

## Vocabulary Definitions and Sentences

So you found the words and now you're ready to define them and write sentences for each word. Let me help you so we can make sure it's done right every time.

**First and foremost - Follow these directions.  
If you don't...you won't get credit. Period. End of story.**

**Remember, it must be turned in ON time, EVERY time or you WON'T get credit.**

To help, we are going to use the same example that you will find when you find the actual word list.

<b>1</b>	<b>Week 3</b>		
<b>2</b>	<b>9/10/14</b>		
<b>3</b>	Incandescent	LT	<b>4</b>
	Adagio	MT	
	Ensembles	MT	
	Opera	MT	
	Chief Electrician	TJ	
	Adept	SAT	
	Eulogy	SAT	
	Jocular	SAT	
	Pacifist	SAT	
	Sporadic	SAT	

1. The first thing we need is the VOCABULARY FORM that is found on the website under YOUR class.
  - a. You will need to TYPE the sentences and definitions on this form. Handwritten is NOT accepted.
2. Our first word is *Incandescent* so you need to look that word up.
  - a. First - find the LT definition page. Again, located on the website under YOUR class.
  - b. Second - open that file
  - c. Third – find the word *Incandescent* and type the definition from that file on to the Vocab form.
  - d. Fourth - now write a sentence for that word.

# Vocabulary Definitions and Sentences

## Sample 1 & 2

1	<b>Definition</b>	Word	Incandescent	Light source consisting of a metal filament (Tungsten) which glows white hot when current is passed through.
	<b>Sentence</b>	Incandescent light bulbs were replaced by the more eco-friendly halogen lights all around the United States.		
2	<b>Definition</b>	Word	Incandescent	Light Bulb
	<b>Sentence</b>	I turned the incandescent light on.		

### 3. Sample 1

- The word is written inside the box.
- Notice that the FULL definition is typed out.
- Also notice that the sentence is COMPLETE.
  - It shows a complete understanding of the word AND is consistent with the ability and intellect of a high school student.

### 4. Sample 2

- The word is written inside the box
- The definition is NOT complete and only gives a partial idea of what the word is or means.
- Is the sentence complete? Yes. Is the word used in the sentence? Yes. Is it consistent with the intellect of a high school student? Absolutely not. That is a sentence I might expect from an elementary student.

5. Simply writing a sentence DOES NOT get you credit.

6. If you copy and paste your friend's sentence you will BOTH get ZERO credit for the work. Even if the sentences are great, you still plagiarized the work so NEITHER of you will get credit.

7. This is a very easy assignment. All you have to do is DO IT and do it correctly. That's it.

# Sound Terms

## **A TYPE**

See JACK.

## **A-D CONVERTER**

Short for Analogue / Analog to Digital Converter. Changes a continuously varying electrical signal into a stream of binary data. Found in computer soundcards, Minidisk & CD Recorders etc..

## **AB**

A technique used to record in stereo. Two (identical) microphones are placed next to each other, parallel to each other, and pointing in the same direction. As you're looking at the action, the one on the left is panned hard left on the mixer and the one on the right is panned hard right. There are some problems with this technique, such as reflections off each microphone, leading to comb filtering and also a narrow coverage. Some sound techs try to overcome the coverage problem by spacing out the microphones, although this can lead to 'muddy' sounds due to delays. See COMB FILTERING and XY.

## **AB POWERING**

See PHANTOM POWER.

## **ABO**

Association of British Orchestras.

[ABO website](#)

## **ABSORPTION**

The ability of a surface to absorb sound. The absorption coefficient of a material is a figure between 0 and 1, representing its degree of absorption.

## **ABTT / A.B.T.T.**

The Association of British Theatre Technicians.

[ABTT Website](#)

## **AC**

Short for ALTERNATING CURRENT.

## **ACOUSTIC PICK-UP**

See PICK UP

## **ACOUSTICS**

The behaviour of sound and its study. The acoustics of a room depend on its size and shape and the amount and position of sound-absorbing and reflecting material.

## **ACTIVE**

In electronics (particularly audio), an 'active' circuit operates with an external power supply and is usually low power, while a 'passive' circuit operates directly on the signal using the inherent power of the surrounding circuitry.

This is why an **active crossover** is usually placed before the amplifiers, with integrated circuits and line level signal processing (100 Ohms impedance or greater), while a passive crossover acts after the amplifiers where the power level is much greater (16 Ohms impedance or less). Amp to speaker level is generally between 2 and 16 Ohms, while preamplifier electronics are generally 100 to 100K Ohms.

*Submitted by Bruce Trotter*

## **ADAM**

See DIGITAL RECORDING.

## **ADAPTOR**

1) Connector which allows two or more electrical devices to be connected to a single power outlet. The connection is normally parallel, that is, each device is fed the same voltage, but the current is divided between them. Sometimes known as a 'Twofer'. A three-way splitter is known as a 'Threefer'. A Series splitter is also available where a voltage is shared equally between two loads.

2) Also an ADAPTOR can be the same as a JUMPER.

See SERIES SPLITTER, JUMPER and GRELCO.

## **ADAT**

See DIGITAL RECORDING.

## **ADDRESS\***

Each item of equipment controlled by DMX512 has an address, which is the first DMX control channel to which it will respond. For example, in a situation where you have three 6-way dimmer racks, the first should be addressed to 1, the second to 7 and the third to 13.

## **AEOLIPHONE**

More commonly known as a wind machine, this is a specialist musical instrument / sound effects generator used to produce the sound of a gusty wind.

*[Video](#)*

## **AERIAL**

Cable or rod used to send and receive radio signals (connected to transmitter and receiver or tuner).

## **AES/EBU**

Audio Engineering Society / European Broadcast Union. Digital audio transfer standard, similar to S/PDIF. Uses 3 pin XLR connectors.

*[What is AES/EBU](#)*

## **AGC**

**A**utomatic **G**ain **C**ontrol. Circuitry within recording equipment which compensates for differences in volume in the incoming sound signal by adjusting the gain automatically. Helps to reduce wild swings in volume.

## **AMBIENT NOISE**

The sound heard in a given room with no sound sources. Each space has a particular sound which aids our identification of the kind of space we're in.

## **AMP**

Abbreviation for ;

- 1) AMPERE
- 2) AMPLIFIER

## **AMPLIFIER**

Sound equipment that amplifies/boosts the low voltage, low current signal from a CD player, mixing desk etc. into a higher current signal suitable for driving speakers.

As a general rule, each speaker in a sound system requires a separate amplifier. Each amplifier unit usually contains two amplifiers (for the two stereo components (left and right) of the sound signal), so with a single amplifier box, you can drive two speakers.

See POWER AMPLIFIER, CROSSOVER.

## **AMPLITUDE**

The strength of a vibrating wave; in sound, the loudness of the sound.

## **ANALOGUE SIGNAL**

A continuously variable signal that can have any value over a given range.

1) In lighting: an analogue voltage within the range 0 to 10 Volts can have values of 0, 2, 8.785 or any value between. Most dimmers require an analogue voltage in order to operate (from 0 to -10V or 0 to +10V depending on the manufacturer). Most lighting control desks produce a digital multiplexed output, which is converted by a demux box to an analogue signal for the dimmer. See also Digital dimmer.

2) Sound: An analogue recording will record the exact waveform of the original sound, simply converting it to an electrical signal at the microphone, and back into air movement at the speaker. See DIGITAL.

## **ARRAY**

A set of loudspeakers flown in a performance space. See also CLUSTER.

## **ATMOSPHERE**

The normal background sound at any location.

## **ATTENUATE**

To reduce the intensity of a sound signal. This is what the 'PAD' switch does on a sound desk.

## **AUTOMATIC STOP**

Many reel-to-reel tape players for theatrical use have a facility that stops the tape mechanism when a piece of clear leader passes a detector adjacent to the erase head. This can be used to cue the tape up ready to start the next effect.

## **AUTOMATION**

1) Facility available on larger sound mixing desks allowing channel muting or even fader moves to be taken under the control of a computer to ensure accurate and repeatable mixing.

2) Describes the method used instead of stage crew for moving bits of set around shows with a big budget. See MOUSE, SPADE.

### **AUXILIARY INPUT or RETURN**

A route back into the sound desk for a line level signal sent to a piece of outboard equipment (usually effects processor / EQ unit etc.) via an auxiliary send.

### **AUXILIARY OUTPUT or SEND**

An additional line level output from a sound desk which can be used for foldback or monitoring without tying up the main outputs. Each input channel will have a path to the Aux buss. Also used for feeding a signal to an effects processor. See Auxiliary Return.

### **B-TYPE**

See JACK.

### **BACKING VOCALS (B.V.s)**

Additional vocals for a musical which are performed offstage, often in a specially constructed booth (or an adapted room just offstage). The BV Booth has a video feed from the musical director so the singers can keep time.

### **BACKLINE**

Backline refers to the equipment which stands at the rear of a live band when they are performing. Guitar amps, bass amps etc. are standard backline equipment. Basically, everything a live band needs apart from the instruments the band hold (e.g. guitars), the PA (and front of house desks etc.) and the band themselves is backline.

### **BAFFLE**

- 1) A sheet of material used to prevent a spill of light in a lantern or in part of a set.
- 2) A panel in a loudspeaker cabinet designed to reduce back interference noise by isolating the front and rear of the loudspeaker diaphragm.
- 3) A panel in an auditorium positioned so as to reduce sound reflections and improve the acoustics of the space.
- 4) What most of this jargon will do to any non-technical theatrical type.

### **BALANCED LINE**

A method of carrying sound or data signals which reduces interference by using a third conductor, the shield. In the balanced line the shield, which is grounded, is in addition to the two signal- (or data-) carrying conductors. Balanced lines are less prone than unbalanced to interference. In balanced lines, one of the signal wires carries the audio signal, while the other carries an out-of-phase (inverted) copy. When the signal reaches the destination, the inverted copy is flipped and added to the original. Any noise added by interference is also inverted. When combined with the non-inverted noise, the two noise signals cancel each other out. See UNBALANCED LINE.

### **BANDWIDTH\***

The range of a piece of sound equipment. If an equalizer has cutoff frequencies of 200 and 2000 Hz, then the bandwidth is the difference between them, in this case 1800 Hz.

### **BANTAM**

See JACK.

## **BASS**

Lower end of the musical scale. In acoustics, the range (below about 200Hz) in which there are difficulties, principally in the reproduction of sound, due to the large wavelengths involved.

## **BASS BIN**

Slang for a speaker cabinet containing a Woofer designed for Bass sound reproduction (see also Subwoofer).

## **BEAT**

- 1) In acoustics, a periodic variation in amplitude which results from the addition of two sound waves with nearly the same frequency. Also affects radio reception.
- 2) A deliberate pause for dramatic / comic effect.
- 3) A measure of time when cueing (e.g. "the LX cue needs to go four beats after the door is closed").
- 4) A unit of action, as suggested by Stanislavski to help actors determine the through-line of a role.

## **BECTU**

Broadcasting, Entertainment, Cinematograph and Theatre Union. The UK entertainment technicians union. (US equivalent is IATSE)

[BECTU website](#)

## **BEGINNERS**

A call given by Stage Management to bring those actors who appear in the first part of a play to the stage. e.g. "Act One Beginners to the stage, please". The actors/actresses are then called by name.

A similar call is given after the interval (e.g. "Act Two Beginners to the stage please"). See also HALF, QUARTER.

## **BELL BOARD**

A live sound effects board on which are mounted a number of different types of doorbells / phone bells etc. Usually operated by stage management. The switch or bell push to operate the doorbell (or even the whole bell board) can easily be mounted on the set if the director wants the actors to operate it themselves.

## **BELTPACK**

Part of the communication ('cans') system in a theatre, the Beltpack contains the controls and circuitry to drive the HEADSET worn by crew members. Each beltpack connects into the headset ring and back to a PSU (Power Supply Unit) which is powered from the mains.

See also CANS.

## **BI-AMPLIFICATION**

A way of optimising the efficiency of a speaker system by separately amplifying the High Frequency (HF) and Low Frequency (LF) portions of the sound signal (after the crossover) and sending them down two pairs of cables to the speaker. Multipin Speakon connectors have been developed to do this.

## **BINARY\***

BIT = Binary Digit. More information coming soon.

## **BINAURAL**

Sound reproduction using two microphones usually in a 'dummy head' (to emulate the shape and the response of the human hearing system) feeding a pair of headphones, so that the listener hears the sound he or she would have heard at the recording location.

## **BNC**

Coaxial connector used for carrying a composite video signal or radio frequency signal. BNC stands for **Bayonet Neill-Concelman** - after original inventors Carl Concelman and Paul Neill who developed the connector in the late 1940s. BNC is also thought to stand for 'Bayonet Nut Connector'.

## **BOOM**

1) Vertical scaffolding pole (usually 48mm diameter) on which horizontal boom arms can be mounted, carrying lanterns. Often used behind wings for side-lighting etc. Booms have a base plate (known as a TANK TRAP) or stand at the bottom and are tied off to the grid or fly floor at the top (not always necessary for short booms). Booms can also be fixed to the rear of the proscenium arch (Pros. Boom) or hanging from the ends of lighting bars. Sometimes known in the US as a light tree. A light tree mounted upstage of a Tormentor is known as a Torm Tree.

2) An arm mounted on a microphone stand.

## **BOOTH**

(US) Control Room.

## **BOUNDARY MICROPHONE**

A microphone mounted on a flat plate which acts as a reflective surface directing sound into the mic capsule. Used for general pick-up over a large area. A PZM (Pressure Zone Microphone) is an omnidirectional boundary mic for picking up sound from all around. A PCC (Phase Coherent Cardoid) picks up only from in front of the microphone.

See also THREE TO ONE RULE and COMB FILTERING.

## **BREAKOUT**

A connection at the end of a multicore cable which allows the connection of many items to it. (e.g. there is a breakout box at the end of a sound multicore cable which allows you to plug microphone cables into it).

## **BRIDGE**

1) A walkway, giving access to technical and service areas above the stage or auditorium, or linking fly-floors. See also CATWALK.

2) A lighting position above the auditorium, commonly with a catwalk above it to access lighting equipment and electrical systems is known in Dutch as a *Zaalbrug*.

## **BRIDGING**

Technique for getting more power out of a stereo amplifier by feeding it a mono input signal and then connecting the outputs together. The amplifier is said to be 'BRIDGED'. Check the owner's manual of the amplifier before trying this. Some amplifiers have a switch which does the bridging internally.

## **BUSS**

A signal line within a sound mixing desk that can receive its signal from a number of sources. eg the Aux 1 buss carries the signals from the input channels to the Aux 1 Send master control.



## **C.C.T.V. / CCTV**

Closed Circuit television. A video relay system, used in the theatre to give a view of the stage to remote technical operators (especially stage managers). Also used to give musical performers a view of the conductor (and vice versa) to help in keeping time. It's called Closed Circuit because the signal is not being broadcast anywhere - there's a direct link between camera and monitor.

## **CABLE**

Wiring, temporarily rigged, to carry electrical current. Depending on the size of the cable (current carrying capacity), cables are used to supply individual lanterns, whole dimmer racks, or carry signals from a microphone etc.

## **CABLE TIE**

Lockable (and sometimes releasable) plastic strap used to tie a bundle of cables together, amongst many other things.

## **CALLING THE SHOW**

The process of giving verbal cues to the lighting, sound, fly operators and stage crew during the performance. Usually done from the prompt corner by the DSM or Stage Manager over cans.

## **CANS**

- 1) Headset earpiece, microphone and beltpack used for communication and co-ordination of technical departments during a performance. (e.g. "Electrics on cans", "Going off cans", "Quiet on cans!"). A commonly used system in the UK is produced by Canford Audio under the TechPro brand. In the USA, ClearCom is commonly used.
- 2) Any headphones.
- 3) Short for PARCANS.

## **CAPACITANCE\***

TO BE DEFINED

## **CARDOID**

See PICK-UP.

## **CARTRIDGE**

A tape loop in a box which can cue itself up to the beginning of the recorded track in a cartridge player. Previously used extensively for radio jingles, and sometimes for theatre sound effects, but now superseded by Minidisk.

## **CASSETTE**

Originally, Compact Cassette. Popular domestic 1/8' tape format. Difficult to cue up accurately, so awkward for live theatre, but cheap, so often used by small scale touring companies as sound effects source. A different cassette is used for each effect. However, Minidisk prices are coming down to the extent that cassettes are rarely used for sound effects now.

## **CASUALS**

Part-time temporary technicians (paid by the hour).

## **CD (Compact Disc)**

Digital sound storage medium introduced in 1982. Provides a high quality source of music, sound effects etc. Also used as a playback medium for sound effects etc by large theatres with long running shows, although CDR (Recordable CD) is becoming more affordable by the day.

## **CHANNEL**

A complete control path for signals in lighting or sound equipment.

In a lighting desk, the channels are directly controllable by the lighting operator. Within the desk, the channels are 'patched' to a dimmer or dimmers which the desk then sends a signal to depending on the level of the channel.

## **CHECK**

1) Opposite of Build; a smooth diminishment of light or sound level (e.g. Lighting: 'I think we should check this state down a touch as the song begins')

2) See Prefade Listen.

## **CHINAGRAPH PENCIL**

Usually white, wax-based pencil used for marking magnetic tape prior to splicing. Also used for marking identifying numbers on lighting gels.

## **CHORUS**

1) In Greek theatre, a character (or group) representing an element in the drama which comments on the action, and advances the plot.

2) A sound processing effect which adds 'body' to a sound by overlapping a number of slightly delayed versions of the original sound.

## **CITT**

Canadian Institute for Theatre Technology.

[CITT website](#)

## **CLICK TRACK**

Technique for reinforcing the live sound of a musical or band with recorded sound from one track of a tape. The other track of the tape consists of a click used by the musical director to keep the live band and cast synchronised with the recorded band or cast.

## **CLIPPING**

Distortion in a sound signal caused by an amplifier or mixer being unable to handle the level of signal being fed to it.

## **CLUSTER**

Generic name for a grouping of loudspeakers hung in a performance space. (e.g. The central cluster). Also known as ARRAY.

## **COMB FILTERING**

An effect caused by the same sound arriving at a given point at slightly different times. This could be the listening position or a microphone. Comb filtering can be reduced in the case of sound from speakers by employing delays, and in the case of microphones by following the three to one rule. See THREE TO ONE RULE and DELAY.

## **COMPANDER**

Outboard sound equipment. Combination of a COMPRESSOR and an EXPANDER.

## **COMPRESSOR**

A piece of sound processing equipment that ensures all wanted signals are suitably placed between the noise and distortion levels of the recording medium. It evens out the unwanted changes in volume you get with close-miking, and in doing so, adds punch to the sound mix. A Limiter is used to stop a signal from exceeding a preset limit. Beyond this limit, the signal level will not increase, no matter how loud the input becomes. A Limiter is often used to protect speaker systems (and human ears) by preventing a system from becoming too loud.

## **CONDENSER MIC**

(Capacitor Mic) A microphone that uses the varying capacitance between two plates with a voltage applied across them to convert sound to electrical pulses. Condenser microphones need a power supply to provide the voltage across the plates, which may be provided by a battery within the case of the microphone, or it may be provided from an external phantom power supply. A condenser mic is more sensitive and has a faster reaction to percussive sounds than a Dynamic mic and produces a more even response. See Electret Mic.

## **CONSTANT VOLTAGE SYSTEM**

See HUNDRED VOLT LINE.

## **CONTACT MIC**

A microphone that directly picks up the sound transmitted by a solid material. See Boundary Mic, PCC, PZM.

## **CONTROL ROOM**

Room at the rear of the auditorium (in a proscenium theatre) where lighting and sometimes sound is operated from. Known in the US as the BOOTH. The stage manager calling the cues is very often at the side of the stage (traditionally stage left) but in some venues he/she may be in the control room also. The control room is usually soundproofed from the auditorium so that communications between operators cannot be heard by the audience. A large viewing window is obviously essential, as is a show relay system so that the performance can be heard by the operators. Obviously if sound is being mixed, the operator should be able to hear the same as the audience, so some control rooms have sliding or removable windows, or a completely separate room for sound mixing. Where possible, the sound desk is moved into the auditorium so that the operator can hear the same as the audience.

Also known as the BOX.

## **CROSS FADE**

Bringing another lighting state up to completely replace the current lighting state. Also applies to sound effects / music. Sometimes abbreviated to Xfade or XF.

## **CROSSOVER**

- 1) A route leading from one side of the stage to the other, out of the audiences view.
- 2) An electronic filter in a sound system that routes sound of the correct frequency to the correct part of the speaker system. Different speakers handle high frequencies (tweeters) and low frequencies (woofers). Sometimes known as a crossover network.

An active crossover splits the signal from the mixing desk into high, mid and low frequencies which are then sent to three separate amplifiers.

## **CROSSTALK**

A leakage between two audio circuits (e.g. between two channels on a sound mixer).

## **CROWN**

Manufacturer of PA amplifiers and microphones.

[Crown website](#)

## **CUE**

1) The command given to technical departments to carry out a particular operation. E.g. Fly Cue or Sound Cue. Normally given by stage management, but may be taken directly from the action (i.e. a Visual Cue).

2) Any signal (spoken line, action or count) that indicates another action should follow (i.e. the actors' cue to enter is when the Maid says "I hear someone coming! Quick - Hide!")

## **CUE TO CUE**

(also known as 'Topping and Tailing')

Cutting out action and dialogue between cues during a technical rehearsal, to save time. (e.g. "OK, can I stop you there - we'll now jump to the end of this scene. We'll pick it up from Simon's line "And from then on it was all downhill" in a moment. OK - we're all set - when you're ready please.")

## **CUEING**

There is a standard sequence for giving verbal cues:

- 'Stand-by Sound Cue 19' (Stand-by first)

- 'Sound Cue 19 Go' (Go last).

## **DAISY-CHAINING**

Connecting items of equipment together by linking from one to the next in a chain. Used for connecting demux boxes to dimmers etc.

## **DAT (Digital Audio Tape)**

See DIGITAL RECORDING.

## **DBX**

A tape-recording noise reduction process.

## **DCC**

(Digital Compact Cassette) Manufactured by Philips in the Netherlands, this format was supposed to be the successor to the compact cassette, but Mini Disk won the marketing war. DCC was discontinued for mass market use in 1996. See DIGITAL RECORDING.

## **DEAD ROOM**

A room with very thick sound absorbers, causing a very dull sound with no reverberation.

## **DECIBEL (dB)**

Relative measurement for the volume (loudness) of sound. One dB is the smallest variation in loudness that the human ear can detect. Also used to measure the difference between two voltages, or two currents. See ZERO

DB.

## DECK

- 1) Stage/Rostrum Floor (e.g. "Fly that flat in to the deck") [known in German as *bühnenboden*]
- 2) Tape deck/Record deck.
- 3) A steel-framed platform with a wooden top used with replaceable scaffold legs (Trade names include Steeldeck, Metrodeck (made by Maltbury), ProDeck).

## DELAY

Outboard sound equipment that can momentarily stores a signal being sent to part of a P.A. system so that delayed reinforced sound reaches the audience at the same time (or just after) the live sound from the stage. Using the 'Haas Effect' the audience cannot detect the sound as amplified.

## DI BOX / D.I.BOX

Interface unit to convert the high impedance unbalanced output of an instrument (e.g. Electric guitar) into a low impedance balanced signal of low level suitable for connection to the microphone input of a mixing desk. Usually has an output jack socket so that the instruments unprocessed signal can be passed direct to the musicians amplifier. DI = Direct Injection.

## DIAPHRAGM

- 1) See IRIS.
- 2) The part of a microphone which responds to sound waves.

## DIGITAL

Many electronic devices use digital logic. Information is handled in separate bits (either ON or OFF) rather than continuously variable analogue signals. Most computer lighting boards give a digital multiplexed output, and more and more sound equipment is going digital.

## DIGITAL EFFECTS

Reverb, Delay, Phasing, Flanging, Harmonising, Chorusing. More information coming soon !

## DIGITAL RECORDING

- 1) **ADAM** : (Akai Digital Audio Multitrack). 12 track recording onto Video 8 tape. 16 bit, 44.1 or 48kHz sampling rate.
- 2) **ADAT** (Alesis Digital Audio Tape) Digital 8 track multitrack recording format introduced in 1991. There are two formats of recording: Type 1 (16 bit) Type 2 (20 bit) at two sample rates (44.1kHz and 48 kHz) onto standard SVHS video tapes.
- 3) **DAT** (Digital Audio Tape) Cassette-like system which has much higher quality than standard audio cassettes. Introduced in 1987, and widely used in gathering sound effects, for news gathering, and for playback of music.
- 4) **DCC** (Digital Compact Cassette) Rival to DAT which also plays standard audio cassettes. DCC was discontinued in 1996.
- 5) **Mini Disk (MD)** : Uses magnetic disk technology, rather than tape. A laser heats an area of magnetic disk which is then written to by a magnetic head. When cooled, the magnetic information is read from the disk by laser. Tracks can be named, and are instant start. Very theatre-friendly system.
- 6) **Direct to Disk** : Uses the hard disk present in most PCs as the recording medium.

[Alesis Website](#)

**DIN**

Deutscher Industrie Normen. European standard covering audio connectors and tape equalisation characteristics.

**DIPOLE**

Aerial used with radio microphone systems. A relatively long aerial in two parts, with an insulator at each end, connected in the middle to a coaxial cable which then connects to the receiver.

**DIRECT INJECTION BOX**

See DI BOX.

**DISTORTION**

Usually undesirable result of overloading sound equipment. Reducing the levels can remedy the situation.

**DIVERSITY**

A way of maximising the quality of received radio signal by using two receivers and aerials tuned to the same frequency - the circuitry automatically silently switches to the strongest signal.

**DOGBOX**

Channel at the rear of a mixing desk flight case used to contain cables and adaptors to enable some cabling to remain connected whilst in the case. Some cases have a hinged removable dogbox cover to hide the cables during operation where the appearance of the desk is important.

**DOLBY**

Trade name for a series of noise reduction systems that have become standard on many tape playback machines. Most film soundtracks are produced using this process. Different varieties are found from Dolby B on most personal cassette players, to Dolby SR and Digital, the current state of the art for cinema.

[Dolby Labs Website](#)

**DOOR SLAM**

A small wooden box with a heavy door and various bolts and locks used to simulate slamming and other door sound effects offstage.

**DRESS REHEARSAL**

A full rehearsal, with all technical elements brought together. The performance as it will be 'on the night'.

**DRY**

- 1) An actor forgetting the words of his script.
- 2) To record a sound without using any effect or other processing is to record it 'dry'. Recording with an effect is recording 'wet'.

**DUBBING**

The analogue process of copying a sound or video from one source to another for backup purposes, or for mass distribution.

## **DYNAMIC MIC**

Robust type of microphone which picks up the sound on a diaphragm connected to a coil of wire which moves within a magnet. An alternating current is induced into the wire which provides the electrical output. Most dynamic mics have low output impedances of 200 Ohms. See CONDENSER MIC and ELECTRET MIC.

## **EARTH LOOP**

Normally refers to audio interference resulting from a situation where two pieces of sound equipment are connected together over a long distance. The earths of the equipment are at different potential, and this results in an audible hum or buzz. Can be cured by removing the screen connection on one end of the signal cable. Electrical earth connections must never be removed.

## **EARTHING**

Electrical safety requirement that metal parts of electrical equipment are connected to a common earth or ground point so that in the event of a fault, excess current can be carried away, causing the fuse to blow. Known in the USA as Ground. Some sound problems (such as hums) can be cured by altering the earthing / grounding arrangements of the system, but this should never involve removing the earth connections to equipment, only by adding an earth connection where none exists, or by adjusting the way audio cables are wired. Seek professional advice to avoid safety problems.

## **ECHO**

A repeated sound received late enough to be heard as distinct from the source. See REVERB.

## **EFFECTS, SOUND**

1) **Recorded** : Often abbreviated to FX. There are many sources for recorded sound effects, from Compact Discs, to downloading from the internet. May form an obvious part of the action (train arriving at station) or may be in the background throughout a scene (e.g. birds chirping).

2) **Live** : Gunshots, door slams, and offstage voices (amongst many others) are most effective when done live. See Door slam, Thunder Sheet, Rain box.

See also Compressor, Digital Effects, Exciter, Noise Gate, Reverb.

## **ELECTRET MIC**

A condenser microphone where the capacitor plates are given a charge during manufacture which they retain, therefore requiring no external power supply.

## **ENHANCER**

Sound processing equipment which increases the presence of the vocal track in a mix by adding to the treble information in the signal. Also known as an Exciter.

## **EQUALISATION**

The process of adjusting the tonal quality of a sound. A graphic equaliser provides adjustment for a wide range of frequency bands, and is normally inserted in the signal path after the mixing desk, before the amplifier. See FEEDBACK.

## **ESTA**

(US) Entertainment Services and Technology Association. See PLASA for the UK equivalent.

[ESTA website](#)

## **EXCITER**

1) See ENHANCER.

2) **Exciter Lamp** - the lamp in a film projector that shines through the optical soundtrack and enables it to be read by a light sensor.

## **EXPANDER**

See Noise Gate.

## **FADE**

A fade is an increase, diminishment or change in lighting or sound level.

## **FADE UP**

An increase in lighting or sound level, over a given time period. An increase in level from an existing state is known as a BUILD.

## **FADER**

A vertical slider which is used to remotely set the level of a lighting or sound channel.

## **FEED**

A power supply to a piece of equipment or installation is termed a 'feed'. Sound equipment and sensitive computer equipment should have a clean feed - that is, a supply that is free from interference from other equipment.

A signal from one system to another is also known as a feed (for example, an audio signal from the FOH desk to a TV company videoing a concert is known as a feed.)

## **FEEDBACK / HOWLROUND**

(Sound) A loud whistle or rumble heard emanating from a sound system. It is caused by a sound being amplified many times. (E.g. a sound is picked up by a microphone and amplified through the speaker. The microphone picks up this amplified sound and it is sent through the system again). Feedback can be avoided by careful microphone positioning, and can be reduced by use of Equalisation to reduce the level of the frequency band causing the feedback.

## **FEEDER**

In the US, a main power cable to an installation is known as a feeder.

## **FIBRE OPTICS**

A method of directing light down a very thin glass fibre. Fibre Optics are used mostly in communication, but find theatre applications in star cloths which are black backcloths with the ends of optical fibres poked through, to create a mass of pin pricks of light. A large bundle or harness of fibres may be fed from one light source, sometimes with a motorised colour or flicker wheel.

New technology enables digital sound signals to be sent down optical fibres, replacing heavy and expensive multicore cables.

## **FILLS**

Term for speakers additional to the main PA to improve the sound in particular locations (e.g. 'Front fills' add sound at the front of the auditorium which might be just out of range of the main PA stacks at the sides of the



stage).

## **FILTER**

1) See Colour. 2) Electronic device to isolate and redirect specific frequencies in a speaker system.

## **FLIGHTCASE / FLIGHT CASE**

Metal framed wooden box on wheels with a removable lid used for transporting equipment between venues.

Flightcases are very strong, and have reinforced corners and edges. Care should be taken when lifting flightcases as they can be very heavy.

The term comes from their original use in protecting delicate equipment when being loaded into air transport and being both very strong and relatively lightweight.

*Additional information by Chris Higgs*

## **FLOAT MIC**

See FLOATS.

## **FLOATS**

Early form of footlights using burning wicks floating in oil across the front of the stage. Now applies to anything rigged on the front edge of the stage (eg Float microphones, Uplights / footlights etc.)

## **FOH**

See FRONT OF HOUSE.

## **FOLDBACK**

Means by which musicians can part of the rest of the sound mix (including voices) and how their instruments sound after being amplified. Also enables actors on stage to hear musicians or effects when they cannot hear the output of the auditorium sound system.

## **FOUND SOUND**

Refers to an audio composition created using sounds that have been recorded for the project, sometimes all from the same location, to which the project relates.

## **FREQUENCY**

(measured in Hertz - Hz - cycles per second) The number of times a sound source vibrates each second. A high frequency (HF) sound has a higher pitch and is uni-directional. A low frequency (LF) sound has a lower pitch and is omnidirectional.

## **FX**

Abbreviation for Effect, usually referring to Sound Effects, but can also mean special stage effects.

## **GAFFER TAPE / GAFFA TAPE**

Ubiquitous sticky cloth tape. Most common widths are .5 inch for marking out areas and 2 inch (usually black) for everything else. Used for temporarily securing almost anything. Should not be used on coiled cables or equipment. Originally known as Gaffer's Tape, from the Gaffer (Master Electrician) on a film set. Also known as Duct Tape. See PVC Tape.

**GAIN**

- 1) The level of amplification given to a signal or of a system.
- 2) A control of the amount of pre-amplification given to a sound signal on its way into a mixer. Particularly important for microphone inputs - a quiet vocal will require a lot of gain, a loud singer less so.

**GRAMS**

Refers to a Gramophone, originally the only way of playing back sound effects from vinyl or shellac record discs. A Grams cue, then, is a cue to play back recorded sound. Some TV productions (particularly shows that are shot "as live" or broadcast live) list GRAMS OPERATOR in the credits. The term is rarely used in theatre nowadays.

**GRAPHIC**

Short for GRAPHIC EQUALISER.

**GRAPHIC EQUALISER**

See EQUALISATION.

**GROUP**

A subdivision, permanent or optional, of a lighting board control preset, or a sound desk.

**GUN MIC**

A highly directional condenser microphone.

**HAAS EFFECT**

A psychoacoustic phenomenon whereby an audience will focus on an actual sound source if the reinforced sound from speakers arrives 10 - 15 milliseconds later. The setting up of delays can be time-consuming but the Haas Effect can make a vast difference to the perceived quality of the sound in a show. The delays are set up by experimentation rather than by using distance/speed/time formulae.

**HEAD**

See RADIO MIC.

**HEAD SOUND**

The head of the sound department, which deals with any recorded music, sound effects, vocal reinforcement and music amplification required in the production.  
See also NO.1 SOUND.

**HEADSET**

- 1) General term for theatre communication equipment.
  - 2) A headphone and microphone combination used in such communications systems with a beltpack.
- See also CANS.

**HOWLROUND**

See FEEDBACK.

## **HUM HEAD**

See NOISE BOY. Term popular around the Edinburgh Festival.

## **HUNDRED (100) VOLT LINE**

Way of sending speaker signals over long distances without losing signal strength. Transformers are used in each speaker cabinet to convert the signal from 100 Volts to a more usable level. (100V is used in the UK, 70.7V in the USA)

## **HYPERCARDROID**

See PICK-UP

## **IEM / I.E.M.**

See IN EAR MONITORS

## **IN EAR MONITORS**

Small headphones worn inside the ear by members of a pop band so they can hear the monitor mix (or the backing track they're miming to) without having lots of monitor speakers onstage. The advent of in-ear monitoring has improved the sound quality of the monitoring for these band members as they no longer have to try to hear the monitors over screaming from the audience. Each member of the group can have their own monitor mix which is guaranteed to be the same in every venue on the tour. Known as I.E.M.s or IEMs for short.

## **INDUCTION LOOP**

System which amplifies audio frequency currents (from a microphone over the stage) around a large loop of cable (around the auditorium) to generate a magnetic field which can be picked up by a hearing aid switched to the 'T' position.

## **INFRASOUND**

Very low frequency sound which is not normally audible by the human ear. Usually describes sound waves below 20Hz. At high enough volumes (sound pressure levels) sound waves as low as 12 Hz can be perceived by some ears. When they can't be perceived as sound, the waves can be felt as pressure either in the ear drums, or elsewhere on the body. Some scientists have linked the presence of infrasound in buildings (produced by air conditioning systems or large empty rooms) with feelings of unease, nervousness, or even perceptions of supernatural presences by visitors.

## **INSERT**

- 1) An additional route into a sound desk.
- 2) An extra lighting state added into the sequence later. See POINT CUE.

## **INTERCOM**

Usually refers to microphone/headset communications equipment. Abbreviated to 'comms'. Also known as 'cans'.

## **INTERVAL MUSIC**

Music played in the foyer and/or auditorium during intervals. Most usually Vivaldi's Four Seasons.

## **JACK**

1) Segmented audio connector. Mono Jacks have two connections - tip and sleeve, and are unbalanced. Stereo jacks have three connections - tip, ring and sleeve.

**B-type jacks** (also known as Bantam jacks) were originally designed for use in telephone exchanges and provide a high quality (and expensive) connection in jackfields.

**A-type jacks** are cheaper and more common, but more fragile. A type jacks are available in 2 sizes : quarter inch and eighth inch.

2) (US) A hinged brace. In the open position, it holds up a flat or other unit of scenery. A Tip Jack is a combination of a jack and castors so scenery can be supported or rolled. When it is in position, it is tipped to vertical. When rolling, it leans backwards.

## **JACKFIELD**

An array of jack sockets ('jills'), providing connections to equipment/outlets etc. A patch panel.

## **JUMPER**

An adaptor from one type of electrical connector to another. For example, a 13 - 15A jumper has a 13A plug and a 15A socket at either end of a short cable. Also applicable to sound cables.

## **KILL**

To switch off (a light/sound effect); to strike/remove (a prop).

## **KILOWATT**

1 kilowatt (1kW) is equal to 1000 Watts. The WATT is a measure of electrical power.

## **LATENCY**

In digital live sound systems there are tiny time delays due to the processing time required to convert sound from analogue to digital and back again. This time period is known as the LATENCY of the system.

## **LAVALIER MICROPHONE**

Originally, a mic worn around the neck on a string. Now applies to a small 'tieclip' microphone. These microphones are used for TV and also in musical productions requiring the amplification to be 'invisible'. The mic is worn in clothing, in hair / wigs, over the ear or on the face (heavily made-up).

## **LEADER TAPE**

Non-magnetic plastic tape used to begin and end sound tapes and to separate cues on tape. Clear leader tape is used to activate the automatic stop on some playback machines. Leader tape is available in a variety of colours.

## **LEMO**

A small metal multipin connector used for connecting radio microphone heads into the transmitter pack.

## **LIMITER**

See COMPRESSOR.

## **LINE CHECK**

An important part of the sound check process, the line check is a methodical test of every instrument or microphone that is connected to the sound desk. It enables the sound engineer to ensure that everything is

working correctly and is connected as he expects it to be, and is in the correct place on stage.

### **LINE LEVEL SIGNAL**

Standard level at which the inputs and outputs of domestic and professional sound equipment operate. Slight variations are that some equipment works at +4dB, some at -10dB. See MIC LEVEL SIGNAL.

### **LINE-UP TONE**

Signal of known frequency and level used for setting up sound recording equipment levels accurately.

### **LOUDSPEAKER**

Device for converting the electrical signal from an amplifier back into sound waves, most commonly by vibrating a paper cone. Most speaker systems are composed of a number of sources - each designed to handle a specific range of frequencies. See Tweeters and Woofers, Bi-Amplification.

### **MADI**

Acronym for Multichannel Digital Audio Interface, this is a standard way of sending digital audio signals over distances over 100m. Developed by AMS Neve, Mitsubishi, Solid State Logic and Sony, it is defined and monitored by the Audio Engineering Society. The standard is also known as AES10. MADI supports serial digital transmission over coaxial cable or fibre-optic lines of 28, 56, or 64 channels; and sampling rates of up to 96 kHz with resolution of up to 24 bits per channel.

### **MASTER**

- 1) An overall control fader or lever on a lighting or sound control board. The Grand Master takes precedence over all other controls and allows the operator to fade out the entire output of the lighting desk. On a lighting desk the PRESET MASTER allows the control of a section of the desk independently from the rest. See also SUBMASTER.
- 2) An original (e.g. Master tape, master plan) which should be used only to make a copy from which to work.
- 3) A Department Head (e.g. Master Carpenter, Master Electrician).

### **MATRIX OUTPUT**

Set of outputs on a mixing desk which allows the user to preset a number of output configurations. eg on a 8 x 8 matrix, each of the 8 group outputs from the channels can be routed to any or all of the matrix outputs.

### **MD**

- 1) See MUSICAL DIRECTOR.
- 2) Mini Disc. See DIGITAL RECORDING.

### **MIC**

(pronounced 'Mike') Abbreviation for microphone.

### **MIC LEVEL SIGNAL**

Low level audio signal produced by circuitry in microphone. Needs boosting either by a pre-amp or a mixing desk before it can be amplified. Susceptible to interference over long cable runs.

### **MICROPHONE**

Device for converting sound into electrical pulses which can then be amplified or recorded onto tape. Signals from a microphone are very low level and are amplified in the mixing desk to line level. See Dynamic Mic, Condenser Mic, Phantom Power, Pick-up, Radio Mic.

## **MICROPHONE CAPSULE**

An interchangeable microphone head that fits onto a pre-amplifier. Many capsule types are available, all of which fit the same pre-amplifier.

## **MIDI**

**M**usical **I**nstrument **D**igital **I**nterface. Control system established in 1984 for linking musical instruments or other electronic equipment and computers together and storing the control signals the equipment produces for subsequent playback. See MSC, MMC, SYSTEM EXCLUSIVE.

## **MINI DISC**

See DIGITAL RECORDING.

## **MIXDOWN**

The process during which a multitrack recording is balanced and transferred to two tracks (stereo) for playback or reproduction.

## **MIXER**

A desk comprising a number of input channels where each sound source is provided with its own control channel through which sound signals are routed into two or more outputs. Many mixing desks can also change the quality of the sound (see EQUALISATION).

A **Powered Mixer** has an amplifier built into it. Sound sources of varying levels are accepted which can be amplified if necessary.

Also known as a Sound Desk or Sound Board. (See Line Level, Gain).

## **MMC**

MIDI Machine Control. A variation of the MIDI language designed for controlling mechanical equipment (eg Tape Players).

## **MONITOR**

1) An onstage speaker which allows a performer to hear the output of the PA system, or other members of a band.

2) A video display screen (not normally able to receive broadcast TV pictures) used with a CCTV system or a computer.

## **MONOPHONIC (MONO)**

Single channel sound recording, as opposed to STEREOPHONIC, which uses two channels (left and right).

## **MS**

MS stands for Mid and Side. It involves the use of two different types of microphone capsule - a cardioid for the M and a figure-eight for the S. The biggest advantage is that centre sounds are not 45 degrees off-axis as with XY, because the Mid capsule points along the centre-line. This means that there isn't so much of a 'hole' in the centre of the stereo image. The Side capsule is placed at right angles to the M capsule. The M is connected to a mixer

channel. The S is split into two and connected to two mixer inputs. The M is panned centre. One of the S inputs must be phase-inverted. Find out which is the left and which is the right and pan hard left and hard right respectively. If set correctly, there will be no noise if the M is switched off because the two S channels cancel each other. Originally, there were problems with reflections and due to the use of two different capsules, although single-point MS mics have been developed which overcome the problem quite effectively.

## **MSC**

MIDI Show Control. A control language which is an extended version of the original MIDI language. In addition to a 'go' command, cue numbers and other information can be sent as well (in addition to fault reports and safety checks).

## **MULTI**

Short for MULTICORE.

## **MULTICORE**

A flexible electrical cable composed of several well-insulated cores covered in a strong PVC or rubber covering. Enables a number of different circuits to be carried down one piece of cable. Both lighting and sound multicores are available. Sometimes known as a Multi or Snake.

## **MULTIPAIR CABLE**

See MULTICORE.

## **NAB**

National American Broadcast. Standard for tape recording equalisation characteristics.

## **NAGRA**

A portable audio reel-to-reel tape recorder, manufactured by Kudelski in Switzerland. The analogue Nagra was the industry standard for radio & TV reporters and for film location sound. The company now manufacture digital recorders to the same rugged build quality.

*[Nagra website](#)*

## **NOISE BOY**

Theatre or concert sound engineer. Normally male. But not exclusively so! Also known as a Hum Head. See also Techie and Lampy.

## **NOISE GATE**

A piece of sound processing equipment that reduces background noise by muting a sound signal when it falls below a certain level, restoring it when the level increases again. Must be used on vocal microphones with care, because it may cut the signal off, although the vocalist is still singing quietly. Also known as an Expander.

## **NORMALLING\***

TO BE DEFINED

## **OHM**

The unit of electrical resistance.

## **OMNIDIRECTIONAL**

See PICK-UP.

## **OVERHEADS**

- 1) Microphones positioned above a drum kit to pick up the cymbals etc. without getting hit.
- 2) Microphones positioned over the stage to pick up the overall sound of the concert / production.

## **PA SYSTEM**

Short for Public Address System.

## **PACK**

See RADIO MIC.

## **PAD**

A switch on a mixing desk input channel which attenuates (reduces the level of) a signal. Used if a loud / high level signal is causing the desk to be overloaded.

## **PAGE**

- 1) See PAGING. 2) Some theatre announcement systems use the term 'PAGE' to mean making a call (e.g. 'Can you page Simon to come to the fly floor')
- 3) A way of increasing the functionality of a control on a lighting desk. For example, most computerised lighting desks with SUBMASTERS will allow you to store more than one lighting state in each submaster. Each group of submasters is given a page number which is used to select which set you want to use. See also SUBMASTER.

## **PAGING**

The act of holding a tab etc. back to allow large items or actors offstage. Also preventing microphone etc cables from getting entangled by pulling / releasing them from offstage as performer walks around.

## **PAN**

- 1) A control on a mixing desk which allows the operator to position the channel's output in the final stereo image (L - R).
- 2) A horizontal (side-side) movement of a camera or a moving light. Short for Panorama. See also TILT.

## **PARAMETRIC EQUALISER**

Equalisation control where the range of frequencies to be boosted or cut can be selected. Allows the 'fine-tuning' of the equalisation.

## **PARAMETRIC SPEAKER**

Highly directional speaker which produces a very narrow beam of sound using ultrasonic waves as carriers. When the ultrasonic waves collide with an object (or the listeners's head) the sound waves become audible to that person.

## **PASSIVE**

Opposite of ACTIVE. See ACTIVE.



## PATCH

- 1) (verb) The act of plugging a lantern into a dimmer (e.g. 'Can you patch circuit 12 into dimmer 18 please').
- 2) (noun) The system for connecting lanterns to dimmers (The Patch).

The term also applies to sound - a PATCH BAY is used to connect outboard equipment into the sound desk and to connect sound desk outputs to amplifiers, and amplifiers to speakers.

## PATCH BAY

See PATCH.

## PATCH PANEL

A board consisting of rows of sockets into which plugs can be connected to route sound signals or power for lighting circuits. Some American systems use a Pin Plug patching system. See also PATCH.

## PATCHING

- 1) To cross-connect lighting circuits around the stage area to a chosen dimmer. Connecting lanterns to dimmers.
- 2) Using a cross-connect panel which enables any stage lighting channels to the control desk to control any dimmer or group of dimmers. Some large lighting boards have the facility for **soft patching** - a totally electronic way of patching. Some Rock Desks have a **pin patch** which allows groups of dimmers to be allocated to a particular control channel. Also applies to routing of sound signals.

## PCC

Phase Coherent Cardoid. See BOUNDARY MICROPHONE.

## PFL

See PRE-FADE LISTEN.

## PHANTOM POWER

Some condenser microphones require a power supply in order to operate. If this supply is not from a battery within the microphone body, it is known as a phantom power supply. It is usually 48 Volts DC (can be 9 - 52 volts from most mics), and is supplied either by a separate battery pack, or by the sound desk. The supply is termed 'phantom' because it is 'invisibly' carried down the same microphone cable as the sound signals.

## PHASE

Two identical sound waves which are slightly apart in time are said to be out of phase; two identical waves are in phase.

## PHASES

Electricity is generated and supplied to large installations as three separate supplies, known as phases, and labelled L1, L2 and L3 (for Line).

Until recently, the three lines were colour-coded Red, Yellow and Blue in the UK. Now, across Europe, the three lines are colour-coded brown, black and grey, with the neutral coloured blue.

Each of the phases and one neutral are supplied down a single multicore cable to the building, but effectively give three separate supplies. Because there is a potential difference (voltage) of 415 volts between any two phases and earth/ground, care must be taken that pieces of equipment powered by different phases are not capable of being touched at the same time in case of a fault.

## PHONE PLUG

(US) 1/4' Jack plug

## PHONO PLUG

An unbalanced audio connector used for connecting line-level equipment together (eg CD player, tape recorder). Unsuitable for professional use due to lack of durability. Also known as RCA connector, Pin Plug.

## PICK-UP

1) Device which, when attached to an acoustic musical instrument, converts sound vibrations into an electrical signal.

2) A way of describing the directional sensitivity of a microphone. An **Omnidirectional** microphone has equal pick-up from all around, a **Cardoid** microphone is more sensitive from the front, a **Hypercardoid** has very strong directionality from the front. A **figure-of eight** microphone picks up front and rear, but rejects sound from the sides.

3) The action of turning a followspot on a performer. (e.g. 'that was a good pick-up', 'your next pick-up is downstage left'). A BLIND PICKUP is on a moving performer and requires good hand-eye co-ordination. A SET PICKUP is on a specific area, is preset, and is made on a cue from the stage manager. A SIGHT PICKUP is made visually by the operator to a preset position.

## PIN PLUG

See PATCHING, PHONO PLUG.

## PINK NOISE

Random sounding audio noise containing all frequencies in the audio spectrum tuned to the response of the human ear. Used with a Spectrum Analyser to set equalisation equipment for a large PA installation. However, the human ear is still a better judge of how a system sounds. See also WHITE NOISE.

## PIT NET

Protective net across the orchestra pit to prevent any objects (or actors) falling from the stage and injuring musicians.

## PITCH CONTROL

Facility on some sound playback devices for changing the speed of playback, and thus the pitch or frequency of the sound, to match an existing sound, or to fit a particular timeslot. Some Professional CD players have tempo controls which speed up the playback, and then compensate for the resulting increase in frequency using a pitch change. This results in the ability to match the beat of a CD in a disco situation, without the 'Pinky and Perky' effect.

## PLASA / P.L.A.S.A.

Professional Lighting and Sound Association (UK).

See ESTA for the American equivalent.

[PLASA website](#)

## PLATE REVERB

Reverb effect produced using a large metal plate. A signal is supplied to an acoustic transducer at the edge of the plate, causing vibrations which are picked up by transducers at other locations on the plate. This type of reverb can be simulated by some digital effects units.

## **PLOT**

- 1) List of preparations and actions required of technical crews during the performance (eg Sound Plot = list of sound cues and levels in running order.) In the US, the term plot refers to a plan. (eg Light Plot = scale plan showing lighting instruments). See also RUNNING PLOT, STATE PLOT.
- 2) The basic story thread running through a performance / play which gives the reason for the character's actions.

## **PLOTTING SESSION**

Time during which the plot for each department is prepared (eg Lighting Plotting session)

## **POINT CUE**

A cue inserted during / after plotting between two existing cues. (eg 8.5 is inserted between cues 8 and 9). Most computer lighting desks have the ability to either insert an additional cue in a sequence, or to link to another cue out of the sequence, and then link back again. Inserting cues into a plotted sequence on a manual lighting desk is more awkward, because it is a running plot (where only the changes between cues are noted down). Stage Management may prefer to call 8A instead of 8.5, but this is down to personal preference. Sound cues which relate to an already-running cue within a sequence should have lettered cues (e.g. 8A is a fade up of Cue 8 and 8B is the fade out).

## **POP SCREEN**

A thin gauze screen placed between a singer and a microphone to reduce vocal 'popping' and other breath noise. This noise is particularly produced by pronunciation of plosive sounds (P, B, T).

## **POP SHIELD / POP FILTER**

A foam shield placed over the end of a microphone to reduce the pick up of vocal 'popping' and external wind noise.

## **POWER AMPLIFIER**

Converts sound signals of line level (approx 1 volt) into tens of volts, with currents of around 1 Amp to drive speakers.

## **PPM**

(Peak Programme Meter) Meter, often with green/red LED's, giving an accurate indication of the electrical nature of an audio signal (see also VU).

## **PRE-FADE LISTEN**

Often shortened to PFL. Control on a sound mixing desk which allows the user to check the presence of a signal, and its quality before bringing up the fader. Also vital for fault-finding, where the route of a signal can be PFL'ed around the desk until the point where the fault occurs. Also known as CHECK and CUE.

## **PREFADE / POSTFADE**

An output from a sound desk is said to be prefade if it is independent of the channel fader. If it is postfade, the level of the output is relative to the channel fader.

## **PROCEDURAL AUDIO**

Term for realistic sounding audio which is synthesised in real time on demand by software. This could be triggered by physical actions on a set or by movement sensors or infrared camera feeds, or at random. Seen as a

possible future for sound design for theatre & film, and to increase the variety of audio present in gaming applications.

## **PSU**

Power Supply Unit.

## **PUBLIC ADDRESS SYSTEM**

The venue auditorium sound system. Usually shortened to "PA". Most theatres will have a separate sound system for emergency announcements in all public areas of the theatre. This system may also be used for Front of House calls. The Rear of House calls system often also acts as a SHOW RELAY, conveying the sound of the performance to remote parts of the theatre building.

## **PUNCH IN**

A facility on multitrack recorders which allows you to 'drop in' a sound onto a track whilst playing through the tape, sometimes controlled by a footswitch. Useful for correcting mistakes in an already recorded tape.

## **PZM**

Pressure Zone Microphone. See BOUNDARY MICROPHONE.

## **QUADROPHONIC**

A sound system which uses four independent speakers (or sets of speakers). The fore-runner of today's Surround Sound. See Stereophonic.

## **RACK**

A cabinet of standard width (19') into which various components can be bolted. Racks are ideal for touring equipment, are neat, and they allow easy access to the rear and front panels.

## **RADIO MIC**

Device consisting of a microphone **head**, transmitter **pack** with batteries, aerial and mains receiver unit which allows actors and singers to be amplified with no visible means of connection. Almost universally used in musicals where the singers have to be amplified to be heard over the orchestra / band. Used in non-musical shows for sound reinforcement.

## **RAT STAND**

Illuminated music stand (named after manufacturer).

[R.A.T. website](#)

## **RCA**

See Phono Plug. (RCA = Radio Corporation of America)

[RCA Corp website](#)

## **RCD**

Residual Current Device. Protects the user against short circuit (earth faults) and earth leakage caused by damaged cable or faulty equipment. A RCBO is a combined MCB and RCD, protecting against earth leakage/short circuit and overload. Known as a GFI (Ground Fault Interruptor) in the USA.

## **RECITATIVE**

Musical terminology for a sung dialogue passage, in the rhythm of ordinary speech, during an opera, operetta or oratorio. Often shortened to RECIT.

## **RESOLUTION**

- 1) The point during a drama when the plotline reaches a conclusion, and conflict is resolved.
- 2) A measure of the quality of a video display
- 3) The quality of a sound sample is measured by the sample rate (e.g. 44.1kHz is CD quality sample rate) and the resolution (either 8 bit or 16 bit normally).

## **RETURN**

- 1) Flats joined to the DS edge of flats of a set or unit that 'return' into the wings. They help mask and also keep the DS edge of a set from looking raw.
- 2) A financial report given to theatre management staff by the box office manager on a daily or weekly basis setting out the takings for performances.
- 3) Route for an auxiliary signal back into a sound mixer (see also SEND).

## **REVERB**

(Reverberation) Effect which may be added to sound effects during recording or to a voice during performance. Sustains the sound longer than normal, as if the sound was reverberating around a large building (eg cathedral). Persistence of sound after the source has ceased.

## **REVERSE RADIO**

A sound system that works opposite to a radio microphone - a sound signal is transmitted from the mixing desk to a battery-powered receiver, amplifier and speaker. Used for relaying a fully controllable sound feed to a remote location on stage - often used for an on-stage prop radio or tape player. This system is also used for in-ear monitoring (IEM).

## **REVOX**

Brand name of the once industry standard reel to reel tape recorder. Still enormously popular and universally known.

## **RF**

Radio Frequency.

## **RIAA**

Record Industry Association of America. The standard equalisation to be applied to a signal from a record deck pick-up. Phono pre-amps have RIAA circuitry built-in.

## **RIBBON MIC**

Delicate mic not suitable for high sound pressure levels. Consists of a corrugated conductive foil strip suspended between opposing magnetic poles which is excited by pressure differences between the front and rear of the microphone and induces a current.

## **RIDING THE FADER**

Sound operating technique where the operator constantly adjusts the fader level to maximise level while

minimising feedback and background noise.

### **RIFLE MIC**

See Gun Mic.

### **RING OUT**

Process of maximising the volume of sound possible through a sound system before feedback ("ringing") occurs. The equalisation controls on the mixing desk channels are used, along with gain controls to reduce the chance of feedback.

### **RT60**

Also known as reverberation time, the RT60 is the time taken for an impulse sound to decay by 60 dB. For speech, the RT60 of a space should be lower than for a room used for music. In general, as the volume of a room increases, the RT60 time can be longer. The RT60 time of a room can be estimated using mathematical formulae.

### **SAMPLER**

Electronic device for recording a series of sounds digitally so that they are available instantly for playback. Samplers for theatrical use have a number of independent outputs (normally 8) to which any sound sample can be sent at any time. Samplers can be controlled by a MIDI keyboard or by computer control.

### **SAMPLING**

The technique of recording a sound digitally (translating the analogue audio waveform into a series of electrical ons and offs that can be manipulated by a computer) for subsequent processing, editing and playback.

### **SEND**

See AUXILIARY OUTPUT.

### **SEQUENCING**

A act of recording digitally and manipulating the MIDI information required to remotely play a synthesizer keyboard or similar device. A sequence of notes.

### **SFX**

Abbreviation for SOUND EFFECTS.

### **SHIELD**

In an audio cable, a conductive cylinder around one or more center conductors that protects against unwanted electrostatic fields that could induce a signal, heard as a hum or buzz, across the conductors of the cable.

### **SHOTGUN**

A type of highly directional, high quality condenser microphone which can be placed a relatively long way from a sound source. A shotgun microphone uses a hypercardoid PICK-UP pattern.

### **SHOW CONTROL\***

TO BE DEFINED

## **SHOW RELAY**

A network of speakers carrying the sound of the show, and sometimes stage managers calls, to the furthest reaches of the theatre. (e.g 'Can we turn the show relay down please?')

## **SHURE**

(Manufacturer) American sound equipment maker specialising in microphones (especially the industry standard SM58 vocal mic).

[Shure website](#)

## **SIBILANCE**

Undesirable characteristic of some performer's speech when s, sh or ch sounds are emphasised.

## **SIGNAL TO NOISE RATIO**

The ratio of the average signal (recorded or processed) to the background noise (due to the recording medium or electronic processing). The ratio is usually expressed in decibels.

## **SMPTE (pronounced 'Simp tee')**

Society of Motion Picture and Television Engineers. A timecode for synchronising a piece of music etc on a tape to almost anything else.

## **SNAKE**

See MULTICORE.

## **SNAP**

A lighting or sound cue with no fade time - the cue happens instantly.

## **SOCAPEX**

A multipin connector which can carry a series of lighting or sound circuits. Very robust and designed for touring. Available in 19 pin (6 circuits) and 37 pin (12 circuits) configurations. Sometimes shortened to SOCA. See also LECTRIFLEX.

## **SOLO**

1) On a sound desk, the solo button on each input channel silences all other inputs so that channel alone can be heard. Dangerous to use during a show, but can be useful for fault-finding or testing equipment.  
2) On a lighting desk, SOLO mode kills all other channels except the single dimmer you're working with. Again, can be useful for identifying a channel in a large rig, but can be dangerous during a show. Some desks allow you to assign flash buttons to SOLO mode which will turn off all channels except those loaded into that flash button or submaster. This can be used for a quick lightning effect (but it's a bit tacky). On Strand Lighting memory desks, the solo function is called REMAINDER DIM (or REM DIM).

## **SON ET LUMIERE**

An audiovisual entertainment often based on an historical theme (and often produced in a historically relevant location). A voice narration is often used and lighting / special effects set the mood and portray certain events in time with the narration. Often used to refer to a performance with no performer where the meaning is communicated solely with technical effects.

## **SOUND BOARD**

See MIXER.

## **SOUND CHECK**

A thorough test of the sound system before a performance. This will include checking each speaker cabinet individually, and each playback device. In the case of a live concert, this is the session when each instrument is played in turn for the sound engineer to check and fine-tune the sound. A line check should be carried out methodically to ensure that every input to the sound desk is working correctly.

## **SOUND DESIGNER**

Member of the production team who has the responsibility for planning and executing the layout of all sound playback and reinforcement equipment for the show. This role also includes the sourcing of music and sound effects for the production.

See also SOUND OPERATOR.

## **SOUND DESK**

See MIXER.

## **SOUND EFFECT**

See Effect, Sound.

## **SOUND OPERATOR**

Also known as Sound Op. The Sound Operator is responsible for operating the sound playback and mixing equipment for a show. He or she is often a member of the Electrics department of the theatre and works with the sound designer for the production.

## **SOUND REINFORCEMENT**

Amplifying a voice just enough so that it can be heard, without the audience being aware that it is being amplified (ideally!).

## **SOUNDCRAFT**

(Manufacturer) Maker of Sound Desks in the UK.

[Soundcraft website](#)

## **SPDIF or S/PDIF**

Sony and Philips Digital Interconnect Format. Digital link between (usually) CD players and recording equipment. The S/PDIF format can cope with sample rates of up to 96kHz (CD is only 44.1kHz) and 24bit (CD is only 16 bit). S/PDIF followed on from AES/EBU (similar data stream, but different connector).

[More about S/PDIF](#)

## **SPEAKER**

See Loudspeaker.

## **SPEAKON CONNECTOR**

Manufactured by Neutrik. A type of shielded, locking multipin speaker connector which can safely carry the high



currents from an amplifier needed to drive large speaker systems. Available in 4- or 8-way types, and ideal for bi-amplified systems. The cable version of the connector is male, and the panel mount connector is female.

[Neutrik website](#)

### **SPL (Sound Pressure Level)**

A measurement of the loudness of a sound.

### **SPLICE**

A join or edit in a sound tape. A splice may be between leader tape and audio tape or between two pieces of audio tape. Splicing tape is the adhesive tape used, a splicing block is used to hold the tape and guide the single-sided razor blade when making the cut.

### **SQ**

Abbreviation for Sound Cue, used by stage management in the prompt book. The equivalent for lighting cues is LX. Avoid using abbreviations such as SX or FX for sound effect cues, as they sound similar to LX. When cueing the show, the member of stage management on the prompt book should say 'Sound Cue 12' rather than 'S. Cue 12', for clarity.

### **SQUELCH**

Control on a radio microphone receiver for fine-tuning the reception according to the surroundings.

### **STAGE BOX**

A connection box at the end of a lighting or sound multicore cable.

### **STAGE LEFT / RIGHT**

Left/ Right as seen from the Actor's point of view on stage. (ie Stage Left is the right side of the stage when looking from the auditorium.)

**Stage Right** = OP (Opposite Prompt) French: Cote Jardin, Netherlands: Toneel Links (translates to Stage Left!)

**Stage Left** = PS (Prompt Side) French: Cote Cour, Netherlands: Toneel Rechts (translates to Stage Right!).

NB: The Netherlands, Portugal and Germany use the opposite to the rest of Europe; i.e. Stage Left UK = Stage Right. The directions are seen from the director's and audience's perspective, NOT the actors. In Portugal *Isquerda* (left) is the equivalent of UK Stage Right and *Direita* (right) is the equivalent of UK Stage Left.

### **STAND-BY / STANDBY**

1) A warning given to technical staff by stage management that a cue is imminent. The member of the stage management team calling the cues will say "Standby Sound Cue 12". Technicians acknowledge by saying "Sound Standing By".

In the US, the word "Warning" replaces "Stand-by".

2) A member of the cast of a musical or play who understudies one (sometimes more) of the principal roles but is NOT also in the chorus. A standby often will not even be required to be at the venue at each performance unless he/she is called in to perform in the role for which he/she is an understudy.

See also ALTERNATE, SWING, UNDERSTUDY.

*Additional information submitted by Pierce Peter Brandt*

### **STEREOPHONIC (STEREO)\***

TO BE DEFINED

## **SUB-BASS**

That part of a speaker system designed to extend the low frequency range of the system. See also SUBWOOFER.

## **SUBWOOFER\***

(often just SUB) - Speaker dedicated to reproducing very low frequencies. The large cabinet is often placed on the floor

## **SX**

Used by some as a shorthand for SOUND, in the same way LX is a shorthand for Lighting. However, when calling cues, stage management should always say 'Sound Cue 12 GO' rather than 'SX Cue 12 GO'. 'Sound' has one less syllable to say, and SX sounds too similar (no pun intended) to LX.

SXOP can be shorthand for Sound Operator. Many venues use FX in the same way, but this can also refer to Stage effects like smoke, pyro etc.

## **SYSTEM EXCLUSIVE**

Part of the MIDI protocol which allows control of one device by another.

## **TAKE-DOWN**

The same as a get-out, often used for live music events, this consists of removing all equipment and structures used for an event.

## **TAKE-UP SPOOL**

The empty reel on the right hand side of a reel to reel tape deck onto which the tape is wound as it plays through the machine.

## **TALKBACK**

1) On a sound desk, the talkback section enables the sound engineer to talk via a microphone to selected outputs of the desk. If the sound desk is used to feed on-stage monitor speakers for a musical group, the engineer can select a particular monitor feed (e.g. the drums) to politely ask the musician (drummer) to play quieter.

2) Term sometimes used interchangeably with HEADSET for the communication system between technical crew on the production.

## **TAPE LOOP**

A continuous loop of tape which produces an 'everlasting' sound effect when played. Used for any long sound needed (eg rain, wind) without having to continuously repeat a short effect.

## **TASCAM**

Manufacturer of recording and mixing equipment.

[Tascam website](#)

## **TDIF**

Tascam Digital Interconnect Format.

[Tascam website](#)

## **TECHNICAL REHEARSAL**

(also known as the TECH RUN, or just TECH). Usually the first time the show is rehearsed in the venue, with lighting, scenery and sound. Costumes are sometimes used where they may cause technical problems (eg Quick changes). Often a very lengthy process. Often abbreviated to the Tech.

A **DRY TECH** is without actors to rehearse the integration of lighting, scenic changes etc. It follows that a **WET TECH** is a full technical rehearsal with actors and all technical elements, although this term isn't used as often as DRY TECH.

A **PAPER TECH** is a session without the set or actors when the technical and design team talk through the show ensuring everything's going to work as planned. Stage Managers can use this session to ensure all is written correctly in the Prompt Book.

## **TELEX**

A brand of wired or wireless intercom used on stage (predominantly US).

## **THREE TO ONE RULE**

In order to get maximum gain (level) out of a PA system, microphones which are picking up the same sound source (e.g. a chorus on a large stage) should be three times further from each other than from the sound source. This minimises COMB FILTERING.

## **THUNDER RUN**

Long channel down which a cannonball is rolled to give a realistic thunder rumble effect. Built into the roof of some older theatres, but mostly now unused (for safety reasons).

## **THUNDER SHEET**

Large suspended steel sheet with handles which produces a thunder-like rumble when shaken or beaten.

## **TIE LINE**

A sound connection between two patch panels in different parts of the building. For example, there are tie lines between front of house mixing position and the stage to reduce the need for additional cables through the auditorium.

## **TRACK**

- 1) Metal structure with rails on which curtain runners are placed to enable curtains to open and close smoothly.
- 2) A sideways movement of a flying piece, or flown actor. See FLYING HARNESS.
- 3) Separate audio recording channel. Most playback / recording devices have two tracks - left and right. Some are used for MULTITRACK RECORDING and allow either four or eight tracks to be recorded onto standard media (see also DIGITAL RECORDING). Many more tracks can be recorded onto computerised systems. The most important feature of a multi-track system is the ability to record and playback at the same time (e.g. Recording vocals on track two with a pre-recorded piano on track one.)

## **TRANSDUCER**

A device that converts energy from one form to another. A microphone is a transducer that converts sound wave energy into electrical pulses.

## **TRIBE (bundle)**

Bunch of cables tied or taped together into a single unit.

## **TWEETER**

Part of a speaker system designed to handle the high frequency part of the signal.

## **UNBALANCED LINE**

A method of carrying sound or data signals cheaply. An unbalanced cable consists of two conductors - audio and screen/ground. Two pin connectors such as RCA/phono connectors are used, which are not suitable for heavy duty professional use. Commonly used for short distance hookups between audio or video equipment, unbalanced cables are subject to interference over long distances. See BALANCED LINE.

## **UPSTAGE**

1) The part of the stage furthest from the audience.  
2) When an actor moves upstage of another and causes the victim to turn away from the audience he is 'upstaging'. Also, an actor drawing attention to himself away from the main action (by moving around, or over-reacting to onstage events) is upstaging.

## **VCA**

Voltage Controlled Amplifier. Way of controlling sound level remotely from a physical fader. With a VCA sound desk, the faders control the VCA, which then controls the sound signal. Any faults etc in the fader do not affect the clarity of the output. More desk automation is possible with VCA's, as a particular VCA (or group of VCA's) can be allocated to any fader, or can be controlled by an outside controller.

## **VIDEO**

See CCTV.

## **VISUAL CUE**

A cue taken by a technician from the action on stage rather than being cued by the stage manager. Often abbreviated to "Vis".

## **VOICE OVER**

Refers to a technique for recording an actor's voice and replaying it during the performance to indicate a thought process, or for more practical uses such as covering a scene change or costume change. Abbreviated to V.O.

## **VOLTAGE**

The pressure at which electric current is available. The UK standard voltage is 230 Volts. The American standard is 110 Volts.

The scientific name for Voltage is Electromotive Force.

## **VPLT**

German Professional Lighting and Sound Association.

[VPLT Website](#)

## **VU METER**

(VU - Volume Unit). Pointer and scale meter which indicates the average level of a signal. Misses any transients and spikes that lead to a clipped signal. See PPM.

## **WALLA**

General background hubbub sound effect - named after the sound actors make to create the effect.

## **WATTS**

Unit of electrical power derived from the current (or 'quantity' of electricity) multiplied by the voltage (or 'pressure' at which the current is delivered). Stage lighting equipment is rated in Watts (or Kilowatts - 1kW being equal to 1000W). This refers to the amount of power required to light the lamp. A higher wattage lamp requires more power and gives a brighter light output.

## **WAVELENGTH**

The distance from one point on a vibrating wave to the same point on the next wave. The lengths of the sound waves (wavelengths) we can hear range from one inch to 40 feet. High frequency sounds have short wavelengths (and are more directional), low frequency sounds have long wavelengths (and are less directional). In lighting terms, blue light is short wavelength, green is medium and red is long wavelength. Beyond visible light are the short wavelength Ultra Violet light and the long wavelength Infra Red light. Wavelengths of light are measured in Angstroms.

See also FREQUENCY.

## **WEDGE**

A wedge-shaped foldback speaker. Angled so that it can sit on the stage floor and point up at musicians/cast.

## **WET**

1) See DRY (Sound) 2) See TECH (Wet Tech).

## **WHITE NOISE\***

TO BE DEFINED. See also PINK NOISE.

## **WOOFER**

Part of a speaker system designed to handle the low frequency parts of the signal.

## **WORKSTATION**

- 1) A PC and Monitor.
- 2) A synthesiser keyboard which also contains a sequencer and other MIDI software.

## **XFADE**

See CROSS FADE.

## **XLR**

Multipin metallic connector. (3 pin for normal sound use, 5 pin for DMX, Colour Scrollers etc). Sometimes called Cannons after the original manufacturer.

The UK standard for wiring the 3 pin connector is as follows : Pin 1 (Screen), Pin 2 (+ve / 'hot'), Pin 3 (-ve, 'cold'). (Xternal, Live, Return).

A 5 pin connector for DMX512 use has the following connections: pin 1 = screen, pin 2 = data -ve ('cold'), pin 3 = data +ve ('hot'), pin 4 and 5 are not used by many manufacturers. A comparison is made between the signals carried by the two data cables, and any differences are cancelled out, meaning that noise/data error reduction is very effective.

## **XY**

A stereo technique whereby two identical microphones are placed next to each other with each mic being pointed 45 degrees off-axis from the centre-line of the action. This technique attempts to overcome the coverage problems of AB, although it is still affected by reflections off the two mics. The other disadvantage is that sounds from the centre of the stage arrive 45 degrees off-axis, where the response of a mic is not as good as 0 degrees. This can appear to leave a 'hole' in the middle of the stereo image. The mic on the left (as you are facing the action) picks up sounds from the right, so it is panned hard right at the mixer, while the other is panned hard left. See AB and MS.

## **ZERO DB**

The common reference point when discussing sound levels. Levels above 0dB are expressed as positive (+5dB) and those below as negative (-20dB).