

The site of the Cleethorpes Station is a flat field which gives a clear space a little more than 600 feet square. There are nine masts, one of which is 180 feet high in the centre, four at 160 feet symmetrically placed round the central mast at the corners of a square having sides 300 feet long, and four of 60 feet outside, again at the corners of another square, having sides 600 feet long.

External arrangements.

*Cleethorpes.*

The Wireless Station buildings are in the centre of the site near the central mast, the centre of the aerial tower being about 12 feet away from it. The aerial is in four independent sections; each section extends from the central mast to a jackstay between two of the 160-foot masts, thence outwards and downwards to a jackstay between two of the 60-foot masts. Sets of feeders are taken up from the aerial tower and the four jackstays between the 160-foot masts to feed the four sections.

The galvanised steel earth plates are buried on edge in a circle 300 feet radius round the central mast as centre; 200 galvanised iron earth wires are taken from the aerial tower out radially to the earth plates. These wires are supported at one end on a ring of poles running round near to the earth plates, and at the other on the aerial tower, the wires being kept overhead and just out of reach at their lowest point.

At Horsea the arrangements are very similar, with the exception that there is no central mast, and that the four outer 60-foot masts have been replaced by eight. The site is very much cut up by the torpedo range and the area of the earth plates limited. The buildings are at the side and outside the 300-foot square formed by the four 150-foot masts. The aerial is in four sections and very similar to that at Cleethorpes, but slightly smaller and lower. The centre is supported on a pair of jackstays stretching in the form of a cross between the diagonally opposite masts. Four sets of feeders, one from each section of the aerial, come down from four points near to the centre of the aerial; each feeder consists of eight wires in the form of a cylinder 4 feet diameter.

At Gibraltar the aerial wires are taken from the Wireless Station up to the top of the rock. There are twenty wires of hard drawn copper trolley wire about  $\frac{1}{4}$  inch diameter.

The wires are suspended by a chain that has been run along the edge of the rock anchored at intervals.

The lower ends of the wires are fastened to a flexible steel cable supported by two short strong masts placed just beyond the station, suitable anchors being arranged. The insulators at the top are so arranged that the top of the aerial wires are about 30 feet out from the rock. The height of the rock is about 1,200 feet, and the lower anchorage is about 1,300 feet out horizontally from the vertical line through the upper suspension; the wires are 2,000 feet long each, and fairly taut; they have an ample factor of safety even in a severe gale. The upper ends of the wires have been spread out as much as possible, and are about 15 feet apart. The lower ends have been drawn in to about 2 feet apart. A great amount of difficult and nerve-straining work has had to be carried out in putting up these wires, and many difficulties have had to be overcome, but now that they are in position they promise to form a very good and permanent aerial. The ground on the North Front is of soft dry sand, but salt water that rises and falls slightly with the tide is met with at a depth of about 8 feet. The earth connections are made with galvanised iron pipes. There are about 160 pipes driven in round the circumference of a circle of about 400 feet diameter, but the space available has not allowed a full circle to be obtained. The pipes stand vertically and have been driven down until their lower ends are 2 or 3 feet below the water level. Galvanised iron earth wires radiate in from the tops of the pipes to a ring round the top of the aerial tower.