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16 OR 24 TRACK MIXING CONSOLE

The "Series 80" has been designed as a direct result of demand from studio owners for a recording console that offers the highest technical specifications, overall facilities and sound quality of the standard that has come to be associated with the name Trident, whilst keeping the overall price within the budget of most studios.

Electronic and mechanical design is based on the highly successful T.S.M. console and has therefore a head start in that the reliability factor is already well proven. Series 80 is capable of handling the most complex of recording and mix-down sessions and full automation is available as standard or as a retro-fit package.

Series 80 offers a fully modular removable patchbay using cross point professional bantam jacks. To service the patchbay is now the simplest of operations and re-programming is possible by changing wire links on the individual printed cards. Individual jack sockets can also be cleaned in a matter of minutes.

For the studio engineer servicing is of the utmost ease because of the modular design. Each module has full component identification making the sourcing of a problem a very quick and methodical operation. Changing a potentiometer on some consoles can involve a complete strip-down and a great deal of soldering — on Series 80 all pots are replaceable in minutes as they are wire linked to the board itself. Throughout the console all relays are completely electronic, obviating the wear and tear normally associated with mechanical relays.

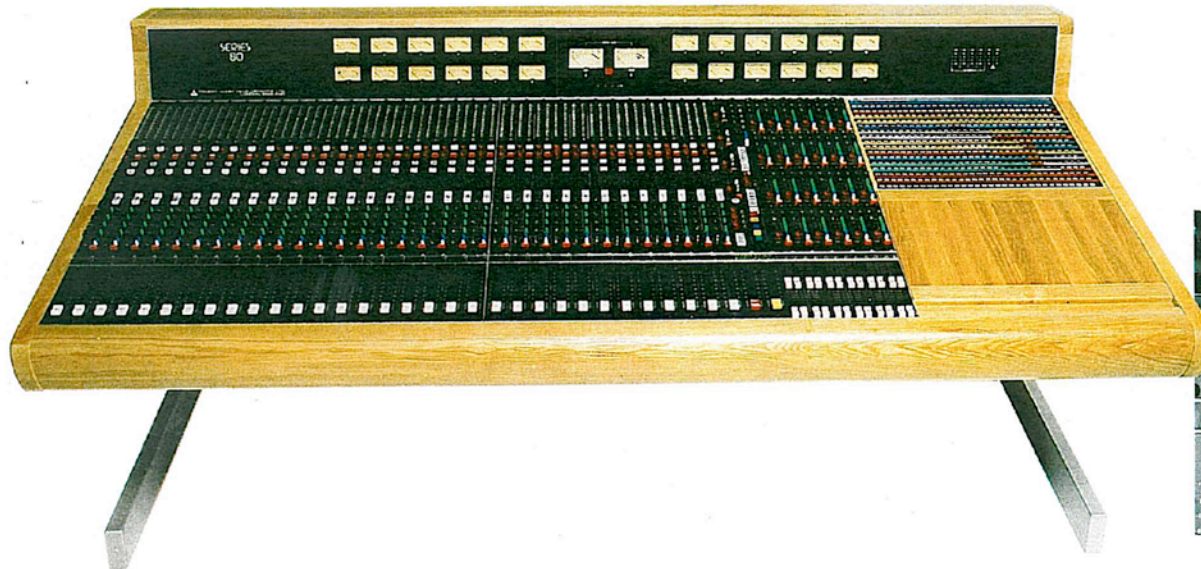
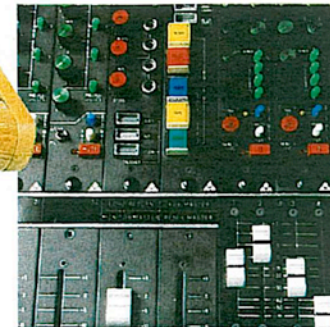
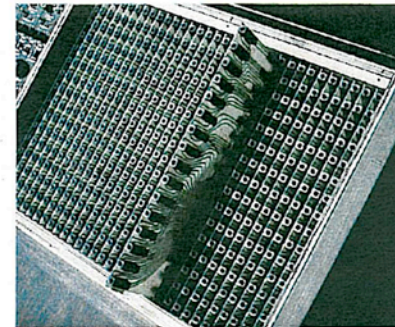
The latest generation of plug-in op-amps are used throughout the Series 80 and as a result distortion figures are extremely low, whilst transient response and sound quality are of the highest order.

The module panels are manufactured in black brushed aluminium and the lettering is anodised into the panel making it completely wear resistant.

The general construction of Series 80 is of aluminium sheet-profile and box section steel tubes giving great overall strength and rigidity.

All connections are situated underneath the console, keeping cabling completely unobtrusive. The connections themselves are ITT D.L. zero insertion force and are gold plated.

The overall finish of the console is extremely attractive and it is clad in solid English Ash. Other wood finishes are available to customer specification. Although the Series 80 is built in standard frame size it is possible to have various custom modifications undertaken, such as built-in tape machine remotes or ancillary equipment in the patch bay area.

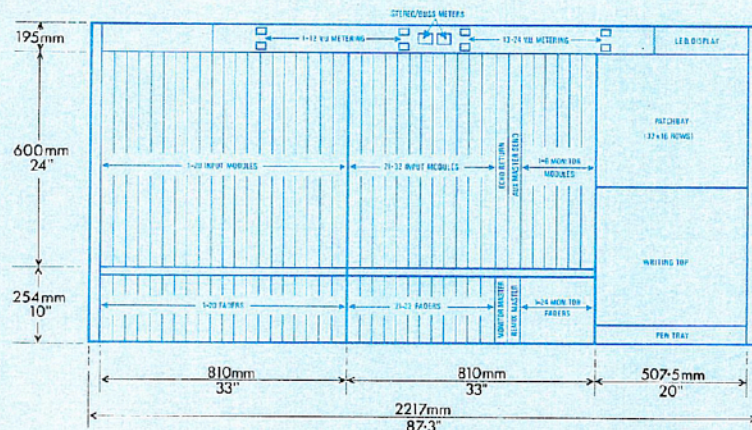
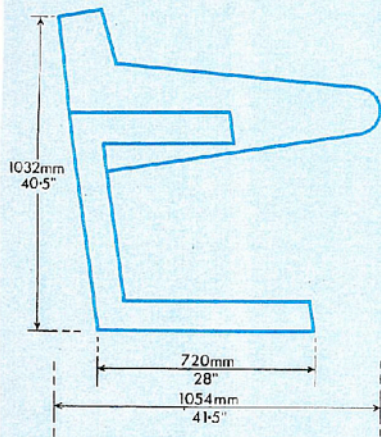


Series 80 Patchbay

Colour coding is provided so that the different functions can be easily identified and located. Below the patchbay is a writing area that features a moulded pen tray, providing immediate location of writing instruments.



32-24-24 Console Layout



Technical Performance / Specifications

Impedances:	
Mic Input	1.2k ohm transformer balanced (45v Phantom power standard).
Line Inputs	20k ohms electronically balanced.
Group Outputs	Less than 50 ohms unbalanced (transformer balanced as an option).
All Other Outputs	Less than 50 ohms unbalanced.
Maximum Levels:	
Mic Input	+ 10dBv @ 50Hz. + 24dBv @ 1kHz. + 23dBv @ 10kHz.
Line Input	+ 24dBv at all frequencies.
Distortion:	
Mic Input	0.3% @ + 10dBv 40Hz. 0.006% @ + 20dBv 1kHz. 0.02% @ + 20dBv 10kHz.
Line Input	0.01% @ + 20dBv 40Hz. 0.006% @ + 20dBv 1kHz. 0.015% @ + 20dBv 10kHz.
Group Output	0.05% @ + 20dBv 40Hz. 0.006% @ + 20dBv 1kHz. 0.01% @ + 20dBv 10kHz.
Noise:	
Mic Input	- 124dBm ref 600 ohms 20Hz to 20kHz.
Group Output	Typically - 80dBm 20Hz to 20kHz. Line input routed to one group, all faders set for unity.
Monitor Buss	- 86dBm 20 Hz to 20 kHz
Stereo Buss	- 86dBm 20 Hz to 20 kHz
Frequency Response:	
Mic	± 0.5dB 20Hz to 20kHz.
Line	- 0.2dB @ 20Hz to 20kHz
Crosstalk:	
Group to Group	Better than - 75dBm (all faders set for unity), 20Hz to 15kHz.

In accordance with our continuing policy of product improvement and development, we reserve the right to modify or change designs without prior notice.

DESCRIPTION	No OFF	MOD No	MOD BY	DATE	MATERIAL	SCALE	DRAWN
					FINISH	PROJECTION	CHK'D
					TOLERANCES	ISSUE DATE	
					All imperial dimensions ±0.01" All metric dimensions ±0.25mm All angles 10-50° Unless otherwise stated		TRIDENT

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INPUT MODULE.

This module includes the routing facility to a multi-track tape machine, the auxiliary sends, channel signal equalisation, and contains the following:

Routing. Selectable to any combination of multi-track busses or to a totally independent stereo mixdown buss. Visual indication of assignment is by way of "blinking eye" type switches. Each channel has its own combining amplifier which becomes the mix amp for all channels routed to that buss. This design feature ensures that noise is kept to a minimum, avoiding low level pick-up and crosstalk.

Separate Stereo Re-mix Buss. This gives each channel direct assignment to the stereo mixdown buss. The pan control allows the signal to be panned across either the multitrack or remix busses. When the pan control is not selected via the pan in/out pushbutton the signal will go directly to the buss (or busses) selected.

Mic-gain control. Allows continuously variable signal gain from unity (which enables the use of high level microphones without the need for a mike pad) through to 65dB of gain for the lowest level of mike input signal.

Input source selection. Either mic or line is by a pushbutton switch on the module.

Line Input gain/attenuator. Provides up to 10dB of continuously variable boost or attenuation of the line input signal level.

To reverse the phase of both microphone or line inputs a phase reverse switch is fitted.

Equaliser Section. The equaliser is four-band offering two swept overlapping high and low mid-ranges variable between 100Hz and 1.5Hz (low mid) and 1kHz-15kHz (upper mid). The two high and low frequency ranges are shelving, selectable either to 8K or 12K for the high range and 60Hz and 120Hz for the low range. All frequencies have variable boost or cut from 0 to 15dB. A 50Hz low frequency roll-off switch is incorporated for the filtering of any low frequency signals such as air conditioning, rumble etc. The slope rate is 12dB/octave. The equaliser section is selected with a silent E.Q. in/out pushbutton which illuminates an L.E.D. when enabled.

Auxiliary Sends. Five auxiliary sends are available, each having its own level control and pre or post fader selection. Sends 1, 2 and 3 are individual mono sends, suitable for echo or foldback, whilst sends 4 and 5 are a stereo pair controlled by a single level control and pan pot, and ideally suited as a stereo foldback system.

Solo. This mutes all other input modules leaving stereo image "in place" on the monitors. All other channel mute L.E.D.'s illuminate when this system is initiated.

Mute. This switch mutes the individual channel signal and a red L.E.D. indicates this function.

Auto Mute. This feature enables the simultaneous muting of pre-selected channels by means of a single master auto-mute positioned in the auxiliary module. The mute, auto-mute and solo switches all interrupt the signal flow to the tape machine.

To monitor the output of the mic/line module in mono on the control room monitors without interrupting the signal flow, the A.F.L.P.F.L. switch is selected. This can be either after or pre the fader level.

Below each input module is fitted a high quality conductive plastic fader.

ECHO/RETURN AND COMMUNICATION MODULE.

This module consists of four identical echo return sections which normally route to the stereo mixdown buss automatically, and each provides the following facilities:

Rotary echo-return level control. Manual mute selection which has L.E.D. indicator when selected. A.F.L.P.F.L. selector switch which has a similar function to the A.F.L.P.F.L. on the input module, placing a mono image across the studio speakers either before or after the level control. To send the echo return signal to foldback, a switch marked AUX 4/5 is depressed. To interrupt the signal flow from the echo return to the stereo buss, the button marked TO MON is depressed. This then places across the studio monitors the echo return signal (Phantom Echo). This signal will appear across the speakers dependent on the position of the pan-pot.

Each echo return section has a high and low frequency shelving equaliser selectable at 50Hz and 10K and provides 15dB of cut and boost.

Communication Section. This section of the module has the facilities for studio communications. A self-contained high quality microphone allows the following facilities—

Talkback to studio enabling announcements to be made through the studio speakers, with the rotary "studio" pot controlling the level.

Auxiliary talkback enabling communication onto the aux buss(es) by means of the pre-selection switches. The original auxiliary programmes are attenuated with the announcement superimposed on the programme. With the

combination of the "Slate" rotary pot and slate pushbutton, announcements can be made onto the main output busses and also the stereo buss. A 20Hz tone also appears to aid tape identification.

AUXILIARY MODULE.

This module houses the auxiliary and main monitoring functions of the Series 80. Housed at the top of the module are the five auxiliary master level controls, determining the final levels of the auxiliary busses. Each master send has its own solo switch enabling quality checking of the individual auxiliary sends, with sends 4/5 appearing in stereo. Visual indication of the auxiliary send outputs is accomplished by means of five individual L.E.D. column indicators situated on the right-hand side of the meter panel.

Incorporated below this is a multi-frequency switched oscillator, which appears at the jackbay, and when "slate" is selected will appear across all output groups, enabling the accurate alignment of multi-track tape machines. **Studio Playback Select.** These eight push-buttons designate the source to the studio playback system. The buttons are connected in series so that only one source is selectable at a time, the lowest button taking priority. "Mute" - this "kills" the studio playback signal, and the "level" rotary pot controls the amount of level to the studio playback system.

The "P.F.L. Master" controls the overall level of the A.F.L.P.F.L. system, and like the auxiliary outputs, visual indication of the A.F.L.P.F.L. signal level is achieved by an L.E.D. column situated on the right-hand side of the meter panel. A large rectangular indicator, situated in the middle of the console, also shows when the A.F.L.P.F.L. system is operative. Auto-Mute Master is the master function to mute any pre-selected inputs as described in the input module section.

Control Room Source. These five pushbuttons designate the source to the control room speakers, the lowest button selected taking priority. The mono compatibility pushbutton, when selected, combines the control room speakers to a mono signal, making it possible to check stereo-mono compatibility.

Meter Couple. This function is fully described in the Monitor Module section. **Remix.** This pushbutton, when selected, will monitor the separate remix level on the remix buss, over-riding any of the other monitor modes selected. When remix is not selected, the large stereo buss V.U. meters indicate the control room monitor level. When the remix button is depressed, the stereo buss V.U. meters automatically switch over to reading the stereo buss level.

Mute. This function, when selected, "defeats" the monitor signal only. The "Overdub", "Tape" and "Mixer" selects are all momentary action switches controlling the multi-track monitoring facilities of the console, and are fully described in the Monitor Module section.

Overall gain of the monitor and remix busses is controlled by separate, accurately matched, stereo conductive plastic faders.

MONITOR MODULE.

This module contains four monitor sections each of which are identical and contain the following facilities:

Track level control — by way of a rotary control which is pannable on a separate pot across the studio monitors.

Five auxiliary sends — as on the input module each being selectable either before or after the level control by pressing the pre or post buttons alongside.

The overdub button on the monitor section works in conjunction with the master "Tape", "Mixer" and "Overdub" switches which are located in the Auxiliary module. These master switches control the overall status of the console monitoring.

When the "Mixer" button is depressed, all the monitor sections are selected to monitor their appropriate console group outputs, and that situation cannot be overridden.

When the "Tape button" is depressed all monitor sections are selected to monitor the individual tape machine replay lines. However, when the "Overdub" master button is selected the monitor section will monitor the tape replay lines but this can be overridden on any monitor section by selecting the monitor "overdub" button which illuminates an L.E.D. The section selected to overdub will then monitor the appropriate console output whilst all other sections will monitor tape machine output lines as normal.

This makes overdubbing a very quick and simple affair.

The meters will either follow the monitor source automatically by pressing the "meter couple" button in the auxiliary module, or by pressing the meter button in the monitor section. The meters will read either tape replay lines or mixer out lines.

This makes it easy to monitor the mixer whilst reading the levels from the tape machine lines. This feature is extremely useful for checking overdub level compatibility. Situated below the monitor modules are 24 conductive plastic group output faders.