

New trunk waveguide system 500,000 telephone channel capability

Marconi are collaborating with BICC and the UK Post Office in offering a new waveguide system, for use on busy telephone trunk routes throughout the world.

Already the subject of a highly successful trial link between the Post Office Research Station at Martlesham and Wickham Market, the system is now being actively considered for operational trunk service between Bristol and Reading, a distance of some 70 miles.

The system, which uses a hollow tube about 50mm in diameter with a metallic conductive wall instead of conventional cable, is capable of providing capacities equivalent to 500,000 both-way telephone channels.

Marconi's contribution to the system consists of the vital terminal, repeater and frequency multiplexing equipment which will be manufactured by Marconi Communication Systems. It was developed by Marconi Research Laboratories following three contracts placed

by the Post Office for feasibility studies, experimental work and field trials on the waveguide system. Working in the 30-110GHz bandwidth, the system called for state-of-the-art development work on the part of waveguide engineers. The success of the trial link has amply proved the capability of the Company to contend with these innovative techniques.

The waveguide was developed and is manufactured by BICC who also developed the jointing and installation techniques.

The Martlesham to Wickham Market link was designed to test the system thoroughly, and curves, sharp bends and river crossings were all introduced into the system.

The system can accommodate very high growth rates, whether it be in telephony, data, TV services or video telephony at cost per channel rates much lower than competing systems. Repeater stations can be sited at intervals of more than 20km, reducing main-

tenances and improving reliability considerably. Additional channels can be quickly and cheaply brought into service by the introduction of bolt-on and plug-in factory aligned modules.



This photograph shows a waveguide band branching and channelling unit

Another £1 million worth of Marconi tropo for North Sea oil communications

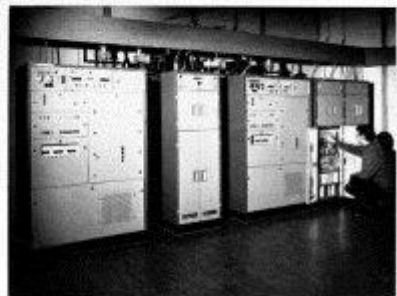
Another £1 million worth of Marconi tropospheric scatter equipment has been ordered by the British Post Office for use in the communications network serving oil production platforms in the North Sea.

Under the terms of two contracts placed with Marconi Communication Systems, two new stations on South Shetland are to be equipped with tropo antennas, transmitters, receivers and a full range of ancillary equipment. This follows the opening last year of the Post Office's first North Sea tropo-based communications system. This links the Beryl Field into the UK's national and international telecommunications circuits via a station on South Shetland and a relay to Fraserburgh on mainland Scotland. This particular system, which will also serve

the Frigg Field, uses some £1½ million of Marconi tropo equipment at the shore stations.

Two further stations are now needed – one to serve the Ninian and Heather Fields and the other to serve the Thistle and Cormorant Fields. These will form an extension to the present South Shetland station and will be remotely operated from the existing control centre. Both will be equipped with the most recent Marconi 1-kilowatt equipment operating in the 2GHz band. This, the Marconi Type H3112/H3712 dual transmitter and quadruple diversity equipment, will carry 72 voice channels initially, although it is capable of providing 132. Marconi will also provide billboard antennas, two towards Thistle and Cormorant, with beam swinging for alternate routing, and two towards

Ninian, together with spares and installation services. Line-of-sight links will connect Heather to Ninian.



Marconi tropo equipment installed at Post Office station near Fraserburgh

Post Office buys another £1 million worth of Marconi PCM

Marconi Communication Systems, has won another contract worth nearly £1 million to supply PCM (pulse code modulation) systems to the U.K. Post Office. This brings the total value of sales to all customers in the 9½ years since the introduction of Marconi PCM to over £21 million.

Under the terms of the new contract, Marconi is to supply 24-channel systems for use in the Eastern, Northern Ireland, Wales and South Western Telecommunication Regions. The contract also covers the provision of a quantity of equipment designed to

protect PCM line systems from high induced voltages such as those caused by lightning. Marconi Communication Systems is the only company to supply this type of equipment to the Post Office.

Delivery of all this new equipment is scheduled for completion by the end of July 1977.



County Antrim, Cushenden

Communication and Broadcasting - Autumn 1977

Message handling system for Bahrain

Bahrain Advanced Radiotelephone Communications (BARC) is a message handling service being set up by Cable and Wireless Limited in the State of Bahrain. Cable and Wireless have ordered four RC731 base stations and one hundred RC625 mobile radiotelephones from Mobile Radio Division of Marconi Communication Systems for the new service. The contract was placed after a local survey and demonstration carried out by Mobile Radio Division.

The mobile radiotelephones being supplied are 10-channel sets (RC625), fitted with Marconi selective calling and vehicle identity facilities. This allows the central control to address up to 100,000 different mobiles individually. When called, the mobile automatically signals back to base that the call has been received, and, in the event of the driver being away from his vehicle, the

call is stored until he returns. Mobiles transmitting into base automatically signal their identity which is displayed at the base station control point. This prevents the unauthorized use of the system by unlicensed sets.

Local telephone regulations do not allow radio circuits to be inter-connected with the public telephone service. The system does, however, include some 'fixed' mobiles, for example on contractors' sites, and if required, the base stations can be switched to 'talk through' operation to allow these 'fixed' mobiles to speak directly with radiotelephones in vehicles.

The scheme uses the first equipment with 12.5kHz channel spacing to operate in Bahrain. Installation and maintenance will be carried out by Cable and Wireless using their local resources.



Two operators using part of the BARC control equipment in the temporary headquarters being used until the completion of the new building which will have a purpose-built control suite