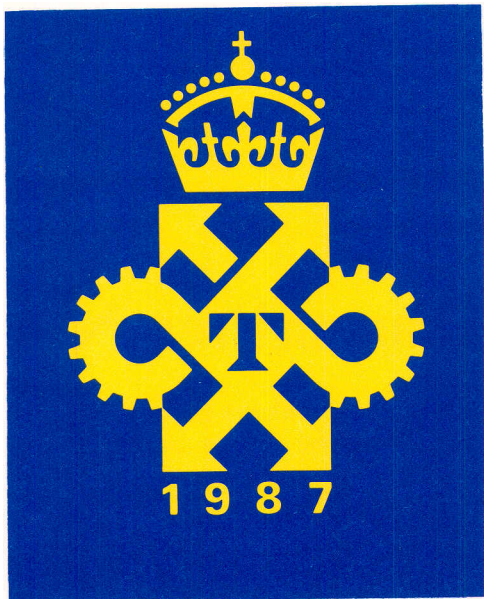


# ENGINEERING

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## BBC Engineering awarded fourth Queen's Award



BBC Engineering and the Electricity Council have been jointly awarded the Queen's Award for Technological Achievement for Radio Teleswitching. This, the fourth award to BBC Engineering, is for pioneering work with the BBC's low-frequency transmitters which send coded signals to electricity time-switches. By adding data signals to the BBC's low frequency broadcasts, without affecting the audible signals, load switches and meters on electricity consumers' premises can be remotely controlled. This enables off-peak storage systems to operate without the disadvantages of electro-mechanical time-switches and flexible tariff rates to be developed. Consumers benefit from the opportunity to take advantage of favourable tariffs, while savings of up to £80 million a year are expected in the cost of electricity generation.

Using low-frequency transmitters at Droitwich, Burghead and Westerglen, the system superimposes a data signal by phase-modulating the rf carrier. Because

of the narrow-band nature of the data-signals, the Radio Teleswitching system can be used in the areas such as basements or steel framed buildings where the field strength from the transmitters is too low for normal reception. Thus the low-frequency transmitters are ideal for this type of service.

The data signals are received and decoded by Radio Teleswitching receivers installed in consumers' premises, where they initiate the switching of tariff controlled appliances such as storage or water heaters as required. This allows the Electricity Supply Industry more flexibility to smooth peak demands and hence helps avoid the need for excess generating capacity.

The data signals originate from a message assembler located at Broadcasting House in London. Information from the Central Electricity Generating Board (CEGB) is used to key data onto one channel of the message assembler, and the resultant waveform is sent to the transmitters. The data waveform is a 25 bits/s bi-phase signal that phase-modulates the 200 KHz transmitter carrier by  $\pm 22.50$ . The absence of de in the modulating waveform maintains the overall accuracy of the transmitter frequency, which is derived from a rubidium frequency-standard. The remaining data channels on the message assembler are currently not used.

The Radio Teleswitching system was developed by engineers from Research Department, in co-operation with the Electricity Council. It has been fully available to Area Electricity Boards since 1985. Earlier evaluation tests confirm that the system does not cause interference to the Radio 4 (OK) or World Service programmes normally carried by the low-frequency transmitters.

# Edit Suite for TV News

PID Tel Recording Section have recently completed a three machine vt editing suite to provide the extra material for Daytime News summaries.

The ergonomic wrap-around desk which houses all the technical equipment was the result of much discussion. It was constructed by the Building Maintenance Workshop at Woodlands and the result was much praised by the users.

Two Sony U-Matic machines, one with slow motion ability, play into a third machine via a Grass Valley vision mixer and an Audio Developments 6-channel sound mixer. The operation is time-code controlled, with match-frame accuracy, by the new Sony 900 editor, a keyboard and VDU arrangement which can memorise up to 128 edits including wipes and mixes.

The suite also contains a time-code synchronised twin-track Studer audio recorder for lay offs and effects.

Although the project was done 'in-house' with one E.D wireman and one PID Tel Engineer - Rod Smith, no custom control panels were employed, the necessary loudspeaker selection being taken care of by the manufacturers upgrade to the audio mixer.

The capital cost for the project including acoustic treatment was under £12,000 and the suite was handed over 4~ months after approval.



*Rcsi Smith in TV News edit suite*

# Licence Agreement

SVT Video Systems Ltd have been given a licence to manufacture the VHF Stereo Modulator MD1/7.

This modulator accepts left and right audio signals at standard level and produces a pre-tuned Band II frequency-modulated output suitable for feeding into wired distribution systems.

A multiplex output at standard level and a data input for the modulation of 'radio data' type signals is also available.

The unit is intended to be used with termination panel PA20/28.

\* \* \* \*

# Transmitter News

The following transmitters have opened or changed since January.

## UHF TELEVISION

Caergybi	Gwynedd
Chilfrome	Dorset
Clennon Valley	Devon
Eastbourne	E. Sussex
Halesowen	W. Midlands
South Brent	Devon
Wenvoe	S. Glamorgan

## VHF RADIO

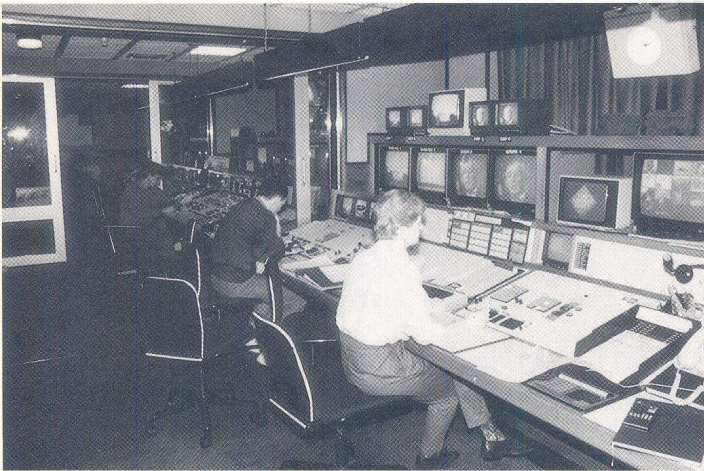
Campbeltown	Strathclyde
Ilchester Crescent	Bristol
Limavady	Ulster
Les Platons	Channel Islands

## LOCAL RADIO

Bath	R. Bristol
Ilchester Crescent	R. Bristol
Woolmoor	R. York
North Hessary Tor	R. Devon
Okehampton	R. Devon
Exeter	R. Devon
Redruth	R. Cornwall
Isles of Scilly	R. Cornwall

\* \* \* \*

# Electronic Graphics Area for TV News



TV News electronic graphics preparation and output area.

"Cardboard" graphics and "cut and paste" are fast becoming a thing of the past in national News bulletins. A new electronics graphics area has just entered service at Television Centre which provides enhanced pictures for all News bulletins. Designed and built by Central Systems Section of P & ID Tel, to the requirements of Television News staff, the area offers, for the first time, a host of facilities that give the News a sharper image.

Previously News graphics were produced using Letraset, photographs, and coloured cardboard artwork transmitted from a 12" x 9" caption scanner, together with conventional photographic slides. Electronic graphics, including the opening sequences, first made a regular appearance on News broadcasts with the re-vamped 6 O'Clock News in 1984. This made use of a Quantel DPB7001 Paintbox, Quantel DLS6001 stills store, and Aston 3 character generator. Pictures were positioned 'behind' the newsreader using a Cintel Slidefile and key signals from a Design Department DOG (Digitally Originated Graphic) key, an effect previously achieved using colour separation overlay (CSO) techniques. In those days the electronic graphics area was temporarily on the 6th floor of the Spur, but this was required to be moved because of stage V building work. In September 1985 a second set of equipment was obtained and again installed in a temporary area, in order that the 9 O'Clock News could have the advantage of electronic graphics. To rationalise the situation a dedicated area for all News graphics activities was

proposed on the corner of the 4th floor Spur close to the Stills Library and Video Tape.

The new area has been designed for 'on-line' and 'off-line' preparation. The 'on-line' unit comprises one long operations desk, split into three distinct parts. At either end are the two graphics preparation/output areas, called GR1 and GR2, each housing the controls for a Quantel 7001 paint box, and Quantel 6001 stills store, plus control of Rank Cintel Slidefile. Each area also has an Aston 3 character generator and Ikegami ITC730A copy camera. The camera is used in the vertical mode for photographs, logos and documents to provide basic material for the paintbox and stills stores. Pictures and graphics, once prepared, are transmitted from the two outputs of the Quantel 6001. The Cintel Slidefiles are used as additional stills stores during transmissions.

The central position (GCR) acts as a router, combiner and general output desk for the three News studios on the 6th floor. The desk provides access to a large probe six-level component matrix which enables all of the various graphics devices to be routed to each other and to standard PAL coders to give a coded input to the studios. Various monitors are provided, including RGB, encoded, and monochrome, so that the graphics can be checked at each stage of production. Two D & ED and digital PAL decoders are used to provide high quality RGB pictures from outside sources such as OBs or VT. This area also includes a Thompson slide scanner, 'tarrif' colour correction units and a D & ED digital combiner (see Engineering Information no 20). This allows combining of any component sources within the area with minimum loss of quality.

Away from the main desk is a 'quiet' 'off-line' preparation area, located in the graphic design office. Here Graphic Designers can use the third Paintbox away from the pressures of the production and preparation areas. Despite being located away from the 'on-line' areas, this paintbox has all the input and output facilities available to the main area, and work can be transferred instantly to and

**Continued on next page**

# News Graphics continued

from it. An Ampex Picture maker and Abekas A64 digital disc recorder will shortly be installed, which will permit the formation of 3D animated sequences known as 'stings'

The stills stores and paintboxes have Winchester disc drives as an active storage medium, plus removeable cartridge drives on which are stored a library of basic graphics such as maps of the UK. A Quantel central lending library will soon be installed that connects all five devices together to facilitate the easy transfer of pictures digitally between different equipments.

Nigel Jackson from Central Systems Section of P & ID Tel, the project Leader, said "The move to the new area was made gradually to give minimum out of service time, mainly at weekends and at night. However, we were under pressure to move the 6 O'Clock News because their old area was required for re-development work associated with the stage V building work". Most of the moves were carried out between mid November and early December 1986, with final tidying up made early in the new year. Additional pressure for the area to be brought into service came from the start of Daytime Television with its hourly bulletins. Credit must be given to Project Leader Nigel Jackson, Engineer Julian Stone, Installation Technician - Frances Hill, Wiremen - John Huckstable, Malcom Walsh and Keith Savage from Power Distribution Section of P & ID Tel, as well as many Television News resource staff for enabling the smooth transition from the old areas to the new one.

## New radio pager for west London TV premises

A replacement radiopaging system for Television Centre and surrounding buildings was commissioned in the New Year. Although more familiarly known as beepers, the new receivers, manufactured by Cass Electronics Ltd., do considerably more than bleep. There is a five digit alpha-numeric Liquid Crystal Display which is used to give messages to the user. Normally this would be the telephone number which a caller wants the user to

ring, but it can also be used to warn when the unit is carried out of range of a transmitter, or when the rechargeable batteries need charging.

Some of the units do not bleep at all. Because of the possible disruption caused by a receiver sounding in a studio or other sensitive area, there is the option of carrying a vibrating receiver. This is virtually silent, but nevertheless makes its presence felt very well provided it is worn close to the body.

In all, seven transmitters are able to make individual calls to any of 550 receivers in the areas of North Acton, Woodlands, Television Centre, and the Shepherd's Bush premises. Anyone using a TC PABX extension can make a telephone call to extension 8811 followed by the pager number required and the 4-digit message it is wished to display.

Unlike the old pagers, which were in use for 17 years, the receiver number is not set indelibly during manufacture, but can be re-programmed as often as necessary at one of four programming units situated at North Acton, Woodlands, TC and Lime Grove. This number is also shown on the display when not displaying a current message.

The Cass 2800 Teletracer system was chosen by Communications Department for TC so that it would be compatible with a similar system already in use at BH. When the BH system is moved to White City, the two systems will combine to provide the largest single radiopaging system in the country.

*M3.rtin* Denyer (1) from *Comms* examines the new radio pager with Ron Renton (r), Head of Telecommunications Section, Clive Conway-Phillips (seated) and Jim Flerning (behind), MJ of Cass Electronics Ltd.