THE BRITISH BROADCASTING CORPORATION ENGINEERING TRAINING DEPARTMENT

INFORMATION SHEET S.T.O.

PYE MOBILE CONTROL ROOM

All video equipment can operate on 405 or 625 50 fields/sec or 525/60 fields/sec.

Details of Facilities Available

POWER

(a) Mains Supply

Single phase 170V to 250V 47Hz to 70Hz 60 Amps.

Two power entry connectors at termination panel at rear of the van exterior.

(1) Normal mains (2) Stand by supply

A separate low current supply may also be connected for night-watchman's lights.

Automatic voltage regulator supplies 3 separate regulated circuit groups (A,B,C) to technical equipment and interior lighting.

Mairs supplies to vehicle services are unregulated.

(b) Mains Control Panel

Contains on/off switches for the four supply cct. groups (A,B,C & unreg.). Fuses for each circuit. A voltmeter (300V F.S.D.) with selector switch (A,B,C, Unregulated or Line volts).

An ammeter (100 A F.S.D.) indicates total line current.

(c) Arrangement of Equipment Groups

In the event of failure of one group's supply, video TXM. can continue on the other.

e.g. Group A feeds 2 camera chains + S.P.G. (1)
Group B " " " " + S.P.G. (2)

Sound equipment is fed from Group C with stand-by battery supply.

Video Programme Routing

(a) Cameras

4 x MK6 $4\frac{1}{2}$" Image Orthicon camera chains transported by separate van. Camera cable inputs to M.C.R. on forward cable termination panel.

C.C.U.'s mounted in forward apparatus racks compartment. Operation carried out from camera control panel on vision control engineers' desk. Output from each C.C.U. is taken to the appropriate input of vision mixer.

(b) Vision Mixer

10 sources. Two parallel rows of push buttons A - B type.

Sources 1 - 4 normally cameras 1 - 4.

Special effects "Wipe-insert" incorporated.

(c) Transmission-Rehearsal Switch

This is situated on the vision engineer's (1) panel.
In TXN Position Vision mixer output fed to line and to 17" TXN monitor.
In REH. Position Vision mixer output fed to 17" TXN monitor but not to line.

Test Signal (Pulse & Bar or Sawtooth) sent to line.

Synchronising

(a) Pulse Generators

Two transistorised W.G.63 S.P.G.'s are fitted. They supply line drive, field drive, mixed blanking and mixed syncs for 405/50, 625/50 or 525/60 operation.

(b) S.P.G. Changeover

Almost instantaneous change over of pulses from SPG (1) to SPG (2) is possible. All pulses are distributed via relay contacts in the SPG changeover unit. Operation of the change over switch located on the vision engineer's (1) panel energises (or de-energises) the relays.

(c) Field Phasing

When a remote video feed is to be fed to the vision mixer, a reference signal from the remote source is fed into the field phase and locking unit. The S.P.G. receives triggering information from this unit and adjustment at the unit will bring the remote source and local sources into field phase at the vision mixer. This avoids picture "bumps" or "rolls" when cutting between local and remote sources and vice versa.

(d) Genlock

A sync coincidence detector is available for use on any two outside sources and indicates when synchronism is correct by lighting a GREEN lamp on the vision mixer beneath the channel button concerned. A YELLOW lamp shows when the source syncs are non-coincident.

Video Monitoring

(a) TXN Monitor

17" monitor is fed from line feeding distribution amplifier when rehearsal/transmission switch is in "Transmission" position.

When switch is in "Rehearsal" position the output of the vision mixer is shown.

(b) Camera Monitors

Each of the four cameras has a permanently tied monitor and waveform monitor. These are located immediately in front of the vision control engineers.

(c) Producer's Preview Monitor

14" monitor on immediate right of TXN monitor with a waveform monitor above. Selection buttons on the right-hand side of the vision mixer allow the Producer access to 14 preview sources.

(1) Insert
(2) Channel 1
(3) " 2
(4) " 3
(5) " 4
(6) " 5
(7) " 6
(8) Channel 7
(9) " 8
(10) " 9
(11) " 10
(12) Captions
(13) Radio check
(14) Mixer out

(d) Engineering Preview Monitor

14" monitor to the left of TXN. monitor with a waveform monitor above. Two sets of selection buttons, one on vision control engineer's (1) desk and one in the equipment racks area, are available. Which set is operational is controlled by a local/remote switch on the vision engineer's desk.

In the equipment racks area there is an $8\frac{1}{2}$" monitor and Tektronix waveform monitor for use when control of selection is extended to this area by a vision control engineer operating the local/remote switch to "Remote".

16 sources are available for preview. These are all sources available to Producer plus Send Output and Composite Sawtooth.

(e) Viewfinder Mixing

An output from the preview selector unit is fed in parallel to the four camera C.C.U.'s. Which source is selected for this purpose is selected by means of a row of push buttons on the vision control engineer's (2) desk.

Each cameraman may switch this signal in to be superimposed upon his own viewfinder picture by operating a switch. Used for superimpositions, inserts, etc.

(f) Commentators' Monitors

Feeds are available for two commentators' monitors with selection from 3 sources.

(1) Mixer output
(2) Radio check receiver
(3) Pluggable on video jackfield.

(g) Master Waveform Monitor

Situated between the two vision control engineers. For keeping an accurate check on the amplitude of the video waveform.

Instrument used is a Tektronix type 515A oscilloscope.

Sound Equipment

(a) Microphones

Microphone inputs are via 3 multi-microphone connectors on forward cable termination panel (8 + 4 + 8). Individual microphones then appear on 3-pin male connectors for patching to individual Mic. Amp. inputs (3-pin female also on forward cable termination panel).

Alternately each mic. may have an individual lead terminating in a 3-pin male connector for direct insertion into the mic. amp. inputs.

Two channels may be fed from radio microphones.

(b) Sound Mixer

20 source - 3 groups of 10, 4 and 6 quadrant faders.

Inputs via plug and socket connections at rear of desk or via jackfield beneath desk front:

(i) 600Ω low level
(ii) 30Ω low level
(iii) 600Ω high level.

Provision is made for Prefade or P.A. feed on each channel. "Clean Feed" may be obtained by using the output of one of the three group amplifiers. The input to these is selected by a 3 position switch.

(c) Tape Machine

A Philips twin track tape recording machine is located immediately behind the driver's cab in the apparatus racks area. Remote stop/start is available at the sound mixing desk.

A BBC Line identification unit type RP4/1 is also included in the tape console.

Sound Monitoring

(a) P.P.M.

Two P.P.M.s are provided, one acting as a spare which may be switched in by operating the PPM Changeover switch on the meter panel.

By selection on a row of push buttons the following may be monitored:-

Main Output 1	Group Clean Feed Output 3
Main Output 2	Public Address Output 1
Main Output 3	Public Address Output 2
Group Clean Feed Output 1	Public Address Output 3
Group Clean Feed Output 2	

An optical P.P.M. is mounted above the TXN monitor and is connected to an "External P.P.M." socket at the rear of the sound desk.

(b) Loudspeaker

Consists of a rigid cabinet in which are mounted a 15" bass unit and two H.F. transducers. Power rating = 15 watts. Fed from a transistorised L/S amplifier.

Signal fed to L/S is selected by a 3-position switch.

Centre position - Main output
"Up" " - Radio check receiver
"Down" " - Same programme as selected on push buttons for P.P.M. monitoring.

A "Normal", "L/S Dim", "L/S Cut" key is provided.

(c) Headphones

Monitoring at various points by headphones may be achieved by plugging into the jackfield immediately below the mixing desk top. This facility may be extended to the engineering manager's desk by tie lines.

(d) Talkback

Comprehensive talkback facilities are provided.

(1) Cameraman to vision control engineer or producer.
(2) Camera jacks for general use carrying producer's T/B.
(3) Mixed camera T/B available at sound desk.
(4) Sound mixer, E.M., or producer to boom operator (uni-directional).
(5) Producer's private T/B to assistant or E.M.
(6) Producer to commentators.

D.G. Enoch/CMN
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