ENG INF

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New Studio Complex Opened in Belfast

BBC Northern Ireland's first purpose built broadcast television studio was officially opened by BBC Chairman Stuart Young and National Governor Lady Faulkner as part of the Region's 60th Anniversary Celebrations.

The television studio is part of a new complex, housing tv continuity, videotape and telecine suites, make-up, dressing rooms, scenery transit area as well as a second smaller television studio. The complex covers nearly a third of the area of the BBC Northern Ireland centre in Ormeau Avenue, Belfast.

The larger television studio, B, has a floor area of about 200 sq m, and is unusual in that most of the technical facilities are on one wall, allowing more of the floor area to be usefully employed for productions. Three Link 125 cameras, with facilities for a fourth, have been installed in the studio. Some of the Colortran luminaires have been suspended from a new motorised traversing pantograph built by Colortran to a SCPD design.

Belfast studio B

The new television complex in Belfast

The vision and lighting control room for studio B has been combined with the production control room. A sixteen-channel Cox T16 vision mixer has been installed, together with a 120-way Dynamic Technology 'Datalite' lighting console. A Neve twenty eight-channel desk has been installed in the sound control room, with monitoring via LS5/8 loudspeakers.

The smaller studio, C, uses a single Link 125 camera for local news contributions. The floor area is some 35 sq m, and, like studio B, it has Colortran luminaires plus a twenty-way DTL lighting console. The vision mixer comprises a Cox T16 sixteen-channel desk, with sound being handled by a twelve-channel Neve desk.

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Editorial

Licences fee application

As you will have read elsewhere, the BBC has made an application for an increase in the colour television licence fee to £65. Part of the justification for the increase is the need for capital investment, an area that effects most departments in Engineering Division. I reproduce below the case for continued capital investment taken from BBC Information's "Background to the BBC's Licence Fee Application."

Capital Expenditure

"The BBC has been unable to raise significantly the level of its capital investment programme during the past 3 years. It continues to suffer from the effects of Government expenditure controls imposed during the 1970s. The result is a substantial backlog of investment that needs to be undertaken.

Worn-out plant and equipment threaten the high standards that viewers and listeners expect – unless the BBC can maintain investment at a reasonable level.

New technology – ranging from the applications of digital techniques to the development of lightweight portable electronic television cameras – can contribute greatly to the quality of programmes. The BBC believes that it must provide its creative staff with the means to remain in the forefront of broadcasting.

In addition to the replacement of worn-out plant and provision for new technology, capital expenditure in Television includes the completion of the Television Centre at the White City in London. This will eventually embody a new Television Theatre, replacing the obsolete building at Shepherds Bush Green. Building replacements outside London include a new post-production block at Bristol, new broadcasting centres for the North-East and South Regions and improved facilities in Belfast, Cardiff, Bangor and Glasgow.

Radio's capital expenditure requirements include replacement of worn-out plant in London, the Regions and Local Radio and provision for a start to be made on a new Broadcasting Centre on the site of The Langham in Central London.

Broadcasting House is now over 50 years old and totally unsuited to the needs of modern broadcasting – especially the production of high quality VHF stereo programmes.

The building of a new Broadcasting Centre will enable the BBC to rationalise the whole of its accommodation in Central London, allowing 21 leasehold premises to be surrendered. It is planned also to build a new Broadcasting Centre in Edinburgh, replacing the collection of converted houses currently – and inefficiently – in use.

There are areas of the United Kingdom where people still cannot hear BBC Radio or see BBC Television programmes adequately. Radio capital expenditure also provides for the creation of a separate VHF network for Radio 1, together with a VHF network to enable Radio 4 to be heard in Scotland, Wales and Northern Ireland. New transmitters are also planned to bring VHF signals to the 3 million listeners in the UK currently denied this service."

Alan Lafferty

Licence Agreements

Designs Department have recently signed a licence agreement with Avitel Electronics Ltd., for the production of four BBC designed test equipments.

The ME1P/520 level measuring meter is designed to work with the colour calibrator UN1/509 to measure the insertion loss of circuits and equipment at line and colour subcarrier frequencies. The primary use of the meter is for the equalisation of tie lines. Two measurement ranges are available; 0.5dB and 6dB. Two potentiometers are provided for the separate amplitude adjustment of the line rate and subcarrier signals from the colour calibrator. The ME1P/520 is mains powered with battery back-up. It is constructed on a modified CH1/64B chassis with plastic top and bottom covers.

The ME3M/502 television waveform analyser is a self contained measurement set, designed to measure video waveform parameters. It will measure either the ITS or line repetitive test waveforms.

The UN1/75A amplitude measuring unit is a video signal measuring unit, developed for use at television studios and control centres, and is used with an oscilloscope for accurate measurement of amplitude, coder and oscilloscope calibration.

Belfast Studio

continued from page 1

The television continuity includes a comprehensive Cox special mixer, Rank Cintel MK7 slide scanner, Aston 3 character generator and separate network and clock logos; switching, as in the whole complex, is handled by a NTP router. The continuity has facilities to opt-out of either network and incorporates a special network mimic diagram.

There are three new videotape cubicles. Two of these have new cubicle equipment and a new pair of VPR2s, taking the total number of 1" machines to four. One Rank Cintel telecine machine has been moved to a new area in the complex.

The £5½M project has been completed in only three years, under the watchful eye of SCPD project leader Tom Deakin.

Transmitters Opened

The following uhf transmitters have opened since October:

Llangynog	Powys
Dronfield	Derbyshire
Piddletrenthide	Dorset
Crosthwaite	Cumbria
Coombe	Devon
North Bovey	Devon
Linnet Valley	Suffolk
Winterbourne Steepleton	Dorset
Woodford Halse	Northants
Clearwell	Glos
Westbourne	Dorset
Wonersh	Surrey
Lisbellaw	Co. Fermanagh
Derrygonnelly	Co. Fermanagh
Gortnageeragh	Co. Antrim
Plumbridge	Co. Tyrone

The following vhf transmitters have opened or changed:

Guildford	Surrey
Rothesay	Strathclyde
Ilchester Crescent	Avon
Kilkeel	Co. Down
Knock More	Grampian
Gt. Massingham	Norfolk
Pontypool	Gwent

Transcription Service Compact Disc

The first Compact Disc (CD) to be made by the BBC has been issued by the Transcription Service. This is the first time that Transcription Recording Unit (TRU) have used this medium for distributing programmes to overseas broadcasters, and is also the first CD to be manufactured in Britain.

TRU have been involved in recording programmes on conventional LP's for the past 30 years, cutting master lacquers which are subsequently processed and pressed by commercial companies. In recent years much of this work has been handled by Nimbus Records at their factory in a country house in the Wye valley. The decision by Nimbus to set up a CD plant encouraged TRU to suggest a pilot recording and subsequent issue. The scheme was welcomed by the Transcription Service business office, and by the production staff who co-operated to launch the first disc only two months after the original recording.

The programme chosen for the first disc was of works by Britten and Schoenberg played by the City of Birmingham Symphony Orchestra, conducted by Simon Rattle at Snape Maltings. A digital recording was made using the Sony F-1 system, with the subsequent editing, assembly and special presentation by John Amis done by TRU. A Sony PCM 1610 system with special facilities was hired for the high-quality fine editing and mastering required for CD discs.

The replication plant was, in fact, still being installed in the factory whilst the editing and production of artwork for the label and booklet were being correlated. Nimbus produced the first 50 discs just in time for their shipment to the USA where the concert was broadcast to a number of major cities over the Labor Day weekend.

So far more than 20 countries have ordered the programme. Interest has ranged from the sophisticated broadcasters of Europe, Australia and the USA to small third-world stations. This bold gesture in a revolutionary medium has attracted widespread attention and praise throughout the broadcasting world. The exercise has proved valuable not only from the publicity gained but also as an indication of the international interest in the first widespread application of digital audio technology.

Simon Rattle the conductor receiving a presentation copy of the Transcription Compact Disc.
Left to right: Jimmy Burnett (Music Producer) Quentin Fuller (Recording Engineer) Alan Bilyard (HTS) Corrinne Fisher (TS Publicity) Simon Rattle and Ted Dougherty (Business Manager)

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Woodlands Exhibitions

Here is the list of exhibitions being arranged for Woodlands in 1985. More details from IT&P Section, A2047, Woodlands:

February	
6	National Semi-Conductors Ltd., Acorn Computers Ltd.,
20	Gould Ltd.,
March	
6	United Electronics Ltd.,
27	R.F. Components Ltd., (Provis).
April	
17	Schroff (UK) Ltd.,
May	
8	Cooper Tools Ltd.,
29	Imhof-Bedco Ltd.,
June	
19	Rittal Ltd.,
July	
17	Sony Broadcast Ltd.,
August	
7	Varelco Ltd.,
September	
18	Canadian Instruments & Electronics Ltd.,

* * *

ERRATUM
The caption on page 12 of 'Eng Inf' number 18 is incorrect. It should read:

> The new Microwave Communications link equipment.

Our apologies for any embarrassment caused, and our thanks to the engineers who spotted the mistake.

••• More Developments at t

The Neve desk in the new Sypher suite at Pebble Mill

New Film Dubbing and Sypher Suites

The film sound dubbing theatre at Pebble Mill has recently been converted into two suites suitable for film dubbing and sypher (SYnchronised Post dub, Helical-scan and Eight track Recorder) operations. Both areas are operationally similar with customised Neve stereo sound desks specially designed for post-production sound dubbing. The film dubbing area is unique in that it serves a dual-purpose and can also be used as a sypher suite.

The sypher suite - the third of its kind in the BBC, and the first outside London - has a twenty channel Neve 51 series stereo mixing desk with a Necam 96 automation system to be fitted soon. A Sony 26-inch monitor provides both picture and time-code displays, and a pair of LS5/8 loudspeakers allow the production to be monitored.

The gram ops sub-mixer in the film dubbing area at Pebble Mill

Behind the mixing desk is a gram operations area containing a small Neve sub-mixer that allows three SCPD disc players, three Studer A810 twin-track plus time-code tape recorders, or three cartridge machines to be used in a production. Two of the A810s are equipped with trolley mounted synchronisers and control panels allowing effects to be played in synchronism with the master multi-track or video tapes.

Mechanically noisy equipment, such as U-matic vcrs and multi-track tape recorders, have been located in an apparatus room outside of the control room. Two JVC high-band U-matics and two Studer A80 8-channel multi-track recorders can be controlled locally in the apparatus room, or remotely from the main desk. All equipment is synchronised using the Designs Department Maxim time-code synchronisers.

The film dubbing area is similar to the sypher suite, and, with its dual-purpose role, can be used for sypher operations as well. The same controls operate the video scanner and sepmags for film dubbing or U-matic and multi-track for sypher work.

Outside of the control room are nine Perfectone Rapimag 16mm sepmag machines. An optical projector has been replaced by an Albrecht video scanner capable of running synchronously at up to thirty times normal speed (750 frames/second) forwards or backwards. All of the Rapimag machines and the Albrecht video scanner can be locked to a pulse generator using 50 Hz and 250 Hz bi-phase pulses to control the transport mechanisms as slaves. A pulse routing system allows any of the transports to be locked to the scanner, and also enables the telecine machines to replace the normal scanner, and locks any of the nine sepmag machines to a

he Mill •••

telecine without disturbing the dubbing operations.

Two small studios can be switched to either control area. Each contains the necessary "audio props" such as false doors, windows, stairs, and a variety of walking surfaces, to enable successful dubbing of a production. The studios are visually monitored in the control rooms via closed circuit television systems.

The refurbishment of the film dubbing area was carried out by Roy Clarke of SCPD. The sypher suite was installed by Mike Atree of SCPD with building work co-ordinated by John Hackworth of ACED.

U-matic recorders in the apparatus room

Studio B Control Rooms Refurbished

The studio B control rooms at Pebble Mill have been rebuilt and refurbished with new mixing and monitoring equipment. Production, sound, and vision and lighting share the same control area.

The production area boasts a new Grass Valley mixer, Aston 3 caption generator, three Melford colour monitors and eighteen monochrome monitors. To the left of the production area is the vision and lighting control for the four Link 125 cameras and Electrosonics thirty five-way lighting control system. Monitoring is via three Melford colour monitors, and five monochrome monitors. Between the two control desks, carefully camouflaged into the wood panelling, is a bay of line connectors, allowing easy interconnection of sources and destinations to the production mixer.

Pebble Mill studio B
Production, vision and lighting control areas.

Behind the production control area is the sound control area, unusually separated only by a heavy curtain from the other areas and not in a dedicated room. Equipped with a Calrec stereo twenty-channel mixer, LS5/9 monitor louspeakers and two Revox PR99 tape recorders, the area boasts good communication with the production area; a vital asset for the local news and current affairs programmes produced there.

The studio area remains basically unchanged except that there are no technical facilities on one wall of the studio, allowing the cyclorama to extend almost to the studio wall, effectively increasing the usable floor area. Iris-two lights have been installed to provide top lighting onto the cyclorama.

The sound control area, Pebble Mill studio B

Major Milestone in Bush Modernisation

The recent commissioning of seven new radio studios for the BBC External Services at Bush House represented a substantial milestone in the £30 million modernisation programme currently under way there. The studios are in the basement of the SE Wing and replace eleven much smaller studios dating from the early 1940s. The refurbished area also accommodates a new conference room, new waiting areas and toilets.

Work began on this phase of modernisation two years ago and several significant building problems were immediately apparent. An unforeseen hazard was the discovery of asbestos in the old studios, requiring careful extraction, but the irregular shape of the building and the existence of fifteen internal support columns presented added problems. Fortunately it has been possible to carefully integrate the columns into the general design so that they are barely noticed. These difficulties were further compounded by the necessity to remove some concrete blast walls, a legacy from the war years.

The seven new studios comprise: four small talks studios; two larger general purpose studios for programmes involving discussion groups; and the largest, a stereo drama studio.

The studios share the basement area with a chiller compressor plant which gives out 315 Hz vibrations. One of the general purpose studios, S11, is immediately over the plant. To counteract the vibrations a kinetic floor containing rubber pads was specially designed for S11. In fact, as a precaution all the other talks and general purpose studios have been fitted with similar flooring. The air conditioning ducts themselves presented problems due to the general space restrictions. To accommodate the trunking some ceiling sections needed to be reduced to door height and light fittings had to be carefully positioned.

A typical Bush House Talks Studio, S10. Note the counterbalanced microphones (designed specially for External Services) and the differing finishes of the table top, leather for writing and baize for absorbing the sound

The drama studio, by far the largest in the group, is of double height and is built over an old swimming pool, unused since the BBC took over from the original tenants of the building. The original creaking wooden floor has been replaced with a concrete one.

The whole area has been completed to a very high standard of finish and decoration. Each studio has a distinctive colour scheme with easily removable fabric wall panels covering standard acoustic wall boxes. The waiting areas, devoid of natural light, have been given an artificial daylight decor incorporating window boxes with artificial flowers.

Much of the Bush House technical operation is geared to providing short programme contributions consisting mainly of speech. The new talks studios fulfil just this requirement: the equipment is quick and simple to operate and is designed to be powered and prepared for transmission by the Studio Manager in a matter of minutes. To facilitate this, each studio has a Pre-Transmission Test facility indicated by a row of LEDs on the BBC designed mixer desk.

The central PDP switching computer in the Bush House Control Room checks the appropriate transmission line from the studio and then automatically switches the studio to the correct network at the right transmission time. As part of the test the Studio Manager operates a test button which signals to the computer that the studio is ready to go on the air. Failure to operate the test button within a set time sounds an alarm in the Control Room.

The talks mixer desks comprise nine channels which for speed of operation have no jackfields. Source selection switches are used instead to select any of twenty-four channels. Four outside sources can be accommodated with provision for two more.

The two general purpose studios accommodate a Bush House version of MkI and MkIV BBC general purpose mixer desks. These mix sixteen channels in two groups and can accommodate up

to ten outside sources. Their control cubicles also accommodate four A80 tape machines and four EMT 950 grams apiece, and provision exists for a further two tape machines in each.

The drama studio has a standard MkIID stereo desk mixing twenty-four channels in four groups. The studio itself has the familiar facilities: gravel trays for footstep sound effects and curtaining to partition the acoustic "live" and "dead" ends of the studio.

* * * * *

Control room of GP Studio, S7. One of the building's supporting pillars is cleverly concealed behind the jackfield to the right of the mixer desk

405-Line transmitters Close

A milestone in the history of British broadcasting was reached in January when all of the remaining BBC 405-line transmitters were switched off.

When the 405-line service started in 1936 it was described as "The world's first regular public service of high-definition television programmes". The number of viewers had been dwindling since the introduction of the duplicate 625-line ultra-high frequency (uhf) colour service in 1969. The closure comes as the result of an announcement by the Home Secretary in 1983 that the frequencies used by the 405-line transmitters should be released by the broadcasters for mobile radio communication. The close-down of the last transmitter, at Melvaig in West Scotland, was carried out by Syd Garrioch, the local transmitter manager. In its heyday, the 405-line network comprised one hundred and seven transmitters.

Bill Busby, former Engineer-in-Charge, switches off the 405-line sound transmitter at Crystal Palace transmitter station

The first 'high definition' television programme in the world. Miss Helen McKay singing at Alexandra Palace studios in 'Here's Looking at You!'

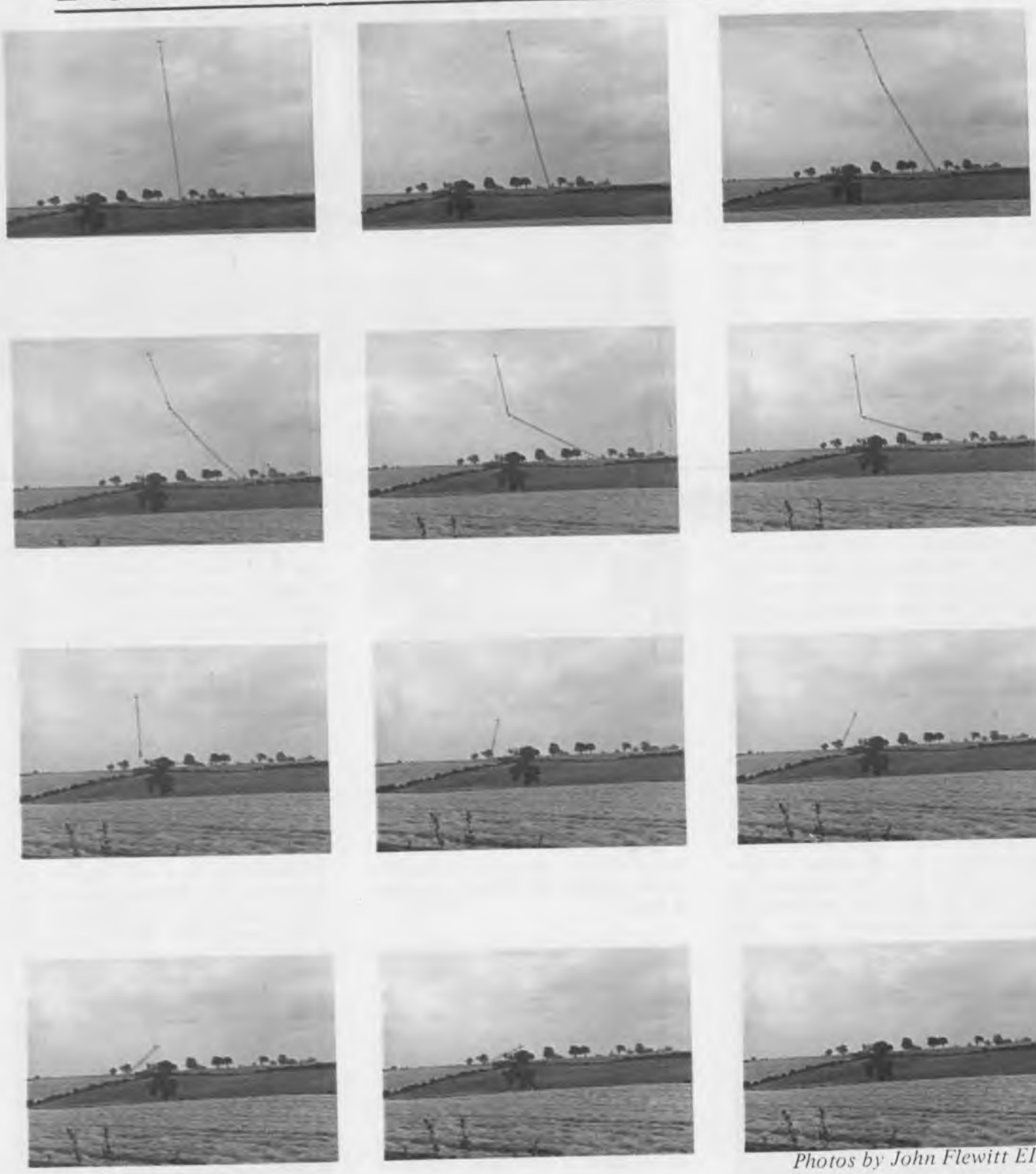
After the formal opening by the Postmaster General, Major G.C. Tryon on 2nd November 1936, the service grew in popularity when the BBC screened the first major outside broadcast in May 1937, the Coronation of King George VI. Over 23,000 receivers were in use in September 1939 when the Alexandra Palace transmitter was closed for the war years. The service re-opened after the war in 1946, screening the Victory Parade on the 8th June.

Television spread throughout the UK with stations at Sutton Coldfield serving Birmingham and the Midlands opening in 1949, Holme Moss serving Yorkshire and Lancashire in 1951, and Kirk O'Shotts and Wenvoe serving parts of Scotland and Wales in 1952. The London transmitter moved to Crystal Palace in 1956 to provide a better signal to London and the Home Counties.

Commenting on the closures, Bill Mitchell, ACET, said "The end of the first chapter of television broadcasting is a sad day for us. However, the 405-line service has been duplicated on 625-lines for many years now, so it is appropriate that these old transmitters should be switched off."

Norman Shacklady, Senior Transmitter Area Manager, switches off the BBC 405-line vision transmitter at Crystal Palace

GOING: GOING: GONE!
Dodford Landscape Changes



Photos by John Flewitt EID

The familiar skyline alongside the M1 in Northamptonshire changed when the old Radio 3 mast at Dodford, near Daventry, was demolished. The whole process took about 20 seconds.

The 732 foot mast was constructed for the start of the third programme from Daventry in April 1951. Designed originally as an anti-fading mast, there was a break insulator at 470 feet, with the two halves fed separately; this was intended to increase the ground-wave and reduce the sky-wave, thus increasing the primary service area.

In 1955 the break insulator was removed, and the mast became a conventional base-fed radiator. It stopped being used in 1978 at the time of the wavelength changes.

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