GLOSSARY

ACOUSTIC FEEDBACK (HOWLROUND)
A whistling or howling noise caused by an amplified signal 'feeding back' into the amplification chain via a microphone or guitar pick-up.

ACTIVE DI BOX
A device which permits Direct Injection of signals from guitars, etc, into the console. Incorporates circuitry to adjust gain and provide impedance matching. Requires power and may be battery driven or sometimes 'phantom powered' from a console.

AFL (AFTER FADE LISTEN)
A function that allows the operator to monitor a post-fade signal. Used with Aux Masters.

AMPLIFIER
Device that increases the level of an electrical signal.

AMPLITUDE
Signal level, usually in volts.

ANALOGUE
Analogy (n.): correspondence or partial similarity, using physical variables. For example; an analogue tape recorder stores sound on tape in the form of a magnetic pattern which is a replica of the original musical waveform.

ASSIGN
On a mixing console, to switch or route a signal to a particular signal path or combination of signal paths.

ATTENUATE
To decrease the level of a signal.

AUXILIARY SEND
Level control feeding a dedicated bus for driving external effects or a foldback monitoring system. An output from the console comprising a mix of signals from channels derived independently of the main stereo/group mixes. Typically the feeds to the mix are implemented on rotary level controls.

BACK-LINE
Stage parlance for the row of instrument amplifiers and loudspeaker cabinets behind the performers, e.g. guitar amps.

BALANCE
Relative level of the left and right channels of a stereo signal.

BALANCED
A method of audio connection which 'balances' the signal between two wires and a screen which carries no signal. Any interference is picked up equally by the two wires, through common mode rejection at the destination differential balanced input resulting in cancellation of the interference signal. For balancing to be effective, both the sending and receiving device must have balanced output and input stages respectively.

BANDWIDTH
A means of specifying the range of frequencies passed by an electronic device such as an amplifier, mixer or filter.

BARGRAPH
A row of LEDs calibrated to indicate signal level.

BOOST/CUT CONTROL
A single EQ control which allows the range of frequencies passing through its filter to be either amplified or attenuated. The centre position is usually the 'flat' or 'neutral' position.

BUS or BUSS
A defined set of conductors along which signals may travel. A mixer has several busses carrying the stereo mix, the groups, the PFL signal, the aux sends, etc.

CAPACITOR
See Condenser

CARDIOID PATTERN
The 'heart-shaped' polar response of a microphone meaning that most of the sound is picked up from the front. Mainly used for stage vocals or in any situation were sound has to be picked up from a concentrated area, i.e. drums.

CHANNEL
A strip of controls in a mixing console relating to a single mono input or a stereo input.

CHIP
Integrated circuit; a multi-pinned device consisting of many circuits encapsulated in plastic.

CHORUS
Effect created by doubling a signal and adding delay and pitch modulation.

CLIPPING
Severe form of audio distortion which is the result of signal peaks exceeding the amplifier capacity. Normally caused by a limitation of the unit's power supply.

CLONE
Exact duplicate. Often refers to digital copies of digital tapes.

CONDENSER
Electrical component exhibiting capacitance (the ability to temporarily store electric current) and block direct current.

CONDENSER MICROPHONE
A type of microphone which picks up sound via a thin, flexible diaphragm placed in proximity to a metal plate - as opposed to the rigid diaphragm-and-coil system used by dynamic microphones. Condenser mics are very sensitive, especially to distant sounds and high frequencies. They have to be powered, which can be achieved by batteries, but for professional use a 48v DC PHANTOM POWER supply is provided from the console via the balanced mic cable.

CONDUCTOR
A thing that conducts or transmits heat or electricity.

COMPRESSOR
A device designed to control or reduce the dynamic range of an audio signal.

CROSSOVER

A passive circuit, normally built into a speaker system which divides the full-range audio signal from an amplifier in order to feed the individual drive units, ie: bass, midrange and treble.

CUEING

To put a piece of equipment in readiness to play a particular part of the recording material. Assisted on a mixing console by use of the PFL (Pre-Fade LIsten) facility.

CUT-OFF FREQUENCY

The frequency at which the gain of an amplifier or filter has fallen by 3dB.

DAT (DIGITAL AUDIO TAPE)

High quality cassette based recording format which stores signals digitally and therefore provides very high quality sound. Originally touted for consumer use, but now firmly ensconced as a professional tool.

dB (DECIBEL)

A ratio of two signal levels. Can be in Voltage, Watts or Current units.

dBm

Variation on dB referenced to 0dB = 1mW into 600 ohms.

dBu

Variation on dB referenced to 0dB = 0.775 volts.

dBV

Variation on dB referenced to 0dB = 1 Volt.

DETENT

In audio terms a click-stop in the travel of a rotary or slide control, normally used to indicate 'centre stereo' on pan-pots or 'zero boost/cut' on EQ controls.

DI BOX

A device allowing connections as explained below.

DI (DIRECT INJECTION)

The practice of connecting an electric musical instrument directly to the input of the mixing console, rather than to an amplifier and loudspeaker which is covered by a microphone feeding the console.

DIGITAL DELAY

The creation of delay and echo effects in the digital domain.The premise being that, as digital signals are resistant to corruption, the process will not introduce additional noise or distortion.

DIGITAL REVERB

Reverberation effects created as above.

DIGITAL

The processing and storage of signals with sound- information represented in a series of '1s' and '0s', or binary digits.

DIRECT OUTPUT

A pre-/post-fade, post-EQ line level output from the input channel, bypassing the summing amplifiers, typically for sending to individual tape tracks during recording.

DRY
Slang term for an original audio signal that has had no added effects.

DYNAMIC RANGE
The ratio in decibels between the quietest and loudest sounds in the audible range that the audio equipment will reproduce.

DYNAMIC MICROPHONE
A type which uses a thin diaphragm attached to a coil of wire arranged about a permanent magnet. Any variation in air pressure on the diaphragm will cause the coil to generate a minute electric current which then requires amplification.

EARTH
See GROUND.

EFFECTS
The use of devices to alter or process the sound to add special effects eg; reverb, normally as a mix of the original ('dry') sound and the treated ('wet') version.

EFFECTS RETURN
Additional mixer input designed to accommodate the output from an effects unit.

EFFECTS LOOP
Connection system that allows an external signal processor to be connected into the audio chain.

EFFECTS SEND
A post-fade auxiliary output used to add effects to a mix.

ELECTRET MICROPHONE
Type of condenser microphone using a permanently charged capsule.

ELECTRONIC CROSSOVER
An active device which divides the full range audio signal into several narrower frequency bands (eg:low, mid and high), which are then amplified and fed to the appropriate speaker drive units.

ENCLOSED HEADPHONES
Types that completely enclose the ears and therefore provide good exclusion of outside noise. Of particular use when monitor mixing or recording live on stage.

EQ
Abbreviation for equaliser or equalisation.

EQUALISER
A device that allows the boosting or cutting of selected bands of frequencies in the signal path.

EXPANDER
The opposite of a compressor, an expander increases the dynamic range of signals falling below a pre-determined threshold.

FADER
A linear control providing level adjustment. Favoured by professionals due to smoothness of activation and the ability to give an instant visual indication of status.

FILTER
A filter is a device or network for separating waves on the basis of their frequencies.

FOH
An acronym for Front Of House. In the entertainment world "House" is a collective term for the audience at a theatre, cinema, etc. Hence an FOH console will be situated "audience-side" of the stage. A "house" PA system refers to the main audio system responsible for the principal sound in the venue.

FOLDBACK
A feed sent back to the artistes via loudspeakers or headphones to enable them to monitor the sounds they are producing.

FOLDBACK SEND
A pre-fade auxiliary output used to set up an independent monitor mix for the performers.

FREQUENCY RESPONSE
The variation in gain of a device with frequency.

FSK (Frequency Shift Keying)
A method of synchronisation which generates a series of electronic tones related to the tempo of the music. These tones may then be record on a spare track of the multitrack recorder.

FX UNIT
Slang term for Effects Unit. Typical effects units are delays, reverbs, pitch shifters, and chorus units.

GAIN
Gain is the factor of how much the level of a signal is increased or amplified. Normally expressed in decibels.

GATE
A user-adjustable electronic device that switches off the signal path when the signal falls below a certain predetermined level or threshold.

Typically used to ensure silence between pauses in the signal during vocal passages or to prevent 'spill' between the close-proximity, multiple mics on a drum kit.

GRAPHIC EQUALISER
Device incorporating multiple narrow-band circuits allowing boost and cut of predetermined frequencies. Vertical fader controls are used which provide a 'graphic' representation of the adjustments across the frequency range.

GROUND COMPENSATION
A technique used to cancel out the effect of ground loops caused by connections to external equipment.

GROUND
Ground and Earth are often assumed to be the same thing, but they are not. Earth is for electrical safety, while Ground is the point of zero voltage in a circuit or system.

GROUND LOOP
A ground loop occurs when there are too many ground points, allowing small electrical currents to flow.

GROUP

An output into which a group of signals can be mixed.

HEADROOM
The available signal range above the nominal level before clipping occurs.

HERTZ (Hz)
Cycles (or vibrations) per second.

HIGH PASS FILTER
A filter that rejects low frequencies below a set frequency, typically 100Hz.

IMPEDANCE
The AC resistance of a circuit which has both resistive and reactive components.

IMPEDANCE BALANCING
A technique used to minimise the effect of hum and interference when connecting to external balanced inputs.

INDUCTOR
Reactive component that presents an increasing impedance with frequency. A coil in a loudspeaker crossover is an inductor.

INSERT POINT
A break point in the signal path to allow the connection of external devices, for example signal processors or to another mixer.

K OHM, K Ω or kHz
x 1000 ohms, x 1000 ohms and x 1000Hz respectively.

LINE LEVEL
Signals at a nominal level of -10dBV to +4dBu, usually coming from a low impedance source such as keyboards, drum machines,etc.

mA (milliampere)
One thousandth of an ampere, a measure for small electrical currents.

MIC SPLITTER
A device which divides the output from a microphone in order to supply two signals, for example; FOH console and recording mixer or monitor console.

MIDBAND
The range of frequencies to which the human ear is most sensitive.

MIDI
Musical Instrument Digital Interface.

MIXDOWN
The process of taking the outputs from a multitrack recorder, processing as required and combining all elements to create a stereo 'master'.

MONITOR LOUDSPEAKER
Any high quality loudspeaker which is used to check the quality or status of the signal.

MTC (MIDI Time Code)
An interpretation of SMPTE allowing the time code to come in as part of the MIDI data stream.

MULTICORE
A cable with multiple cores allowing signals to be carried independently but within the same physical outer casing.

MUTE GROUPS
A method of combining the on/off status of a selection of channels under a single control button.

NEARFIELD MONITOR
A high quality, compact loudspeaker designed for use at a distance of three to four feet from the operator. Their use ensures that detrimental room effects are minimised.

NORMALISE
A socket is said to be normalised when it is wired in such a way that the original signal path is maintained unless a plug is inserted into the socket. The most common examples of normalised connectors are the INSERT POINTS found on mixing consoles.

OSCILLATOR
A tone generator for test and line-up purposes.

OVERDUB
To add another part to a multitrack recording or replace one of the existing parts.

OVERLOAD
To exceed the operating capacity of an electronic or electrical circuit.

PAN (POT)
Abbreviation of 'panorama': controls levels sent to left and right outputs. Allows positioning of signals within the stereo sound stage.

PARAMETRIC EQUALISER
A graphic equaliser in which the cut/boost, frequency and bandwidth are all adjustable.

PASSIVE
A circuit or component which does not amplify the signal or is not powered.

PATCH BAY
A system of panel mounted connectors used to bring inputs and outputs to a central point from where they can be routed using plug-in patch cords.

PATCH CORD
Short cable used with patch bays.

PEAKING
A signal of the maximum displacement from its mean (average) position.

PHANTOM POWER
The +48v DC voltage applied equally to the two signal pins of a balanced mic input to provide powering for condenser microphones.

PHASE
Phase is the fraction of the whole period that has elapsed, measured from a fixed datum. A term used to describe the relationship of two audio signals: in-phase signals reinforce each other, out-of-phase signals result in cancellation.

PHONO PLUG
A hi-fi connector developed by RCA and used extensively on semi-pro

recording equipment.

POLARITY
The orientation of the positive and negative poles of an audio connection. Normally, connections are made positive to positive, negative to negative and this would ensure correct polarity. If this is reversed the result will be out-of-phase signals (see PHASE above).

POP SHIELD
A device used in the studio, consisting of a thin mesh placed between the microphone and vocalist in order to reduce the 'explosive' effects of 'P' and 'T' sound

POST-FADE
The point in the signal path after the channel or master fader and therefore affected by fader position.

PRE-FADE LISTEN (PFL)
A function that allows the operator to monitor the pre-fade signal in a channel before it reaches the main mix.

PRE-FADE
The point in the signal path before the monitor or master position and therefore unaffected by the fader setting.

PROCESSOR
A device which affects the whole of the signal passing through it, e.g. gate, compressor or equaliser.

Q (Bandwidth)
A measure of the sharpness of a bandpass filter. The higher the value of Q, the narrower the band of frequencies that passes through the filter.

RESISTANCE
Opposition to the flow of electrical current.

REVERB
Acoustic ambience created by multiple reflections in a confined space. A diffuse, continuously smooth decay of sound.

RINGING OUT
The process of finding the problem frequencies in a room by steadily increasing the gain of the system until feedback occurs. A GRAPHIC EQUALISER is then used to reduce the offending frequencies.

ROLL-OFF
A fall in gain at the extremes of the frequency response. The rate at which a filter attenuates a signal once it has passed the filter cut-off point.

SEQUENCER
Computer-based system for the recording, editing and replay of MIDI music compositions.

SHELVING
An equaliser response affecting all frequencies above or below the break frequency i.e. a high-pass or low-pass derived response.

SHORT CIRCUIT
The situation where two electrical conductors touch.

SIBILANCE
n. sounding with a hiss. When certain phonics are exaggerated, ie: s, sh.

SIGNAL
Electrical representation of input such as sound.

SIGNAL CHAIN
The route taken by a signal from the input to a system through to its output.

SIGNAL-TO-NOISE RATIO
An expression of the difference in level between the audio signal and the background noise of the device or system. Normally expressed in decibels.

SMPTE (Society of Motion Picture and Television Engineers)
Time code developed for the film industry but now extensively used in music and recording. SMPTE is a real-time code and is related to hours, minutes, seconds and film or video frames rather than to musical tempo.

SOLO-IN-PLACE
A function that allows the operator to listen to a selected channel on it's own but complete with all relevant effects, by automatically muting all other inputs.

SOUND REINFORCEMENT
The process of amplifying or reinforcing on-stage sound (whether from already-amplified or acoustic instruments/voices) without overpowering the original sound. Suitable for smaller venues and often used solely to raise the level of the vocals above the back line and drums.

SPIRIT
The name found on some of the best-value professional audio equipment around.

SPL (Sound Pressure Level)
Intensity of sound measured in decibels.

STEREO
Two channel system feeding left and right speakers to create the illusion of a continuous sound field. Stereo: from the Greek word for 'solid'.

STEREO RETURN
An input designed to receive any stereo line level source such as the output of effects or other external processing devices.

STRIPE
To record time code onto one track of a multitrack tape machine.

SWEEP EQ
An equaliser section (e.g. Midband EQ) which boosts or cuts a variable rather than fixed frequency.

TALKBACK
A system allowing the operator to speak to the artistes or to tape via the auxiliary or group outputs.

TAPE RETURN
A line level input provided specifically to receive the playback output of a tape machine.

TRANSIENT
An instantaneous rise in the signal level e.g. a cymbal crash or similar.

TRIM CONTROL A variable control which gives adjustment of signal level over a limited

A Typical Block Diagram (Folio SX shown)