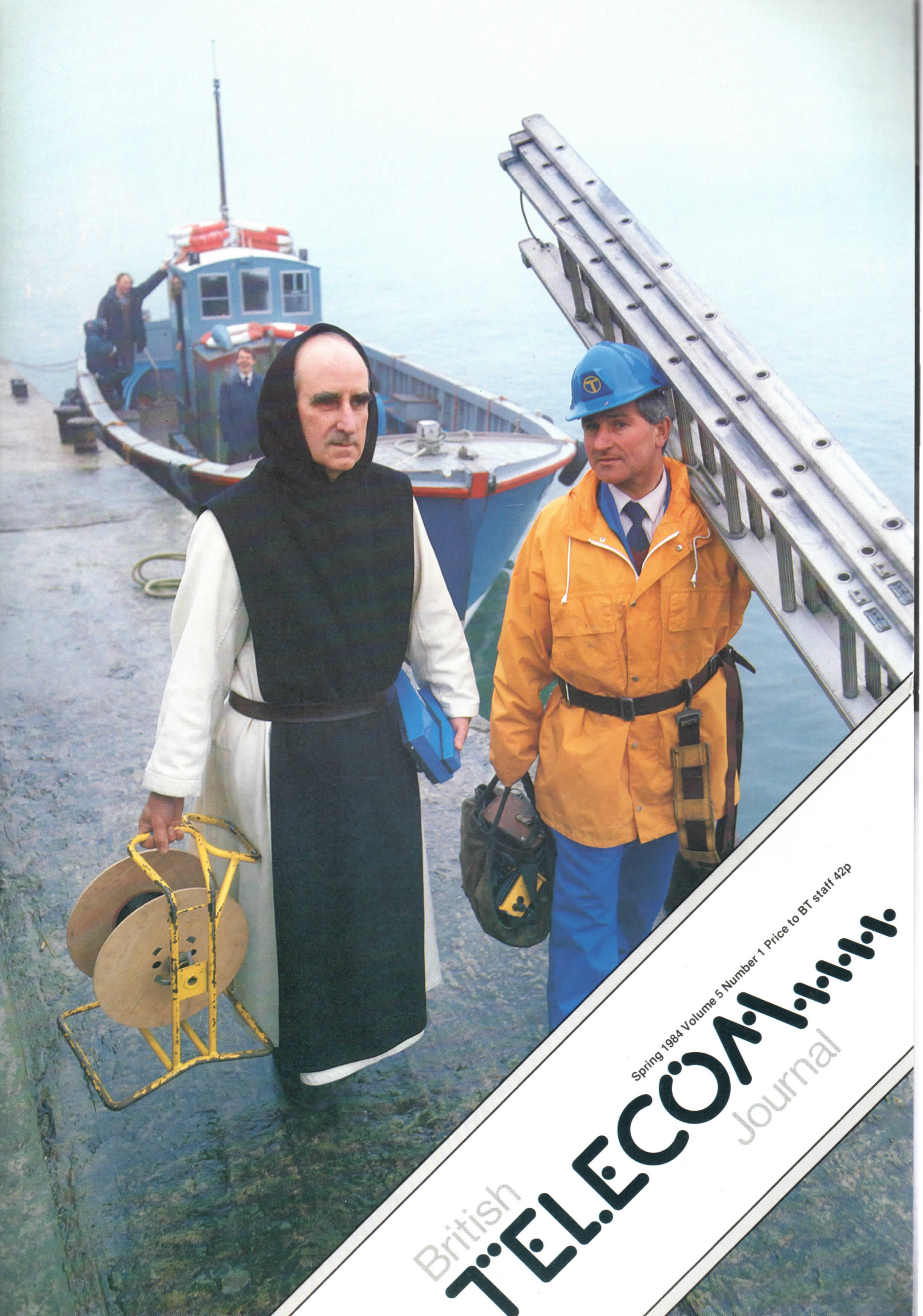




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British TELECOM Journal

How Voteline works



Caller

Exchange

Announcer

Line terminating
equipment

Votes on the line

Alan Birch and Roger Green

Early last year, a new British Telecom service called 'Televote' was introduced. It enabled a radio, television or press audience to vote by telephone using equipment at eight major centres throughout the country.

After discussion with local radio station Mercia Sound, Coventry Telephone Area accepted that Televote could be adapted to meet local need. This challenge was taken up by two technical officers who between them developed 'Voteline' – a service which provides:

- ★ Digital display of votes cast at the radio station.
- ★ Separate displays for each option with up to four options such as Conservative, Labour, Alliance and Don't know.
- ★ Reliable and comparatively cheap microprocessor-controlled circuitry.
- ★ Four-wire link only between exchange and station – one pair for data, one pair for control.
- ★ High-capacity with the system handling up to 66,000 calls an hour, the limiting factor being the public exchange equipment.

The Coventry service began just before last year's General Election and on that day more than 2,000 calls were registered. Since being introduced, calls have been received at a rate adding up to about 50,000 a year. Political and sporting polls have proved the most popular.

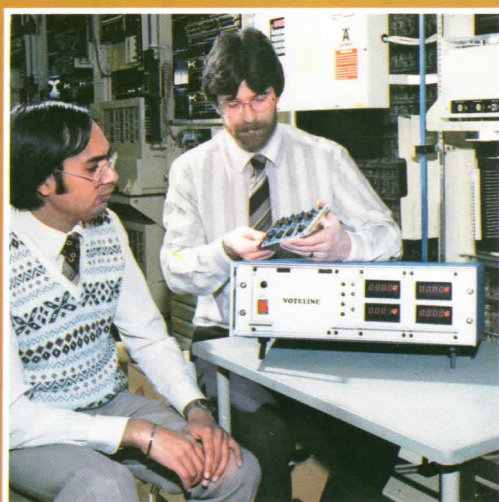
The Voteline equipment is divided between the

telephone exchange and the studio console at Mercia Sound. This enables the programme presenter to control the system from the studio via a panel on which are mounted four electronic totalisers recording the votes cast by callers. There are four voting options each having an associated telephone number.

Signal

When the presenter invites listeners to vote he indicates the telephone numbers to dial for each option used. He then sends a 'count start' signal which takes an engaged condition off the lines and brings in the facility for connecting an announcement to inform callers that their vote has been recorded. Each registered vote is recorded on the totaliser associated with the number dialled so the presenter has an immediate indication of the state of the poll.

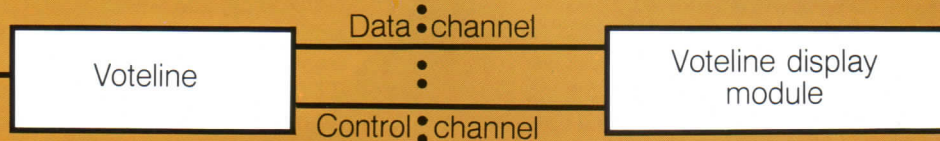
The system is operated by four simple push button controls and the system state is indicated by one of three indicators. Before using the system in a live context, the presenter has at his disposal a system test facility, which if used, generates 100 test calls. These are registered on



Testing Voteline equipment



Radio Station



Far left:

Coventry housewife Sue Whittle listens to the Mercia Sound announcement telling her that her telephone vote has been recorded.

Centre:

Technical officers Makhn Singh and Glen Chambers, who between them developed Voteline test equipment at Wolverhampton exchange for Beacon Radio.

Above left:

Mercia Sound disc jockey Jim Lee invites responses from listeners as Voteline equipment – on his left – totals up telephone calls.

each of the four totalisers and once the test sequence is complete the totalisers are automatically reset. At the telephone exchange the Voteline equipment registers and counts the votes as they come in.

At Coventry, each of the four Voteline numbers has 15 lines associated with it. Each line is connected to a line terminating circuit which acts as interface between the Strowger equipment in the exchange and the Voteline equipment. The two ends of the Voteline system are connected by a four-wire, speech-band circuit. Data and control signals use separate channels and consist of two out of five multi-frequency tones.

When a count is in progress all 60 lines are continuously scanned for calls. When one is detected it is stored, encoded and then transmitted in packets to the Mercia Sound studio where it operates the appropriate totaliser. A duplicate set of totalisers exists at the exchange which mirrors the state of the studio totaliser.

Flexibility

At the heart of the Voteline system is a microprocessor which controls all functions of equipment from opening the lines to ensuring that each vote operates the correct totaliser. The microprocessor is controlled by a computer program stored on an erasable, programmable-memory chip. This introduces a degree of flexibility in that the computer program can be re-written to introduce new facilities.

A major improvement to come from further talks with Mercia Sound was for a call trap to be incorporated under their control. This additional facility enables the station to select voters at random to take part in programmes thereby creating an air of excitement. It has been designed and incorporated in the system and went on trial in December. It is hoped to further the joint enterprise with Mercia Sound and by continued discussions, expand and improve the service.

The radio station has agreed to avoid using the service between 9 am and 5.30 pm weekdays which greatly limits provision of extra equipment in the public exchange.

If necessary, up to 30 lines per option could be made available on existing numbers. Over this, the system would have to transfer to special information services equipment. Work is in hand to develop Voteline systems for other areas and one for Beacon Radio in West Midlands Area is under construction. It will also be necessary to design the service for interworking with System X.

In working with Coventry's local radio station, a close relationship has been built up but there are other avenues to explore. Apart from radio, newspapers and local authorities are possible candidates for using the service to canvas public opinion. Coventry Area sees 'televoting' expanding for a number of years yet but when Prestel and interactive cable tv become more widely available, these services could well take over Televote's role. ①

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