

Sound Terms

A

acoustical phase: The time relationship between two or more sound waves at a given point in their cycles.

acoustics: The science that deals with the behavior of sound and sound control. The properties of a room that affect quality of sound.

active combining network (ACN): An amplifier at which the outputs of two or more signal paths are mixed together before being routed to their destination.

ADAT: One of two formats used in modular digital multitrack tape recorders. It uses SVHS videocassette tape. ADAT stands for Alesis Digital Audio Tape recorder. See also digital tape recording system.

additive ambience: When the ambience of each track becomes cumulative in mixing a multitrack recording.

adhesion: One layer of audiotape sticking to another.

ADR: See automated dialogue replacement.

ADSR : See sound envelope.

AES/EBU interface: Internationally accepted professional digital audio interface transmitted via a balanced line connection using XLR connectors, specified jointly by the Audio Engineering Society and the European Broadcast Union. See also SPDIF.

ambience : Sounds such as reverberation, noise, and atmosphere that form a background to the main sound. Also called room tone and presence, and atmos in Great Britain.

amplifier: A device that increases the amplitude of an electric signal.

amplitude: The magnitude of a sound wave or electrical signal, measured in decibels.

amplitude processor: A signal processor that affects a signal's loudness.

analog recording: A method of recording in which the waveform of the recorded signal resembles the waveform of the original signal.

anechoic chamber : room that prevents all reflected sound through the dissipation or the absorption of sound waves.

assemble editing: Dubbing segments from one tape or tapes to another tape in sequential order.

atmos :Short for atmosphere, the British term for ambience. See ambience.

attack: (1) The way a sound beginsóthat is, by plucking, bowing, striking, blowing, and so on. (2) The first part of the sound envelope.

attack time :The length of time it takes a limiter or compressor to respond to the input signal.

audio leading video: When the sound of the incoming scene starts before the corresponding picture appears. See also videoleadingaudio.

automated dialogue replacement (ADR): A technique used to rerecord dialogue in synchronization with picture in postproduction. The picture is automatically replayed in short "loops" again and again so that the performers can synchronize their lip movements with the lip movements in the picture and then record the dialogue. Also known as automatic dialog recording and looping See also dialogue recording studio.

azimuth: Alignment of the record and playback heads so that their centerlines are parallel to each other and at right angles to the direction of the tape motion passing across the heads.

B

backtiming: Method of subtracting the time of a program segment from the total time of a program so that the segment and the program end simultaneously.

balanced line: A pair of ungrounded conductors whose voltages are opposite in polarity but equal in magnitude.

bandpass filter: A filter that attenuates above and below a selected bandwidth, allowing the frequencies between to pass.

bandwidth curve: The curve shaped by the number of frequencies in a bandwidth and their relative increase or decrease in level. A bandwidth of 100 to 150 Hz with 125 Hz boosted 15 dB forms a sharp, narrow bandwidth

curve; a bandwidth of 100 to 6,400 Hz with a 15dB boost at 1,200 Hz forms a more sloping, wider bandwidth curve.

bandwidth: The difference between the upper and lower frequency limits of

an audio component. The upper and lower frequency limits of AM radio are 535 and 1,605 kHz; therefore, the bandwidth of AM radio is 1,070 kHz.

bass: The low range of the audible frequency spectrum; usually from 20 to 320 Hz.

bass rolloff : Attenuating bass frequencies. The control for example, on a microphone used to roll off bass frequencies.

bass tipup: See proximity effect.

bias: The inaudible DC or AC signal added to an audio signal to overcome nonlinearities of amplification or of the medium. In magnetic tape recording, ultrasonic AC bias is used to linearize the tape medium, which would otherwise be highly distorted.

bias current :An extremely high frequency AC current, far beyond audibility, added during a tape recording to linearize the magnetic information.

bidirectional microphone: A microphone that picks up sound to its front and back and has minimal pickup at its sides.

binaural hearing :Hearing with two ears attached to and separated by the head.

binaural microphone head :Two omnidirectional capacitor microphones set into the ear cavities of an artificial head, complete with pinnae. This arrangement preserves binaural localization cues during recording and reproduces sound as humans hear it, three dimensionally. Also called artificial head or dummy head stereo.

blast filter: See pop filter.

blocking: Plotting performer, camera, and microphone placements and movements in a production. board Audio mixing console.

boundary microphone: A microphone whose capsule is mounted flush with or close to, but a precise distance from, a reflective surface so that there is no phase cancellation of reflected sound at audible frequencies.

bulk eraser :A demagnetizer used to erase an entire roll of magnetic tape without removing it from its reel. Also known as a degausser.

bus :A mixing network that combines the outputs of other channels.

C

calibration: Adjusting equipment components—for example, a console and a tape recorder—according to a standard so that their measurements are similar. See also electronic alignment.

camcorder: A handheld video camera with a built-in or dockable videotape recorder.

capacitor microphone : A microphone that transduces acoustic energy into electric energy electrostatically.

capstan: The shaft that rotates against the tape, pulling it across the heads at a constant speed.

cardioid microphone : A unidirectional microphone with a heart-shaped pickup pattern.

CDR: See recordable compact disc.

CDrewritable (CDRW): A CD format that, as with tape, can be recorded on, erased, and used again for another recording.

CDRW : See CDrewritable.

center frequency: In peak/dip equalizing, the frequency at which maximum boost or attenuation occurs.

chorus effect: Recirculating the doubling effect to make one sound source sound like several. See also doubling.

cinching: Slippage between the tape layers due to loose packing. Also known as windowing.

clap slate: A slate used in synchronizing sound and picture during filming and editing. The slate carries information such as scene and take number, production title, location of shot—e.g., indoors or outdoors—and time code. A pair of hinged boards on top of the slate—called clapsticks—clap together, producing the sound that is used to synchronize picture and sound.

clipping: Audible distortion that occurs when a signal's level exceeds the limits of a particular device or circuit.

close miking: Placing a microphone close to a sound source to pick up mostly direct sound and reduce ambience and leakage. See also distant

miking.

coercivity: The magnetic force field necessary to reduce a tape from saturation to full erasure. This value is expressed in oersteds.

coincident miking: Employing two matched microphones, usually unidirectional, crossed one above the other on a vertical axis with their diaphragms. See also XY miking.

combfilter effect; The effect produced when a signal is timedelayed and added to itself, reinforcing some frequencies and canceling others, giving sound an unnatural, hollow coloration.

commentative sound: Descriptive sound that makes a comment or interpretation. See also descriptive sound and narrative sound.

compander: A contraction of the words compressor and expander that refers to the devices that compress an input signal and expand an output signal to reduce noise. Also known as a noise reducer.

complementary equalization :Equalizing sounds that share similar frequency ranges so that they complement, rather than interfere with, one another.

compression: (1) Reducing a signal's output level in relation to its input level to reduce dynamic range. (2) The drawing together of vibrating molecules, thus producing a highpressure area. See also rarefaction.

compression ratio: The ratio of input and output signals in a compressor.

compression threshold: The level at which a compressor acts on an input signal and the compression ratio takes effect.

compressor: A signal processor with an output level that decreases as its input level increases.

condenser microphone: See capacitor microphone.

console: An electronic device that amplifies, processes, and combines input signals and routes them to broadcast or recording.

constructive interference: When sound waves are partially out of phase and partially additive, increasing amplitude where compression and rarefaction occur at the same time.

contact microphone: A microphone that attaches to a sound source and transduces the vibrations that pass through it. Also called acoustic

pickup mic.

contextual sound: Sound that emanates from and duplicates a sound source as it is. See also diegetic sound.

contrapuntal narration: Juxtaposes narration and action to make a statement not carried by either element alone.

coverage angle: The offaxis angle or point at which loudspeaker level is down 6 dB compared with the onaxis output level.

cps: See hertz.

crossfade: Fading in one sound source as another sound source fades out. At some point the sounds cross at an equal level of loudness.

crossover frequency: The frequency at which the high frequencies are routed to the tweeter(s) and the low frequencies are routed to the woofer(s).

crossover network: An electronic device that divides the audio spectrum into individual frequency ranges (low, high, and/or mid) before sending them to specialized loudspeakers such as the woofer(s) and tweeter(s).

crosstalk: Unwanted signal leakage from one signal path to another.

crystal synchronization: Synchronizing the operating speeds of a film camera and an audiotape recorder by using a crystal oscillator in both camera and recorder. The oscillator generates a sync pulse tone. See also doublesystem recording.

cupping: Deformation of the backing of audiotape due to expansion of the magnetic coating and base.

curling: Twisting of audiotape when it hangs due to a problem in the binding between the plastic and magnetic coatings.

cut: (1) An instantaneous transition from one sound or picture to another. (2) To make a disc recording. (3) A decrease in level.

cut and splice editing: Editing tape or film by physically cutting the material and joining the cut ends with splicing tape.

cycles per second (cps) :See hertz.

D

DASH format :See Digital Audio Stationary Head format.

DAT: Digital audiotape.

DAW: See digital audio workstation.

dB: See decibel.

dBm: An electrical measurement of power referenced to 1 milliwatt as dissipated across a 600ohm load.

dB SPL A measure of the pressure of a sound wave, expressed in decibels (dB).

dBu: A unit of measurement for expressing the relationship of decibels to voltage 0.775 volt.

dBv: See dBu.

dBV: A measure of voltage with decibels referenced to 1 volt.

DCA: See digitally controlled amplifier.

deadpotting: Starting a recording with the fader turned down all the way. Also known as dead rolling.

decay time: See reverberation time.

decibel (dB): A relative and dimensionless unit to measure the ratio of two quantities.

deesser: A compressor that reduces sibilance.

degausser: See bulk eraser.

delay: The time interval between a sound or signal and each of its repeats.

descriptive sound: Describes sonic aspects of a scene not connected to the main action. See also commentative sound and narrative sound.

destructive editing :Permanently alters the original sound or soundfile. See also nondestructive editing.

destructive interference: When sound waves are partially out of phase and

partially subtractive, decreasing amplitude where compression and rarefaction occur at different times.

dialogue recording studio: A studio in which dialogue is recorded and synchronized to picture. See also automated dialogue replacement.

diaphragmatic absorber: A flexible panel mounted over an air space that resonates at a frequency (or frequencies) determined by the stiffness of the panel and the size of the air space. Also called bass trap.

diegetic sound: Sound that comes from within the story space, such as dialogue and sound effects. See also nondiegetic sound. diffraction The spreading or bending around of sound waves as they pass an object.

diffusion : The scattering of sound waves.

Digital Audio Stationary Head (DASH) format :A format agreed to by Sony, Studer, and TASCAM to standardize digital recording.

digital audio workstation (DAW): A multifunctional harddisk production system, controlled from a central location, that is integrated with and capable of being networked to other devices, such as audio, video, and MIDI sources, within or among facilities.

digital cartridge disk system: An audio recorder and/or playback system that uses compact, magneto-optical disc, mini disc, floppy disk, or hard disk as the recording medium.

digital delay: An electronic device designed to delay an audio signal.

digital news gathering (DNG): Reporting and gathering news from the field using digital equipment.

digital recording: A method of recording in which samples of the original analog signal are encoded on tape as pulses and then decoded during playback.

digital signal processing (DSP): A software program that provides various manipulations of sound in digital format using complex algorithms.

digital tape recording system (DTRS): One of two formats used in modular digital multitrack tape recorders. It uses Hi8 videocassette tape. See also ADAT.

digital versatile disc (DVD): A compact disc providing massive data storage of digital-quality audio, video, and text.

digitally controlled amplifier (DCA): An amplifier whose gain is remotely controlled by a digital control signal.

directional microphone: Any microphone that picks up sound from one direction. Also called unidirectional microphone.

direct narration: Describes what is being seen or heard.

direct sound: Sound waves that reach the listener before reflecting off any surface. See also early reflections.

distant miking :Placing a microphone(s) far enough from the sound source to pick up most or all of an ensemble's blended sound including room reflections. See also close miking.

distortion: The appearance of a signal in the reproduced sound that was not in the original sound. See also harmonic distortion, intermodulation distortion, loudness distortion, and transient distortion.

diversity reception: Multiple antenna receiving system for use with wireless microphones. See also nondiversity receiver.

DNG: See digital news gathering.

donut: An announcement in which music is established faded under the announcer, and reestablished after the announcer finishes reading the the copy.

Doppler effect: The perceived increase or decrease in frequency as a sound source moves closer to or farther from the listener.

doublesystem recording: Filming sound and picture simultaneously but separately with a camera and a recorder. See also crystal synchronization.

doubling: Mixing slightly delayed signals (15 to 35 ms) with the original signal to create a fuller, stronger, more ambient sound. See also chorus effect.

dropout :(1) A sudden attenuation of sound or loss of picture due to an imperfection in the magnetic coating. (2) Sudden attenuation in a wireless microphone signal due to an obstruction or some other interference.

dry sound: A sound devoid of reverberation. See also wet sound.

DSP: See digital signal processing.

DTRS: See digital tape recording system.

dub :Transferring sound from tape or disk to another tape or disk.

DVD: See digital versatile disc.

dynamic microphone: A microphone that transduces energy electromagnetically. Movingcoil and ribbon microphones are dynamic.

dynamic range: The range between the quietest and loudest sounds a sound source can produce without distortion.

E

early reflections : Reflections of the original sound that reach the listener within about 40 to 50 ms of the direct sound. Also called early sound. See also direct sound.

early sound:.. See early reflections.

echo: Sound reflections delayed by 35 ms or more that are perceived as discrete repetitions of the direct sound.

edit decision list (EDL) :A list of edits, computergenerated or handwritten, used to assemble a production.

EDL :See edit decision list.

EFP: See electronic field production.

eigentones :The resonance of sound at particular frequencies in an acoustic space. May add unwanted coloration to sound. More commonly known as room modes.

elasticity: The capacity to return to the original shape or place after deflection or displacement.

electret microphone :A capacitor microphone which, instead of requiring an external highvoltage power source, uses a permanently charged element and requires only a lowvoltage power supply for the internal preamp.

electroacoustics :The electrical manipulation of acoustics.

electronic alignment: The adjustment of electronic and mechanical characteristics of a tape recorder to a defined standard specified by the manufacturer or by international industry bodies such as the Audio Engineering Society (AES, the National Association of Broadcasters (NAB),

or the International Electrotechnical Commission (IEC). See also calibration.

electronic editing: Using one tape recorder and inserting or punching in material, or transferring material from one tape recorder (the master) to another (the slave).

electronic field production (EFP): Video production done on location, involving program materials that take some time to produce and reamplified. Electronic feedback is created in digital delay devices by feeding a proportion of the delayed signal back into the delay line. Also called regeneration.

electronic news gathering (ENG): News production done on location, sometimes taped and sometimes live, but usually with an imminent deadline.

ENG: See electronic news gathering

enharmonic: In music, two different notes that sound the same, for example, C# and Db, G# and Ab.

EQ Equalization: See equalizer.

equalizer : A signal processing device that can boost, attenuate, or shelve frequencies in a sound source or sound system.

equal loudness principle :The principle that confirms the human ear's nonlinear sensitivity to all audible frequencies: that midrange frequencies are perceived with greatest intensity and that bass and treble frequencies are perceived with lesser intensity.

erase head: Electromagnetic transducer on a tape recorder that automatically demagnetizes a tape before it reaches the record head when the recorder is in the record mode.

ergonomics: Designing an engineering system with human comfort and convenience in mind.

expander: An amplifier in which the output signal's dynamic

F

fadein: Gradually increasing the loudness of a signal level from silence (or from "black" in video).

fadeout: Gradually decreasing the loudness of a signal level to silence (or to "black" in video).

fadeout/fadein: A transition usually indicating a marked change in time, locale, continuity of action, and other features.

fader: A device containing a resistor that is used to vary the output voltage of a circuit or component. Also known as an attenuator, a gain or volume control, or a pot or potentiometer.

feedback: When part or all of a system's output signal is resumed into its own input. Feedback can be acoustic or electronic. A commonly encountered example of acoustic feedback is the loud squeal or howl caused when the sound from a loudspeaker is picked up by a nearby microphone

fill leader: Old picture film or unrecorded magnetic film used to fill silences on a magneticfilm recording thereby reducing the noise of recorded magnetic film. Also called spacer.

filter: A device that removes unwanted frequencies or noise from a signal.

fixedfrequency equalizer: An equalizer with several fixed frequencies usually grouped in two (high and low) or three (high, middle, and low) ranges of the frequency spectrum.

flanging: Combining a direct signal and the same signal slightly delayed, and continuously varying their time

flat: Frequency response in an audio system that reproduces a signal between 20 and 20,000 Hz (or between any two specified frequencies) that varies no more than + 0r 3 dB.

flutter: Frequency changes in an analog tape recording resulting from faster variations in the speed of the tape transport. See also wow.

flutter echoes: Echoes between parallel walls that occur in rapid series.

FM microphone: Wireless microphone.

foldback :The system in a multichannel console that permits the routing of sound through a headphone monitor feed to performers in the studio.

Foley recording: Producing and recording sound effects in the studio in synchronization with picture.

formant: The resonance band in a vibrating body that mildly increases the level of specific steady-state frequencies in that band.

fourway system loudspeaker: A loudspeaker that uses three crossover frequencies to divide the bass, midrange, and treble ranges.

frame rate: The number of film frames that pass in one second of real time—frames per second (fps).

freewheel: A mode in a synchronizer that allows stretches of poorly encoded time code to be passed over without altering the speed of the slave tape recorder's transport.

frequency: The number of times per second that a sound source vibrates. Now expressed in hertz (Hz); formerly expressed in cycles per second (cps).

frequency response: A measure of an audio system's ability to reproduce a range of frequencies with the same relative loudness; usually represented by a graph.

full coat: Magnetic film in which the oxide coating covers most or all of the film width. See also stripe coat.

fundamental: The lowest frequency a sound source can produce. Also called primary frequency and first harmonic.

G

gauss: A unit of magnetic density.

graphic equalizer: An equalizer with sliding controls that gives a graphic representation of the response curve chosen.

guard band: The space between tracks on an audiotape recorder head to reduce crosstalk.

H

Haas effect: See precedence effect.

harddisk recording: Using a harddisk computer system as the recording medium, which is more versatile than tape because data storage and retrieval is random, quick, and nonlinear; storage capacity is far greater; and data is nondestructive.

hardwired: Description of pieces of equipment wired to each other. See also patch bay.

harmonic distortion: Nonlinear distortion caused when an audio system introduces harmonics to a signal at the output that were not present at the input.

harmonics: Frequencies that are multiples of the fundamental.

headroom: The amount of increase in loudness level that a tape, amplifier, or other piece of equipment can take, above working level, before overload distortion.

headset microphone: A microphone attached to a pair of headphones; one headphone channel feeds the program and the other headphone channel feeds the director's cues.

headstack: A multitrack tape head.

height: One of the adjustments made when aligning the heads on an audiotape recorder. This adjustment aligns the height of the heads with the recording tape.

helical scanning: Using one or more rotating heads that engage the tape wrapped at least partially around the head drum.

Helmholtz absorber: A resonator designed to absorb specific frequencies depending on size, shape, and enclosed volume of air. The enclosed volume of air is connected to the air in the room by a narrow opening or neck. When resonant frequencies reach the neck of the enclosure, the air inside cancels those frequencies. Also called Helmholtz resonator.

humbuck circuit :A circuit built into a microphone to reduce hum pickup.

hertz (Hz): Unit of measurement of frequency; numerically equal to cycles per second (cps).

high end: The treble range of the frequency spectrum.

highoutput/tape: Highsensitivity tape.

highpass (lowcut) filter: A filter that attenuates frequencies below a selected frequency and allows those above that point to pass.

Hz: See hertz.

I

IEC standard: The time code standard for RDATE recording, established by the International Electrotechnical Commission.

IFB :See interruptible foldback system.

IM :See intermodulation distortion.

impedance: The measure of the total resistance to the current flow in an AC circuit; expressed in ohms.

indirect narration: Describes something other than what is being seen or heard.

indirect sound :Sound waves that reflect from one or more surfaces before reaching the listener.

infrasonic: The range below the frequencies audible to human hearing.

inharmonic overtones: Pitches that are not exact multiples of the fundamental.

initial decay: In the sound envelope, the point at which the attack begins to lose amplitude.

inline console: A console in which a channel's input, output, and monitor functions are placed inline and located in a single input/output (I/O) module. See also splitsection console and input/output (I/O) module.

inner ear: The part of the ear that contains the auditory nerve, which transmits sound waves to the brain.

input/output (I/O) module: On an inline console, a module containing input, output, and monitor controls for a single channel

input section: On a console, the section into which signals from a sound source, such as a microphone, feed and are then routed to the output section.

insert editing: In electronic editing, inserting a segment between two previously dubbed segments. Also, electronic editing segments out of sequential order.

Integrated Services Digital Network (ISDN): A public telephone service that allows inexpensive use of a flexible, widearea, alldigital network

for, among other things, recording simultaneously from various locations.

intermodulation distortion (IM): Nonlinear distortion that occurs when different frequencies pass through an amplifier at the same time and interact to create combinations of tones unrelated to the original sounds.

interruptible foldback (IFB) system :A communications system that allows communication from the producer or director and selected production personnel with the on air talent.

intheear monitoring: Using small headphones to feed the sound blend to onstage performers instead of stage monitors.

in the mud: Sound level so quiet that it barely "kicks" the VU meter.

in the red :Sound level so loud that the VU meter "rides" over 100 percent of modulation.

inverse square law: The acoustic situation in which the sound level changes in inverse proportion to the square of the distance from the sound source.

I/O module: See input/output module.

ISDN :See Integrated Services Digital Network.

J

jack: Receptacle or plug connector leading to the input or output circuit of a patch bay, tape recorder, or other electronic component.

jam sync: A mode in a synchronizer that produces new time code during dubbing either to match the original time code or to regenerate new address data.

L

lavalier microphone: Microphone that used to be worn around the neck but is now worn attached to the clothing.

layback: Dubbing the composite audio track from the multitrack tape to the edited master videotape, or the dialogue, sound effects, and music tracks to separate reels of magnetic film. See also layover and prelay.

laydown: See layover.

layering: When many sounds occur at once, layering involves making sure that they remain balanced, in perspective, and intelligible in the mix.

layover: Dubbing the audio from the edited master videotape or audiotape, or both, to a multitrack recorder for premixing. Also called laydown. See also layback and prelay.

leader tape: Nonmagnetic tape spliced to the beginning and end of a tape and between segments to indicate visually when recorded material begins and ends.

limiter: A compressor with an output level that does not exceed a preset ceiling regardless of the input level.

linear editing: Nonrandom editing. See also nonlinear editing.

linearity: Having an output that varies in direct proportion to the input.

listening fatigue: A pronounced dulling of the auditory senses inhibiting perceptual judgment.

localization: (1) Placement of a sound source in the stereo or surroundsound frame. (2) The direction from which a sound source seems to emanate in a stereo or surroundsound field. (3) The ability to tell the direction from which a sound is coming.

longitudinal time code (LTC): A highfrequency signal consisting of a stream of pulses produced by a time code generator used to code tape to facilitate editing and synchronization. Also known as SMPTE time code.

loudness distortion: Distortion that occurs when the loudness of a signal is greater than the sound system can handle. Also called overload distortion.

low bass: Frequency range between roughly 20 and 80 Hz, the lowest two octaves in the audible frequency spectrum.

low end: The bass range of the frequency spectrum.

lowoutput tape: Lowsensitivity tape.

lowpass (highcut) filter: A filter that attenuates frequencies above a selected frequency and allows those below that point to pass.

LTC: See longitudinal time code.

M

magnetic film: Sprocketed film containing sound only and no picture. See also full coat and stripe coat.

magneto-optical (MO) recording: Disc-based, optical recording medium that uses tiny magnetic particles heated to extremely high temperatures.

masking: The hiding of some sounds by other sounds when each is a different frequency and they are presented together.

master: (1) The original recording. (2) The final tape or disc recording that is sent to the CD mastering house or to distribution.

master fader: The fader that controls the combined signal level of the individual input channels on a console.

master section: In a multichannel production console, the section that routes the final mix to its recording destination. It usually houses, at least, the master controls for the mixing bus outputs, reverb send and reverb return, and master fader.

maximum sound pressure level: The level at which a microphone's output signal begins to distort, that is, produces a 3 percent total harmonic distortion (THD).

MD: See mini disc.

MDM: See modular digital multitrack recorder.

microphone: A transducer that converts acoustic energy into electric energy. Also called mic.

middle ear: The part of the ear that transfers sound waves from the eardrum to the inner ear.

middleside (MS) microphone: Consists of two mic capsules housed in single casing. One capsule, usually cardioid, is the midposition microphone. The other capsule, usually bidirectional, has each lobe oriented 90 degrees laterally.

MIDI: See Musical Instrument Digital Interface.

MIDI time code (MTC): Translates SMPTE time code into MIDI messages that allow MIDI-based devices to operate on the SMPTE timing reference.

midrange: The part of the frequency spectrum to which humans are most sensitive; the frequencies between 320 and 5,120 Hz.

mil :Onethousandth of an inch.

milking the audience: Boosting the level of an audience's sound during laughter or applause and/or reinforcing it with recorded laughter or applause or applause.

mini disc™ (MD): Magneto-optical disc 2.5 inches wide that can store more than an hour of digital-quality audio.

minimic: Short for miniature microphone. Any extremely small lavalier microphone designed to be unobtrusive on camera and which can be easily hidden in or under clothing or on a set.

mix-minus: A program feed through an interruptible foldback (IFB) circuit minus the announcer's voice. See also interruptible foldback system.

mixdown :The point, usually in postproduction, when all the separately recorded audio tracks are sweetened, positioned, and combined into stereo or surround sound.

mixer: A small, highly portable device that mixes various elements of sound, typically coming from multiple microphones, and performs limited processing functions.

MO: See magneto-optical recording.

mobile unit: A car, van, or tractor-trailer equipped to produce program material on location.

modular digital multitrack (MDM) recorder: An audiotape recorder that uses a videocassette transport with videocassette tape. It can record up to eight channels and, linked to multiple MDMs, can expand track capability in eight-channel increments.

monitor section: The section in a console that enables the signals to be heard. The monitor section in multichannel production consoles, among other things, allows monitoring of the line or recorder input, selects various inputs to the control room and studio monitors, and controls their levels.

moving-coil loudspeaker: A loudspeaker with a moving-coil element.

MS microphone: See midside microphone.

MTC: See MIDI time code
mult: See multiple.

multidirectional microphone: Microphone with more than one pickup pattern.
Also called polydirectional microphone.

multipath: In wireless microphones, when more than one radio frequency (RF) signal from the same source arrives at the receiver's front end, creating phase mismatching.

multiple: (1) On a patch bay, jacks interconnected to each other and to no other circuit. They can be used to feed signals to and from sound sources. Also called mults. (2) An amplifier with several mic level outputs to provide individual feeds, thereby eliminating the need for many. Also called a press bridge or a presidential patch.

multipleentryport microphone: A microphone that has more than one opening for sound waves to reach the transducer. Most of these openings are used to reject sound from the sides or back of the microphone through phase cancellation. Each port returns a different frequency range to the mic capsule out of phase with sounds reaching the front of the mic.

Musical Instrument Digital Interface (MIDI): A protocol that allows synthesizers, drum machines, sequencers, and other signalprocessing devices to communicate with or control one another, or bot

N

NC: See noise criteria.

nearcoincident miking: A stereo microphone array in which the mics are separated horizontally but the angle or space between their capsules is not more than several inches. See also XY miking.

nearfield monitoring :Monitoring with loudspeakers placed close to the operator, usually on or just behind the console's meter bridge, to reduce interference from control room acoustics at the monitoring position.

noise: Any unwanted sound or signal.

noise criteria (NC): Contours of the levels of background noise that can be tolerated within an audio studio.

noise gate: An expander with a threshold that can be set to reduce or eliminate unwanted lowlevel sounds, such as room ambience, rumble, and leakage, without affecting the wanted sounds.

noise processor: A signal processor that reduces tape noise.

noisecanceling microphone: A microphone designed for use close to the mouth and with excellent rejection of ambient sound.

nondestructive editing: Editing that does not alter the original sound or soundfile, regardless of what editing or signal processing is effected. See also destructive editing.

nondiegetic sound: Sound that is outside the story space, such as music underscoring. See also diegetic sound.

nondirectional microphone: See omnidirectional microphone.

nondiversity receiver: Single antenna receiving system used with wireless microphones. See also diversity reception.

nonlinear: The property of not being linear or not having an output that varies in direct proportion to the input.

nonlinear editing: Instant random access to and easy rearrangement of recorded material. See also linear editing.

notch filter: A filter capable of attenuating an extremely narrow bandwidth of frequencies.

O

octave: The interval between two sounds that have a frequency ratio of 2 to 1. oersted A unit of magnetic force.

Offmic: Not being within the optimal pickup pattern of a microphone;

offaxis.

offmiking: Miking technique that employs microphone farther from the sound source than the close mics to add more ambient, airier sound to the overall recording.

ohm: A unit of resistance to current flow.

Omnidirectional microphone: Microphone that picks up sound from all directions. Also called a nondirectional microphone.

onmic: Being within the optimal pickup pattern of a microphone; onaxis.

openreel audiotape recorder: A tape recorder with the feed reel and takeup reel not enclosed in a cartridge, requiring that they be mounted manually

oscillator: A device that generates pure tones or sine waves.

Outer ear: The portion of the ear that picks up and directs sound waves through the auditory canal to the middle ear.

Output section: In a mixer and console, the section that routes the signals to a recorder or broadcast, or both.

overroll: Recording ambience after recording narration or dialogue by letting the recorder continue to run.

overdubbing: Recording new material on a separate tape track(s) while listening to the replay of a previously recorded tape track(s) in order to synchronize the old and new material.

overload Feeding: a component or system more amplitude than it can handle and thereby causing overload distortion.

overload distortion: See loudness distortion.

Overload indicator: On a console, a lightemitting diode (LED) that flashes when the input signal is approaching or has reached overload and is clipping.

overtone: Harmonics that may or may not be multiples of the fundamental. Subjective response of the ear to harmonics. pad An attenuator inserted into a component or system to reduce level.

P

pan pot: A volume control that shifts the proportion of sound to any point from left to right between two output buses and, hence, between the two loudspeakers necessary for reproducing a stereo image. Pan pot is short for panoramic potentiometer.

parabolic microphone system: A system that uses a concave dish to focus reflected sound into a microphone pointed at the center of the dish.

paraphonic equalizer: An equalizer that combines the features of a parametric and a graphic equalizer.

parametric equalizer: An equalizer in which the bandwidth of a selected frequency is continuously variable.

patch bay: An assembly of jacks to which are wired the inputs and outputs of the audio components in a console and/or sound studio. Also called patch panel. See also hardwired.

patch cord: A short cord or cable with a plug at each end, used to route signals in a patch bay.

peak program meter (ppm): A meter designed to indicate transient peaks in the level of a signal.

percentage of modulation :The percentage of an applied signal in relation to the maximum signal a sound system can handle.

perspective miking: Establishing through microphone distance the audio viewpoint in relation to the performers and their environment in screen space.

phantom power: Operating voltage supplied to a capacitor microphone by an external power source or mixer, thereby eliminating the need for batteries.

phase: The time relationship between two or more sounds reaching a microphone or signals in a circuit. When this time relationship is coincident, the sounds or signals are in phase and their amplitudes are additive. When this time relationship is not coincident, the sounds or signals are out of phase and their amplitudes are subtractive.

phase shift: A change in the phase relationship of two signals at a given time, or the phase change of one signal over an interval of time.

phasing: An effect created by splitting a signal in two and timedelaying one of the signal portions.

phon: A dimensionless unit of loudness level related to the ear's subjective impression of signal strength.

phone line (PL) system: See private line system.

pickup pattern: See polar response pattern.

pin: When the needle of the VU meter hits against the peg at the righthand corner of the red. Pinning is to be avoided because it indicates too high a loudness level and it could damage the meter.

pinch roller: On a tape recorder, the springloaded, freespinning rubber

wheel that holds the tape against the capstan. Also called capstan idler and pressure roller.

pink noise: Wideband noise that maintains constant energy per octave. See also white noise.

pitch: The subjective perception of frequency. pitch shifter A signal processor that varies the pitch of a signal.

PL system: See private line system.

plant microphone: A stationary mic positioned on the set to cover action that cannot easily be picked up with a boom or a body mic or to provide fill sound. Also referred to as a fixed mic.

playback head: Electromagnetic transducer on a tape recorder that converts magnetic energy into electric energy.

polarity: The relative position of two signal leads—the high (+) and the low (–) in the same circuit.

polarity reversal :The control on a console that inverts the polarity of an input signal 180 degrees. Sometimes called phase reversal.

polar response pattern: The graph of a microphone's directional characteristics as seen from above. The graph indicates response over a 360-degree circumference in a series of concentric circles, each representing a 5dB loss in level as the circles move inward toward the center. Also called pickup pattern.

polydirectional microphone : See multidirectional microphone.

pop filter: Foam rubber windscreen placed inside the microphone head. Particularly effective in reducing sound from plosives and blowing. Also called blast filter. See also windscreen

porous absorber: A sound absorber made up of porous material whose tiny air spaces are most effective at absorbing high frequencies.

pot: Short for potentiometer. See also fader.

potentiometer: See fader.

ppm: See peak program meter.

precedence effect: The tendency to perceive direct and immediate repetitions of a sound as coming from the same position or direction even if immediate repetitions coming from another direction are louder. Also

known as the Haas effect.
prefader listen (PFL): See solo.

prelay :Recording audio elements, other than those from the edit master videotape, onto a multitrack recorder. See also layback and layover.

premix: The stage in postproduction sweetening when dialogue, sound effects, and music are prepared for final mixing.

presence: Perception of a sound as being close and realistic. See also ambience and room tone.

press bridge: See multiple (2).

printthrough: Unwanted transfer of a magnetic signal from one tape layer to an adjacent tape layer.

private line (PL) system:An intercom system consisting of a headset with an earpiece and a small microphone used during production to connect production and technical personnel. Also called phone line system.

production source music: Music that emanates from an onscreen singer or ensemble and is produced live during shooting or in postproduction.

proximity effect: Increase in the bass response of some mics as the distance between the mic and its sound source is decreased. Also known as bass tapup.

psychoacoustic processor: Signal processor that adds clarity, definition, overall presence, and life, or "sizzle," to recorded sound.

psychoacoustics: Study of the perception of sound stimuli.

pure tone: See sine wave.

Q

quantization :Converting a waveform that is infinitely variable into a finite series of discrete levels.

R

radio microphone: Wireless microphone.

rarefaction: Temporary drawing apart of vibrating molecules, causing a partial vacuum to occur. See also compression (2).

RDAT: See rotaryhead digital audiotape recorder.

read mode: Mode of operation in an automated mixdown when the console controls are operated automatically by the data previously encoded in the computer. Also called safe mode. See also update mode and write mode.

realtime analyzer: A device that shows the total energy present at all audible frequencies on an instantaneous basis.

record head: Electromagnetic transducer on a tape recorder that converts electric energy into magnetic energy.

recordable compact disc (CDR): A CD format allowing users to record one time but to play back the recorded information repeatedly.

reflected sound: Reflections of the direct sound that bounce off one or more surfaces before reaching the listener.

release: The time and manner in which a sound diminishes to inaudibility.
release time: The length of time it takes a limiter or compressor to return to its normal level after the signal has been attenuated or withdrawn. Also known as recovery time.

remnance: The residual magnetization from a previous recording after erasure.

remote: Any broadcast done away from the studio.

rerecording: The process of combining individual dialogue, sound effects, and music tracks into their final formó stereo or surround sound.

resonance: Transmitting a vibration from one body to another when the frequency of the first body is exactly, or almost exactly, the natural frequency of the second body retentivity Measure of a tape's ability to retain magnetization after the force field has been removed. Retentivity is measured in gaussóa unit of magnetic energy.

reverberation: Multiple blended, random reflections of a sound wave after the sound source has ceased vibrating. Also called reverb and reverberant sound.

reverberation time: The length of time it takes a sound to die away. By definition: the time it takes a sound to decrease to onemillionth of its original intensity, or 60 dB SPL. Also called decay time.

ribbon microphone: A microphone with a ribbon diaphragm suspended in a magnetic field.

ride the gain :Continually adjusting controls on a console

ridging : A bulge or depression, seen after winding, caused by deformed layer(s) of tape.

ring off: When a dialogue line ends with the ambient ring of a room and another line begins with that ring decaying under it.

room modes: See eigentones.

room tone: Another term for ambience. Also called presence.

rotaryhead digital audiotape (RDAT) recorder: Specifically, a digital cassette audiotape recorder with rotary heads. See also stationaryhead digital audiotape recorder.

S

safe mode: See read mode.

SA system: See studioaddress system.

SDAT: See stationaryhead digital audiotape recorder.

sampler: An audio device that records a short sound eventó such as a note or a musical phraseóinto computer memory. The samples can be played by triggering them with a MIDI signal from a MIDI controller or a MIDI sequencer

sampling: (1) Examining an analog signal at regular intervals defined by the sampling frequency (or rate). (2) A process whereby a section of digital audio representing a sonic event, acoustic or electroacoustic, is stored on disk or into a memory.

sampling frequency: The hequency (or rate) at which an analog signal is sampled. Also called sampling rate.

scrape flutter filter: A cylindrical, lowfriction metal surface installed between the heads to reduce the amount of unsupported tape, thereby restricting the degree of tape movement as it passes across the heads. It reduces flutter.

scrubbing: In harddisk editing, moving the playbar cursor through the defined region at any speed to listen to a sound being readied for editing. Scrubbing is similar to rocking a tape in cutandsplice editing.

SCSI (Small Computer Systems Interface): The standard for hardware and

software command language that allows twoway communication between, primarily, hard disk and CDROM drives. Pronounced "scuzzy."

segue: (1) Cutting from one effect to another with nothing in between. (2) Playing two recordings one after the other, with no live announcement in between.

Sel Syncô :Changing the record head into a playback head to synchronize the playback of previously recorded material with the recording of new material.

selective synchronization: See Sel Sync.

selfnoise: The electrical noise, or hiss, an electronic device produces.

sensitivity: (1) Measurement of an amp's output level capability relative to a standard reference tape. (2) Measurement of the voltage (dBV) a microphone produces, which indicates its efficiency. (3) The soundpressure level directly in front of the loudspeaker, onaxis, at a given distance and produced by a given amount of power.

sequencer: An electronic device that can be programmed to store and automatically play back a repeating series of notes on an electronic musical instrument such as a synthesizer.

shelving: Maximum boost or cut at a particular frequency that remains constant at all points beyond that frequency so the response curve resembles a shelf.

shock mount: A device that isolates a microphone from mechanical vibrations. It can be attached externally or built into a microphone.

shotgun microphone: A highly directional microphone with a tube that resembles the barrel of a rifle.

signalto noise ratio (S/N): The ratio, expressed in decibels (dB), of an electronic device's nominal output to its noise floor. The wider the signalto noise ratio, the better.

silent film: Film carrying picture only.

sine wave: A pure tone or fundamental frequency with no harmonics or overtones.

singleDô: microphone See singleentryport microphone.

singleentryport microphone: A directional microphone that uses a single port to bring sounds from the rear of the mic to the capsule. Because these sounds from the rear reach the capsule out of phase with those that reach the front of the capsule, they are canceled.

singlesystem recording: Recording picture and sound in a film or video camera simultaneously.

slap back echo: The effect created when an original signal repeats as distinct echoes that decrease in level with each repetition.

slate: The part of a talkback system that feeds sound to tape. It is used to record verbal identification of the material being taped, the take number, and other information just before each recording.

slave: The tape or disk to which the material on a master recording is transferred.

SMPTE time code: A highfrequency signal consisting of a stream of pulses produced by a time code generator used to code tape to facilitate editing and synchronization. Also known as longitudinal time code.

S/N :See signaltonoise ratio.

Solo: A control on a multitrack console that automatically cuts off all signals feeding the monitor system except those feeding through the channel that the solo control activates. Sometimes called preface listen (PFL).

sound absorption coefficient: A measure of the soundabsorbing ability of a surface. This coefficient is defined as the fraction of incident sound absorbed by a surface. Values range from 0.01 for marble to 1.00 for the materials used in an almost acoustically dead enclosure. Also known as noise reduction coefficient (NRC).

sound chain: The audio components that carry a signal from its sound source to its destination.

sound design: The process of creating the overall sonic character of a production (usually in relation to picture).

sound designer: The individual responsible for a production's overall sonic complexion.

sound envelope :Changes in the loudness of a sound over time, described as occurring in four stages: attack, initial decay, sustain, and release (ADSR).

soundfile: A sound stored in the memory of a harddisk recorder/editor.

sound film: Film carrying both picture and sound.

sound frequency spectrum: The range of frequencies audible to human hearing: about 20 to 20,000 Hz.

soundpressure level: See dBSPL

sound transmission class (STC): A rating that evaluates the effectiveness of barriers in isolating sound.

source music: Background music from an onscreen source, such as a stereo, radio, or juke box.

spaced miking: Two, sometimes three, microphones spaced from several inches to several feet apart, depending on the width of the sound source and the acoustics, for stereo recording.

spacer: See fill leader.

SPDIF (Sony/Philips Digital Interface): The consumer version of the AES/EBU interface calling for an unbalanced line using phono connectors. See also AES/EBU interface.

spectrum processor: A signal processor that affects a sound's spectral range.

splicing tape: A specially made adhesive tape that does not ooze, is nonmagnetic and pressure sensitive, and is used to join cut ends of audiotape and magnetic film.

split editing: (1) Editing the same sound into two or more separate tracks to facilitate control of its length and in editing transitions. In dialogue, for example, this makes it easier to extend lines that may have been cut too short during picture editing, to overlap voices, and to carry over lines from one scene to the next. (2) A type of transition where the audio or video leads or lags a portion of the previous edit.

splitsection console: Multichannel production console in which the input, output, master, and monitor sections are separate. See also inline console.

splittrack recording: Recording two separate sound sources on two separate tracks of a stereo recorder or VCR with two audio tracks.

spotting: Going through a script or work print and deciding on the

placement of sound effects and music.

spotting sheet: Indicates the sound effect, or music, cue and whether it is synchronous or nonsynchronous, its in and outtimes, and its description.

stationaryhead digital audiotape (SDAT) recorder: A fixedhead digital audiotape recorder. See also rotaryhead digital audiotape recorder.
STC: See sound transmission class.

stereotomono compatibility: Ensuring that a recording made in stereo is reproducible in mono without spatial or spectral distortion.

stereophonic microphone: Two directional microphone capsules, one above the other, with separate outputs, encased in one housing.

stripe coat: Magnetic film that contains two stripes of oxide coating, a wide stripe for recording singletrack mono and a narrow balance stripe to ensure that the film wind on reels is smooth. See also full coat.

studioaddress (SA) system: An intercom system used like a publicaddress system to communicate with people in the studio not connected to the privateline system, such as the performers, and for general instructions to all studio personnel. Also called a tallback.

subtractive equalization: Attenuating, rather than boosting, hequencies to achieve equalization.

sustain: In the sound envelope, the period during which the sound's relative dynamics are maintained after its initial deCaY

sweet spot: In control room monitoring, the designated listening position that is the optimal distance away hom and between the loudspeakers.
sweetening: Enhancing the sound of a recording through the procedures of layover, prelay, premixing, and layback.

sync beep: See sync pop. synchronization The ability to lock two or more devices that have microprocessor intelligence so that they operate at precisely the same rate.

synchronizer :(1) Device with sprocketed, ganged wheels that locks in the film reels of picture and sound so they can be wound in synchronization during editing. (2) Device that regulates the operating speeds of two or more recorders so they run in sync.

sync pop A single frame of magnetic film cut across hom the Academy 2 with a 1,000Hz tone that creates a beep. Also called sync beep.

sync tone: The tone or pulse that synchronizes tape recorder speed and film camera speed in double system recording.

system microphone: Interchangeable microphone capsules of various directional patterns that attach to a common base. The base contains a power supply and a preamplifier.

system noise: The inherent noise an electronic device or system generates.

T

tails out: Having the end of the material on a tape or film at the head of the reel.

talkback: Studio address intercom system that permits communication from a control room microphone to a loudspeaker or headphones in the studio.

tangency: One of the adjustments made when aligning the heads of an audiotape recorder. This adjustment aligns the forwardness of the heads so that the tape meets them at the correct pressure.

tape transport system: The mechanical portion of the tape recorder, mounted with motors, reel spindles, heads, and controls, that carries the tape at the constant speed from the feed reel to the takeup reel.

temporal fusion: When reflected sound reaches the ear within 10 to 20 ms of the original sound, the direct and reflected sound are perceived as a single sound. This effect gradually disappears as the time interval between direct and reflected sound increases from roughly 30 to 50 ms.

three-to-one rule: A guideline used to reduce the phasing problems caused when a sound reaches two microphones at slightly different times. It states that no two microphones should be closer to each other than three times the distance between one of them and its sound source.

three-way system loudspeaker: A loudspeaker that uses two crossover frequencies to divide the bass, midrange, and treble frequencies.

threshold of hearing: The lowest sound pressure level (SPL) at which sound becomes audible to the human ear. It is the zero reference of 0 dB SPL.

threshold of pain: The sound pressure level at which the ear begins to feel pain, about 140 dB SPL, although levels of around 120 dB SPL cause discomfort.

tie line: Facilitates the interconnecting of outboard devices and patch bays in a control room or between studios. timbre The unique tone quality or color of a sound.

time code address: The unique SMPTE time code number that identifies each 1/30 of a second of a recording.

time compression: Altering the time of material without changing its pitch.

time processor: A signal processor that affects the time interval between a signal and its repetition.

tinnitus: After prolonged exposure to loud sounds, the ringing, whistling, or buzzing in the ears, even though no loud sounds are present.

TL: See transmission loss.

transducer: A device that converts one form of energy into another.

transient: A sound that begins with a sharp attack followed by a quick decay.

transient distortion: Distortion that occurs when a sound system cannot reproduce sounds that begin with sudden, explosive attacks.

transmission loss (TL): The amount of sound reduction provided by a barrier such as a wall, floor, or ceiling. transmitter microphone Wireless microphone.

treble: Frequency range between roughly 5,000 and 20,000 Hz, the highest two octaves in the audible frequency spectrum.

trim: (1) To attenuate the loudness level in a component or circuit. (2) The device on a console that attenuates the loudness level at the microphone/line input.

tube microphone: A capacitor microphone using a tube circuit in the preamp.

tweeter: The informal name of a loudspeaker that reproduces high frequencies. See also woofer.

two-way system loudspeaker: A loudspeaker that uses one crossover frequency to divide the highs from the lows.

U

ultrasonic: Frequencies above the range of human hearing.

unbalanced line: A line (or circuit) with two conductors of unequal voltage.

underscore music: Nondiegetic music added to enhance the informational or emotional content of a scene.

unidirectional microphone: A microphone that picks up sound from one direction. Also called directional microphone.

update mode: Mode of operation in an automated mixdown when an encoded control can be recorded without affecting the coding of the other controls. See also read mode and write mode.

upper bass: Frequency range between roughly 80 and 320 Hz.

upper midrange: Frequency range between roughly 2,560 and 5,120 Hz.

V

variableD microphone: See multipleentryport microphone.

variablespeed control: Device on an audiotape recorder that alters the playing speed to various rates of the recorder's set speeds.

VCA: See voltage controlled amplifier.

velocity The speed of a sound wave: 1,130 feet per second at sea level and 70 degrees Fahrenheit.

vertical interval time code (VITC): Time code that is recorded vertically on videotape and within the video signal but outside the picture area.

videoleadingaudio: When the picture of a new scene starts before the sound of the old scene has finished. See also audioleadingvideo.

virtual track: In harddisk recording, a track that provides all the functionality of an actual track but cannot be played simultaneously with another virtual track.

VITC: See vertical interval time code.

voltage controlled amplifier (VCA): An amplifier used to decrease level. The amount of amplification is controlled by external DC voltage.

volume unit (VU) meter: A meter that responds to the average voltage on the line, not true volume levels. It is calibrated in volume units and percentage of modulation.

VU: See volume unit meter.

W

walla :A nonsense word that used to be spoken by film extras to create ambient crowd sound, without anything discernable actually being said.

waveform :A graphical representation of a sound's characteristic shape displayed, for example, on test equipment and harddisk editing systems.

wavelength: The length of one cycle of a sound wave. Wavelength is inversely proportional to the hequency of a sound; the higher the frequency, the shorter the wavelength.

weighting network: A filter used for weighting a hequency response before measurement.

wet sound: A sound with reverberation or signal processing. See also dry sound.

white noise: A wideband noise that contains equal energy at each hequency. See also pink noise.

windscreen :Foam rubber covering specially designed to fit over the outside of a microphone head. Used to reduce plosive and blowing sounds. See also pop filter.

wireless microphone system :System consisting of a transmitter that sends a microphone signal to a receiver connected to a console. Also called radio, FM, transmitter, or cordless microphone.

woofer: Informal name for a loudspeaker that produces the bass hequencies. See also tweeter.

worldizing: Recording room sound to add to a dry recording or to use to enhance or smooth ambient backgrounds that are already part of the dialogue track.

wow: (1) Starting a recorded sound before it reaches full speed. (2) Frequency changes in an analog tape recording resulting hom slower variations in the speed of the tape transport. See also flutter.

wrap: One of the adjustments made when aligning the heads of an audiotape recorder. This adjustment aligns the head so that it is in full physical contact with the tape.

write mode: The mode of operation in an automated mixdown during which controls are adjusted conventionally and the adjustments are encoded in the computer for retrieval in the safe mode. See also read mode and update mode.

X,Y,Z

XLR connector: Commonly used male and female microphone plugs with a three-pin connector.

XY miking: Coincident or nearcoincident miking that places the microphones' diaphragms over or horizontal to one another. See also coincident miking and nearcoincident miking.

zenith: One of the adjustments made when aligning the heads of an audiotape recorder. This adjustment aligns the vertical angle of the heads so they are perpendicular to the tape.