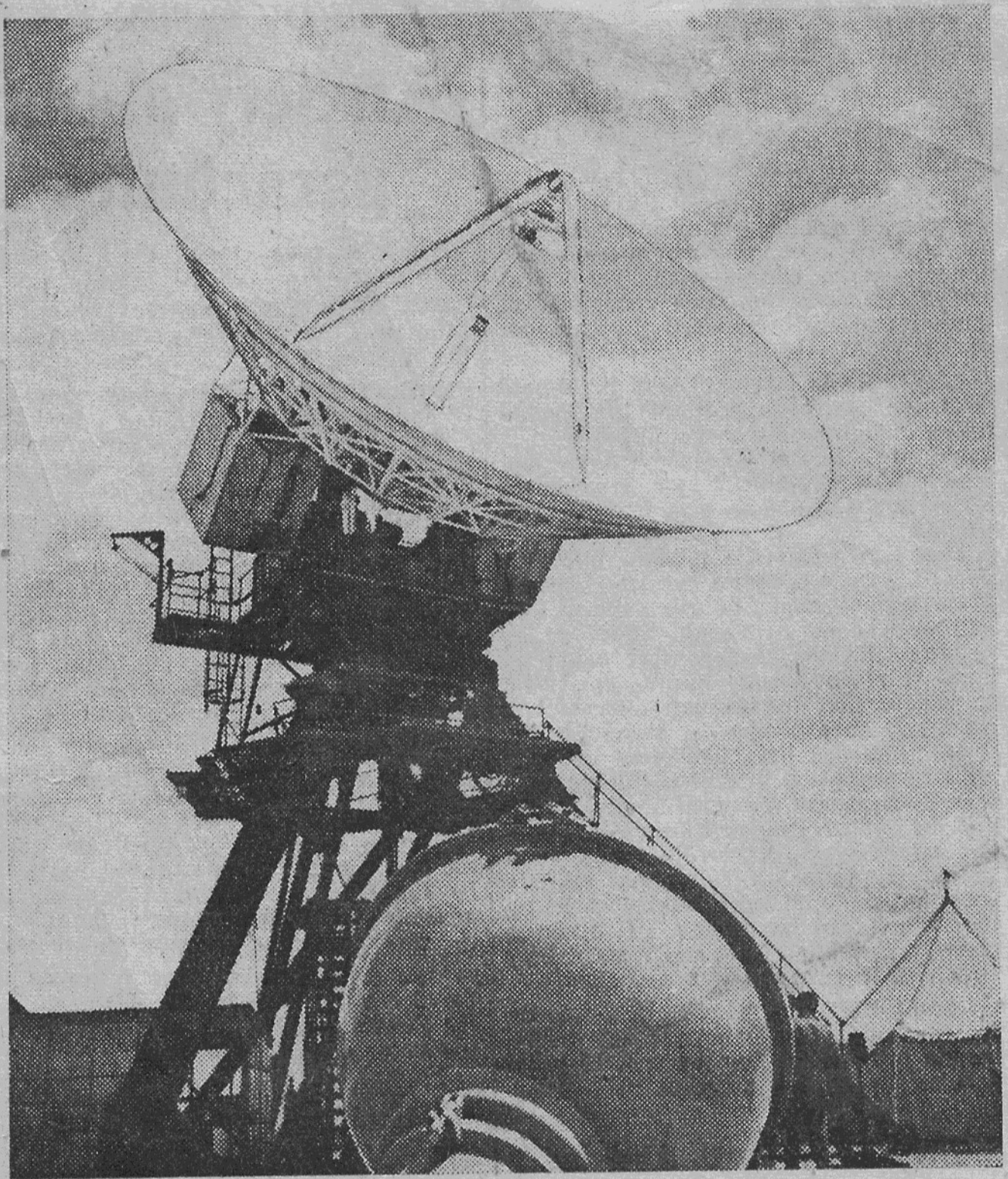


MES THURSDAY JULY 7 1966



A British-made aerial for the American Apollo man-on-the-moon project which is undergoing final tests at Rivenhall, Essex, before being dismantled for shipment to Ascension Island in a few days' time. Reassembly on the island and the handover by the Marconi Company to Cable and Wireless Limited will be completed by September 21.

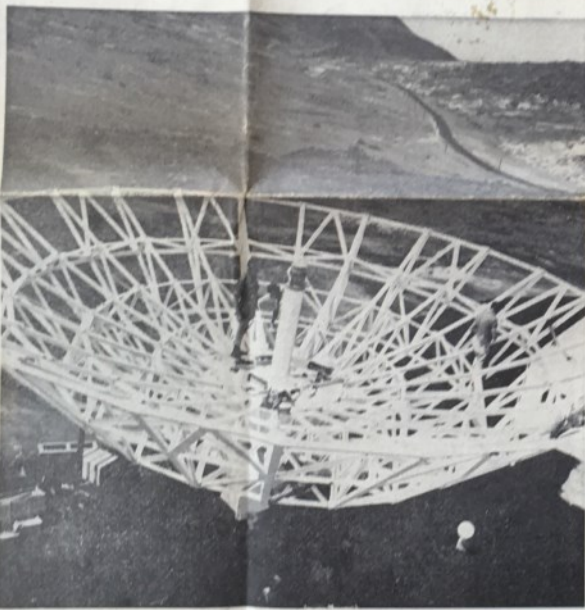
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ASCENSION ISLAND EARTH STATION

which is now operational



Because of its isolation in the south Atlantic, Ascension Island presented special difficulties for the men who built Britain's first overseas civil satellite communications station there. The dish aerial was first erected in England then dismantled and reassembled on the island. It will play an essential role in the American Apollo project to send a man to the moon.

Project completed on time

THE TASK OF DESIGNING, building and installing Britain's first overseas civil satellite communication station on Ascension Island in less than a year, presented a fascinating and unique challenge to show the world what Britain could do. That the project has been accomplished in the time prescribed is due, in no small measure, to the enthusiasm and whole-hearted cooperation between Marconi's and Cable and Wireless.

Ascension Island, because of its isolated position in the South Atlantic, is not the ideal location on which to build a sophisticated communication station in so short a time. From the very beginning the project was planned with the thoroughness of a military operation with regular liaison and progress meetings held between the manufacturer and the customer. Further, the whole project including installation was fully monitored by computer analysis and any possible delays were discovered and remedied.

Transport communication with the island is a big problem. Although there is an airstrip there are no scheduled services.

Because of the island's remoteness, the manufacturer decided to erect and fully test the complete station in the United Kingdom before dismantling and shipment to Ascension. However, the 13-ft. high tripod gantry and the 63-ton 40-metre turntable, which could be duplicated at the test site, were sent out to the island by a scheduled cargo ship to start preliminary installation work on site.

The off-loading of equipment at Ascension Island presented special problems, caused mainly by the high rise and fall of the tide which prevented cargo boats from anchoring at the existing small jetty at Georgetown. The boats had to discharge their cargo, using their own cranes, on to large flat tank pontoons which were towed into the jetty area where they were unloaded by a mobile crane. From there, the cranes were taken by low loader to the station site three or four miles away and unloaded by the mobile crane which was later also used for erecting the aerial.

Natural bowl

By this method, over 80 tons of station equipment, including delicate electronic items, were brought to the site.

Plans for the civil engineering of the station were drawn up by Cable and Wireless's architects and covered the main operation and domestic building, a separate power-house and electrical sub-station and the concrete foundations, required to be levelled to high accuracy, for

the aerial gantry. In addition, after careful surveying, a site on Command Hill some two miles away was chosen for the base-site tower, used as a test facility for the aerial. The entire building programme was undertaken by Cable and Wireless.

The station site on Donkey Plain is in a natural bowl, which provides screening from possible sources of interference coming from the existing high-power high-frequency radio transmitters and navigational beacon installations on the island. The site is on porous volcanic rock, scrub-covered, which provides a solid foundation, but raised problems of achieving a low resistance electrical earth. After extensive evaluation a system using copper sheet buried deep in the rock was chosen.

The main power is brought overland on 11 kV feeders from English Bay to the Power House which also accommodates a standby BMW diesel set. It is interesting to note that although the operation's centre and the aerial are only separated by 1000, the total station wiring used 30 miles of electrical cores.

The island's natural dryness and the prevailing winds make short a special problem and precautions are necessary to avoid its ingress into electronic and electrical equipment.

The installation programme was divided into phases: the first party went

to the island in July to erect the heavy mechanical items, and to receive the aerial on its arrival in early August. Back at the United Kingdom test site, the tempo of the project required round-the-clock shift working and the tests were satisfactorily completed during the early part of July. As the equipment was dismantled, packed and crated, each part was carefully marked to assist speedy re-erection on the island. The cranes were loaded on to a specially chartered cargo boat at Felixstowe, Suffolk, which departed at the end of July and whose arrival at Georgetown, Ascension Island, was planned to avoid other vessels thus preventing docking delays.

Problems solved

In early August, a team of engineers departed from Britain for the island by special charter flight to be ready to receive the equipment on its arrival. The concluding phase of customer acceptance tests is now in its final stages.

The influx of additional people to the island created special domestic problems of nursing and accommodation, as much of the island's supplies are imported from the United Kingdom. However, with the cooperation of the local staff of Cable and Wireless these problems were successfully solved.

