

Radiophonic Workshop Diary 1986 - 2001

1986

Jan 1986

New studio E in operation: Varicon connectors on tapes and grams. Crimp 'D' connectors used for first time with Belden cable throughout.

Temporary Studio E in ex-Film Unit Projection Room. Permanent installation later in year with Soundcraft Series 200B mixer.

Input and output transformers removed from treatment devices in Studios B, C and E.

Four extra Syncwriters to be built, making total of seven. Program to be modified to work on BBC Micro model B+ (Master 128?). Note: Syncwriters produced tape start and MIDI clocks and 'tones'.

March 1986

Elizabeth Parker throws tape spools into old piano for sound effects.

April 1986

Fostex 6301B loudspeakers in use.

Old prototype Syncwriters scrapped.

Temp Otari 24-track in use in Studio B in lash-up with 8-track Dolby and two 6-pack Dolbies. Alesis Midiverb demo.

Eventide H949 Harmonizer repaired.

Drawmer DL231 compressor modified.

Soundcraft SCM 8-track safety tested.

May 1986

Ray Riley using VIEWSHEET on BBC micro for spares listing.

Dick called me Biggles: sticker appears on door.

Macintosh computer demonstrated, running Total Music software with MIDI interface: seemed slow.

June 1986

Mac Plus 1 MB computer on loan, with Professional Composer (for creating musical scores) and Professional Performer (for MIDI sequencing).

Jon Gibbs presents MIDI seminar.

New ROMs for Yamaha QX1 Sequencer.

Converting Post-Office headphone jacks to standard types.

July 1986

Made Varicon/Hypertac adaptor for Sondor sepmag machine.

Prophet V machine in Studio C repaired itself.

BBC canteen privatised.

Stage at Golder's Green Hippodrome found to be on temp scaffolding of 1968.

August 1986

New multitrack cables for C and E. Old XLR cables and Varicon conversion boxes to be used for Soundcraft 8-track and noise reduction in new Studio H.

'Drilled out' headphone sockets to convert to 'Igranic'.

Using 300 baud modem.

TX816 and more QX1's ordered.

Peter using Yamaha DX1 keyboard and Yamaha MEP4 MIDI Processor.

Hi-fi VHS machines (with timecode on one channel) to be rented.

Fairlight Computer Musical Instrument (CMI) modified: removed transformers box.

Phone system costing almost £4000 a year: £8000 Thorn-Ericson 'Earl' system considered.

Mac Plus computer arrives with large screen and adaptor card: has internal Micahdrive HDD?

September 1986

Alesis Midiverb and Midifix arrive.

Old Film Unit Studio V8 used as temp office by MV engineers.

Yamaha CS40 and Oberheim OBX synths given to school. CS80 to Guildhall School of Music.

New Studio H (Room 19) planning in detail: Richard Atree appears.

October 1986

LS5/8's replace old LS5/5's in Piano Room and LS3/5A's in Studio F (Film Area).

Technics SLP1200 CD Player considered: £542 with ±8% speed variation.

Ordered extra RX11 and TR-707 drum machines.

Charlie 'this is it' commissionaire retires at 60.

November 1986

Another Soundcraft mixer arrives (for H?).

M16 matrix in use: new ROM.

Studio F set up with Soundcraft 200B 8-channel desk: replaces Seck mixer and DK2/21.

Jon Gibbs gets job as Man Ops 2 & 3 (Radio): his great work was Syncwriter. To get 'ordinary organiser'.

More S-50 samplers ordered.

300 pieces of equipment to be marked with security paint and labels.

To get Bel noise reduction for 2 promised Lyrecs.

Varicons fitted on back of original 8-track Bel units, replacing XLRs.

December 1986

Cables for Yamaha 8-channel mixer (rack device?) to TX816 (8 synths in one box).

Philips VHS arrived: to have timecode on RH Hi-fi channel. Modified so as not to combine L and R on standard mono track. Still-frame only advanced every four frames!

Brian playing with MacDraw on Mac.

1987

January 1987

Three Radio Rentals Ferguson 3V53 VCRs replace 3V23's: can 'inch' frame by frame in both directions.

Two Roland S-50 samplers arrive.

TR727 rhythm composer, with Latin American sounds, ordered.

TR707 and TR727's MIDI Out converted to MIDI Thru.

1200 bit/s modem won't work over BBC's Monarch PBX telephone system.

Opcode DX/TX Librarian Mac application.

MacNifty SoundCap audio digitiser has no power from new Mac port (as with older Opcode MidiMac) so had to create 19-way 'D' plug from cut-down 25-way plug and inserted this in external floppy disk socket to get +5 volt power.

DX7 Mk II, TX81Z, and prototype DMP7 digital mixer demonstrated at Yamaha: later had MIDI control for almost everything but equalisation wasn't working yet.

February 1987

Roland D-50 synth demonstrated: eight-output S-500 sampler promised.

10 Macs arrive, including studio machines with HDDs: others for offices and engineering workshop. Micahdrive, maker of internal hard disk drives, went bust so external SCSI HD-20 drives were bought.

SoundCap doesn't work.

Roland SRV2000 apparently in use.

Brian installs Word on author's Mac: uncertain if it'll be used.

Four more S-50's and Rhombus Eizo monitors to match.

Opcode Pro-Plus MIDI interfaces.

IEC distribution boards in B and E.

March 1987

KX88 keyboard and extra MEP4 MIDI Processors arrive.

MIDI to XLR cable in B: DIN 4, 5 to XLR 2, 3.

Jon Gibbs visits to create software to transfer information on BBC micro to Mac. Mac drive is partitioned into 2 MB volumes but one volume too small for Excel application! Engineering equipment schedule transferred at 1200 bits/s. Everything saved onto network but backed-up onto floppy disk.

Brian using TopMail software over network which is extended to Studio G (?).

Peter using Switcher application that 'scrolls' sideways between application windows on Mac.

R-DAT machines considered.

Old Room 10 taken over (?).

All Macs on transformers to avoid network earthing-loop problem.

Mar 30: Mark Wilson acts as Sen Eng RW as author acts Sen Eng MV.

April 1987

Apr 19: Studio H (Room 19) opened by Michael Checkland. This replaced old Studio H (Room

11) which had a Soundcraft Series 2 desk. Celebrated with cake shaped as keyboard. Brian did a little speech to which the DG replied that he didn't understand all the words in it and had only come for the cake: 'I declare this cake well and truly cut'. The new studio had black ceiling, crimp Varicon connectors, screened 'round and flat' cable and insulation displacement connector (IDC) version of 'D' connectors for data such as MIDI. Racks with built-in audio connectors and MIDI connection boxes. Standardised Varicon connections to Soundcraft system.

May 1987

Rod Argent's MIDI Communicator interface tests: problems when AppleTalk (LocalTalk) is used on other serial port. Mr Birch: 'The Man From Argent'.

June 1987

Mark Wilson offered attachment as 'sort of organiser' at lower grade, but only on author's return. Problem with VITC reader and Syncwriter: it pumps out timecode at 1/10 of normal rate when video tape is stationary. Jon Gibbs still involved.

Studio B: 8-channel Twister VCA in use.

Ex-Studio C Soundcraft Series 2 mixer used in Maida Vale Studio 1.

July 1987

Author returns to RW.

Studio E: Lyrec 24-track installed.

Abandoned Argent MIDI Communicator.

Orders for D-50, another TX816, DX(?)81Z, Alesis(?) Midiverbs, Dominators.

InterMail application causes Performer to fail and is removed from studio machines.

Demo of Yamaha TX802, a 'DX7 Mk II' in a box: eight outputs and microtonal tuning.

Mark tries Ken Gale filter with Roland MIDI to CV converter.

Survival autolocator in use.

New telephone system in use? Old Plessey intercom removed from Liz's room.

Studio B: updated to Studio H standard with rack, new 16-track wiring etc.

Brian sees Akai audio router at British Music Fair at Olympia.

Lyrec TR55 stereo tape machines rescued from Broadcasting House.

August 1987

Two 'spare' Philips VHS machines to be made into dubbing facility.

Network wiring in rooms 7, 8, 9 (type of network?).

16-track to Liz's room.

Studio A: a mess, has two Yamaha submixers.

Gold foil reverb to V8 for storage.

Now have 6 Ferguson VHS machines: owned.

Studio D: Studer A80 8-track scrapped (swapped penthouse with 16-track), also 3 Revox A700's.

Plans for Rooms 11 and 12 complete.

Studio H: Mac with large Radius monitor in use alongside standard monitor.

DX7 II FD keyboard and TX81Z arrive.

Old Studio H (Room 11) dismantled.

Stereo ringmain boxes for offices.

Studio C: second Lyrec 24-track installed with extra noise reduction in bay and 2-track noise reduction in trolleys.

Note: Room 6 is 'Composers' Room'.

New Studio G planning: central pillar?

Replacement network cables between rooms 9 and 11. Opcode interfaces work with network so Argent Communicators are returned.

September 1987

Survival autolocator modified to work with 15/30 in/s Studer A80 multitrack.

Studio H: Soundcraft 8-track modified for Syncwriter autostart.

Studio A: (Liz) Modified Survival autolocator for remote track selection for 16-track A80.

Fairlight CMI sold to a French (?) customer for £7,500.

To buy: 'rack' S-50 samplers, 'rack' D-50 synths. To lose: Synthex and other old synths.

New Studio F: to be built on site of V8 and V7 (Projection Room). 40-channel Soundcraft or DMP7?

October 1987

Studio B: DMP7 installed for tryout.

Dick's studio: has own mini-locator for A-80, built by RR.

Akai router under consideration: usually configured with 4 boxes, each with 32 inputs and outputs, giving total of 112 circuits but with only 4 (?) link circuits between boxes.

Author uses MacDraw for technical drawings.

Mark tries to use MultiFinder instead of Switcher but with little success.

Peter talks about separate DMP7 for each 'area' of new studio. Using this with a Soundcraft Series 800 looks like 'mixed technology'.

November 1987

IEC mains connectors in workshop.

Oscar and Wasp synths, KR55 rhythm unit to V8 store.

DMP7 mixer plan: synths and associated mixers vertically aligned. 3 mixers and 'main' desk?

Akai router tryout: awful control system with own monitor but 4-pole XLR control connector was actually a two-way MIDI connection. Unfortunately the router couldn't feed two inputs to one destination and there was 6 dB loss on output when feeding unbalanced destinations, although it could be used for unbalanced signals throughout by changing numerous internal links.

PCM70 used for some time: what is it?

Jon Gibbs worked on MIDI Timecode output for Syncwriter.

New 2-track cable for allowing A-80's to have standard XLR polarity.

Studio B: the buzz.

Problems with Emu synth.

Mark experimented with HyperCard.

MIDI cable tests: probably OK over 50 metres of cable with a capacitance of 30 pF/m, giving a total capacitance of 1.5 nF.

DMP7 discussion: PH exploded after author criticised Mark.

Used tone output of MacDialler to dial out across speech circuits of Diavox phone system.

December 1987

Experimented with removing input transformers on LS5/8 amplifiers: 3dB improvement at 15 kHz. (decided to plug speakers directly into desks in A, B, C and D, but to change 4-pole F&E (EP) connectors on passives in Studio E to XLR; 'gender bender' tails on amp inputs.)

£60,000 budget, mostly to be spent on new F.

Mark working on HyperCard control of Akai matrix.

MacDialler hardware fitted in studios.

Sony R-DAT machines evaluated.

TX802, D550, two DMP7s and Valley People 'Gatex' noise gates ordered.

Planned lash-up of new studio in Studio L (Piano Room) using Akai matrix with original controller, DMP7s and Mac with external HD40 disk drive.

Using MacDraft.

1988

January 1988

Jon Gibbs creates version of Syncwriter software that generates MTC and MIDI Clocks at same time.

New Studio: decided on circular construction on two levels. Master fader and record output will feed multitrack and stereo recording machines. DMP7 contained two micros running at 4 MHz and employed dedicated 23-bit digital signal processor (DSP) chips. Analogue to digital converter (ADCs) were used on the motorised faders to provide a servo action.

Brian prepared 30th Anniversary brochure.

Mark rumoured to have 2-year contract as Development Coordinator.

DAT machine modified for triggering remote pause and automatic music search (AMS) system.

February 1988

Room 11 set up as 'trial' for new studio. Six DMP7 mixers, when used as in a digital cascade gave noise levels in the -60's, falling to the -50's with analogue connections. Rack made to hold two mixers at correct angle. Five MIDI mergers used to get real-time data from DMP7s.

Studio B: buzz fixed. Due to a neutral-earth short in wiring of AC emergency lights in Maida Vale 1 which was creating a current of around 4 amps.

S-550's, D-550's, , TX802's, RX5's (rhythm machine).

Brian's 50th birthday: Mac-shaped cake.

4-plate Steenbeck sent redundant, 6-plate to library.

New building N of MV studios.

Dismantling of V7 and V8 begins.

Lyrec TR55s found to have poor speed stability.

Ericsson phone installed in library.

March 1988

Room 11 used in earnest by Peter Howell: currently equipped with 8-track.

Use of centre-track 2-track timecode machines discussed: better to take DAT to TVC?

Three new S-550s and KX88 keyboards.

Removed from Studio A: PPG Waveterm, Godwin, Roland 100M (rack synth), old Akai sampler. Also out of use: timecode memory units, old spring reverbs, Roland joysticks, Ken Gale (Wavemaker) boxes.

Mains filter capacitors removed from TX802, TX81Z, DMP7s.

New video switches for monitors installed.

New studio will require DEQ7 equaliser and MLA7 microphone amplifier.

First Mac II computer arrives for new studio. Colour monitor but Apple is about the only thing that's coloured and Peter doesn't like the colour anyway. Only 16 colours unless extra card fitted.

Design work on monitoring unit for new studio.

Sony PCM2500 DAT machines arrive: mains capacitors removed. In 2 boxes: machine itself and separate box with AES/EBU, Sony/Philips Digital Interface (S/PDIF), and Sony Interface (SDIF2).

28 Mar: 30th birthday party for Workshop.

April 1988

Room 11: Peter using B62 in place of Lyrec TR55. 'Domestic' DTC1000 DAT in use.

Mark close to perfecting control of Akai matrix using HyperCard on Mac.

Two VITC readers arrive from ED after 4 year wait but without boxes.

Mark's Room: ImageWriter LQ printer - he doesn't like it with him.

Mark suggests curtain around bottom of new studio desk!

Piano Room: old services trolley with PPMs etc dismantled.

DAT level problems: DTC1000 was -10dB in/out (control at 3) and 20 dB overhead but PCM2500 was 0dB in/out (control at 8) and 30 dB overhead. Will need to put amplifier on DTC1000 output.

New studio ceiling: 600 mm suspended grid with 'clipped' tiles, 6 inches of fibreglass in bags above.

May 1988

New studio desk woodwork to cost £4,600 in overall £50,000 scheme.

John O'Connor of Cork Insulation (from Woolwich) delivers 70 acoustic boxes for new studio.

He plays at Prince of Orange 'Jazz' pub at Rotherhithe.

Old Piano Room connection systems simplified and new portable talkback and headphone units made.

With simple modifications by Ray Riley Akai matrix is found to also work with MIDI.

Central bay: Video patch panel, buffer amplifiers for cue and SLS feeds.

Studio H: Added 20dB gain switches to monitor return circuits so they can be used for synths.

Thunderscan printer adaptor for scanning.

Mark develops HyperCard software to include programme notes and voice listings, as well as matrix control.

June 1988

Central bay: earthing distribution system revamped.

Dick, about Liz Parker: 'In that slim girl there's a fat girl trying to get in'.

Studio F: ringmain wired via IDC blocks. Monitoring control system designed.

Ray tries MacWrite 5, experiments with HyperScript.

Jon Gibbs does more work on Syncwriter and VITC and MTC.
Engineer's material was transferred from Word to MacWrite 5.
Ray Riley worked on jack back panel for Akai matrix: 64 jacks is a tight fit. Had to modify design to fit inside Jeremy Quinn's (of Brixton) cabinets.
Akai 12-track digital recorder demonstrated: uses Video 8 cassette.

July 1988

Steve Marshall, also-ran at last composer board, on attachment. Works with tape loops and 'Do not fiddle with' loop stands. Attachment extended to September to Malcolm's back.
Girl on bus "Why do you talk to yourself, Melissa? Because I'm the only intelligent person around". "What a lovely day to go to the Park."
Six Mac II computers arrive.
Engineers threw out Word and Works and use MacWrite 5 instead, although it can only open one document at a time.
Survival autolocators modified to work with machines own autolocator system.
Experiments with Canford VCAs for new studio monitoring.
Dick Mills offered retirement but didn't take it.
Peter complains of 'two passengers' whilst Malcolm away with bad back.
Mark releases engineering version of Akai matrix HyperCard software.

August 1988

Work on new studio monitoring system continued.
Brian talks of how DSP can be used to remove noise from existing recordings.
Ray Riley making mini-racks.
DMP7D arrived for evaluation, but need for 'genlock' approach to synchronisation of digital data, using a separate word clock cable to each device, makes its usefulness doubtful at the time.
Mark makes initial plan for matrix connections.
Ray Riley modifies VCR remote and creates 'big button' membrane-switch control panel.

September 1988

Ray makes 8-track cables for new studio using 6-core Klotz cable, also standard jack leads of 8-core Klotz 'monocore'. Around 350 jack plugs in installation and hundreds of metres of cable.
Jeremy Quinn, used to work in antiques, went to same furniture-makers college as Steve Marshall, arrives with circular console. Excellent job: wood is 'limed' by painting with emulsion, scraping off excess and then polishing. Ray starts fitting cables in it.
Handyman remembers trying to drill hole in old RWS Engineer's Room (now Studio D) but found it contained ex-wartime steel plate!
Visited Frog and Firkin (2 and half pints of Dogbolter) to send off Steve Marshall, along with Firkin T shirt. On day of leaving told story: Once did music for a magician who was to escape from a trunk using a key secreted on himself. Unfortunately, he was given the key a Steve kept hammering away on the keyboard until they eventually slid the trunk off the stage!
Went to wire 'red light' box but there wasn't one!

October 1988

Red light, RF, video, telephone, earthing and ringmain for new Studio F: tech earth 0.4Ω.

Jeremy to make special housing/monitor stand for Syncwriter. Also extra desk and table tops.
Made headphone box and fader box.

Mark trying to get new house in Brixton: 'only good thing is the walls'.

Liz's new house: £280,000! (in College Lane: the 'turnpike' road?)

12 volt distribution for MIDI mergers and VCR remote. Went down Edgeware Road in search for 20 DIN couplers.

Measured Studio B in anticipation of installing second circular console but it wouldn't fit! Brian 'stews' over the problem.

Both new Studio F and Studio B were to have two PCM2500 DAT machines with 'wired' remote controls whilst the two DTC1000 machines would be mobile.

Twin-track machine power taken from circle to avoid hum loops.

November 1988

FX devices moved from 11 to F. New M16 MIDI matrix arrives for new studio.

Fri 4: Basic engineering complete. Mark had to insert MEP4 in MIDI to TX802 to sort channels. More BBC VITC Readers and Audio Kinetics VITC Reader ordered.

Dick upsets Richard by accidentally plugging feed of Radio 1 to 'rapper' performing in Piano Room.

Three Twister VCAs ordered: one (?) to be used for monitoring in new Studio 'A' in conjunction with extra Akai matrix.

Room 11 cleared.

29 Nov, 11 am: Grand opening of Studio F by David Hatch, Managing Director Radio. He pushed the button that should have initiated a sequence of music and moving faders on the DMP7s but nothing happened: fortunately Peter Howell started a standby DAT recording. Turns out that the Mac software had been 'primed' for too long and simply 'timed out'. Anyway, the curtains whizzed open and there was then champagne and cake. George Crowe of Radio Projects looked suitably impressed. Dick and Malcolm's photos of the event were, as always, embarrassing.

December 1988

Investigated use of Cavendish Automation 8051 'Microbeeb' processor card to control Twister and matrix in new Studio 'A': uses enhanced form of Basic programming and has on-board EPROM burner.

Problems with VITC: a tape appeared with lines 8-10 containing 'programme time' and lines 18-20 containing 'original time of recording'. Now the original VITC 'test tape' only contained data on lines 18-20 but the BBC VITC reader simply combined all the data, stopping it from working altogether. Fortunately, the Audio Kinetics VITC reader allowed you to select the required lines but was more expensive.

The studio's HyperCard package, now known as Cue Card, failed to work with Syncwriter generating MTC from VITC but did work when Syncwriter generated its own code from 'start' and 'stop' signals.

Outstanding problems with Studio F monitoring fixed.

Dick rewired Liz's doll's house that has nice brass fittings.

New Studio: Peter had brilliantly simple idea of feeding Cue and SLS circuits from the overdub signal, using his Addset commands in matrix software. Decided to separate timecode, VCR and click switching away from the main monitoring functions.

Photo of Studio F is added to front page of Cue Card package.
SuperPaint.

1989

January 1989

Liz Parker moves into new Studio F. 16-track, D550 and Lexicon move in (correct?), as well as plants (home from home!).

Liz and Peter have 'teach-in'.

Studio A: rationalised.

Piano Room: the lash-up moves in, except for Compellor, Dominator. Extra Gatex's that were ordered.

VITC found to be unreliable with domestic VHS video machines. Considering buying equipment to 'insert' or regenerate VITC onto VHS tapes by means of dubbing. However, this would require 'capstan lock' VHS player, time base corrector and VITC (plus character) inserter (£7000)! Modification suggested for existing BBC VITC readers to select VITC lines.

Electronic 1 MB disk for office.

Studio B planning.

Dick borrows disk cleaning kit to fix disk that cat 'went' on.

February 1989

Ray working on membrane remote control for Studio F.

Peter helps Liz with 'Sound Stack' in HyperCard.

Engineers begin work on parts for new Studio B.

Dolby A/SR was considered for quarter-inch machines throughout Radio.

Modified VITC reader arrives.

Central Bay: Ray installed PCB to mute SLS in Piano Room when red light is on.

Engineer's information gets too big for single floppy disk!

Scheme to provide engineers with two SE/30 machines.

Ray Riley makes computer-controlled tone generator for new B.

PG1000 MIDI programmer used for MIDI tests.

Akai XE8 drum expanders: mains capacitors removed, has mini 2-pole mains connector.

Due to fire safety corridor behind B can't be modified: new studio will be in Piano Room and lash-up will have to be in old B temporarily.

Gave up with Thunderscan.

Old 'piano' is dispatched.

March 1989

Old Studio B being dismantled.

New B: To have multitrack 'bypass' box for VCR and click signals (tracks 13/14 and 15?).

Cables for new studio arrive. Looking for RS-232 display unit for monitoring. CMS CBC

'Microbeeb' card arrives but faulty! PSU panel and Ray Riley's jack panel complete. Electrical work to be £8,500, building work £10,000.

Piano Room: Soundcraft Series 200B mixer installed for twin-track monitoring, tone, talkback

etc.

Studio E: Extra 8 tracks of noise reduction installed for 24-track.

Modified VITC reader found to have RS-232 output but no TC (chip removed to improve speed!): attempts to connect RS-232 to Mac serial input.

House Services to be withdrawn?

Ray Riley trying to use EPROM programmer with Mac running Red Ryder or Works 'Communications Package': X-ON/X-OFF problems, eventually works.

Mark tries to tell joke but makes such a hash of it that it's funnier than joke itself!

New R-DAT demo: £5,000, timecode in data (IEC standard will be different), 4 heads: output NORMAL (record before playback) or EDIT (playback before record). Can record regenerated timecode or read it using other heads. Monitoring can be switched to input or output (audible delay). Parallel connector for 'standard' synchroniser, serial control, 'composite video' sync in, word sync in and out.

April 1989

3 more DATs arrive.

New Studio: Multi-Basic programming on CMS card. Blue fluorescent display unit. Building MIDI interface card for monitoring unit. Ray Riley working on VCR remote control.

Steenbeck viewing machine goes to Bristol and Sondor sepmag recorder to Redundant Plant.

New SE/30's in use in workshop.

24-hour strike, also Underground strikes.

MIDIScope on Mac, also QuicKeys.

May 1989

A to D converter in CMS card used to send signals to Twister 'MIDI VCA'. Work with Universal Keyboard Encoder (UKE) and serial port on CMS card.

Tube and bus strikes.

DAR (Digital Audio Research?) Soundstation on trial: has 4 pairs of AES/EBU digital inputs and outputs, the first pair of which can feed all 'tracks'; could take DMP7D output or be fed into inputs of DMP7D. Second DMP7D arrives on trial for use with it: 'format converter' used to connect Soundstation AES/EBU outputs to DMP7D inputs.

New Studio B: Total cost to be £35,000.

June 1989

Ray Riley succeeds in using Akai video matrix for digital audio using S/PDIF or AES/EBU signals.

Workshop ceases using BBC micros.

Design for new B monitoring control unit complete.

Maxine surprised as amount of deductions for strike days: Brian "that's the price of solidarity".

Mac II's to get second processor (?) and 1.4 MB floppy disk drive in place of 800 K version.

Studio A: began clearance, desk removed, re-routed technical earth.

Piano Room: temporary installation dismantled. Recent new pattress removed.

July 1989

Richard's Studio: B62 replaced by A80.

Ray Riley tries connecting Yamaha output ('Y' format) of DMP7D to input of DMP7D but this only works on LH channel.

Rail strikes.

Huge new electrical switching system for old B, new B, C and D on back wall by D.

Pete Thomas discusses safety routines.

Studio F: DAR Soundstation and DMP7Ds installed. Lack of 'top' with Yamaha 'cascade': due to pre-emphasis confusion?

August 1989

Investigated modification to PCM2500 DAT for external clock via AES/EBU interface.

Jeremy Quinn doing new reception desk for Hippodrome.

Old Studio B: recordings to DAT from DMP7 have emphasis but Soundstation doesn't see the flag and sound hissy: the DMP7s always use emphasis.

New Studio B: Ray Riley created 8-way DIN couplers for cascading DMP7s. Running wiring from roof: suspended collapsed leaving one of Hart's men holding the ceiling as a sagging wedge shape. Abandoned room and awaited Brent Ceilings. Some screws, driven directly upwards, had torn through holes whilst others, fitted with rawplugs, had simply fallen out. Ceiling refitted in 3 days. Audio & Design compressor modified for 'pin 2 hot'. Ray Riley made EBU switch box for selecting DAT output or multitrack mixer output to main mixer channels 7 & 8. MTI Mac to MIDI interface requires 'reverse polarity' low voltage adaptor cable with 3.5 mm jack plug. Console installed. Most of equipment in. Low-voltage lighting transformer moved outside because of noise. Jeremy Quinn say MDF dust is dangerous.

Studio C: Malc wanted to play '78 so had to use '33 pickup stylus at 45 rev/min, slowed down by around 10%, record it onto tape and then play at twice speed!

September 1989

New Studio B: DAT remote control and mice cables extended; put in DAR leads. Ray Riley made 3-way switcher for two S550s and Syncwriter. System OK if 'multitrack' mixer is driven via Yamaha clock from main mixer with its output cascaded to aux mixer. Studio acoustics 'best stereo image yet'.

AES/EBU conference.

Richard Yeoman-Clarke now at FWO Bauch, Steve Culnane at Audio 1.

Pitchrider sound to MIDI converter tried but returned: apparently Peter thought it had internal microphone but it didn't!

Studio D: found screened mains lead.

PCM2500 sent to Audio Design for clock modification.

Workshop's BBC micro-based Logic Analyser (£3000) is abandoned.

Mark working with CMS/PSI 68000 processor SBC which can be programmed using 'C'.

Studio F: DMP7s lose 'parameter lists' that define MIDI behaviour, requiring information to be reloaded from cartridge, but Peter uses 'Vision' instead of 'Performer' so lists differ.

Studio F: Recording session. Very confusing: you record from the combined Aux 3 send of the main and aux mixers and then feed the musician with the main output!

Grand piano goes.

Varispeed boxes for new studios.

October 1989

Modified portable devices to 'Igranic' using drill!

Ray fitted reset button on MTI MIDI to Mac interface.

Fire in top main floor and mansard roof of restored Langham Hotel.

Central Bay: buffer amps and other wiring removed.

Put new ROMs in DMP7Ds.

Studio E: lobby blocks drawing.

November 1989

Attachment with Radio Projects: PPS1 (Programme Presentation Suite for Radio 1), c £120k To use Atari computer, 2 Akai matrixes, existing Audiofile, Yamaha DMR8 recorder/mixer?.

£44k a year to rent TVs: better to buy and throw! CD player project: £116k.

Berlin wall falls.

December 1989

Radio Projects: TVs and Hi-fis scheme: £100k.

Jeff Bottom stories: 'installing' a £80k GP desk at Bangor through window using crane and webbing. The OBA8 that fell from commentary position in dome of St Paul's during Churchill's funeral: they had to replace glass in PPMs and valves (otherwise OK) but left embarrassing dent in floor! And the quiz OB at Newbury where they forgot the microphone cables and had to make do with twisted bell wire from Woolworth's!

1990

January 1990

Wed 3: 1700: opening of new Radiophonic Studio B: good display of flying faders!

Radio Projects: discussions on red light 'flicks' and buzz-backs.

Asbestos removal at Maida Vale.

Jon Gibbs gets job of Head of TV Post Production: 'groomed for stardom'.

Jeff Bottom stories: how during strike Simon Shute messed up tape changeover by switching off the wrong machine, although he quickly corrected his mistake. And how he had to cut mixing desks in half to get them out of a studio.

'Philips Report': Closure of Ware stores, ACED halved etc.

February 1990

Radio Projects: Neumann U87 microphones.

Martin V Cox of 'underwater hippos' fame.

Jeff Bottom stories: how the RP2/1 gram boxes were to be used for RP2/9s but then they had to make new boxes. How Eddie Hartley (of Legionella fame) pioneered conversion of the BTR/2 tape recorder into the RD4/4 disaster.

Studio 1F: mixing desk, Yamaha MIDI controller.

March 1990

Pete Thomas tries to persuade me to take Projects job (but a lower grade and status?).

Diana Barkham.

PPS1: big flight cases for Atari computer and Akai samplers, to use Allen & Heath 'Saber' desk?
Continuities G, H and J: two are still Type D.
3G/3F/Newsroom Intercom!

April 1990

Poll tax riots.

Visit to Crown FM / Talkback Radio (AM).

£400 bonus for RWS Studio B.

Pete Graham wanted me to stay on.

May 1990

Visit to HHB, past 'Checkland's Folly' (White City).

Studio E: Ray Riley modifying to be more like H, with similar FX circuits, so it can have DMP7s (other studios as well?)

My APRS badge arrives at RWS marked 'AKA Biggles'.

Brian 'unhappy'; thinks I'll 'vegetate' in Sen Eng post.

June 1990

Mr Fabricant, wild blonde hair, director of MBI and failed MP, head-butts John Tidy in slightly drunken accident.

Studio L1: an original BBC studio with doorway supposedly to tunnel to Bakerloo line used by Churchill. Talks with English Heritage.

Doing 'report' on Radio Projects.

Ray Riley has '2W' board; a 'formality' then 'grilled' for three-quarters of an hour! But the board then felt grilled and had to modify questions for later candidates. He got it!

July 1990

PPS1 tenders: Harris Grant at £98k? (Total is £123k!)

Martin Cox gets finger stuck in MBI switch panel which makes for hilarious conversation.

Think I hear 'my' report comments in conversation between Peter Graham and John Tidy.

Alan Stokes in Raynes Park.

Ray Riley makes big new rack for H, also to do one for E.

Back to RWS: Ray Riley on compassionate leave due to Pat's problem.

'Dreams' drawing application and 'Works' for text.

Ordered Lone Wolf MIDI Tap; for feeding MIDI over 1 km of fibre-optic cable. Also TG55 synth.

Rupert fitted 3-core mains cables to Fostex loudspeakers and had headphone amplifier with warning lights!

Lindos test gear; very good, and it does report onto Epson printer.

August 1990

Studio X (Room 38): A800, Fostex D20 DAT and loaned Akai DD1000 digital recorder (2 channels in, 4 out, occupies 10U when fitted with add-on drives). Latter uses erasable optical disks; problems working it from SMPTE timecode. Peter records timecode on 2-track A80 and

uses that to drive system. Talk of getting timecode generators to drive studio when VITC not available; shouldn't sequencer do the driving? Turns out DD1000 doesn't like timecode from Opcode Studio 3 MIDI interface but is happy with other sources.

Ordered DD1000 and Avitel timecode generator.

Akai Digital Multitrack arrived but DD1000 preferred.

Studio F: rearranged outputs for foldback to Central Bay, also matrix outputs.

AF Computing investigating use of external floppy disk drives with Mac IIs.

Studio B: converted DAR Soundstation cables to use with DD1000 and removed DA202 D to A converter. Worked out way of fitting DD1000 in rack.

Studios B and F: Fitted 'cosmic' power reset button for Mac.

SoundTools evaluation; has Mac accelerator card, used with MO SCSI drive. Old rack in A to be hacked up for use as its trolley (special Mac on it?)

Someone steals bananas given to Richard by an American cook!

Doing 'progress reports'.

Studio A: Soundcraft 8-track dispatched.

Studio E: Ray doing drawings for DMP7 'mini-studio' stand, as installed in E.

U-matic playback-only VCR demonstrated; no frame advance but good with VITC, £4,000 each.

Tony Morson appears in diary.

Demonstration of NoNoise system (for Dick's future studio) by Mary of Sonic Solutions and Hans of FWO Bauch; Simon Shute present, all impressed. Takes time for two NuBus cards running at 27 MHz to run through processing calculations, although this can work in background.

Information about CEDAR noise reduction system. Dick wants to keep old Roland FX units and VCS3. 16 effects devices, 4 matrixes and 3 DMP7Ds ('source', 'synths' and 'effects')?

SnapJot with MacDraft 'loses' workshop hard disk drive: hierarchical menus under Apple cause it!

September 1990

E-mu Proteus demo; orchestra in a box, 32-note polyphonic, around 300 sounds, can play 16 sounds at once.

Studio E: removed trunking from old rack as well as old mini-jackfield; was over-engineered.

Part of old rack used for noise reduction and desk PSU. New work well-planned by Mr R; 'mini-studio' is made of 3 Unicol stands bolted together, Akai matrix has extra panel with 8 Varicon connectors.

Investigating video switching for colour monitors used on S55s.

Malk building a Bugatti!

SLP1200 gram and EMO preamp arrives to replace RP2/9 in D.

Liz receives free puddings from Mitch the chef since May!

Studio C: revamp using old trunking from back of rack from E! Devices in use: MXR Pitch Transposer, Alesis Quadraverb (separate PSU and DIN plug).

Studio 5: demo of Sony 48-track digital recorder.

Took stuff from old SCPD room (33) at back of 'plate room'.

Dismantled: Electronic baton, A80 'tones' remote controller.

New varispeeds for H and E.

Studio E: modified video switcher used for switching timecode between multitrack and VITC.

In studio sound tests I guess level correctly as 75 dB Leq!

Barrie Baker is around at this time.

Studio B: digital link from DD1000 to DMP7D works but not in channels 3 & 4 (OK 5 & 6!). DAT machine being used as master clock, although this runs at 48k unless there's a tape in it! Custom Interface Unit (CIU) is in use to connect DMP7s to DMP7D: simplified wiring is huge improvement.

Malk has tantrum ('this is ruining my lunch') over TG55 he took from E but is now wanted back.

October 1990

Studio B: ongoing problems with digital links; DD1000 has to use AES/EBU clock during record but will synchronise to either this or BNC clock in replay only. Compromise by having digital links only between DD1000 and DAT for 'bouncing', rest of system analogue. Monitoring unit forgets its programme again (indicated by red light coming on). Drawings for digital cascade cables and IFU02 updated.

Studio E: New 'mini-studio' installation complete. New Philips CM8833 colour monitor with stereo sound also used as click speaker (to add switching so it can be used for sound from VCR or main mixer output). Appears Syncwriter was removed and one of Roger's 'customers' missed timecode-triggered tape start.

New monitors also installed in H 'mini-studio' and other studios.

Studio F: Proformance Plus 'keyboard sampler'. Cheap KM802 Yamaha 8-channel mixer used to create stereo output from TX816.

Ordered U-matics, Proteus and Pro input/output box for SoundTools.

Tried MIDI Analyser.

Studio D: TR707 used with reverse-polarity Yamaha PSU!

Ray fixes floppy disk drive in S550.

Finished Ruperts 'indicators' headphone amplifier.

Tony reminds Brian that his contract could be terminated in 3 months - by either side!

Malk makes sexist comment in front of Liz, Dick and 2 visitors.

Workshop: tried sharing 2 printer with 2 Macs over AppleTalk (LocalTalk).

Created 8-pin DIN to SCART (RGB) cable to use monitor with S50 sampler.

Tony couldn't find train ticket so walked home only to find it in jacket lining!

Studio D: Syncwriter removed, only one remaining is in C.

Room 33: in use as cable store.

November 1990

Room 11: work starts on conversion to office.

U-matic VCRs installed. Good picture but timecode reader in Opcode interfaces is too clever with VITC and tries to extend timecode beyond an interruption, causing 'dither' on stop-frame.

Studio H: Proteus replaces TX81Z.

Yamaha TG77 on loan (3 U).

Video switching boxes: to use buffered mono output of U-matic (VCR monitor) and STUDIO LS outputs of Soundcraft mixing desk (MIX monitor).

Proformance synths arrive; converted PSU units to have IEC tails.

Studio F: recording session problems; Mark's matrix application confusingly calls inputs outputs.

Studio B: more modifications, including video cables, relocation of ARP and its MIDI to CV converter. provision of separate record feeds to all tape machines, KM802 and Proteus.

Philips announce Digital Compact Cassette (DCC) with 8 digital tracks.

Samplecell on trial: NuBus, 4 stereo outputs. To try in SoundTools machine.

System 7 on the Mac.

VITC: MTC can be used with Performer; Direct Time Lock continues even when tape stops! Liz gets VCR tape without VITC and with timecode on audio channel 2 instead on channel 1!

New Studio A: elongated 'circular' console considered.

December 1990

Richard gets U-matic tape that was transferred from VHS 'pre-edit' tape without regenerating timecode!

New Studio X: drawings and specification.

Room 10: the rest room; video trolley moved here.

Room 11: engineers move in.

Bel noise reduction removed from 2-track machines.

Studio H: timecode gets over video sound outputs via original ribbon cables so rewired.

Brian's new Mac IIsi won't run Works.

1991

January 1991

JL Cooper CS-1 Control Station: programmable buttons and wheel for Mac.

BBC Master computer still in use for EPROM programmer etc.

Studio B: original TX816 connections to be restored, Proteus to connect to old 8-track circuits.

Library: to become equipment store.

Room 34(?): in use as cable store.

Studio B: Peter working on American programme using NTSC low-band machine, 30 frame/s, drop frame and VITC. Video output wouldn't work on Sony TV (except in monochrome) so had to use Barco monitor. Didn't seem to have VITC on tape. Then Avitel VITC reader crashes studio; unlike BBC VITC reader which puts out slow timecode during pause this puts it out at normal rate ($\pm 6\%$ to allow for varispeed). This is better for Opcode interface since it hunts less but overloads the HyperCard software scanning the Mac's serial port. Solution: use BBC VITC reader, push button on Opcode to disable date and avoid HyperCard.

Studio H: Sycologic M16 MIDI matrix fails; this has separate control box and MIDI connection box.

AudioMedia NuBus card on trial: uses StudioVision software for 2-track sounds in sequence and AudioMedia software to store and manipulate samples stored on Mac (similar to SoundTools).

Studio A: dismantled old jackfield and trunking, installed microphone box for use as acoustic area.

Workshop: converted to MacWrite II.

Studio H: Studer A800 24-track for programme won't fit through door, so we'll use Otari from E.

Barrie Baker and Malcolm both have an Amiga computer.

Sean Rudkin on attachment.

MOTU's MIDI Mixer: 7 channels, aux in/out, 'chaining', 1U, external PSU.

Studio C: Ray Riley replaces 2 120-way Varicon FX connectors by 3 56-way types. Old rack

removed.

Deltalab delay unit to go for auction, along with other old equipment.

February 1991

MOTU Video Time Piece tried: reads VITC, 'burns' it on video screen and converts to SMPTE, MTC or anything else. Sadly doesn't work as well on PAL VITC as Avitel (but OK on NTSC!). DAWN (Digital Audio Workstation Nucleus) demo in Studio X: only has analogue connections. Jonathan Allin on attachment.

Studio B: monitoring unit battery fails again so Lithium cell installed.

Studio X: specification complete (9 racks?), re-routing RF cable (ex-A) and tech earth for X, moved old equipment out, Jeremy Quinn measures room for console, suspended ceiling installed.

March 1991

Studio B: Ray put new ROM Opcode Studio 3 Mac interface but VITC still tricky, although problem only seems to happen with Vision (is MOTU Performer with DTL OK?)

Studio X: To have '78 player but styli and cartridges come to around £1000, investigated Packburn 'de-clicker' and Howe Industries Phase Chaser. Two MOTU MIDI Timepieces arrive for X. Work on AES/EBU switch box. Audioscope spectrum analyser arrives.

Workshop: second Radius screen ordered, problems with LQ printer and missing 3x fonts.

Two new Studer A812s arrive: tilting deck and centre-track timecode.

Visit by group of secretaries: one girl asked about the speakers to which I reply "They're Rogers." to which she replies "Does he work here?" and I say "Do you know him?"

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Studio C: New 'mini-studio' installed; all 128 MIDI plugs labelled.

Sean leaves but faulty Quad amp remains!

StyleWriter printer demonstrated.

April 1991

Roger remixes 1976 8-track tape!

Studio B: Mac remote control for DD1000 via SCSI but had to update DD1000 ROM for it to work!

Studio F: new video switcher wouldn't work on one S550 as it was missing +5V RGB switching output on 9-way D connector to switch monitor to RGB mode; lacked a fuseable link!

Studio X: Audioscope analyser arrives and modified to provide +5V RGB switching output on 9-way D connector for monitor. Made up 8-way DIN couplers for this and S50 using two DIN socket shells taped together and then encased in heat-shrink sleeving. ED supply racks but nothing fits! Cables arrive. Design revised to have 2 Mac keyboards and mice since these can't be switched between 2 computers. Digisound MIDI to CV interface (for Roland rack synth, I think). NoNoise arrives. New tops arrive for racks but too BIG! Pete S working on combiner boxes and PSU. Jeremy using workshop in Shropshire!

Investigated Audio & Design SDIF2 to/from AES/EBU conversion box and word clock and AES/EBU distribution box.

Syco try to put 200 MB drives in Mac but original 40 MB drives taking all the space and wrong power connectors: considered upgrade to Iifx since FDHD floppy disk drives can be fitted to these but eventually decided to install alternative drives in all 7 Iifx machines. Iifx machine on

loan.

Soundcraft Series 800 sent to redundant (ex-Studio A).

Note: Tony Morson is in Room 7.

Pete Scott on attachment.

May 1991

Studio B: DD1000 software still doesn't work.

Studio X: Cables completed, Yamaha equipment arrives, also big white box for jack panel.

AD8X with DMP7D gives 20-bit coding. Longer keyboard lead for Mac. Ray Riley investigated whether non-standard MIDI data for control of Akai matrix would pass through MOTU MIDI Time Piece; decided to insert dummy bytes anyway. Discovered that using thru connections to 4 matrixes wouldn't work: would have to be fed in pairs from Time Piece. Tony concerned that Time Piece requires Sysex data to control it and doesn't respond to patch change instructions - nor does matrix! Dimension D to be modified for pin 2 hot. Problems with supply of Media Products monitoring unit so Pete plans simple standby device. Console arrives; the spray-on melamine finish looks very tough.

Investigating Roland Noise Suppressor (£745).

Workshop: extra 4 MB installed in SE/30s. MacDraft 2.

Ray clears 200 reels of quarter-inch scrap tape!

Brian talks of getting rid of old Mac Plus machines - 2 go to Television Sound.

Liz comes to work with two left shoes so has to wear plimsolls all day!

Pete Thomas to leave BBC, sells his loudspeakers to BBC for £10,000.

June 1991

SoundTools put on new Unicol trolley following Roger's 'collapse' of Speedframe version.

Studio F: HyperCard seems to be overwriting files.

The exploding yoghurt, opened by Dick, of course, causing it to fly over Ray Riley's jacket.

Malc: "How do you sell a deaf man a rabbit?" "WANNA BUY A RABBIT?" (Richard hardly smiles, Ray almost crying). Guy the chef burns face with hot custard and had to use ice pack but everyone kept laughing. Malc puts polystyrene packing 'chips' in Ray's drying umbrella so Ray fills Malc's desk drawer with them.

Studio X: RE Broadcast can supply 'digital' headphone unit. 7030 'Super' Sony DAT with timecode arrives. Modified EMT '78 gram with Revox linear tracking arm (costing £100,000) arrives but can't play '33's so will have to retain original gram and add a switch box. Sequencing computer and keyboard to be repositioned near S50 with Mac control of S50 (since its buttons are hidden). Roland 100M modular synth converted back to original form by removing transformers. Digital links to NoNoise system tested. Changed PCM2500 DAT with machine from E since, when recording the incoming 44.1 kHz clock messes up a 48 kHz recording.

Monitoring unit arrives and is sent away again. MIDI Time Piece and Video Time Piece seem to work OK. Complications with MIDI Manager not liking AppleTalk which works via Printer port (as required for printer?).

Tests on Tony's matrix application, with matrix links being greatest challenge.

Peter said he was 'fuming inside' over Dick getting centre-track timecode machines. Referred to Brian, then "po-faced gits" monologue.

Smell from Room 6 found to be decomposing glue on tape labels.

Pete Scott's attachment ends.

July 1991

Studio X: Mac printer port used only for printing, modem port for MIDI with filtering via MTP. VTP output too low for 2-track timecode input so increased to +3dB. Also wouldn't work with low-level VITC tape that was OK with Avitel and BBC timecode readers. 2-track machines are confusing since timecode at input goes to output if 'INPUT' button on penthouse is pressed. Also DAT copies timecode in to timecode out. Had to use Mac's printer port purely for matrix control and old version of MIDI Manager to prevent machine booting up with AppleTalk which disables this control; but now you can't print! NoNoise misbehaving in afternoons; heat problem? 5 CD Writers and Encoder arrive. As supplied you can use all Writers or none; software improvement coming soon! Monitoring Unit has 2 more journeys! Koch CD Tester and Centronics printer installed. Dick begins work; must reformat NoNoise hard disk drives every 8 weeks. V15 cartridge fitted in '78 player and stylus rack installed. FMC1 format converter (huh?) John Birt appointed.

August 1991

Studio X: Pre-emphasis switched off all round. Modifications to reduce SCSI cable lengths. MTP relocated.

Studio F: installed DMP7D and Custom Interface Unit (CIU). Multitrack Mixer intercept box to cut Yamaha digital data from multitrack mixer.

Installing extra drives in studio Macs.

Dave the ex-handyman lives on boat moored on canal and getting married in couple of weeks! MOTU Video Time Piece only works with Performer (which requests full timecode messages) but not with StudioVision. The Studio 5 interface puts out full messages automatically.

StudioVision being installed in most studios. Removing Cue Card at same time.

Studio B: tried Audio Kinetics VITC reader in place of Avitel which pumps out continuous timecode. Slightly better - perhaps video to VITC reader should be muted when in pause.

Tony says successor to Cue Card will be called Cupid!

Ken Tink retires.

September 1991

New Minc phone system installed by Britannic Telecom.

Studio B: SPX1000 connected digitally. CMS card in monitoring unit adjusted to reduce battery current. Tony attempts to convert to System 7 using his matrix software (Max) which is dependent on MIDI Manager but this doesn't work properly and current version of HyperCard doesn't work in System 7. So back to 6.

Studio X: MTP has habit of reverting to defaults. Dick makes clock out of failed CD.

Malcolm: T-shirt with "Cats against the Bomb". He growled and barked!

Tedious annual appraisal with Barrie.

October 1991

Studio X: To install extra 1.2 GB hard disk drive? Dick putting timecode on DAT: there's Int/Ext switch on back - when in Int position timecode is generated from Absolute Time on tape!

Studio B: using new Bel delay unit.

Considering copying facility in old D: lose 1-inch machine and move 16-track to H?

Ray programs M16 ROM using BBC micro (Compton Soft Switch didn't work).

Office/workshop network: EtherPrint boxes using SCSI connections (£600 a go). Created AppleTalk (LocalTalk) sub-network for ImageWriter and other printers. Discovered how to get into network using aliases.

Continuing problems with System 7 and MIDI Manager but Tony developing own software to bypass MIDI Manager.

Sony confirms that U-matic machines 'mute' data from lines 19 through to 21 during search and can't be modified, so any VITC information on these lines won't be recognised. But then (after having ignored Ray's original suggestion) I moved time base corrector (TBC) switch and it worked, although problems could occur if you tried to search at high speed.

Fri 18: Opening of Studio X with pink champagne and yellow cake made to look like a CD.

Mac PowerBook and Quadra 700 (20 MHz) on trial.

Claris Resolve spreadsheet application tried.

Studio D: old installation dismantled. Splash of paint and carpet repair. Soundcraft 1624 desk of 1981 to be retained temporarily.

November 1991

Procussion drum machines go into C and F; old D50 keyboard removed from F.

Studio B: monitoring unit battery fails again. VTP and Studio 3 interconnections sorted out. VCR moved into 'circle' with new remote control cable. DD1000 moved to new low-level cupboard; glass door doesn't stop noise!

Studio F: Procussion and old RX5 drum machine (for clics) on same MIDI circuit. Peter says assign RX5 to top note and set Procussion to ignore top note. Then in Vision you set metronome to top key on 'drum machine' channel.

8000 jobs to go: Producer Choice, Management Units and Business Units. Departments would borrow money from central funds for project work and then would pay it back, with interest, from profits. EOR to be BU by '93.

Studios B and F: extra cables for U-matic VCR remote controls.

5 'boxed' floppy disk drives returned from AF Computing after failing to make them work with Mac II: two used in engineering workshop.

Sharp IQ-8000 Organiser but no Mac Link!

Phase 2 plan for Maida Vale (later aborted).

To get DTC1000 Pro DAT machines (can record at 44.1 kHz digitally) and ProTools?

Two DTC1000 DATs modified by HHB for 44.1/48 kHz record switch.

Studio C: VTP installed but doesn't work with StudioVision (OK with Performer). Eventually connected regenerated timecode output of VTP to timecode input of Studio 3 interface and it worked.

December 1991

DTC1000 DATs fitted with PCBs to give standard output level. 2k2 across input pot to give line up at position '4' on rotary control with 12 dB 'in hand'.

Alesis 8-track recorder announced: digital ins and outs; standard VHS tape, £3000.

Malcolm's flashing LED bow tie.

Studio B: making 25 way leads to allow PCM2500 'halves' to be split; two machines in rack and interface boxes below.

1992

January 1992

Fostex 6301 loudspeakers fitted with thicker mains cable. Ray working on equipment schedules. Looked at Opcode Studio 5 MIDI interface: 15 ins and outs, 240 MIDI channels, MTP 'emulation'. Opcode MIDI System (OMS) can cope with lots of ins and outs, unlike Apple MIDI Manager, but how does this fit with MIDI Manager and Standard MIDI? Might be easier to use Opcode software throughout and ditch HyperCard since it won't co-exist with OMS.

Studio D: Installed Soundcraft Series 200 8-channel mixer for copying and testing work. Tried Studio 5 interface with TX816, TX802 and TX81Z. Standard MIDI is difficult since all messages go to all cables: ended up with 'synth' MIDI messages going to Akai matrix as well. Tony to try feeding output of Max matrix application into OMS (where patches can be changed) via PatchBay and MIDI Manager.

Older version of HyperCard uses Standard MIDI which isn't recognised by MIDI Manager whilst newer version doesn't support MIDI at all! Worse still, when using the Studio 5 in Performer to emulate MTP the Performer application stops MIDI Manager and OMS from having access. Looks as though we'll have to move to StudioVision, possibly using Galaxy editor (in place of HyperCard) to load and dump material between the computer and any DMP7.

Akai matrix codes to be modified so that they all look like Sysex data?

Quadra 900 for tryout: Cue Card wouldn't work on it, even with System 6.

Studio 5 to be tried in H.

16-track and 'penthouse' A80 awaiting disposal.

Using ClarisWorks application in workshop.

To get: 3 Quadoras, SampleCell for F, 5 Studio 5s.

Studio X: NoNoise system fails twice.

February 1992

Workshop: got rid of Excel, Microsoft Works and MacWrite II.

ClarisWorks installed in all studios.

Studio F: Cue Card removed and on System 7, S550 and Peter converts DAT library for new (non-MIDI) version of HyperCard but this gives problems so converts them to ClarisWorks.

Ray Riley gets EPROM programmer to work with ClarisWorks and null-modem cable.

Federation Against Software Theft (FAST).

Studio C: converted Emu sound library on Mac from Sidekick to Address Book programme.

Ray has various problems with hard disk drives; HD Toolkit purchased.

Abandoned use of Ethernet card in Mac IIsi for Tony.

Theramin investigation: last used in MV1 2 years ago for 'Alice in Wonderland' by Del Tedeci.

Studio E: removed Omnis and Sidekick.

March 1992

Formatting removable disks.

Ray uses image-copying of disks to defeat 'key disk' copy protection.

Studio F: Studio 5 interface installed. Tony revamped MIDI circuits, obviating MIDI mergers.

Studio 5 objects to Sysex format of router data (as designed for Studio 3 interface) so he reverts

to codes used with MTP in Studio X. Fuse blows and Tony blows fuse next day.
To extend printer network to Tony's office and fit Media Adaptor in Quadra for Ethernet.
Fitted network card in Mac IIsi for Maxine's office.
Studio D: Installed tape transfer facility. Installed Studio 5 and OMS; seems OK.
Five Studio 5 interfaces arrive.
AM8/12 amplifiers for LS3/5A loudspeakers modified for domestic jack input by using drill.
Oberheim Matrix 1000 installed in F.
DTC1000 Pro DATs arrive: these have same lineup as older modified machines; 2 in Studio E with digital dubbing but analogue connections on one machine only.
Room 10: problems getting 10 MB Prodrive to work.
Video Time Piece: new ROM still doesn't save default settings on power-down; hopeless.
Made cable to transfer data from Sharp IQ8000 to Mac.
5 Quadra 900s arrive, Quadra 700 for Tony; transferred memory from old Mac II (IIX?) machines.

April 1992

Studio B: second DAT machine installed with interface units separated. Plans for 'Phase 1' of wiring changes - what more?
Studio X: Quadra 900 installed for NoNoise and worked; only has 5 NuBus slots so persuaded Calcomp monitor to work from integral video output via adaptor cable. Relocated ProBox (AES to SDIF2 converter).
Studio D: Experiments with StudioVision. Initially it seemed Max, used with Vision in 'Apple MIDI Manager Mode', wouldn't work with timecode but it needed timecode 'bridge' in PatchBay and OMS 'Ports'. ProTools installed.
Studio C: 200 MB drive fails.
John Major wins election.
Brian does Business Unit 'accounts': £72,000 in the red!
In February Tony found out that DMP7s generate glitch of data on MIDI output which gets auto-channelised back to recording channel. Turns out that pressing AUTO button on DMP7 fixes the problem; it then detects when instructions are received via MIDI rather than being operated by hand.
New version of Max with 'addsets' known as QuickPatches that you can add to an existing patch.
Studio F: Liz having 'notes sticking'; probably due to 280 clock beats per second through MIDI Manager with timecode (she sweats it out). Tony turns off RAM Cache which helps and Ray finds out that Studio 5 doesn't like incoming MIDI at more than 1.4 times the standard MIDI rate, although it should accept 8 times and is perfectly happy to put out data at this rate. Eventually set interface to work at only 2 times on input and 6 times (rather than 8 times on output) which fixed problem.
Studio C updates: had to create 'Z-dummy' in Instrument List in OMS/Studio 5 Setup. This provides 'dead' destination for 'laying' MIDI tracks. Possibly best to turn VITC switch on Avitel VITC reader to 'off' position when not using it since it generates 'stationary' timecode all the time, even when there's no tape in the machine!
Studio X: Dick wrecks 5 CD-Rs when NoNoise runs out of memory; turns out extra installed memory wasn't working since 32-bit addressing hadn't been enabled.

May 1992

Barrie Baker returns from attachemnt as ESM.

Sony 128 MO SCSI drive from Syco fitted to Mac IIsi and disks formatted but doesn't actually work until switching off extensions and changing formatting software and removing viruses.

Philips/Audio Design standalone CD writing machine complete with Smart Box that converts DAT codes conveyed via S/PDIF to CD tracks IDs (this doesn't work so well via AES/EBU). Is optimised for commercial CD levels, although when connected to S/PDIF output of PCM2500 around 6 dB is added, giving reasonable level on the CD. Made chart of relative signal levels.

Ray Riley tries to install Studio 5 software one time too many from Installer floppy disk, causing Quadra to play 'Be-bop-a-lula, She's my Baby'! Eventually did 'bit' copy of another disk; floppy not copy protected and each disk allows around 7 installations.

Studio X: new version of Sonic System software gives problems so back to the old one. Dick accidentally recorded CDs at 48 kHz so they sound slow!

Sony cassette recorders give lamp problems.

Galaxy won't run on Mac IIsi (as don't other applications!)

Peter copies quad material from 4 tracks of 16-track in F to 2 DATs (with 'sync' blip at start) for Broadgate 'concert' on Fri 29, also 'Cathedral of Sound' in Liverpool Street station - the commuters liked the electronic birds. He was then going to copy it to DD1000.

June 1992

Ray creates stack of 4 100 MB drives for copying 'install' disks etc.

Studio X: customer complains of low-level CD. Requires bargraph on A to D converter to be just below clipping, with results trimmed in NoNoise to lose '1' on the scale. Put 10-12 dB pad on analogue output so that PPM 6 (+8 dB) is close to clipping with +20 dB actually being recorded. This means that lineup of PPM 4 (0 dB) actually feeds +12 dB to the NoNoise system. Levels must be closely monitored or a limiter must be provided in the chain. Prokofiev test recording was OK when played on domestic machine, peaking to +5 dB (when +7 dB corresponds to clipping). Considered getting two Audio & Design Limiters (modified to have threshold 5 dB above the normal +5 to +15 dB threshold, £2,000 each), sample rate converter (£3,500) and digital fader (£1,000).

Martin Atterton collected two IIsi machines for trade-in.

New version of StudioVision; SMPTE markers, can work on music at same time as playing. Ray found that it requires Serial Switch control panel to be set to Compatible.

Studio B: monitoring unit programme updated for second DAT machine. Current Red Ryder application incompatible with System 7 so used Comms part of ClarisWorks.

Workshop: converting MacDraft files to ClarisWorks. Placed order via Altos!

Studio D: trunking mains sockets without earth due to 'link' modification; insulating boxes fitted. Modified two VITC readers; extra 6 dB on output for unbalanced destinations.

XLR LNE connector: Barrie says shouldn't be used by operational staff since they don't meet any British Standard. So EMS Vocoder modified to have fixed cable. Special glands obtained for adapting other devices.

Rupert acting as ESM. EOR reorganisation in pipeline.

Studio B: New matrix connections and other modifications.

Brian 'disillusioned' with management, but gets PowerBook.

Richard notices that our DATs record 4 dB higher than other BBC areas.

July 1992

Modifying old devices for safety: old suitcase 'Synthi A', Lintex HJ Encoder, 'TSR' buffer amplifier with 10 dB of gain in mid position and 20 dB gain at maximum, 'talkback unit', Hanimex slide projector and 'Howard Tombs' white noise generator in aluminium 'can' box. Didn't replace XLR-LNE connectors on Ray's 'Timecode Memory Unit': just a warning label. Workshop: IEC mains distribution boards on benches. Snooper software for testing Macs, complete with NuBus card with LEDs.

Studio C: mixer data getting back to synths as note information; must use StudioVision 'Input Map' to select certain sources to go to a dummy destination. It can't go to mixers themselves, otherwise you get MIDI 'feedback' (ie 'rubbery faders'). 200 MB Seagate drive fails; HDT Primer software identifies it as CDC 1239N! Malcolm actually uses multitrack with timecode from Studio 5. Gave him SnapJot.

CD-R blanks cost £12 to £15 each.

Peter playing with Encore musical scripting application.

Studio H: Quadra and Studio 5 installed. XLRs changed to jacks (?).

Micromega CD-R and two Audio & Design Limiters (modified to have threshold 5 dB above the normal +5 to +15 dB threshold, £2,000 each). Latter very good, especially if limiting set to 4 to 6 dB.

When used with Micromega CD-R the input gain on the CD-R device should be set to maximum.

Studio D: Micromega CD-R and Audio & Design Limiter installed

Studio X: installed Audio & Design Limiter.

August 1992

EOR looking for around 20 redundancies.

Tests on Alesis 8-track; OK but balanced output loses 6 dB when sent to unbalanced circuit.

Brian replaces his Mac IIsi by PowerBook which he uses with optical drive. IIsi goes to Room 10. He uses Virtual Memory against Tony's advice, necessitating use of Disk First aid on optical disk.

Studio C's 200 MB drive returned to Syco (the fourth one to go wrong!); noted different components and blue wires on PCB.

Spot-On formatting application in use.

New version of AudioMedia: wouldn't work until 'Sample Rate Folder' from latest Sound Designer disk was added. Installed in all areas; works with old files.

Old 8-track goes.

Studio F: simplified effects wiring and put in smaller in/out connection box. Gram fitted with IEC means plug and jack socket outputs

Studio C: new 200 MB drive, gram mods; had to modify internal Surrey Disk Amplifier back to pin 2 hot again.

Studio X: fitted mono switch to fader box. Brian's Office: remote control IEC mains panels for computer equipment and hi-fi.

Studio H: problems with even 3 devices wired over MIDI thrus; installed V10 thru box.

Ian McCraw retires. Eddie Hartley guzzling as usual. Posts of Head of OBs and Head of Prog Ops (?) to go. Hatch to be hatched?

September 1992

Studio X: fitted mono switch to fader box. New Sonic System hardware cause computer to play 'Death' sounds at startup. Further work damaged machine so had to rent another. This worked but Universal Clock Module insisted that master clock must come in on channels 3 and 4, even though we didn't have these available (extra optical interface box required as existing one only gives 2 inputs and outputs). UCM box is designed to convert 'site' reference clock (video, SMPTE 'time of day' or incoming AES/EBU to a reference for the NoNoise, but doesn't read or write SMPTE, although it can read it via its serial port. To purchase rented machine as spare? Sonic System now handled by The Tyrrell Corporation (Steve Payne and Matthew Causon). Malcolm want VHS in studio again!!

Elizabeth (with Roger) goes to Safety Course but falls over in pot-hole inside underground car park!

Studio F: ordered cables for revamp of wiring.

Modifying VITC readers for IEC mains connector and jack output.

Video copying facility moves from 10 to Studio D.

George Legg's Resource Review: 1272 jobs to go (6000 already gone).

Mac Survival Course (I'm leaving soon!)

Memo from Steve Hatherley: 5 'real' redundancies?

Tony revamping Omnis library for Brian.

Brian loans George Crowe a Deltalab delay unit (for his son?)

Ray plans spare CIU. Orders 'spare' AD208 board but then finds we have one!

Brian says 'jokingly' that workshop areas should go to George Legg (not a subtle hint).

October 1992

Converted 16-jack box (as supplied with Akai DP3200 matrix) into an input adaptor for the Media Products AMU-85 monitoring unit. Peter explodes when Ray suggests that his monitoring system is replaced by 'Chad Valley' AMU-85.

Seems Brian would rather pay for one post that keep us both! Peter 'startled' to learn that 'Radiophonic' engineer might be doing other work as well. Spoke to Alison Mountford about redundancy cash (£34,000). Meeting with Steve Hatherley regarding combining Radiophonic engineering with team in 22A. Ray not keen to work for 'MV supervisor'. New 'family tree' has too many chiefs.. Brian tells Dick that 'Ray will not be going and that there might be possibility of contract working'. When speaking to Ray Brian talks of 'my people'. Ray to take his £22,000?, starts emptying filing cabinet.

Studio X: created network for using laser printer from Mac II or Quadra. This has to be wired direct to Mac II printer port as Studio 5 doesn't like AppleTalk, with Studio 5 only using modem port. Also AppleTalk must be switched off to use Apple MIDI Manager.

Safety course.

Ethernet to be extended to Central Traffic Area (CTA) near Studio 7? To connect to Novell Netware system. Ordered SoftNode emulation software for Mac, although there might be problems with Novotech Ethernet adaptors on SE/30s, although Dayna SCSI interface on Brian's machine should be OK.

November 1992

Installed SoftNode and SoftPC on my machine and in Room 10. Edited AUTOEXEC.BAT file on SoftPC using EDLIN; horrid.

Fire alarm goes off and canteen run out of water on same day.
Arp Odyssey modified for IEC mains connector.
Workshop items split from RWS asset register.
MacDraft removed.
Project work dries up.
Paddy Kingsland appears: he went 11 years ago; lives in Barnes with studio in Hammersmith.
Final decision made on RWS engineering posts. Ray tells Brian he's not interested in Brian 'pulling strings' over staffing. Said he was 'sad' but didn't look too bothered.
Maxine's Office: SE/30 to be replaced by Iifx since Iisi couldn't cope with library.

December 1992

Brian says John Birt is a 'lovely man'.
Apparently Brian says Dick could 'go tonight' but will be paid until April. NoNoise likely to go to BH where expertise exists. Then Brian says 'we're keeping Studio X in 30 second meeting.'
Peter says I've 'abrasive attitude'.
Studio X: Audio and Design digital fader arrives but discovered it strips out DAT ID codes, which makes it useless, so sent back.
Studio F: ProTools installed.
Found illicit second subterranean entrance to Club.
Ray copying old 31/4 CBS and BBC tapes using machines running at 7 1/2 and 15 in/s.
Ray finishes spare CIU.
Studio F: modifications; most matrix bridge links removed, freeing inputs and outputs.

1993

January 1993

New SampleCell, Emu and Roland samplers, all with Mac front ends.
Malcolms 50th birthday, cake and model Bugatti.
Rupert gets MV job and Barrie gets Music job.
Studio F: Continuing problem with offset in level with CIU: Liz instructed on DMP7D digital pad but occasional clicks continue.

February 1993

Mon 8: Dick says 'letters are going out from Jill Daniells'. Gave Brian schemes folder and accounts software but not MOBP information.
Mon 15: First training session for 22A staff.
Tue 16: Rupert appears with Fiona Sleigh. Ray to get acting Sen Eng pay if I leave early. Gave Fiona key and left for home.
Mon 22: One-day visit for second training session. Brian wrote letter about 'the excellent and undoubted contribution you have made to the engineering integrity of the Radiophonic Workshop. You inherited a mess and have left us with a well engineered set of studios built to the highest standard.'

FIN.

March 1993

Fri 26: Dick has party to celebrate his departure. Roger says he's 'envious' of me.

October 1993

Visit to get photos for Wireless World articles. Tony using an Apple Newton.

December 1994

Ray says the Workshop is 'on skids' with Brian and Maxine to leave at end of year.

December 1995

Dec6: Here and Now TV programme, featuring Bill Gates, has sound effects by Tony Morson. Roger and Malcolm, also Brian and Maxine, accept redundancy. Malcolm's Bugatti is complete and Ray says it's impressive. Rupert grows a beard, subsequently removed.

1998

Workshop closes. Elizabeth Parker last to leave, Mark Ayres retrieves tape library.

1998

Jan: Maxine Blythe-Tinker dies of cancer. Funeral at Milford on Sea near Weymouth. Peter Howell initially does installation for Elizabeth using jackfields with phono sockets at the back and jacks at the front. Unfortunately it suffered from hum and other problems that took him three days to sort out. At this time the circular desk was found to be too large and was residing in the garage.

1999

Liz moving to Long Ditton with 'purpose-built studio'. In the meantime the equipment was temporarily used at her place in the West Country.

2000

Peter Howell still doing some work, mainly for Channel 4. Also taken up writing fiction. Dick celebrates his 40th wedding anniversary.

2001

Jul 3: Delia Derbyshire dies, age 64(?)

2003

Jan 5: Daphne Oram dies, aged 77.

Aug(?): 'The Alchemists of Sound' is shown on BBC-4 but doesn't cover period after 1979. Includes all the producers, apart from Liz who objected to way the department was folded up. Desmond was in it, as well as David Cane, flown over from Poland.

Mid-summer: Gwynne Briscoe, Desmond's wife, dies

Aug: reported that Delia Derbyshire died '18 months ago'.

Dec 11: Malcolm Clarke dies of sudden illness, aged 60 (would have been 61 in Jan next year).

Dick sounds depressed in his e-mail of 15th. Ray Riley's Christmas letter indicates it may have been a heart attack.

2004

Jan 6: Roger, Peter, Dick and Richard-Yeoman Clarke gave Malk a 'pretty good send off'. Roger said in e-mail that being at RWS was 'just a job' that was 'sometimes exhilarating' but 'basically ephemeral'.