

Glossary of 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.

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 begins—that 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 video leading audio.

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

back timing 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 omni-directional capacitor microphones set into the ear cavities of an artificial head, complete with pinnas. 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.

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

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

CDR See recordable compact disc.

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

CDRW See CD Rewritable.

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.

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.

clapper board see **clap slate**.

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

close mic'ing Placing a microphone close to a sound source to pick up mostly direct sound and reduce ambience and leakage. See also **distant mic'ing**.

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

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

comb filter effect The effect produced when a signal is time delayed 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 high pressure 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.

coverage angle The off-axis angle or point at which loudspeaker level is down 6 dB compared with the on-axis output level.

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.

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.

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.

dead cat colloquial name for the fluffy screen placed over microphones for use in windy environments to help suppress wind noise. See **wind screen**.

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.

de-esser 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 sound file. 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 hard-disk 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 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 multi-track 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 mic'ing 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 mic'ing**.

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.

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

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

double system 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. Moving coil 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, computer generated 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**.

electret microphone A capacitor microphone which, instead of requiring an external high voltage power source, uses a permanently charged element and requires only a low voltage 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—punching in—material, or transferring material from one tape recorder (the master) to another (the slave).

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.

expander An amplifier in which the output signal's dynamic

F

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

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

fade out/fade in 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

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

fixed frequency 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 +0 or 3 dB.

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

FM microphone Wireless microphone.

foldback The system in a multi-channel 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.

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

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.

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.

hard disk recording Using a hard disk 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.

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.

humuck 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.

high output tape High sensitivity 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 **split section 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, wide-area, all digital 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.

in the ear 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 multi-track 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 lay over.

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 multi-track 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 surround sound frame. (2) The direction from which a sound source seems to emanate in a stereo or surround sound field. (3) The ability to tell the direction from which a sound is coming.

longitudinal time code (LTC) A high frequency 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.

low output tape Low sensitivity 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

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 multi-channel 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 multi-track 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 in single casing. One capsule, usually cardioid, is the mid-position 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 MIDIbased 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 One thousandth 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 TM (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.

mixminus 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 multi-channel 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 middle side 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.

multiple entry port 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 signal processing devices to communicate with or control one another, or both.

N

NC See noise criteria.

near coincident micing 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 micing.

near field 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 low level sounds, such as room ambience, rumble, and leakage, without affecting the wanted sounds.

noise processor A signal processor that reduces tape noise.

noise canceling 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 sound file, 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.

non-directional microphone See **omni-directional microphone**.

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

nonlinear The property of not being linear—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.

off mic Not being within the optimal pickup pattern of a microphone; off axis.

off-micing micing 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.

Omni-directional microphone Microphone that picks up sound from all directions. Also called a non-directional microphone.

on mic Being within the optimal pickup pattern of a microphone; on axis.

open reel 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 light-emitting diode (LED) that flashes when the input signal is approaching or has reached overload and is clipping.

overtones 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.

paragraphic 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 mic'ing Establishing through mic to source 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 time delaying 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 right hand 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 spring loaded, free spinning 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.

poly-directional microphone See multidirectional microphone.

pop filter Foam rubber windscreens 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 multi-track 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).

print through 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 post-production.

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**.

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 rotary head 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.

real time 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 form—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 gauss—a 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 one millionth 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

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.

rotary head digital audiotape (RDAT) recorder Specifically, a digital cassette audiotape recorder with rotary heads. See also **stationary head digital audiotape recorder**

S

safe mode See read mode.

SA system See studio address system.

SDAT See stationary head digital audiotape recorder.

sampler An audio device that records a short sound event — such as a note or a musical phrase—into 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 frequency (or rate) at which an analog signal is sampled. Also called sampling rate.

scrape flutter filter A cylindrical, low friction 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 hard disk 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 cut and splice editing.

SCSI (Small Computer Systems Interface) The standard for hardware and software command language that allows two way 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.

self noise The electrical noise, or hiss, an electronic device produces.

sensitivity (1) Measurement of a tape'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 sound pressure level directly in front of the loudspeaker, on axis, 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.

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

silent film Film carrying picture only.

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

single™ microphone See single entry port microphone.

single entry port 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.

single system 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.

SMPTÉ time code A high frequency 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 signal to noise ratio.

solo A control on a multi-track 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 sound absorbing 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 hard disk 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.

sound pressure level See dB SPL

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 micing 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.

split section console Multi-channel production console in which the input, output, master, and monitor sections are separate. See also inline console.

split-track 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 non-synchronous, its in and outtimes, and its description.

stationary head digital audiotape (SDAT) recorder A fixed head digital audiotape recorder. See also rotary head digital audiotape recorder.

STC See sound transmission class.

stereo to mono 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 single track mono and a narrow balance stripe to ensure that the film wind on reels is smooth. See also full coat.

studio address (SA) system An intercom system used like a public address system to communicate with people in the studio not connected to the private line system, such as the performers, and for general instructions to all studio personnel. Also called a **tallback**.

subtractive equalization Attenuating, rather than boosting, frequencies 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 from 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 from 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 take up 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 multiple entry port microphone.

variable speed 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.

video leading audio When the picture of a new scene starts before the sound of the old scene has finished. See also audio leading video.

virtual track In hard disk 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 hard disk editing systems.

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

weighting network A filter used for weighting a frequency 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 frequency. 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 frequencies. 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 from 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 micing Coincident or near-coincident micing that places the microphones' diaphragms over or horizontal to one another. See also coincident micing and near-coincident micing.

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.