

Extract from Post Office Engineers' Journal (October 1969)

North East Region

Restoration of microwave links to the Emley Moor Television Transmitter

During the afternoon of Wednesday 19 March 1969 the ITA channel between the Leeds Network Switching Centre (N.S.C.) and Emley Moor became noisy. Waveguide pressure had been lost at Emley Moor and there was every indication that the waveguide had been damaged, that moisture had penetrated and possibly that the aerial had been damaged. The receiving aerials for the Post Office microwave link were mounted on the main transmitting mast at Emley Moor.

Late in the afternoon the regional mast and aerial A.E.E. examined the main transmitting mast, which was heavily iced, and decided that ascent would be dangerous. This officer was still on site with the local radio maintenance T.O. when the 1,250 feet tall mast collapsed with an explosive roar at 1703 hours.

Destruction of the mast was complete and various buildings on the site were damaged, some of them quite severely. Much of the mast fell outside the site area completely blocking a main road and the stay wires sliced through the roof of a nearby methodist chapel. It was quite astonishing that there was no loss of life or serious injury. The post office personnel were in the microwave equipment room some twenty-five yards from the base of the mast at the time of the failure. One snapping stay-wire lashed over the snow covered roof of the room, cracking it, and allowing water to seep in. As the temperature rose during the evening this became a serious hazard to the terminal equipment.

Clearly no restoration of services was going to be possible during the evening since the ITA and BBC 2 transmitter aerials and the PO microwave aerials had been lost. The Post Office staff turned their efforts to safeguarding the radio equipment and protecting it from the ingress of water. All the equipment was sheeted over and the roof was cleared of snow. The building formed part of the BBC complex and the following morning they provided an external tarpaulin covering.

Next day various methods of restoration were discussed by Telecommunication Headquarters and Regional staff. It was decided that it would be impossible to use the original routing from Heaton Park via Windy Hill to Emley Moor, because this path needed very high dish aerials at Emley Moor and the proposed temporary broadcast masts could not accommodate these.

An alternative route was devised, exploiting the telephony traffic protection channels on the London-Leeds system, by intercepting these at Upton radio station and extending them to Emley Moor by means of Outside Broadcast (O.B.) temporary equipment. Thus, the ITA program from Heaton Park was extended, first to Tinsill (on the London-Leeds system) on a recently completed broadband channel which had not yet been taken into service, thence to Upton and Emley Moor. The BBC 2 program was teed off the East Anglia feed at Morborne Hill, farther south on the London-Leeds system, then routed northward to Upton and Emley Moor.

Loss of the telephony protection channels was made good by providing a manually-switched channel from London, via Oxford, Birmingham and Manchester to Tinsill.

Demodulation equipment was acquired from Copt Oak radio station in the Leicester Area and installed to feed the television channels to the O.B. links. Extra-long feeder-cables to cope with the height to which the aerials had necessarily to be fitted were supplied by the Midland Telecommunications Region. Panning was carried out in darkness and the first link, providing a BBC 2 signal to an O.B. vehicle roof at Emley, was offered and accepted by the BBC at 2130 hours. The BBC commenced transmission on Friday 21 March at 1430 hours, from a temporary transmission aerial.

The second O.B. link was brought into service on the Friday at 1430 hours and this supplied the ITA signal to the roof of a building on the site at Emley. ITA started transmissions at 1550 hours on the Sunday from a temporary transmission aerial.

The initial O.B. aerial provision was only satisfactory as an emergency expedient since it provided only marginal clearance of trees on the Emley site. To provide a more satisfactory link a 60 ft scaffold platform was erected at Emley for the



Erection of the scaffold platform with temporary BBC aerial in the foreground



Wreckage of the main mast

aerials. This was completed on the Sunday and the O.B. aerials transferred to it.

Meanwhile, arrangements were being made for a more permanent service to normal standards. This was achieved by 27 March with the provision of a transportable mast, aerial dishes and flexwell feeders, connected to the original rack equipment at Emley Moor.

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