was situated in the Hospital at the end of the Block House and opposite to Cabot Tower. The 20 sheets of zinc were prepared ready to be earthed near the door ofthe Store.

December 8th - Sunday - In the evening I went to the Cathedral and was given a seat in the Governor's pew. This building was almost gutted during the great fire of St. John's when I was on "H.M.S. Blake" at Halifax; food and tents were sent at full speed to St. John's and we were also in time to assist in extinguishing the fire.

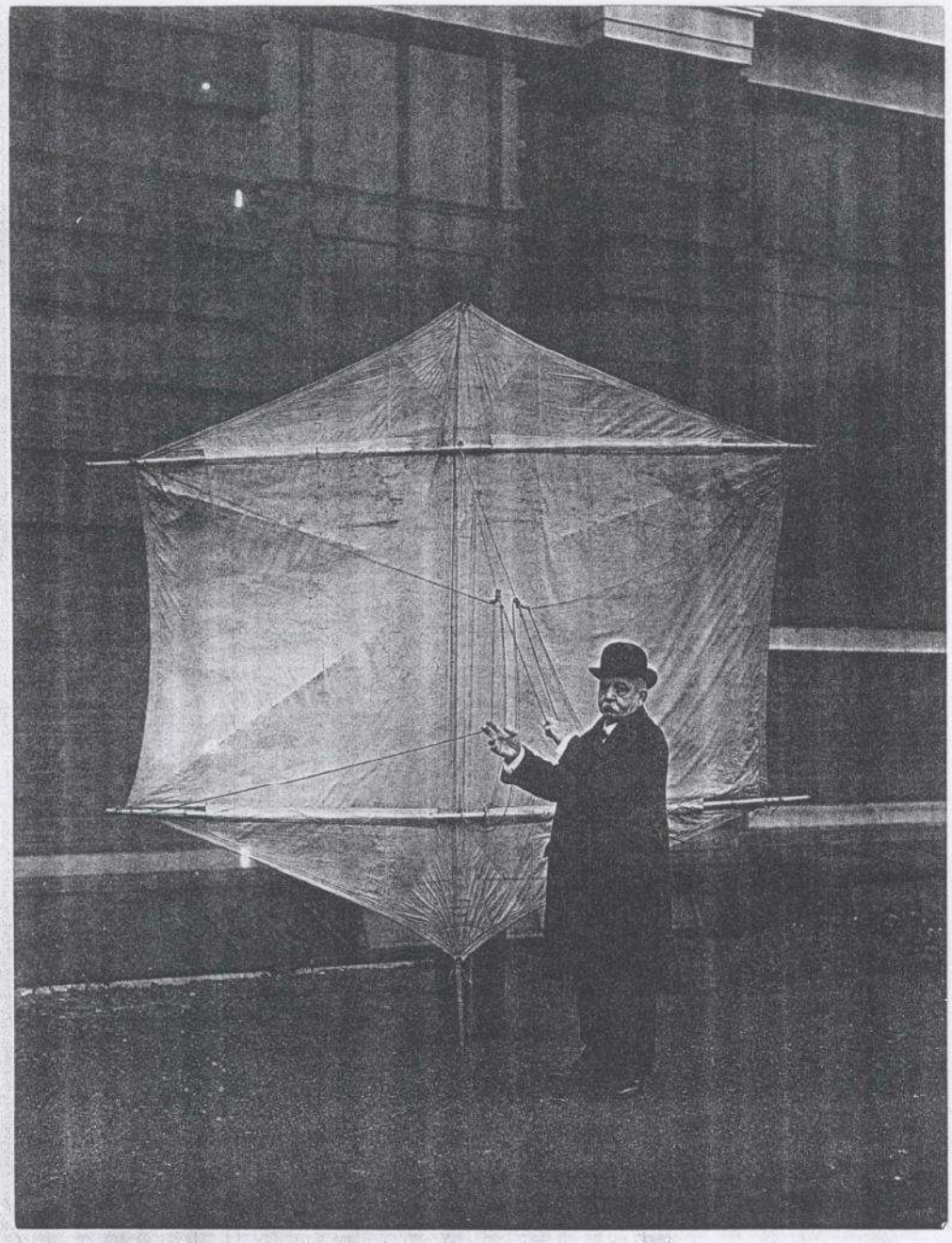
December 9th - The zinc plates were connected and earthed, after which No. 2 balloon was oiled in the Block House and then two kites were prepared with lines 750ft. long. On my return to St. John's, in the evening, I settled all bills etc.

December 10th - A kite and 600ft. of wire were raised on Signal Hill for experiments in connection with reception from Poldhu Station, Cornwall. Mr. Marconi proposed to make a new receiver, which would be more sensitive, when we returned to England.

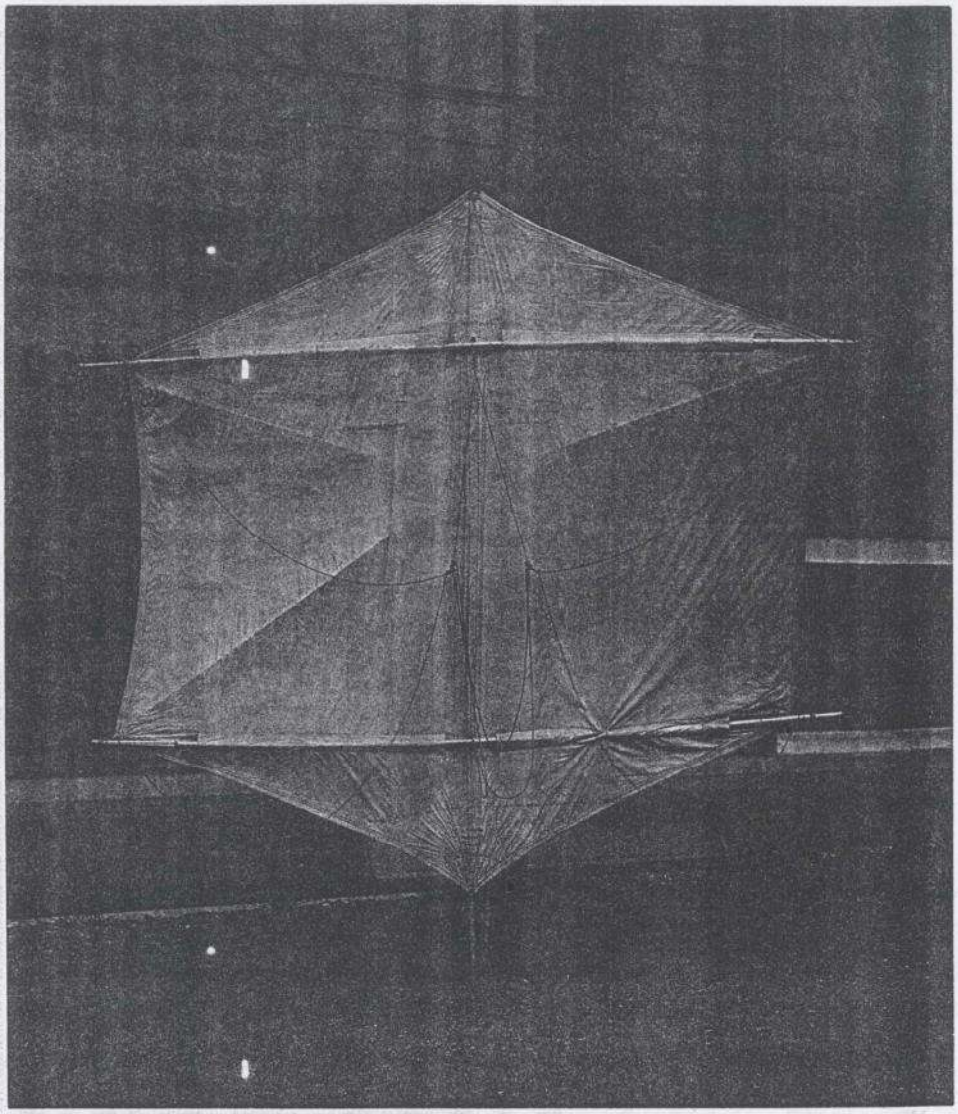
December 11th - The balloon was partly filled with hydrogen gas and I had great trouble with it. This was due to the strong wind that had suddenly sprung up at 3 p.m, which carried away the special mooring line, supplied by Mr. Spencer, and, had it been carried away on the mooring side instead of the balloon side, I should have gone with it as its speed was like a shot out of a gun. Mr. Marconi tried all the detectors from time to time, while we had the balloon under control, and called me in at intervals to try the receivers. Signals appeared at intervals on a telephone in series, when using our sensitive tube circuit, and, at times, the dots threatened to appear on the tapper.

December 12th - We received the three dots or the S signal repeated. We lost the first kite with 2 wires, each 510ft. long, after it had been the means of giving us one hour for reception which was better than yesterday. Another kite was raised with one wire 500ft. long, which appeared more in harmony with the earth's electric medium and the signals from Poldhu Station. We were able to keep this kite up for three hours and it appeared to give good signals.

December 13th - A representative of "The Graphic" visited Signal Hill and made a sketch of the outside of the Hospital which we were using for reception. The wind from the Hump, near to the Block House, was very strong and variable. I tried three kites but not one of them could be kept up, Photographs were



Mr. G. S. Kemp, who was Senator Marconi's first Assistant, photographed with one of the kites used in the Trans-atlantic experiments at Signal Hill, Newfoundland, in December 1901. The aerial at Signal Hill was elevated by means of a kite and signals were received from the Transmitting Station at Poldhu.



The kite which was used on Signal Hill, Newfoundland, 12th December, 1901, and from which the aerial wire was suspended when the first signals were received across the Atlantic from Poldhu Station.

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taken at the Block House. We visited the Bishop and Munro, also Bill Carpenter and the mast, reduced to 4 pieces, was inspected before its removal to Cape Race.

	12 inches	11 inches	9 inches	4ins.
20 inches	12 "	10 "		

At intervals to-day we had frost, snow, rain and hail.

December 15th - Sunday - The weather to-day has been wet and foggy. We went to the Roman Catholic Cathedral in the morning and had a private conversation with the priest after the service, which was more like a concert. We were given a seat with the choir, close to the organ, and this gave us a good view of the religious ceremony. We then went to lunch with Mr. Bowering who gave us champagne that had been saved from a wreck and had therefore been under water for many years. In the evening I attended the Prebyterian Church and then I worked all the night writing telegrams.

December 16th - More telegrams were written and one was composed of 1,000 words. At 10.30 a.m. I drove out to Cape Spear with Mr. White in weather approaching a blizzard. At 6.30 p.m. I returned in a dense fog, the journey being a very cold one. I then arranged for the conveyance of cylinders of hydrogen gas from the top of Signal Hill to Shea's Wharf.

December 17th - We gave a demonstration on Signal Hill to the Governor and Executive Officers and managed to have good photographs taken at Cabot Tower. In the evening Mr. Smith, Postmaster General 2nd in Office and Mr' Waters, the Bank Manager, who had rooms in Cochrane House, left Newfoundland - the first for Ottawa and the latter for Toronto.

December 18th - To-day I did not go up on Signal Hill but made up accounts and wrote out a Stock list for Mr. Paget when he returned to England with the apparatus and stores.

December 19th - I went up on Signal Hill at 9 a.m. and packed all the apparatus, after which I unearthed the zinc plates

and returned to Cochrane House at 5 p.m. I conversed with Mr. Marconi concerning the new receiver that he proposed to work on similar lines as the one that he will show me later. I told him that it was a great shame we could not remain to try our cliff wire, which extended from Signal Hill to one of the icebergs stranded in the Harbour quite close to us. This cliff wire would probably give us better harmony with the earth's electric medium and the transmitter at Poldhu. These cliff wires had been very successful at Swanage, Ballycastle, the Needles and South Foreland and, by their use, signals were received from the Lightship and France when the main Station was troublesome.

December 20th - I transferred all the apparatus from Signal Hill and packed it in store at Shea's Wharf, Agents for the Allan Line. I paid Michael Cantwill and D. J. Crotty the sum of 10 dollars. These are the two men from Newfoundland, seen upon Signal Hill in the photograph, who helped us to get the kite raised and assisted us to construct and demolish the Station on Signal Hill.

December 21st - I went to Petty Harbour with the Governor, Mr. Marconi and Mr. Reid, the owner of the Newfoundland Railway. The Governor gave us a good lunch in the Power House and this he brought with him, in his carriage, packed in up-to-date lunch baskets. This Power House supplied St. John's with electricity, the dynamos being driven by means of water turbines which were very clean and interesting. All day the snow has fallen and we past a number of sledges drawn by dogs and ponies. I met Mr. Stannard Baker in the evening; he had come from McClures Magazine Offices in New York in order to receive, from Mr. Marconi, the first account of his great and wonderful achievement.

December 22nd - Sunday - In the forenoon I met Mr. Stannard Baker again and, at 1 p.m., lunched with the Hon. E. P. Morris Q.C. at "Beaconsfield", Topsail Road.

December 23rd - The "S.S. Grecian" arrived with 10 drums of sulphuric acid. The cases were then marked for Glasgow to

accompany Mr. Paget, and 17 bags of steel filings with 20 sheets of zinc, also two tables and chairs from behind Mr. White's office were removed.

December 24th - We visited Mr. White, the Minister of Lights and Fisheries , in his office and received a permit to land the 10 drums of sulphuric acid, also an Export order for all the material that had to be shipped on board "The Sardinian" which arrived at midnight and was loaded in the morning. I went around St. John's in a sleigh with Mr. Marconi to take farewell of all the officials, after which I packed all that was required and we left in Mr. Reid's private car, which was attached to the train, termed the "Terra Nova". Mr. Stannard Baker accompanied us and, at 11 p.m. we drank to the health of my wife and children.

December 25th - Christmas Day - This day was spent in the private car the "Terra Nova" the owner of which, Mr. Reid, gave us a kindly welcome and provided us with a Christmas dinner that consisted of turkey, plum pudding and champagne. We spent the night crossing from Newfoundland to North Sydney in a blizzard consequently the Captain of the ship, the "S.S. Bruce, was obliged to stop during part of the crossing.

December 26th - On our arrival at North Sydney we met the Premier of Nova Scotia and other members of the Government and, after lunch, travelled to Sydney and Glace Bay in a special car. In the evening we dined with the Government Officials,

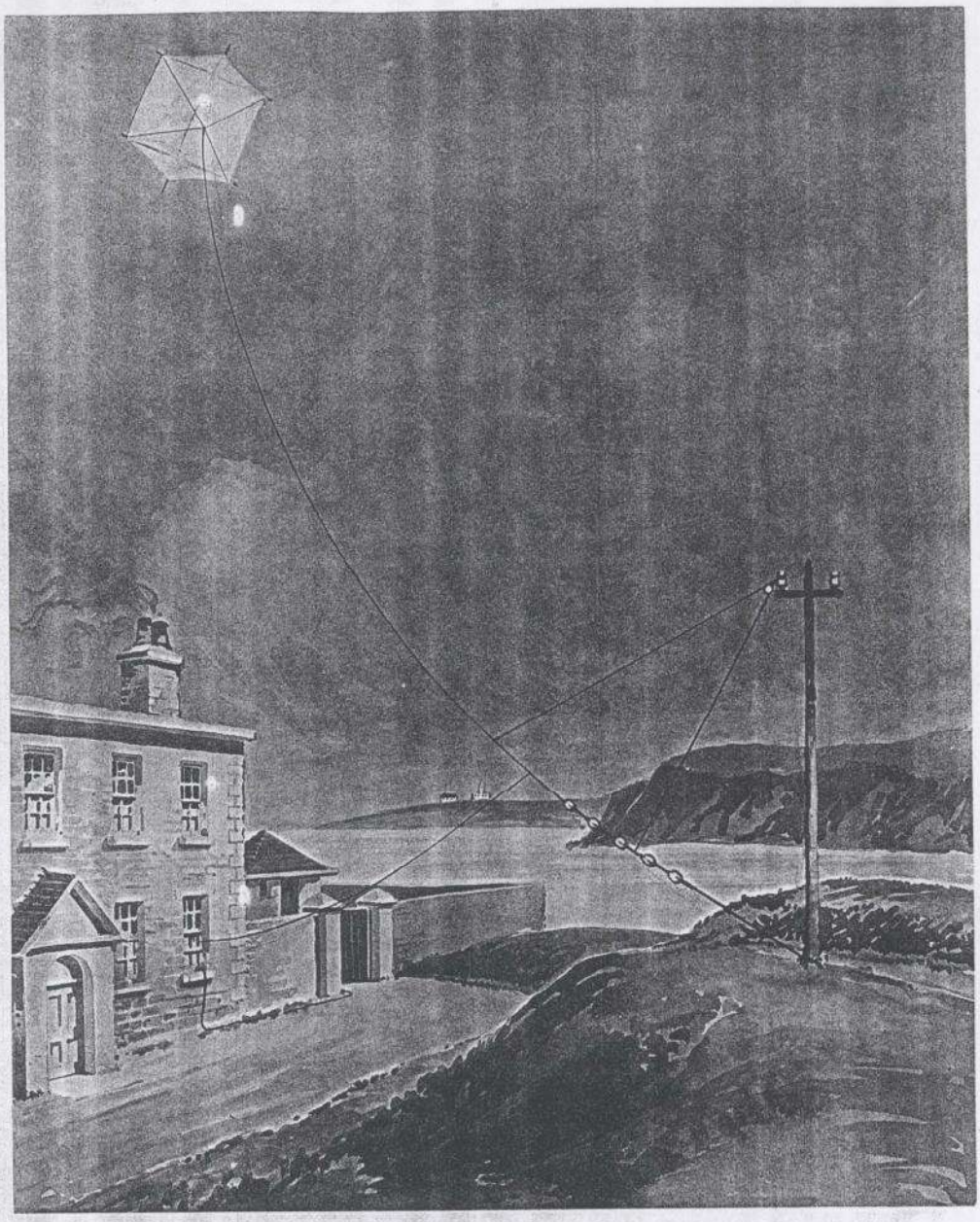
December 27th - We went to Port Morien in a special Dining and Sleeping car which was loaned to us by the Dominion Government, after which we went by steamer round Cape Percy and returned in a snow storm via Scutria Island. We then went to the Cemetery and finished at the Hotel where we dined with the Officials. The Club was next visited and when we returned to the special car allotted to us, we were pleased to have left the blizzard behind where the snow was knee deep.

December 28th - At 5 o'clock in the morning we left. In the Sleeping compartment were the Member of Angonish and Mr. Mc Curdy, a reporter who left us at Truro. With us in the Dining compartment were the Manager of the Intercolonial Railway and Mr. Bourdon, Minister of the Militia, also Mr. Meyers of Railway fame who was engaged in maing a line from Causo to Port Morien.

December 29th - We spent the day in the car, while the snow fell heavily, in the company of Dr. Bourdon and the Manager of the Intercolonial Railway, also Mr. Meyers on this long journey to Montreal. Before we arrived at Montreal at 8.30, we had dinner in the car, after which we went to the Windsor Hotel in a sleigh. Mr. Marconi conversed here with a number of reporters.

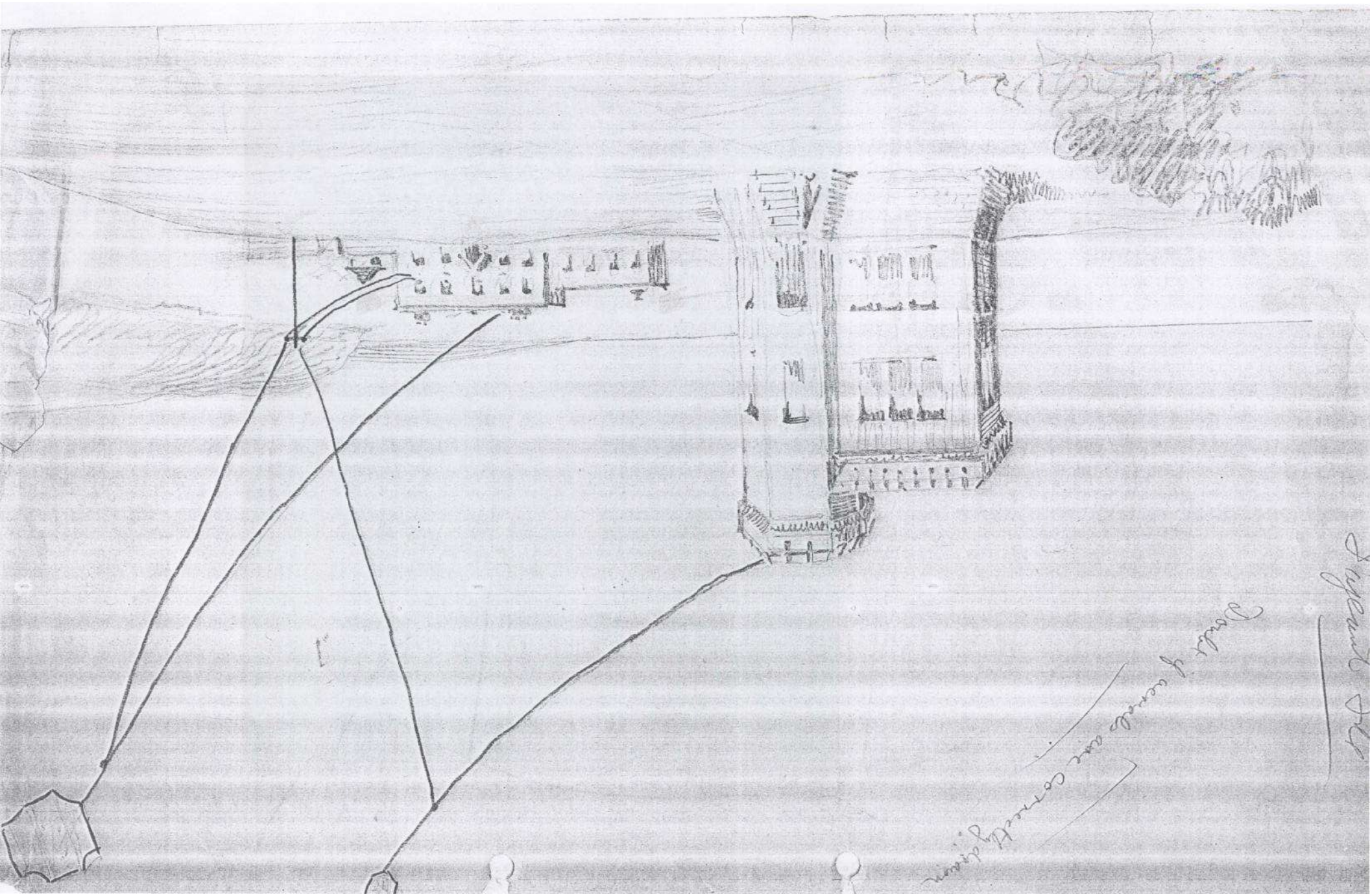
December 30th - In the forenoon we were driven in a sleigh round Montreal and, in the afternoon, we left for the Canadian Atlantic Line for Ottawa where we arrived at 7.30 p.m. and put up at The Russel House, which was well heated and the double windows fitted tightly. The atmosphere of the bedrooms was so dry that one could get a severe electric shock from the radiators or light the gas with the tip of one's finger, the spark being increased if one's feet were rubbed on the carpet beforehand.

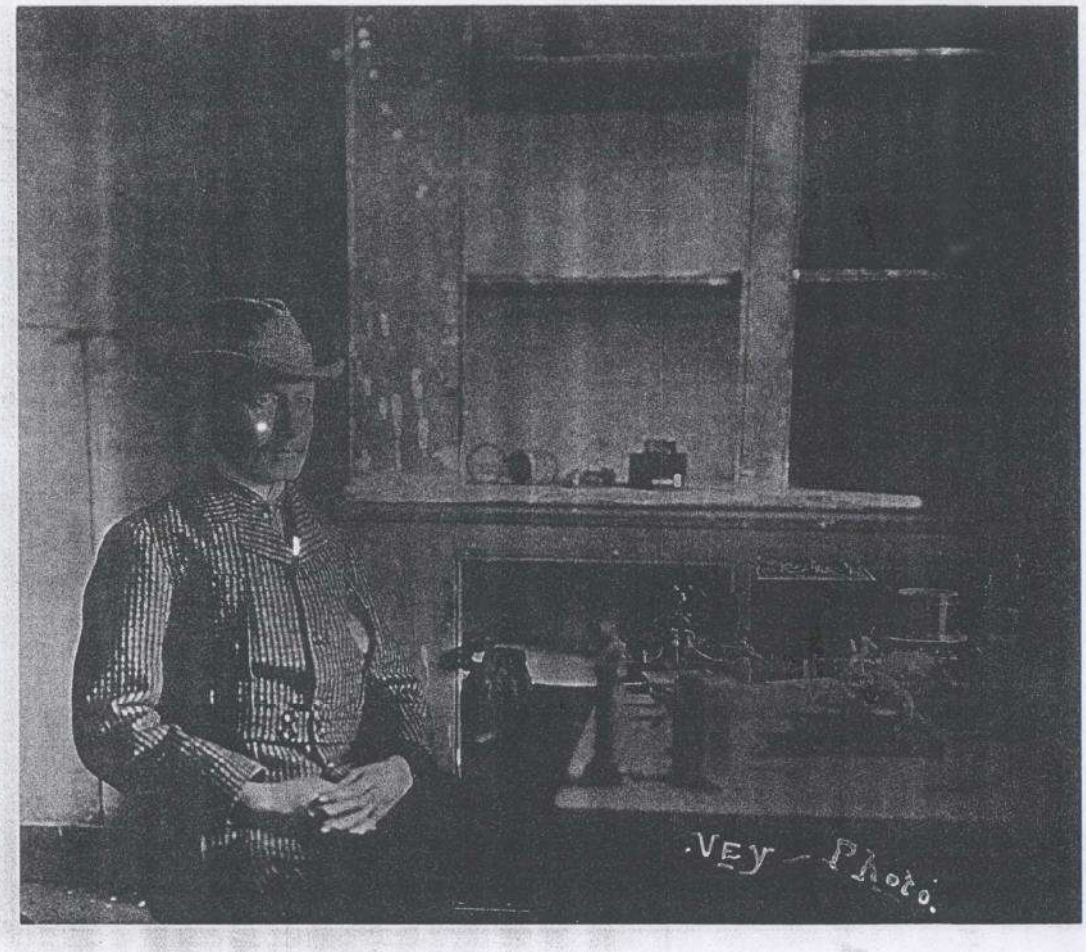
December 31st. - We went to Government Buildings where we saw the Marine Minister and examined the charts concerning the various places we had visited in and around Sydney, also a few others. We then saw Mr. Fielding, the Finance Minister who took us around Ottawa in a sleigh. Then followed lunch at the Red Club with the Ministers of the Government, after which we continued our journey in the sleigh round Hull and the falls on the River concluding with tea at Mr. Fielding's house. The weather was wonderful and the sun shone brightly all day, while, on the ground, there was snow to the depth of 6 inches which was so dry that one could walk for miles without soiling one's boots. The temperature was near zero all the time but there was no wind.



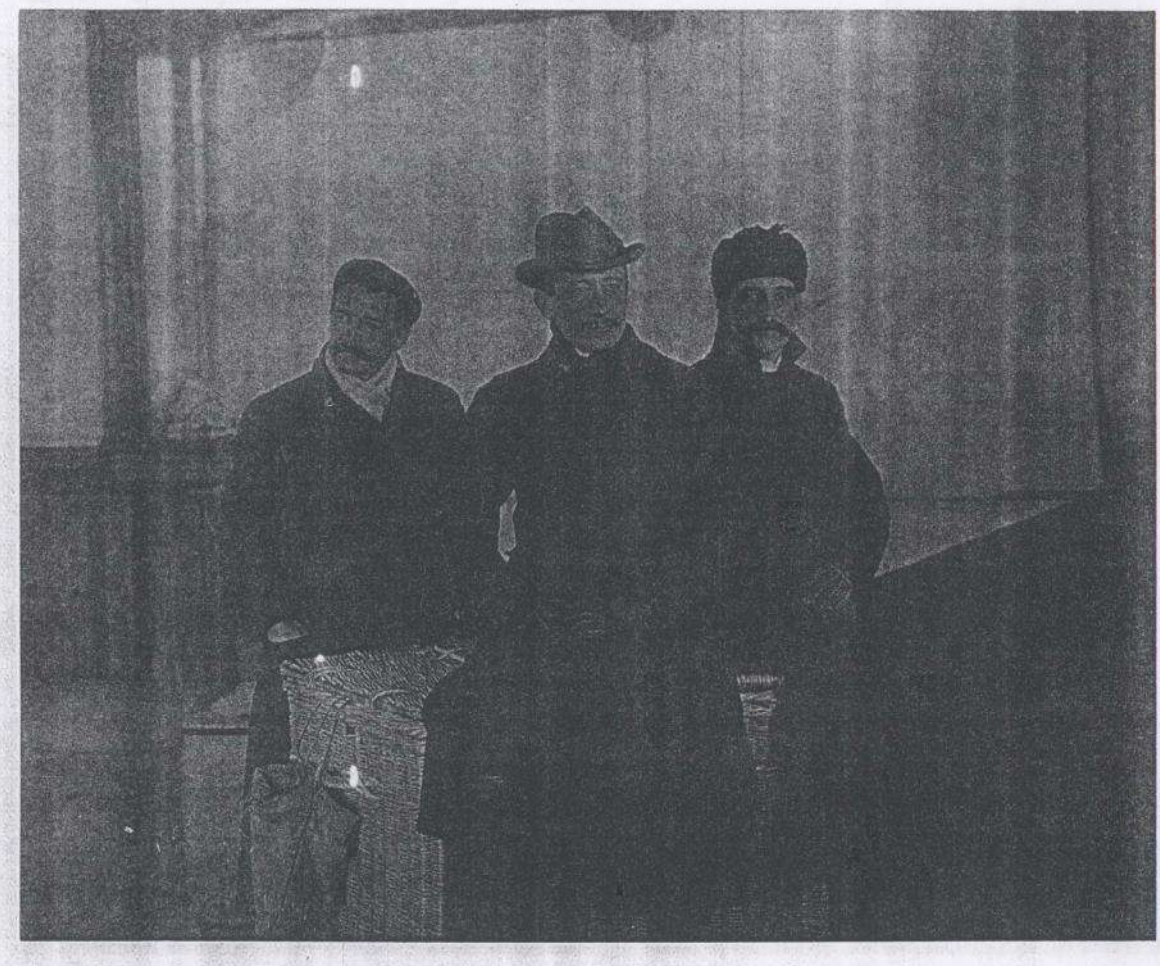
Signal Hill, Newfoundland, December 12th, 1901.

A drawing of the kite-suspended aerial by means of which the first trans-Atlantic wireless signals were received by Senatore Marconi at Signal Hill, Newfoundland on December 12th, 1901. The receiving instruments were in the room in the hospital attached to the Military Barracks, tnrough the window of which the aerial and earth wires can be seen to enter. The aerial wire suspended by the kite was 500 feet in length.

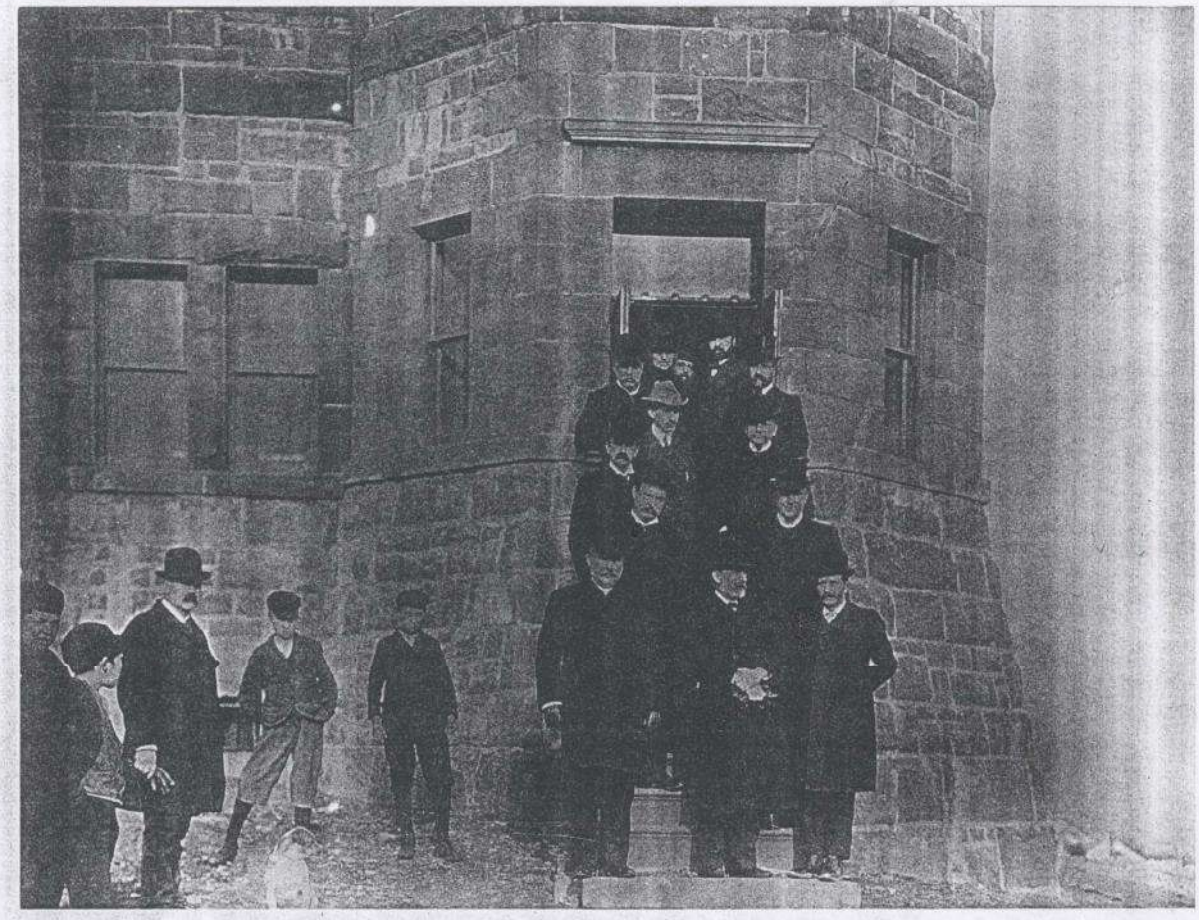




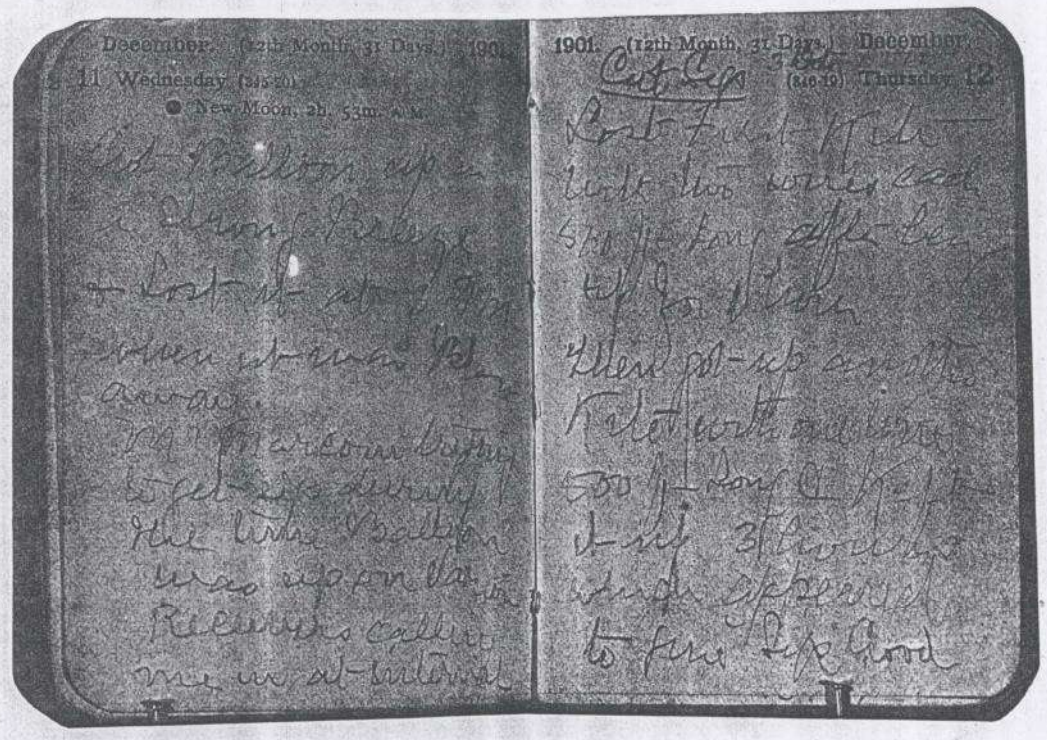
4573. Mr. Marconi in the room at Signal Hill, Newfoundland, with the instruments with which he received the first trans-Atlantic Wireless signals on December 12th, 1901.



4574. A photograph taken at Signal Hill, Newfoundland, of Mr. Marconi with Mr. Kemp (left) and Mr. Paget (right) Behind them on the wall can be seen one of the kites used to elevate the aerial for the reception of the first trans-Atlantic Wireless signals.



4575. Mr. Marconi with a group of members of the Government of Newfoundland, photographed at Signal Hill, Newfoundland, on the occasion of the receipt of the first trans-Atlantic Wireless signals in 1901. Mr. G. S. Kemp, one of his assistants on this occasion, is included in the group and is seen right at the back.



5656. A photograph of two pages in the diary of Mr. G.S. Kemp who was one of Mr. Marconi's assistants when the first trans-Atlantic wireless signals were received on the 12th December, 1901. This is a very interesting record of one of the outstanding events in the history of wireless.

Extracts from Minutes of a Meeting of St. Johns Municipal Council.

Held

Friday December 20th 1901

"On Thursday 12th. December at 12.30 P.M. Signor G. Marconi with his wireless telegraphic receiving apparatus stationed at Signal Hill and by means of aerial wire supported by a kite received signals sent by a pre-arrangement from his transmitting station at Poldhu, Cornwall.

On Monday evening 16th December the Anglo American Telegraph Company having learned of Signor Marconi's success, served a notice of their monopoly rights upon him and threatened legal proceedings in the event of his not stopping operations at once.

The Council are much gratified at Signor Marconi's success making as it does the dawn of a new era in trans-oceanic telegraphy. and deplore the action of the Anglo-American Telegraph Comp'y.

It was further ordered that the above minute be engrossed and transmitted to Signor Marconi."

H. J. Burchell.

Chairman

7288. An abstract from Minutes of a Meeting of the St. John's Municipal Council, recording the reception of Trans-atlantic signals by Signor Marconi at Signal Hill, Newfoundland, on December 12th, 1901.