

Sound Workshop
PROFESSIONAL AUDIO PRODUCTS

1280

Recording Console

The 1280 Project

The 1280 was conceived as a furthering of the semi-pro recording phenomenon that is happening today. The 1/4-inch 4 track format has proven itself as a necessary tool for the creative musician to experiment with and produce workable demos. We saw the emergence of the new 1/2-inch 8-track format as a viable means not only for experimentation, but for the production of commercially acceptable product. What was missing was the *link* between the music and the tape machine.

As we developed our ideas for the creation of the 1280 8-Track Recording Console, sonic superiority was always our primary design goal. Many of today's imported consoles are *decent*, but in multi-track recording the signal must pass through the console at least twice, during recording and mixdown. It was apparent that these "decent" consoles imposed far too many sonic restrictions by the time the final mix was on tape.

Clearly, the 1280 had to be of superior sonic design with a simple, yet flexible and functional, physical layout; a compact human engineered device that would allow creative energies to be focused upon the music, not the equipment.

The 1280

Essentially a 12-in/8-out recording console, the **Sound Workshop 1280** meets and exceeds most of the technical specifications of even the largest studio consoles. Every stage of circuitry has been optimized to an extent never before possible. A breakthrough in integrated circuit design provides ultra-low noise and distortion, while maintaining 20 dB of headroom throughout all stages of the console.

The 1280 has 12 inputs, 8 outputs, an 8x2 stereo control room monitor mix, and an 8x1 musicians cue mix. An independent 2-track mixdown buss is provided as well. Each of the 12 inputs features 3 band equalization, 35 dB trim control, push-button track assign, full panning, echo send, locking solo and mute switches, 26 dB mic pad, mic/line switching, straight line fader, and pre and post fader patch points. All ten output busses feature **Sound Workshop's** unique Tri-Lite LED Readouts which allow level monitoring of all output busses at a glance, even when recording 8 tracks simultaneously. All talkback, slate, and "talkback into cue" switching functions are an integral part of the console. The 8 tape/buss switches permit the monitor mixes to be fed by the buss outputs or the multi-track tape machine, for total flexibility in monitoring even when using single ended noise reduction systems.

Sonic superiority, full 8-track compatibility (in recording, mixdown, and monitoring), logical human engineering, compact physical layout, extensive patching and interface capabilities, expandability, and low cost . . . design parameters that have been met in the **Sound Workshop 1280 Recording Console**.

The Tri-Lite LED Readout

While most engineers are accustomed to reading conventional VU meters, the cost to meter 10 output busses with high quality, accurate meters is prohibitive on a device such as the 1280. Rather than use misleading inexpensive meters, our engineering team designed a simple means of translating high quality "VU" ballistics to a 2 color/3 LED readout. The 2 green LEDs come on in a linear fashion at -15VU and -6VU. The red LED is a quasi-peak detector with a sharp turn on threshold which lights at 0VU. The Tri-Lite LED Readout gives a graphic indication of musical peaks at a glance, while maintaining averaging VU meter ballistics. Only working with the 1280 can adequately demonstrate the advantages of the Tri-Lite system.

For those who want to combine the familiarity of VU meters with the accuracy of the Tri-Lite LEDs, we offer an optional Meter Bridge which can be added to the 1280 at any time. The meter bridge utilizes moving coil, internally lit professional "VU ballistic" meters. The 1280 is adjusted at the factory for a nominal output of -2dBm, but both the Tri-Lite LEDs and Meter Bridge may be calibrated so that 0VU represents output levels ranging from -10dBm to +4dBm.

The 1280 Microphone Pre-Amp

The low cost microphone transformers used in most of today's semi-pro consoles are barely adequate in the 3 important areas of frequency response, distortion and transient response. They also do not excel in their ability to reject hum and noise which may be induced into the mic lines (common mode rejection)

Through extensive bench and listening tests, our engineers have designed a microphone pre-amplifier utilizing state-of-the-art gapless transformers with highly controlled overshoot. Flat response, low distortion, and excellent transient response are maintained, with the benefits of over 100dB of common mode rejection, and a noise figure that approaches the thermal noise limit of the resistors! This is the microphone pre-amplifier that is used in the **Sound Workshop 1280B**.

Super EQ

The equalizer section of the 1280 provides ± 15 dB of shelving at 100Hz and 12kHz, and 15dB of peak or dip at 3.7kHz. For those installations where 3 frequencies do not offer enough selectivity, **Super EQ** was developed. Without compromising any performance, or human engineering, **Super EQ** provides 3 bands of equalization with a choice of 5 frequencies per band. In addition, each band may be switched in and out individually, so that the signal need not flow through unused EQ sections. **Super EQ** is available on the 1280B and may be ordered on the first eight input channels (1280B-8EQ), or on all 12 input channels (1280B-12EQ).

Applications

While the 1280 was obviously designed as an 8-track recording console, an examination of its structure and function, shows it to be a viable sound reinforcement mixer as well. However, recording and sound reinforcement are but 2 of the applications suited to the 1280. Broadcast and multi-media production are only 2 more. The quality and flexibility are built in; the creative application is defined by the user.

All **Sound Workshop** products are covered by our 2 year parts and labor warranty.

In Conclusion . . .

We at **Sound Workshop** are proud that the 1280 which was once a concept, is now a reality. What pleases us more is the knowledge that talented people will be using our 1280 to better convert their musical concepts into sonic realities.

Echo send master level control adjusts level of signal being sent to an external reverberation system

Musicians cue master

Buss output master with Tri-Lite LED Readouts, permits setting of levels being sent to the 8-track tape machine.

Buss/tape switch allows monitoring from the buss output, or the 8-track tape machine output.

8x1 musicians cue mix level controls

8x2 monitor mix level controls and pan pots

26 dB mic pad prevents mic-pre or transformer overload distortion when recording high sound pressure levels.

35 dB feedback type trim control optimizes each input channel for lowest noise and distortion, with maximum headroom.

Mic/line switch selects whether the input will be fed by the microphone or the 8-track tape machine on inputs 1-8, the stereo echo returns on inputs 9 and 10, and the 2-track tape machine on inputs 11 and 12. External line inputs may be patched into inputs 9-12 breaking these "normals."

Super EQ (optional) provides 3 band equalization with a choice of 5 frequencies per band.

Low	Mid	High
20Hz	250Hz	4.8kHz
40Hz	500Hz	7.5kHz
90Hz	1.2kHz	9kHz
200Hz	2.4kHz	12kHz
400Hz	4.8kHz	12kHz (shelving)

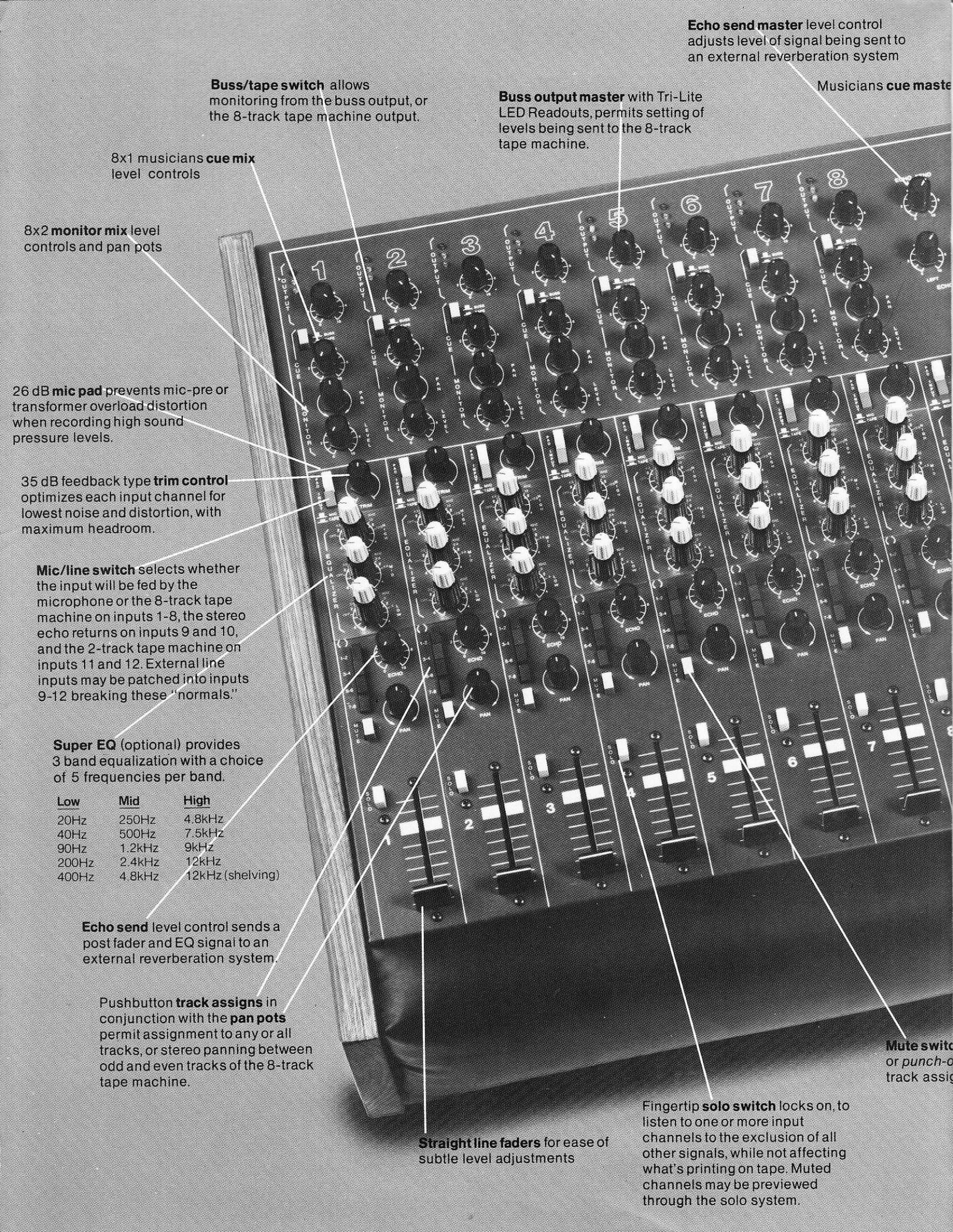
Echo send level control sends a post fader and EQ signal to an external reverberation system.

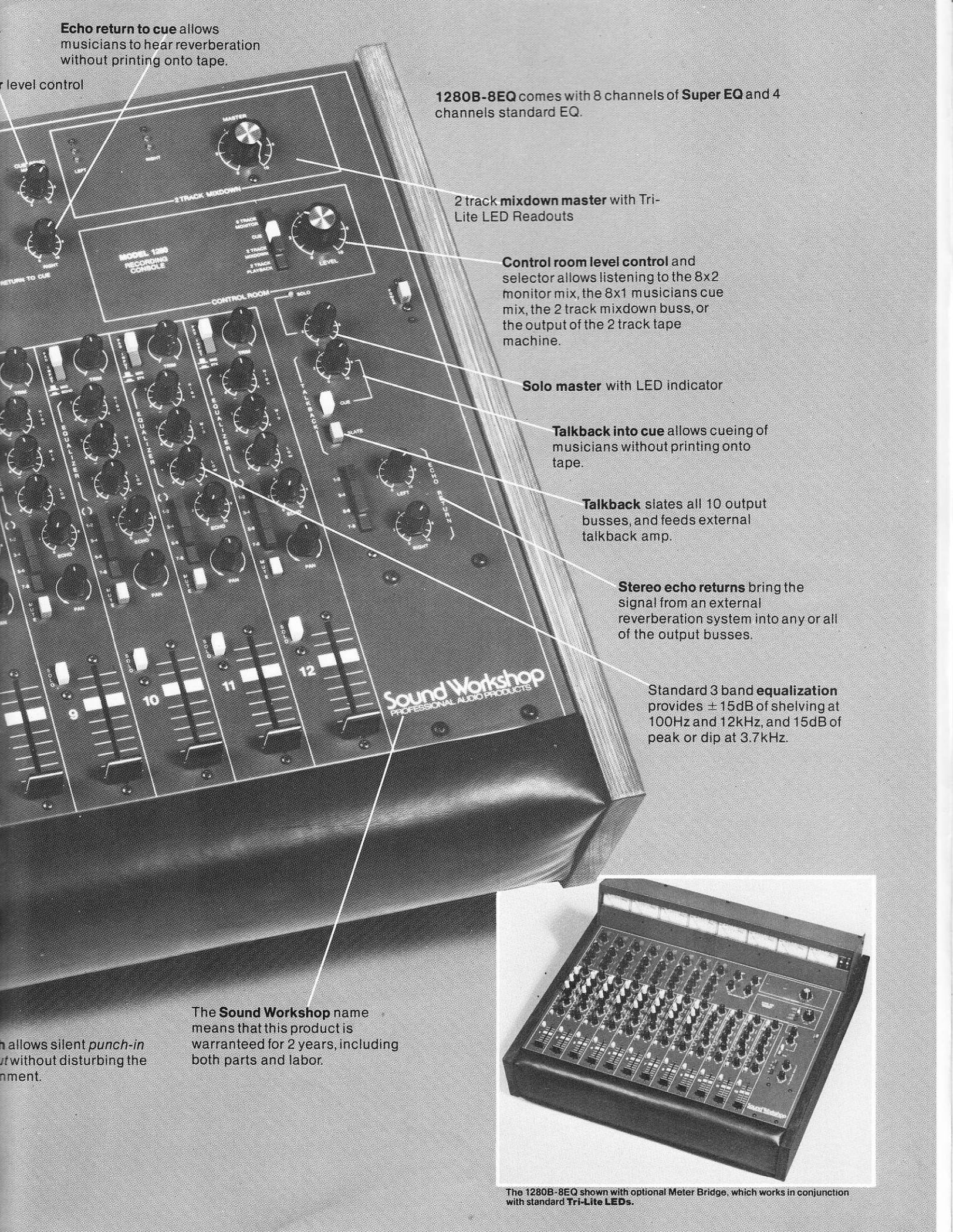
Pushbutton **track assigns** in conjunction with the **pan pots** permit assignment to any or all tracks, or stereo panning between odd and even tracks of the 8-track tape machine.

Straight line faders for ease of subtle level adjustments

Fingertip solo switch locks on, to listen to one or more input channels to the exclusion of all other signals, while not affecting what's printing on tape. Muted channels may be previewed through the solo system.

Mute switch or **punch-off** track assign





Echo return to cue allows musicians to hear reverberation without printing onto tape.

Control room level control

1280B-8EQ comes with 8 channels of Super EQ and 4 channels standard EQ.

2 track mixdown master with Tri-Lite LED Readouts

Control room level control and selector allows listening to the 8x2 monitor mix, the 8x1 musicians cue mix, the 2 track mixdown buss, or the output of the 2 track tape machine.

Solo master with LED indicator

Talkback into cue allows cueing of musicians without printing onto tape.

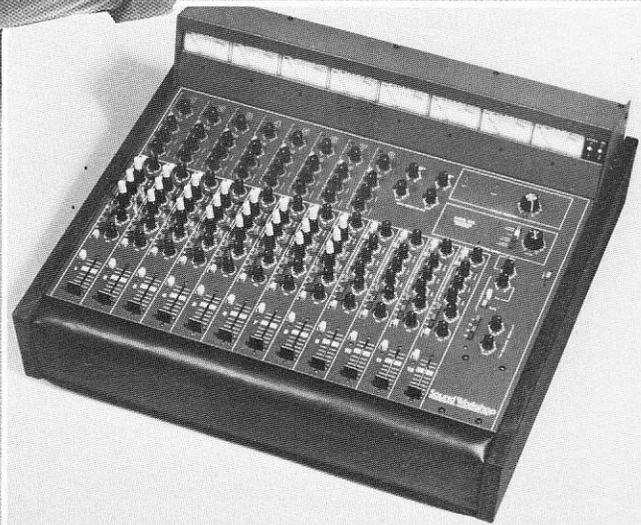
Talkback slates all 10 output busses, and feeds external talkback amp.

Stereo echo returns bring the signal from an external reverberation system into any or all of the output busses.

Standard 3 band equalization provides ± 15 dB of shelving at 100Hz and 12kHz, and 15dB of peak or dip at 3.7kHz.

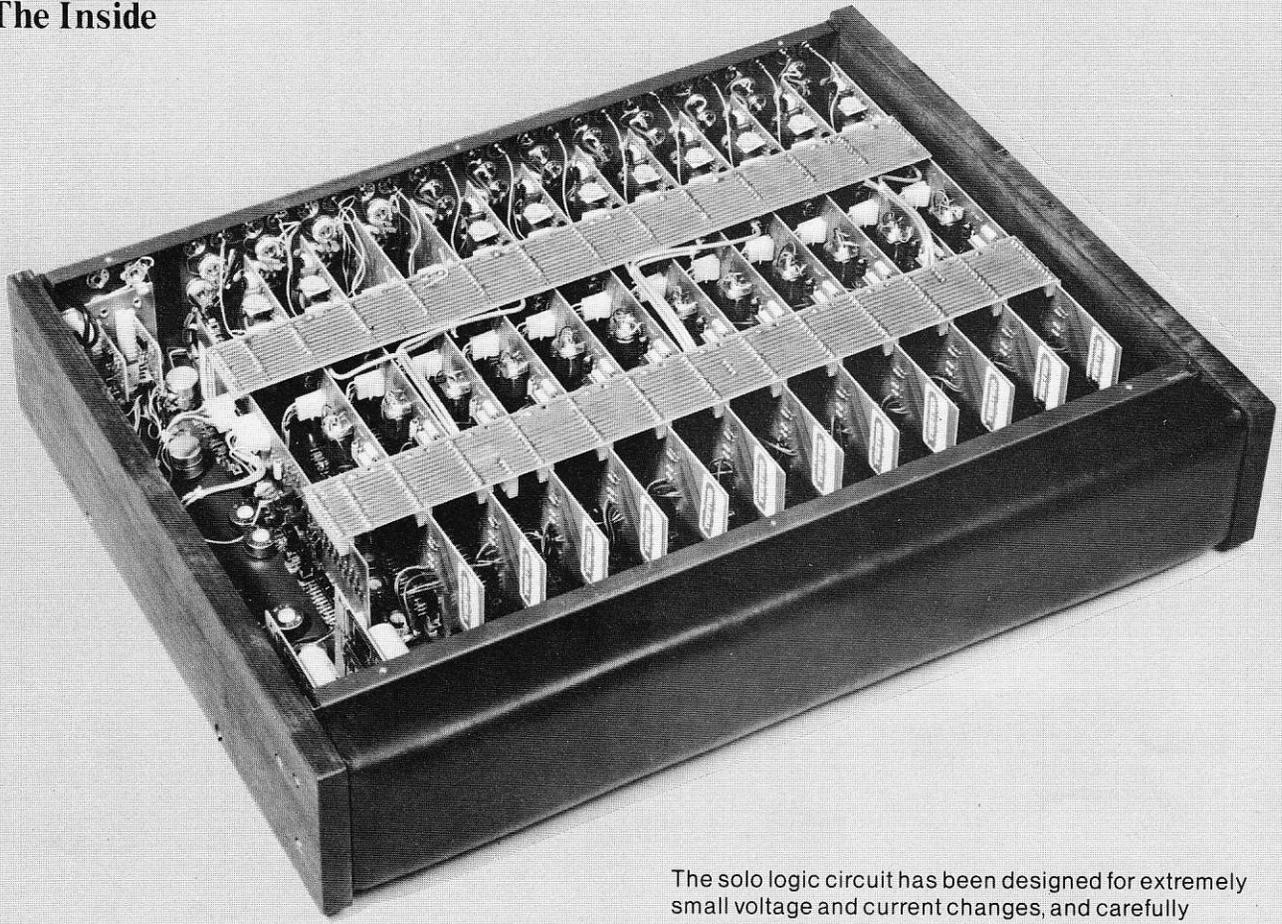
allows silent punch-in without disturbing the instrument.

The Sound Workshop name means that this product is warranted for 2 years, including both parts and labor.



The 1280B-8EQ shown with optional Meter Bridge, which works in conjunction with standard Tri-Lite LEDs.

The Inside



All circuit boards are constructed of G-10 epoxy and are interconnected via Molex connectors to allow the removal of any board without a soldering iron.

The microphone pad is completely out of the circuit when the pad is not engaged, so that the microphone is not double loaded.

A phantom power input is provided.

The solo and talkback switching utilize an integrated 4 channel current mode FET switch, for highest reliability, and lowest distortion and crosstalk.

The solo logic circuit has been designed for extremely small voltage and current changes, and carefully controlled rate of change of voltage at all points in the logic. This, combined with careful control of ground current flow, insures that no "solo click" will ever be printed onto tape.

The control room output uses a high slew rate, low noise IC/discrete line driver which is capable of driving two 600 ohm loads, or up to 32 high impedance loads, to full level!

The two identical, but completely separate power supplies employ two means of overload protection, one in the power transformer itself, and short circuit foldback current limiting in the IC regulator.

All outputs of the console employ active low noise boosters which provide isolation from capacitance loading (as well as short circuits) to allow long cable runs without affecting performance.

The Back



Specifications

Mic input equivalent noise: (10Hz-20kHz UNWTD)		-124dBm (1280A) -128dBm (1280B)	Power requirements:	105-125 VAC 50/60 Hz, 20 watts
Output buss noise: (10Hz-20kHz UNWTD)	12 inputs assigned	-80dBm	Connectors:	Mic inputs: 3 pin female XLR Line inputs 9-12: 1/4 inch phone jack Fader inputs: 1/4 inch phone jack Talkback mic input: 1/4 inch phone jack All others: RCA phono jack
Crosstalk:		60dB (10kHz)	Shipping Weight:	49 lbs.
Frequency response:	(any input to any output)	+25dB - -75dB (20Hz-20kHz)	Dimensions:	27" W, 20" D, 5 1/2" H
Distortion:	Typical Maximum	0.4% 15% (20kHz, +10dBm output)	Warranty:	Two years, parts and labor

Inputs/Outputs

Outputs	GAIN FROM			Nominal Output	Clip Level	Source Impedance	Minimum Load
	Line	Mic (1280A)	Mic (1280B)				
Pre-Fader	9dB	53dB	55dB	-10dBm	+20dBm	47Ω	10KΩ
Direct	23	67	69	-2dBm	"	"	"
Buss	26	70	72	"	"	"	"
Echo	26	70	72	"	"	"	"
Cue	21	-	-	"	"	"	"
Control Room	21	-	-	+4dBm	"	"	300Ω
Talk Back	From Talk Back Mic 65dB			-2dBm	"	"	10KΩ

Inputs	Nominal Level	Maximum Level	Impedance
Mic (1280A)	-50dBm	+20dBm	200Ω Source
Mic (1280B)	-50dBm	+24dBm	200Ω Source
Line	-8dBm	+35dBm	10KΩ
Fader	-8dBm	+35dBm	10KΩ
2 Track Playback	-8dBm	+12dBm	10KΩ
Talk Back Mic	-67dBm	-20dBm	10KΩ
Echo Return	-8dBm	+35dBm	10KΩ

Block Diagram

