APPENDIX B: GLOSSARY

This Glossary contains brief definitions of many of the audio and electronic terms used in discussions of sound mixing and recording. Many of the terms have other meanings or nuances or very rigorous technical definitions which we have sidestepped here because we figure you already have a lot on your mind. If you'd like to get more information, you can call Mix Bookshelf at 1-800-233-9604. We recommend the following titles: *The Audio Dictionary,* by Glenn White; *Tech Terms,* by Peterson & Oppenheimer; and *Handbook for Sound Engineers,* by Glen Ballou.

AFL

An acronym for after fade listen, which is another way of saying post-fader solo function. AFL is one of two popular solo modes used in Mackie mixers, and in the SR24•4 AFL is enabled by depressing the SOLO MODE switch to the IN PLACE AFL position. AFL is usually a stereo monitoring mode (vs. mono PFL).

assign

In sound mixers, assign means to switch or route a signal to a particular signal path or combination of signal paths.

attenuate

To reduce or cut down.

aux

See next entry.

auxiliary

In sound mixers, supplemental equipment or features which provide additional capabilities to the basic system. Examples of auxiliary equipment include specialized equalizers, compressors, limiters, gates and reverberation and delay devices. Most mixers have aux send buses and aux return inputs to accommodate auxiliary equipment.

balanced

In a classic balanced audio circuit, the two legs of the circuit (+ and –) are isolated from the circuit ground by exactly the same impedance. Additionally, each leg may carry the signal at exactly the same level but with opposite polarity, with respect to ground. In some balanced circuits only one leg actually carries the signal but both legs exhibit the same impedance characteristics with respect to ground. Balanced input circuits can offer excellent rejection of common-mode noise induced into the line and also make proper (no ground loops) system grounding easier. Usually terminated with 1/4" TRS or XLR connectors.

bandwidth

The band of frequencies that pass through a device with a loss of less than 3dB, expressed in Hertz or in musical octaves. Also see Q.

bus

An electrical connection common to three or more circuits. In mixer design, a bus usually carries signals from a number of inputs to a mixing amplifier, just like a city bus carries people from a number of neighborhoods to their jobs.

Cannon

A manufacturer of electrical connectors who first popularized the three-pin connector now used universally for balanced microphone connections. In sound work, a Cannon connector is taken to mean a Cannon XLR-3 mic connector or any compatible connector.

cardioid

Means heart-shaped. In sound work, cardioid refers to the shape of the sensitivity pattern of some directional microphones.

channel

A functional path in an audio circuit: an input channel, an output channel, a recording channel, the left channel and so on.

channel strip

The physical representation of an audio channel on the front panel of a mixer; usually a long, vertical strip of controls.

chorusing

An effect available in some digital delay effects units and reverbs. Chorusing involves a number of moving delays and pitch shifting, usually panned across a stereo field. Depending on how used, it can be lovely or grotesque.

clipping

Is a cause of severe audio distortion which is the result of excessive gain requiring the peaks of the audio signal to rise above the capabilities of the amplifier circuit. Seen on an oscilloscope, the audio peaks appear clipped off. To avoid distortion, reduce the system gain in or before the gain stage in which the clipping occurs. See also headroom.

condenser

Is another term for the electronic component generally known as a capacitor. In audio,

condenser usually refers to a design of microphone which uses a capacitor as the sound pickup element. Condenser microphones require electrical power to run internal amplifiers and maintain an electrical charge on the capacitor. Thy are typically powered by internal batteries or "phantom power" supplied by an external source, such as a mixing console.

console

A term for a sound mixer, usually a large desk-like mixer.

cueing

In broadcast, stage and post-production work, to "cue up" a sound source (a record, a sound effect on a CD, a song on a tape) means to get it ready for playback by making sure you are in the right position on the "cue," making sure the level and EQ are all set properly. This requires a special monitoring circuit which only the mixing engineer hears and does not go out on the air or to the main mixing buses. This "cueing" circuit is the same as pre-fader (PFL) solo on a Mackie mixer, and often the terms are interchangeable.

dB

See decibel

dBm

A unit of measurement of audio signal level in an electrical circuit, expressed in decibels referenced to 1 milliwatt. The "m" in dBm stands for "milliwatt." In a circuit with an impedance of 600 ohms, this reference (0dBm) corresponds to a signal voltage of 0.775 VRMS (because 0.775 V across 600 ohms equals 1mw).

dBu

A unit of measurement of audio signal level in an electrical circuit, expressed in decibels referenced to 0.775 VRMS into any impedance. Commonly used to describe signal levels within a modern audio system.

dBv

A unit of measurement equal to the dBu but no longer in use. It was too easy to confuse a dBv with a dBV, to which it is not equivalent.

dBV

A unit of measurement of audio signal level in an electrical circuit, expressed in decibels referenced to 1 VRMS across any impedance. Commonly used to describe signal levels in consumer equipment. To convert dBV to dBu, add 2.2dB.

decibel (dB)

The dB is a ratio of quantities measured in similar terms using a logarithmic scale. Many audio system parameters measure over such a large range of values that the dB is used to simplify the numbers. A ratio of 1000V:1V=60dB. When one of the terms in the ratio is an agreed upon standard value such as 0.775V, 1V or 1mw, the ratio becomes an absolute value, i.e., +4dBu, –10dBV or 0dBm.

delay

In sound work, delay usually refers to an electronic circuit or effects unit whose purpose it is to delay the audio signal for some short period of time. Delay can refer to one short repeat, a series of repeats or the complex interactions of delay used in chorusing or reverb. When delayed signals are mixed back with the original sound, a great number of audio effects can be generated, including phasing and flanging, doubling, Haas-effect positioning, slap or slapback, echo, regenerative echo, chorusing and hall-like reverberation. Signal time delay is central to many audio effects units.

detent

A point of extra physical resistance (a click-stop) in the travel of a knob or slide control, used in Mackie mixers to indicate unity gain.

dipping

Is the opposite of peaking, of course. A dip is an EQ curve which looks like a valley, or a dip. Dipping with an equalizer reduces a band of frequencies. (See guacamole.)

doubling

A delay effect, where the original signal is mixed with a medium (20 to 50 msec) delay. When used carefully, this effect can simulate double-tracking (recording a voice or instrument twice).

dry

Usually means without reverberation, or without some other applied effect like delay or chorusing. Dry is not wet, i.e. totally unaffected.

dynamic

In sound work, dynamic refers to class of microphones which generate electrical signals by the movement of a coil in a magnetic field. Dynamic microphones are rugged, relatively inexpensive, are capable of very good performance and do not require external powering.

dynamic range

The range between the maximum and minimum sound levels that a sound system can handle. It is usually expressed in decibels as the difference between the level at peak clipping and the level of the noise floor.

echo

Echo is the reflection of sound from a surface such as a wall or a floor. Reverberation and echo are terms which can be used interchangeably, but in audio parlance a distinction is usually made: echo is considered to be a distinct, recognizable repetition (or series of repetitions) of a word, note, phrase or sound, whereas reverberation is a diffuse, continuously smooth decay of sound. Echo and reverberation can be added in sound mixing by sending the original sound to an electronic (or electronic/acoustic) system which mimics natural echoes, and then some. The added echo is returned to the blend through additional mixer inputs. Highly echoic rooms are called live; rooms with very little echo are called dead. A sound source without added echo is dry; one with reverb or echo added is wet.

effects devices

External signal processors used to add reverb, delay, spatial or psychoacoustic effects to an audio signal. An effects processor may be used as an insert processor on a particular input or subgroup, or it may be used via the aux send/return system. See also echo, reverb.

EQ

See equalization

EQ curve

A graph of the response of an equalizer, with frequency on the x (horizontal) axis and amplitude (level) on the y (vertical) axis. Equalizer types and effects are often named after the shape of the graphed response curve, such as peak, dip, shelf, notch, knee and so on.

equalization

Equalization (EQ) refers to purposefully changing the frequency response of a circuit, sometimes to correct for previous unequal response (hence the term, equalization), and more often to add or subtract level at certain frequencies for sound enhancement, to remove extraneous sounds, or to create completely new and different sounds.

Bass and treble controls on your stereo are EQ; so are the units called parametrics and graphics and notch filters.

[A lot of] how we refer to equalization has to do with what a graph of the frequency response would look like. A flat response (no EQ) is a straight line; a peak looks like a hill, a dip is a valley, a notch is a really skinny valley, and a shelf looks like a plateau (or a shelf). The slope is the grade of the hill on the graph.

Graphic equalizers have enough frequency slider controls to form a graph of the EQ right on the front panel. Parametric EQs let you vary several EQ parameters at once. And a filter is simply a form of equalizer which allows certain frequencies through unmolested and other frequencies reduced or not at all.

Aside from the volume control, EQs are probably the second most powerful controls on any mixer (no, the power switch doesn't count!).

fader

Another name for an audio level control. Today, the term refers to a straight-line slide fader rather than a rotary control.

family of curves

A composite graph, showing on one chart several examples of possible EQ curves for a given equalizer or equalizer section.

filter

A simple equalizer designed to remove certain ranges of frequencies. A low cut filter (also called a high pass filter) reduces or eliminates frequencies below its cutoff frequency. There are also high cut (low pass) filters, bandpass filters, which cut both high and low frequencies but leave a band of frequencies in the middle untouched, and notch filters, which remove a narrow band but leave the high and low frequencies alone.

flanging

A term for phasing. Before digital delay effects units, phasing could be accomplished by playing two tape machines in synchronization, then delaying one slightly by rubbing a finger on the reel flange. Get it?

FOH

An acronym for Front Of House. See house and main house speakers.

frequency

Frequency is the number of times an event repeats itself in a given period. Sound waves and the electrical signals which represent sound waves in an audio circuit have repetitive patterns which range from a frequency of about 20 repetitions per second to about 20,000 repetitions per second. Sound is the vibration or combination of vibrations in this range of 20 to 20,000 repetitions per second which gives us the sensation of pitch, harmonics, tone and overtones. Frequency is measured in units called Hertz (Hz). One Hertz is one repetition or cycle per second.

fully balanced

See balanced.

gain

Gain is the measure of how much a circuit amplifies a signal. Gain may be stated as a ratio of input to output values, such as a voltage gain of 4, or a power gain of 1.5, or it can be expressed in decibels, as a line amplifier with a gain of 10dB.

gain stage

An amplification point in a signal path, either within a system or a single device. Overall system gain is distributed between the various gain stages.

graphic EQ

A graphic equalizer uses slide pots for its boost/cut controls, with its frequencies evenly spaced through the audio spectrum. In a perfect world, a line drawn through the centers of the control shafts would form a graph of the frequency response curve. Get it? Or, the positions of the side dots give a graphic representation of boost or cut levels across the frequency spectrum.

ground

Ground is also called earth. Ground is defined as the point of zero voltage in a circuit or system, the point from which all other voltages are measured. In electrical systems, ground connections are used for safety purposes, to keep equipment chassis and controls at zero voltage and to provide a safe path for errant currents. This is called a safety ground.

In computer and audio equipment, tiny currents and voltages can cause noise in the circuits and hamper operation. In addition to providing safety, ground provisions in these situations serve to minimize the pickup, detection and distribution of these tiny noise signals. This type of ground is often called technical ground.

Maintaining a good safety ground is always essential to prevent electrical shock. Follow manufacturer's suggestions and good electrical practices to ensure a safely grounded system. Never remove or disable the grounding pin on the power cord.

Quality audio equipment is designed to maintain a good technical ground and also operate safely with a good safety ground. If you have noise in your system due to technical grounding problems, check you manual for wiring tips or call technical support. *Never disable the safety ground to reduce noise problems.*

ground loop

A ground loop occurs when the technical ground within an audio system is connected to the safety ground at more than one place. Two or more connections will allow tiny currents to flow in the loops created, possibly inducing noise (hum) into the audio system. If you have noise in your system due to ground loops, check your manual for wiring tips or call technical support. *Never disable the safety ground to reduce noise problems.*

Haas effect

A psychoacoustic effect in which the time of arrival of a sound to the left and right ears affects our perception of direction. If a signal is presented to both ears at the same time at the same volume, it appears to be directly in front of us. But if the signal to one ear, still at the same volume, is delayed slightly (0 to 5 msec), the sound appears to be coming from the earlier (non-delayed) side.

headroom

The difference between nominal operating level and peak clipping in an audio system. For example, a mixer operating with a nominal line level of +4dBu and a maximum output level of +22dBu has 18dB of headroom. Plenty of room for surprise peaks.

Hertz

The unit of measure for frequency of oscillation, equal to 1 cycle per second. Abbreviated Hz. KHz is pronounced "kay-Hertz" and is an abbreviation for kilohertz, or 1000 Hertz.

house

In SR parlance, "house" refers to the systems (and even persons) responsible for the primary sound reinforcement in a given hall, building, arena or "house." Hence we have the house mixer or house engineer, the house mix, the house mix amps, the main house speakers and so on.

Hz

See Hertz.

impedance

The A.C. resistance/capacitance/inductance in an electrical circuit, measured in ohms. In audio circuits (and other AC circuits) the impedance in ohms can often be much different from the circuit resistance as measured by a DC ohmmeter.

Maintaining proper circuit impedance relationships is important to avoid distortion and minimize added noise. Mackie input and output impedances are set to work well with the vast majority of audio equipment available.

impedance balanced

An audio circuit technique used to gain much of the advantage of a fully balanced

output circuit without the use (and expense) of additional amplifiers or transformers. See also balanced.

input module

A holdover from the days when the only way that real consoles were built was in modular fashion, one channel per module. See channel strip.

knee

A knee is a sharp bend in an EQ response curve not unlike the sharp bend in your leg. Also used in describing dynamics processors.

level

Another word for signal voltage, power, strength or volume. Audio signals are sometimes classified according to their level. Commonly used levels are: microphone level (–40dBu or lower), instrument level (–20 to –10dBu), and line level (–10 to +30dBu).

line level

A signal whose level falls between –10dBu and +30dBu.

main house speakers

The main loudspeakers for an SR system. These are usually the largest and loudest loudspeakers, and are usually positioned so that their sound seems to come from the area of the main stage.

mains

See main house speakers.

master

A control affecting the final output of a mixer. A mixer may have several master controls, which may be slide faders or rotary controls.

mic amp

See mic preamp.

mic level

The typical level of a signal from a microphone. A mic level signal (usually but not always coming from a microphone) is generally below –30dBu. With a very quiet source (a pin dropping?) the signal can be –70dBu or lower. It is also possible for some microphones to deliver more signal than this; in which case it may be referred to as a "hot" mic level. Alternately, you can just say, "Boy, is that loud!"

mic pre

See mic preamp.

mic preamp

Short for microphone preamplifier. An amplifier which functions to bring the very low signal level of a microphone (approximately –50dBu) up to line level (approximately 0dBu). Mic preamps often have their own volume control, called a trim control, to properly set the gain for a particular source. Setting the mic preamp gain correctly with the trim control is an essential step in establishing good noise and headroom for your mix.

mixer

An electronic device used to combine various audio signals together into a common output. Different from a blender, which combines various fruits together into a common libation.

monaural

Literally, pertaining to or having the use of only one ear. In sound work, a monaural has to do with a signal which, for purposes of communicating audio information, has been confined to a single channel. One microphone is a mono pickup; many microphones mixed to one channel is a mono mix; a mono signal played through two speakers is still mono, since it only carries one channel of information. Several monaural sources, however, can be panned into a stereo (or at least two-channel, if you are going to be picky) mix. Monaural SR is common for environments where stereo SR would provide an uneven reproduction to the listener.

monitor

In sound reinforcement, monitor speakers (or monitor headphones or in-the-ear monitors) are those speakers used by the performers to hear themselves. Monitor speakers are also called foldback speakers. In recording, the monitor speakers are those used by the production staff to listen to the recording as it progresses. In zoology, the monitor lizard is the lizard which observes the production staff as the recording progresses. Keep the lizard out of the mixer.

mono

Short for monaural.

mult

Probably short for multiple. In audio work, a mult is a parallel connection in a patch bay or made with patch cords to feed an output to more than one input. A "Y" cable is a type of mult connection. Also a verb, as in "Why did you mult the flanger into every input in the board?"

noise

Whatever you don't want to hear. Could be hum, buzz or hiss; could be crosstalk or digital hash or your neighbor's stereo; could be white noise or pink noise or brown noise.

noise floor

The residual level of noise in any system. In a well designed mixer, the noise floor will be a quiet hiss which is the thermal noise gener-

ated by bouncing electrons in the transistor junctions. The lower the noise floor and the higher the headroom, the more usable dynamic range a system has.

pan, pan pot

Short for panoramic potentiometer. A pan pot is used to position (or even move back and forth) a monaural sound source in a stereo mixing field by adjusting the source's volume between the left and right channels. Our brains sense stereo position by hearing this difference in loudness when the sound strikes each ear, and also take into account time delay, spectrum, ambient reverberation and other cues.

parametric EQ

A "fully" parametric EQ is an extremely powerful equalizer which allows smooth, continuous control of each of the three primary EQ parameters (frequency, gain, and bandwidth) in each section independently. "Semi" parametric EQs allow control of fewer parameters, usually frequency and gain, i.e., they have a fixed bandwidth, but variable center frequency and gain.

peaking

Is the opposite of dipping, of course. A peak is an EQ curve which looks like a hill, or a peak. Peaking with an equalizer amplifies a band of frequencies.

PFL

An acronym for Pre Fade Listen, or PRE FADER on the SR24•4. Broadcasters would call it cueing. Sound folks call it being able to solo a channel with the fader down.

phantom power

A system of providing electrical power for condenser microphones (and some electronic pickup devices) from the sound mixer. The system is called phantom because the power is carried on standard microphone audio wiring in a way which is "invisible" to ordinary dynamic microphones. Mackie mixers use standard +48 volt DC power, switchable on or off. Most quality condenser microphones are designed to use +48 VDC phantom power. Check with the manufacturer's recommendations.

Generally, phantom power is safe to use with non-condenser microphones as well, especially dynamic microphones. *However, unbalanced microphones and equipment, some electronic equipment (such as some wireless microphone receivers) and some ribbon microphones can short out the phantom power and can be severely damaged. Check the manufacturer's recommendations and be careful!*

phasing

A delay effect, where the original signal is mixed with a short (0 to 10 msec) delay. The time of the delay is slowly varied, and the combination of the two signals results in a dramatic moving comb-filter effect. Phasing is sometimes imitated by sweeping a comb-filter EQ across a signal. A comb filter can be found in your back pocket.

phone jack

Ever see those old telephone switchboards with hundreds of jacks and patch cords and plugs? Those are phone jacks and plugs, now used widely with musical instruments and in audio equipment. A phone jack is the female connector, and we use them in 1/4" two-conductor (TS) and three-conductor (TRS) versions.

phone plug

The male counterpart to the phone jack, right above.

phono jack

See RCA phono jack.

phono plug

See RCA phono plug.

post-fader

A term used to describe an aux send (usually) that is connected so that it is affected by the setting of the associated channel fader. Sends connected this way are typically (but not always) used for effects. See pre-fader.

pot, potentiometer

In electronics, a variable resistor, which varies the potential, or voltage. In audio, any rotary or slide control.

pre-fader

A term used to describe an aux send (usually) that is connected so that it is not affected by the setting of the associated channel fader. Sends connected this way are typically (but not always) used for monitors (foldback). See post-fader.

proximity effect

The property of many directional microphones to accentuate their bass response when the source-to-mic distance is small, typically three inches or less. Singers generally like this effect, even more than singing in the shower.

Q

Q is a way of stating the bandwidth of a filter or equalizer section. An EQ with a Q of .75 is broad and smooth, while a Q of 10 gives a narrow, pointed response curve. To calculate the value of Q, you must know the center frequency of the EQ section and the frequencies at which the upper and lower skirts fall 3dB below the level of the center frequency. Q equals the center frequency divided by the difference between the upper and lower –3dB frequencies. A peaking EQ centered at 10kHz whose –3dB points are 7.5kHz and 12.5kHz has a Q of 2.

RCA phono jack—or RCA jack or phono jack

An RCA phono jack is an inexpensive connector (female) introduced by RCA and originally used to connect phonographs to radio receivers and phono preamplifiers. The phono jack was (and still is) widely used on consumer stereo equipment and video equipment but was quietly fading into obscurity in the professional and semi-professional sound world. Then phono jacks began cropping up in early project-studio multitrack recorders, which (unfortunately) gave them a new lease on life; and since so many stereo recorders are fitted with them we decided we'd have to put a couple on the SR24•4 for your convenience. But make no mistake: the only thing that the phono jack (or plug) has going for it is low cost.

RCA phono plug

The male counterpart to an RCA phono jack. See above.

regeneration

Also called recirculation. A delay effect created by feeding the output of a delay back into itself to cause a delay of the delay of the delay. You can do it right on the front panel of many effects units, or you can route the delay return back into itself on your mixer. Can be a great deal of fun at parties.

return

A return is a mixer line input dedicated to the task of returning processed or added sound from reverb, echo and other effects devices. Depending on the internal routing of your mixer and your own inclination, you could use returns as additional line inputs, or you could route your reverb outputs to ordinary line inputs rather than the returns.

reverberation

Reverberation (or reverb) is the sound remaining in a room after the source of sound is stopped. It's what you hear in a large tiled room immediately after you've clapped your hands. Reverberation and echo are terms which can be used interchangeably, but in audio parlance a distinction is usually made: reverberation is considered to be a diffuse, continuously smooth decay of sound, whereas echo is a distinct, recognizable repetition of a word, note, phrase or sound. Reverberation and echo can be added in sound mixing by sending the original sound to an electronic (or electronic/acoustic) system which mimics natural reverberation, or worse. The added reverb is returned to the blend through additional mixer inputs. Highly reverberant rooms are called live; rooms with very little reverberation are called dead. A sound source without added reverb is dry; one with reverb or echo added is wet.

RMS

An acronym for *root mean square*, a conventional way to measure AC voltage and audio signal voltage. Most AC voltmeters are calibrated to read RMS volts. Other conventions include *average* volts, *peak* volts and *peak-to-peak* volts.

send

A term used to describe a secondary mix and output of the input signals, typically used for foldback monitors, headphone monitors or for effects devices. Mackie mixers call it an Aux Send.

shelving

A term used to describe the shape of an equalizer's frequency response. A shelving equalizer's response begins to rise (or fall) at some frequency, and continues to fall (or rise) until it reaches the shelf frequency, at which point the response curve flattens out and remains so to the limits of audibility. If you were to graph the response, it would look like a shelf. Or more like a shelf than a hiking boot. The EQ controls on your stereo are usually shelving equalizers. See also peaking and dipping.

slap, slapback

A single-delay echo without any repeats. Also see echo.

solo

Italian for alone. In audio mixers, a solo circuit allows the engineer to listen to individual channels, buses or other circuits singly, or in combination with other soloed signals. In Mackie mixers, activating a solo function never interferes with or interrupts any of the main or

auxiliary mixing circuits (even in Italy).

SR

SR is an acronym for Sound Reinforcement, which refers to a system of amplifying acoustic and electronic sounds from a performance or speech so that a large audience can hear clearly. Or, in popular music, so that a large audience can be excited, stunned or even partially deafened by the tremendous amplification. Means essentially the same thing as PA (Public Address).

stereo

Believe it or not, stereo comes from a Greek word which means solid. We use stereo or stereophony to describe the illusion of a continuous, spacious soundfield which is seemingly spread around the listener by two or more related audio signals. In practice, stereo often is taken to simply mean two channel.

sweep EQ

A sweep EQ is an equalizer which allows you to "sweep" or continuously vary the frequency of one or more sections. The midrange EQs in the SR24•4 channels 1–20 are sweep EQs (channels 1–28 on the SR24•4).

symmetrically balanced

See balanced.

tinnitus

The ringing in the ears that is produced with prolonged exposure to high volumes. A sound in the ears, as buzzing, ringing, or whistling, caused by volume knob abuse!

trim

In audio mixers, the gain adjustment for the first amplification stage of the mixer. The trim control helps the mixer cope with the widely varying range of input signals that come from real-world sources. It is important to set the trim control correctly; its setting determines the overall noise performance in that channel of the mixer. See mic preamp.

TRS

An acronym for Tip-Ring-Sleeve, a scheme for connecting three conductors through a single plug or jack. 1/4" phone plugs and jacks and 1/8" mini phone plugs and jacks are commonly wired TRS. Since the plug or jack can carry two signals with a common ground, TRS connectors are often referred to as stereo or balanced plugs or jacks. Another common TRS application is for insert jacks, used for inserting an external processor into the signal path. In Mackie mixers the tip is send, ring is return, and sleeve is ground.

TS

An acronym for Tip-Sleeve, a scheme for connecting two conductors through a single plug or jack. 1/4" phone plugs and jacks and 1/8" mini phone plugs and jacks are commonly wired TS. Sometimes called mono or unbalanced plugs or jacks. A 1/4" TS phone plug or jack is also called a standard phone plug or jack.

unbalanced

An electrical circuit in which the two legs of the circuit are not balanced in respect to ground. Usually, one leg will be held at ground potential. Unbalanced circuit connections require only two conductors (signal "hot" and ground). Unbalanced audio circuitry is less expensive to build but under certain circumstances is more susceptible to noise pickup.

unity gain

Unity gain describes a circuit or system which has its voltage gain adjusted to be one, or unity. A signal will leave a unity gain circuit at the same level at which it entered. In Mackie mixers, unity gain is achieved by setting all variable controls to the marked "U" setting. Mackie mixers are optimized for best headroom and noise figures at unity gain.

VLZ

An acronym for very low impedance. One of the most important reasons why inherent noise levels on the 24•4 are so miniscule. Thermal noise is something that's created by all circuitry and usually transistors and resistors are the worst culprits. The basic rule with thermal noise is: the higher the impedance, the more the noise. Mackie's design reduces thermal noise by making internal impedances as low as possible in as many places as possible within the console. VLZ is achieved by scaling down resistor values by a factor of three or four – resulting in a corresponding reduction in thermal noise. This is especially true for the console's mixing buses.

volume

Electrical or sound level in an audio system. Perhaps the only thing that some bands have too much of.

VRMS

See RMS.

wet

Wet means with added reverberation or other effect like echo, delay or chorusing.

XLR connector

See Cannon.