

# Glossary of Lighting Terms presented by



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## A

**ACL** : Acronym for AirCRAFT Landing Light. A type of high intensity Par lamp that derives its name from its use as an aircraft landing lamp. The true ACL is 28V and 250W, although there are many variations. The lamp has a very tight beam.

**ACTING AREA** : That area within the performance space within which the actor may move in full view of the audience.

**ADAPTOR** : A Cable which allows two or more types of electrical connectors to be connected together.

**ADDITIVE COLOR MIXING** : See Color Mixing.

**I.A.L.D.** : International Association of Lighting Designers

**AMP** :Abbreviation for ;

1) **AMPERE**, the standard unit for measurement of electrical current passing through a circuit. Cables, fuses and switches are designated by their current carrying capacity.If a cable rated at 20 Amps is used with a load of 30 Amps, the cable will overheat and possibly catch fire.

2) **AMPLIFIER** - sound equipment that converts the low voltage, low current signal from a tape deck, mixer etc. into a higher current signal suitable for driving speakers.

**A.N.S.I.** : American National Standards Institute.

**ANTIPRO** : Lighting bar positioned just downstage of the proscenium arch.

**ARBOR** : Metal frame in which counterweights are carried in a flying system.

**ARC LIGHT** : See Discharge lamp.

## B

**BACKLIGHT** : Light coming from upstage, behind scenery or actors, to sculpt and separate them from the background

**BAFFLE :**

1) A sheet of material used to prevent a spill of light in a instrument or in part of a set.

2) What most of these terms will do to any non-technical theatrical type.

**BALLAST :** A unit used in conjunction with discharge lamps(HMI, MSR, MSD, etc.) containing capacitors, inductors and other start-up circuitry. The inductor is initially used to develop a high potential to strike the discharge and is then used to limit the current flow while the lamp is lit.

**BARNDOORS :** A rotatable attachment consisting of two or four metal flaps which is fixed to the front of a Fresnel or PC type lantern to reduce the beam spread in one or more directions.

**BATTENS :** The metal bars (usually 1-1/2" sch. 40 steel pipe) to which scenery and lights are attached for flying above the stage.

**BATTEN CLAMP or PIPE CLAMP:** A specially designed piece of hardware used to attach rigging to battens.

**BEAM ANGLE :** The angle of the cone of light produced by an instrument. Defined as the angle within which the lowest intensity in a beam of light from an instrument is not less than one-tenth of the maximum.

**BLACK HOLE :** Accidentally unlit portion of the stage.

**BLACK LIGHT :** See Ultra-Violet.

**BLACKOUT :** Complete absence of stage lighting. Blue working lights backstage should remain on and are not usually under the control of the board, except during a Dead Blackout (DBO), when there is no onstage light. Exit signs and other emergency lighting must remain on at all times.

**BLINDERS :** Lamps arranged around the stage directed into the auditorium , originally to prevent spectators seeing the stage during scene changes when the Main Curtain was not lowered. Now used for effect in rock concerts etc.

**BLIND:**The facility on some light boards for the operator to make changes to the cues, without affecting the state on stage.

**BLUES :** Blue lights used backstage in a performance situation. See also running lights.

**BOARD or CONSOLE :** The main control for the stage lighting. Originally known as the switchboard or dimmerboard, it is now usually remote from the dimmers. The lighting operator for a show is said to be "on the board".

**BOOM :** Vertical scaffolding pole on which horizontal boom arms can be mounted, carrying instruments. Often used behind wings for side-lighting etc. Booms have a base plate 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 battens. Sometimes known as a light tree

**BOOM ARM :** See Boom.

**BORDER :** A narrow horizontal masking piece, normally black to mask the lighting rig and flown scenery from the audience, and to provide an upper limit to the scene. Often used in conjunction with legs.

**BOUNCE** : 1) Diffuse light that has been reflected from the stage, walls, cyc etc.

2) Describes the fast in/out movement of "bouncing" Main Curtain, used during curtain calls.

3) This facility is available on many multitrack tape machines. Describes the mixing down of multiple sounds from different tracks onto one track, hence freeing up the other tracks to be re-used. Allows many sounds to be recorded onto one tape.

**BUMP** : A flash or sudden jump in light level (a snap cue) (see Flash Button).

**BURNT OUT**:A colored filter that has lost its color or melted through due to excessive heat in front of a instrument. Dark blues and greens etc. are most susceptible, and may need replacing during a long run.

## C

**C-WRENCH**:Adjustable wrench. Slang for a manufacturer Crescent.

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

**CAD** : Computer-Aided Design. Using a computer to help with 2D plans and drawings, or increasingly for 3D visualisation of how a set will look, and how lighting will affect it.

**CAMLOCK** : (Trade Name) Single pole connector used on professional power distribution & dimming systems. A separate connector is used for each phase/neutral of the supply. Originally developed for touring concerts, as power demands increase it's finding more use in theatres.

**CATWALK**: An access walkway to equipment. Unlike a Bridge, not necessarily across a void.

**C CLAMP** : Clamp on Yoke of most lighting units; requires a wrench to tighten.

**CENTER LINE** : Imaginary line running down the stage through the exact center of the proscenium opening. Marked as CL on stage plans. Normally marked on the stage floor and used as a reference when marking out or assembling a set.

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

**CHANNEL CHECK**:The board operators job before a performance to make sure all lights are in working order.

**CHASE** : A repeated sequence of changing lighting states.

**CHEAT SHEET** : A smaller version of the lighting plan, used by the lighting designer during the lighting plot. Also known as a Magic Sheet.

**CID (Compact Iodide Daylight)** : A high intensity discharge lamp that produces a light similar in colour temperature to daylight approx. 5500K). A 1000W CID lamp produces 2.5 times more light than a 2000W tungsten halogen source

**CIRCUIT** : 1) The means by which a instrument is connected to a dimmer or patch panel. Numbered for reference.

2) A complete electrical "loop" around which current can flow.

**CIRCUIT BREAKER** : An electro-mechanical "fuse" that can be reset, rather than having to be replaced. Available in the same ratings as fuses.

**CLEAR-COM** : Headset earpiece and microphone used for communication and co-ordination of technical departments during a performance. Also generally used for headphones.

**COLOR CHANGER** :

1) Scroller, where a long string of up to 11 colours is passed horizontally in front of a instrument. Remotely controlled by the lighting desk.

2) Wheel : Electrically or manually operated disc which is fitted to the front of a instrument with several apertures holding different color filters which can be selected to enable color changes. Can also be selected to run continuously.

3) Boomerang : Manual semaphore-type device used on the front of a followspot.

**COLOR CORRECTION** : The use of color filters to compensate for the different color temperatures of different light sources. Important in lighting for TV and film.

**COLOR FILTER** : A sheet of plastic usually composed of a colored resin sandwiched between two clear pieces. The colored filter absorbs all the colors of light except the color of the filter itself, which it allows through. For this reason, denser colors get very hot, and can burn out very quickly.

**COLOR FRAME** or Gel Frame : A frame which holds the color filter in the guides at the front of a instrument. Many different sizes of frames are needed for the different instruments.

**COLOR MIXING** : Combining the effects of two or more lighting filters ;

1) Additive : Focusing two differently colored beams of light onto the same area (eg Cyc Lights). Combining colors in this way adds the colors together, eventually arriving at white. The three primary colors additively mix to form white, as do the complementary colors.

2) Subtractive : Placing two different gels in front of the same instruments. Subtractive mixing is used to obtain a color effect that is not available from stock or from manufacturers. Because the ranges of color are so wide, the need for subtractive mixing is reducing. Combining colors in this way reduces the light towards blackness. The three primary colors mix subtractively to form black (or to block all the light).

**COLOR TEMPERATURE** : A measure of the warmth or coolness of light sources and colors. Measured in degrees Kelvin. The human brain automatically compensates for different color temperatures - a film or video camera cannot, and thus what we see as white may appear to have a blue or green tint when no color correction is used for video. Daylight is approximately 5600K and Tungsten Halogen is approx. 3200K.

**CRACKED OIL** : A smoke effect which creates a haze in the air to make light beams visible. This effect is rarely used now, because it has been found to be carcinogenic. See Water Cracker.

**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.

**CSI (Compact Source Iodide)** : A high intensity discharge lamp. Most often used in followspots, because it has a color temperature (approx. 4000K) close to that of the tungsten halogen lamps.

CUE : The command given. 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).

CYC FLOOD : A floodlight, usually with an asymmetrical reflector, designed to light a cyc or backcloth from the top or bottom.

CYCLORAMA (usually just "cyc") : Plain cloth or plastered wall filling the rear of the stage. The term is often loosely applied to a blue or white skycloth, or any flattage at the rear of the stage. Maybe curved at the ends. A more effective backing can be obtained by hanging a scrim just in front of the plain white cyc which gives a hazy effect of distance.

## D

DICHROIC FILTER : Glass color filters which reflect all light except that which is the color of the filter, which passes through. Normal gels absorb the unwanted colors, turning the light into heat. Dichroic filters run cooler, and produce a much cooler beam of light. Longer lasting, but a lot more expensive.

DIFFUSION : See Frost.

DIMMER : Electrical or electronic device which controls the amount of electricity passed to an instrument, and therefore the intensity of the lamp.

DIMMER RACK : A number of individual dimmer circuits mounted in a cabinet.

DIP : 1) Low lighting intensity when cross fading between two higher states.

DISCHARGE LAMP : A high-powered source of light produced by means of a discharge between two electrodes. An arc light, for example uses a discharge between two carbon rods which are manually or automatically fed together as they are burnt up. The use of this type of lighting is restricted to non-dimming applications such as followspots and projection, where dimming is achieved by mechanical means. Many of the new generation of moving lights use discharge lamps and dichroic filters. See Ballast, CSI, CID, MSR, MSD HMI, HTI, Xenon, MBI.

DISTRIBUTION PANEL: System of interconnected fuse carriers and cabling that routes an incoming power supply to a number of different outputs.

DMX512 : Professional digital protocol / language used for the control of lighting and effects. The current version is the 1990 standard.

DOWNLIGHT : A light from directly above the acting area.

DOWSER : A metal flag used in larger followspots and projection equipment to cut off the light beam without cutting off the electrical supply. Discharge lamps need a period of cooling down when they are turned off before they can be turned on again, so they should not be switched off if needed again within about two hours.

## E

EFFECTS, LIGHTING :

1)Animation Disc : A slotted or perforated metal disc which rotates in front of a instrument to provide

"movement" in the light. Most effective when used in front of a profile carrying a gobo.

2)Effect Disc : A painted glass disc rotating in front of an effects projector with an objective lens to focus the image (eg Flames, Rain, Snow).

3)Flicker Flame : Irregularly slotted rotating metal disc through which light is shone onto a prism-type piece of glass which scatters the beam of light and adds the "dancing" effect of firelight to a scene.

4)Gobo Rotators : Motorised device inserted into the gate of a instrument that can be remotely controlled to rotate a gobo, usually with variable speed and direction.

5)Lightning : Created through the use of either strobe sources or photoflood lamps.

EFFECTS PROJECTOR : Instrument used to project the image from a rotating glass effects disc. Used with an objective lens to produce the desired size of image. Commonly used discs are clouds, flames and rain.

ELECTRICS : See LX.

ELLIPSOIDAL : A instrument with an elliptical reflector.



## F

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

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

FIELD : Refers to the spread of light intensity across a beam. Most instruments have an adjustable field. A Flat field has an even distribution, a peak field has a "hot spot" in the center of the beam. A flat field is essential when using gobos.

FILL LIGHT : (especially TV and Film lighting) Light which fills the shadows that key light creates.

FILTER : Usually a color gel or material to change the character of a light. 1) See Color.

FLASH BOX : A small box containing the socket into which a pyro cartridge is plugged. Also known as a flash pot.

FLOOD :

1) A lensless instrument that produces a broad non-variable spread of light.

2) To increase the beam size of a focus spot by moving the lamp and reflector towards the lens in Fresnels. "Flood that a bit, please !"

FLUORESCENCE : The property of some materials to glow when subjected to Ultra-violet light. The materials degrade the UV wavelengths into longer and therefore visible reflected rays. See also Phosphorescence.

FOCUS : The session when all the instruments in the rig are angled in the correct direction, with the correct beam size.

**FOCUSING** : The process of adjusting the direction and beam size of instruments. Does not necessarily result in a "sharply focused" image.

**FOCUS SPOT** : Term for Fresnel .

**FOLLOW SPOT** : Usually, a powerful instrument usually fitted with its own dimmer, iris, color magazine and shutters mounted in or above the auditorium, used with an operator so that the light beam can be moved around the stage to follow an actor.



**FOOTLIGHTS** : A compartmentalised area sometimes recessed into the front edge of the stage, used to neutralise shadows cast by overhead lighting. Modern lighting equipment renders footlights virtually obsolete except for period/special effects.

**FRESNEL** : (pronounced "Fre-nell") A type of instrument which produces an even, soft-edged beam



*Altman 6" Fresnel model 65Q*

of light through a Fresnel lens. The lens is a series of stepped concentric circles on the front and pebbled on the back and is named after its French inventor, Augustin Jean Fresnel (1788-1827).

**FRONT OF HOUSE (FOH)** :

1) Every part of the theatre in front of the pros arch. Includes lobby areas open to the general public.

2) All instruments which are on the audience side of the proscenium and are focused towards the stage.

**FROST** : A diffusing filter used to soften the edges of a light beam. Different strengths of diffuser are available from many color filter manufacturers. See silk.

**FUSE** : Protective device for electrical equipment (E.g. dimmers). The fuse link will melt or “break” when excess current flows, preventing damage to people or equipment.

## G

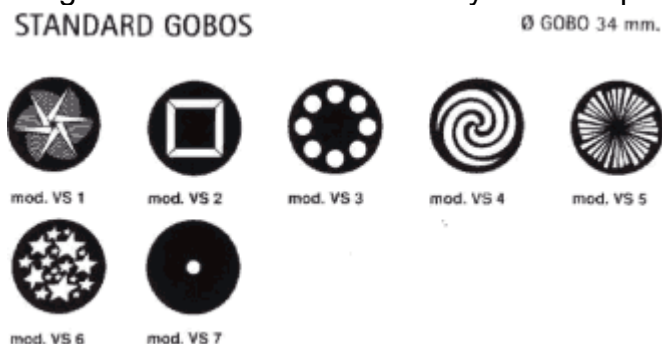
**GAFF TAPE** : Ubiquitous sticky cloth tape. Most common widths are .5" for marking out areas and 2" (usually black) for everything else. Used for temporarily securing almost anything. Should not be used on coiled cables or equipment.

**GATE** : The point of focus in an instrument where the shutters are positioned and where an iris or gobo can be inserted.

**GEL** : See Color Filter.

**GENERAL AREA LIGHT** : Those instruments in a rig which are set aside purely to light the acting areas. The stage is normally split into a number of areas for this purpose, which can then be isolated or blended together as required by the director. See Special.

**GOBO** : A thin metal plate etched to produce a design which can then be projected by a profile spotlight (E.g. Foliage, Windows). The image can be used soft focus to add texture, rather than a defined image. A number of composite gobos in different colored instruments can, with careful focusing, produce a colored image (e.g. a stained glass window). Greater detail can be achieved using a glass gobo. The original use of the word GOBO came from the early days of Hollywood. When the Director of Photography wanted daylight excluded from some area of the set, he'd say "GO BlackOut". Loads of people would run around putting black material between the sun and the set. It eventually evolved into other stuff that goes in front of lights and now most commonly refers to patterns in instruments.



**GOBO HOLDER** : A metal plate designed to hold a gobo of a particular size in a instrument of a particular type.

**GOBO ROTATOR** : See Effects.

**GRAND MASTER** : See Master.

GRID : 1) The support structure close to the top of the fly loft on which the pulleys of the fly system are supported. Constructed from metal or wooden beams.

2) Arrangement of scaffolding from which instruments are hung in a performance space with no flying facilities.

GROUNDING : 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.

## H

HALOGEN CYCLE : Chemical process occurring in Tungsten Halogen lamps which makes them possible. During the lamps life, Tungsten evaporates from the filament, and would normally deposit itself on the glass wall of a Tungsten lamp, causing it to blacken, and causing the output of the lamp to reduce until it finally blew. In a Tungsten Halogen lamp, the Tungsten combines with the Halogen gas elements present in the lamp envelope and is re-deposited back onto the filament. This process needs a very high temperature to operate, so Tungsten Halogen lamps are able to be a lot smaller, and run a lot hotter, than their Tungsten equivalents. See also Tungsten Halogen.

"HEADS UP!" : A shouted warning for staff to be aware of activity above them. Also used when an object is being dropped from above.

HMI (Hydragyrum Medium arc-length Iodide) : A mercury-halide discharge lamp with a colour temperature of 5600K (daylight).

HOUSE LIGHTS : The auditorium lighting which is commonly faded out when the performance starts.

## I

INCANDESCENT : Light source consisting of a metal filament (Tungsten) which glows white hot when current is passed through. See also Discharge Lamp.

INSERT :

An extra lighting state added into the sequence later. See Point Cue.

Intrument:

1) General term for unit of lighting equipment including spotlight, flood etc. Term now being replaced by the internationally recognised "luminaire".

INTELLIGENT LIGHT : See Moving Light.

INTERNALLY WIRED BAR (IWB) : A Scaffolding bar (aluminium) which has a number of sockets (usually 15A) positioned along its length, the wiring for which is contained within the bar. See Six Lamp Bar.

IRIS : Adjustable aperture which, when placed in the gate of a profile lantern, varies the size of a beam of light. Originally, iris diaphragm.

# J

# K

KELVIN : See Colour Temperature.

KEY LIGHT : (Esp. TV & Film lighting) The dominant light source/direction in a lighting state. In a sunny drawing room, the key light would be through the window, for a naturalistic exterior scene the direction of the key light could change as the sun progressed across the sky. See Fill Light.

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

KILOWATT : 1 kilowatt (1kW) is equal to 1000 Watts

# L

LADDER : Non-climbable structure in the shape of a ladder from which instruments can be hung in a vertical "stack".

LAMP : What the un-initiated call a light bulb.

LASER : Acronym of Light Amplification by Stimulated Emission of Radiation. A very high energy beam of light that remains virtually parallel throughout its length. Visible in the air only when a haze of smoke or dust is introduced. Great care is required when using lasers as this energy can cause permanent damage to the retina of the eye.

LD : Lighting Designer.

LEKO : Slang for an Ellipsoidal Reflector Spotlight.

LENS : Optical glass with one or both sides curved, the purpose of which is to direct light by concentrating or dispersing light beams.

LIGHTING PLOT: A scale drawing detailing the exact location of each lantern used in a production and any other pertinent information (E.g. its dimmer number, focus position and colour number). Often drawn from the theatres' groundplan.

LIMELIGHT : An obsolete source of intensely bright light, most recently used in followspots. See limes. Derived from a burning jet of oxygen and hydrogen impinging on a rotatable cylinder of lime.

LIMES : Follow spots and their operators. This term is still in everyday use, although limelight is not.

LINK : See Point Cue.

LINNEBACH PROJECTOR : Lensless system for projecting a shape from a gel or glass slide etc. placed in front of a floodlight onto the set. Often used for shadow effects.

LOAD : 1) The electrical power rating, in Watts, of the equipment connected to a particular lighting dimmer.

2) The equipment connected to a dimmer.

**LOW VOLTAGE** : Lower voltage lamps give more intense light than mains voltage lamps of the same wattage.

**LUMEN** : A measure of light output from a source.

**LUMINAIRE** : The international term for lighting equipment. Not restricted to theatre lighting.

**LUX** : A measure of the level of illumination on a surface (1 lumen spread over 1 metre).

**LX** : Short for Electrics. The department in the theatre responsible for stage lighting and sometimes sound and maintenance of the building's electrical equipment.

## M

**MANUAL DESK** : A lighting desk where the interface between operator and dimmer is a fader, rather than a computer. Many modern manual desks have some memory facilities built in, but there are still a large number of venues with solely manual systems.

**MASTER or GRAND MASTER** :

An overall control on a lighting or sound control board. The Grand Master takes precedence over all other controls. See Submaster.

**MASTER ELECTRICIAN** : The senior member of the theatre's stage lighting team, although not necessarily the lighting designer.

**MEMORY BOARD or CONSOLE** : An electronic storage device which enables recording and subsequent "playback" of lighting states.

**MIDI** : Musical Instrument Digital Interface. Control system for linking musical instruments or other electronic equipment and computers together and storing the control signals the equipment produces for subsequent playback.

**MODEL or MAQUETTE** : A scale model provided by the set designer to help all the technical departments to co-ordinate and plan a production. Used as a reference when building, painting, dressing and lighting the set.

**M.S.R.** : (Medium Source Rare Earth) High efficiency discharge lamp with a high colour temperature.

**MULTICABLE** : 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 multis are available.

**MULTIPLEXED (MUX) SIGNAL** : All modern lighting desks use this serial form of communication with dimmers. All the information from the desk is transmitted along a single pair of cables to the dimmer where a de-multiplexing unit (demux box) decodes the string of data and passes the correct piece of information to the correct dimmer. The industry standard protocol (language/standard) for multiplexing is the digital USITT DMX512. However, new protocols are continually being added to keep up with more demanding equipment. SMX is a communications protocol which enables digital dimmers to "report back" to the desk on any faults (eg blown lamps). D54 uses a stream of analogue voltage levels and was the Strand standard before DMX512 arrived.

# N

**NEUTRAL DENSITY FILTER :** (ND) Lighting filter which reduces the brightness of a light source without changing its colour.

**NON DIMS :** Channels, usually controlled from the lighting desk which are switched, rather than dimmed. This enables motors, slide projectors, smoke machines etc to be controlled from the lighting desk.

# O

**OFFSTAGE :** A movement towards the nearest side of the stage from the center.

**ONSTAGE :** A movement towards the centre of the stage from the sides.[Diagram]

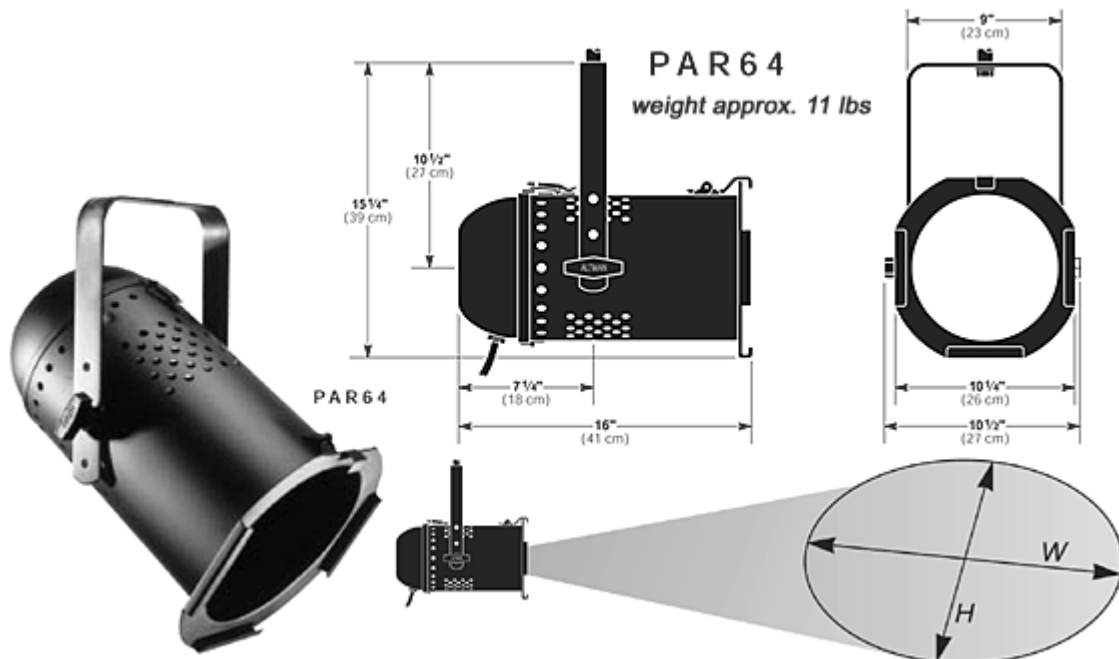
**OPEN WHITE :** (o/w) Lighting with no color filter.

**OUTRIGGER :** An extendible leg to increase the stability of access equipment (eg Tallescope, Scaffold tower).

# P

**PAIRING :** Connecting more than one lantern to one power outlet via an adaptor or splitter, or more than one speaker to one amplifier channel.

**PAR :** Short for Parabolic Aluminised Reflector lamp. A lamp containing a filament, reflector and lens in one sealed unit. Used in Parcans to produce a high intensity narrow beam of light. Par lamps are available in many different sizes and powers. Par sizes available include 16, 36, 38, 56 and 64. (The number refers to the diameter of the lens, in eighths of an inch). The most common for theatre use are Par 64s rated at 1000W (1kW), although other wattages are available.



## 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.

**PATCH PANEL or HOT PATCH :** A board consisting of rows of sockets into which plugs can be connected to route power for lighting circuits.

**PC SPOT:** Originally short of plano-convex - the basic lens shape of many instruments / projectors. Now short for Prism- or Pebble-convex: a type of lens with a pebbled flat surface which gives a slightly harder edge than a Fresnel, but not as hard as a ERS.

**PHASES :** Electricity is generated and supplied to large installations in three phases. Each of the Red, Black and Blue phases are supplied down one cable to the building, but effectively give three separate supplies. Because there is a potential difference (voltage) of 208 volts between two phases, 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.

**PHOSPHORESCENCE :** The property of some materials that can store light energy and glow in the dark.

**PHOTOFLOOD :** A lamp used by photographers which gives a bright white light. Because it has a thin filament, it gives a good flash effect (eg lightning), but has a relatively short life, so should not be left on for any length of time.

## PIN SPOT :

- 1) An instrument focused very tightly on a small area (eg an actors head)
- 2) An instrument used widely in disco installations, consisting of a low voltage Par 36 lamp with a fine beam in a metal case with built in transformer.

**PLAN :** A scale drawing showing a piece of scenery, lighting layout etc from above. Lighting plans are usually drawn onto the theatre's groundplan.

**PLAYBACK :** The part of a computerised lighting control desk which enables the operator to recall cues from the electronic memory.

**PLOT :** List and / or drawing of the lighting design for a presentation or performance.

**POINT CUE :** A cue inserted during / after plotting between two existing cues. (eg 8.5 is inserted between cues 8 and 9 and cues by the stage manager as 8A). 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).

**PREHEAT :** Smoother lighting builds from zero are achieved when a lamp filament has been warmed (at approx 15%) in the previous state.

**PRESET :**

1) Anything in position before the beginning of a scene or act (eg Props placed on stage before the performance, lighting state on stage as the audience are entering.)

2) An independently controllable section of a manual lighting board which allows the setting up of a lighting state before it is needed. Each preset has a master fader which selects the maximum level of dimmers controlled by that preset.

**PREVIEW :** A function on some memory lighting control desks with video mimics. Preview enables the operator to see the levels of dimmers and other information in a lighting state other than that on stage.

**PRIMARY COLORS :** The primary additive colors of light are red, green and blue, and the subtractive colours are cyan, magenta and yellow.

**PRODUCTION MANAGER :** Responsible for technical preparations, including budgeting and scheduling of productions.

**PROTOCOL :** See Multiplex.

**PSU :** Power Supply Unit.

**PYROTECHNICS :** (Pyro) Chemical explosive or flammable firework effects with a manual detonation. Usually electrically fired with special designed fail-safe equipment. Types of pyro range from the Theatrical Flash (a flash and a cloud of smoke) to the Maroon (which produces a very loud bang). A Gerb is a version of the Roman Candle firework, throwing a shower of sparks into the air. All pyrotechnics should be used with close reference to local licensing laws, and the manufacturers instructions.

## Q

**QUARTZ HALOGEN :** See Tungsten Halogen.

## R

**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.

**REAR OF HOUSE (ROH) :** The backstage and storage areas of the theatre.

**RE-RIG :** To change the lighting rig after the last performance of one show to the positions for the next show.

**RESISTANCE DIMMER :** A now obsolete method of dimming which decreases the current available to the load by introducing a variable resistance between supply and load. The excess current is converted into heat. Based around a rheostat.

**RETROFIT :** A modification that can be made to an existing piece of equipment after purchase to bring it up to date.

**RFU :** Remote Focus Unit. A remote control for the lighting desk. Same as RIGGERS CONTROL.

RIDER : (Technical Rider) Information sent to a venue by a touring group detailing lighting, sound, staging and dressing room requirements. Ideally arrives before the group !

RIG : 1) The construction or arrangement of lighting equipment for a particular production.(noun)

2) Installing lighting, sound equipment and scenery etc for a particular show.(verb)

RIGGERS CONTROL : A remote control for a lighting desk which enables dimmer channels to be called up from the stage when rigging or focusing. Usually battery powered, sometimes with infra-red (cordless) control. A Designers Control allows whole memories to be called up and/or played back, as well as individual dimmers.

ROH (Rear of House) : The backstage areas of the theatre.

RUNNING LIGHTS:Blue lights used backstage in a performance situation. See also blues.

RUNNING PLOT or CUE LIST : A plot giving details of the changes between cues, as distinct from a state plot which gives the whole state of the system at any time. For example, a lighting plot on a manual board is normally a running plot. It is difficult to start a running plot half way through; often the operator has to go back to the beginning and work through until the required point is reached.

## S

SAFETY CABLE : Chain or wire fixed around lantern and lighting bar or boom to prevent danger in the event of failure of the primary support (eg Hook Clamp). A requirement of most licensing authorities.

SCENE : In lighting terms, a lighting "picture" ; each lighting cue results in a different scene (or a modified scene).

SCRIM : Cloth with a relatively coarse weave. Used unpainted to diffuse a scene played behind it. When painted, a scrim is opaque when lit obliquely from the front and becomes transparent when the scene behind it is lit . Many different types of scrim are available ; Sharkstooth gauze is the most effective for transformations, because it is the most opaque. Vision scrim is used for diffusing a scene and for supporting cut cloths.

SCROLLER : See Color changer.

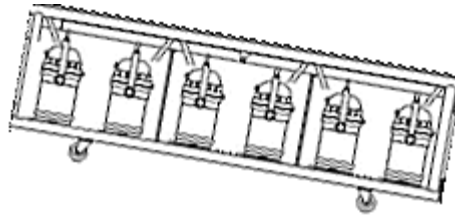
SECONDARY LIGHTING: Separately powered lighting system for use throughout the building in the event of failure of the primary system. Usually battery powered. Maintained lighting is on all the time, regardless of changes in the stage lighting, and is battery backed-up.

SEGUE (pronounced "segway") : Musical term for an immediate follow-on. Often used as jargon for any kind of immediate follow-on.

SHIN BUSTER : The lowest lantern on a lighting boom. Named because of the proximity of sharp parts of the instruments to the flesh of the lower leg. Often shortened to just "Shin".

SHUTTER : Accessory for an ellipsoidal. Metal blade which can be used to shape the edge of the beam. Shutters (normally four) are located in the gate at the center of the instrument. Similar in effect to barndoors.

**SIX LAMP BAR or SINGLE HUNG BAR:** An internally-wired lighting bar, designed for touring, with six socket outlets terminated in a multi-way connector. Often pre-rigged with lanterns (eg Parcans). Stored in Meatracks.



**SMOKE MACHINE :** Electrically powered unit which produces clouds of white non-toxic fog (available in different flavours/smells) by the vaporisation of mineral oil. Specially designed for theatre & film use. Vital for revealing airborne light beams. See Cracked Oil, Dry Ice.

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

**SOCA :** See Socapex.

**SOCAPEX :** A multipin connector which can carry a series of lighting or sound circuits. Very robust and designed for touring. Available in 19 and 37 pin configurations.

**SOFT LIGHT :** Asymmetric flood light used as a fill light in TV studios to eliminate shadows and balance the key light.

**SPECIAL :** An instrument within the lighting rig which is required for a specific moment or effect within the performance, and is not part of the general cover lighting.

**SPIGOT :** An adaptor screwed onto the hanging bolt of an instrument to enable it to be used on an upright stand.

**SPILL :** Unwanted light onstage.

**SPOTLIGHT :** General term for any lantern with a lens system. See Fresnel, PC, Profile.

**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.) [Diagram]

**STAGEPIN :** A connector commonly used in theatres to connect the fixture to the electric.

**STEP :** A control on some lighting effects boards which enables the operator to "step" through a chase effect or scene in sequence.

**STRIKE :** To take down a setting; to take down properties or instruments.

**S.W.L. :** Safe Working Load. The maximum weight that should be put onto a lifting device or suspension point.

## T

**TECHNICAL REHEARSAL :** 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.

TECHNICAL RIDER : See Rider.

TECH TABLE: Table in the auditorium at which director/designer etc sit during rehearsals (especially technical rehearsals). Usually has its own lighting and communications facilities.

THROW : Distance between a light source (e.g. lantern or projector) and the actor or object being lit.

THRUST : Form of stage which projects into the auditorium so that the audience are seated on at least two sides of the extended piece.

TIME : The facility on memory lighting boards for playing back timed fades at the touch of a button.

TRIM: A pre-plotted height for a piece of scenery or lighting batten. Sometimes flying pieces are given a number of extra trims, that may be color coded, in addition to the "in trim" (lower) and "out trim" (higher - out of view).

TRUSS : A framework of alloy bars and triangular cross-bracing (usually of scaffolding diameter) providing a rigid structure, particularly useful for hanging lights where no permanent facility is available.

TUNGSTEN HALOGEN : A standard tungsten filament lamp loses its brightness in its' lifetime. Tungsten Halogen lamps use a Quartz envelope ("bulb") filled with halogen gas to give an almost constant colour temperature. See Halogen Cycle.

TWISTLOCK : A connector commonly used in touring production, making its positive connection by a twist of the body of the connector/plug.

## U

ULTRA VIOLET (UV) : Short wavelength source of light at the end of the visible light electromagnetic spectrum which causes specially treated materials to fluoresce on an otherwise blackened stage. Used for special effect and for lighting onstage technical areas (eg Fly Floors). Ultraviolet sources designed for stage use are known as Black Light sources and have all harmful radiations filtered out.

UPSTAGE : The part of the stage furthest from the audience.

USITT : United States Institute of Theatre Technology.

## V

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".

VOLTAGE : The pressure at which electric current is available. The American standard is 110 Volts.

## W

WATER CRACKER : Device which produces a thin haze in the air by "cracking" water droplets.

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. See also Frequency.

**WIGGLY MIRRORS** : Slang for so-called "Intelligent" lights with moving mirrors.

**WINGS** :

- 1) The out of view areas to the sides of the acting area.
- 2) Scenery standing where the acting area joins these technical areas.

**WORK LIGHTS** :

- 1) High wattage lights used in a venue when the stage / auditorium lighting is not on. Used for rehearsals, fit-up, strike and resetting.
- 2) Low wattage blue lights used to illuminate offstage obstacles and props tables etc. Known as Wing Workers.

**WYSIWYG**: (What You See Is What You Get ) A design program that translates a lighting plot into a three dimensional rendering and reacts in real-time to control protocols.



## X

**XFADE** : See Cross Fade.

**XLR** : Multipin metallic audio connector. (3 pin for normal sound use, 5 pin for DMX, Color Scrollers etc). Sometimes called Cannons after the original manufacturer. See balanced line. The UK standard for wiring the 3 pin connector is as follows : Pin 1 (Ground), Pin 2 (+ve / "cold"), Pin 3 (-ve, "hot").

## Y

**YOKE** : The TRUNNION ARM of a lantern.

YO-YO : A device used for remotely moving a gobo in one plane whilst it is in the instrument. Gives the effect of a lateral movement (door opens, train passes etc.)

## Z

ZOOM : A type of ellipsoidal with two lenses enabling the adjustment of both size of the beam and whether it's hard or soft focus. Essential when working with gobos. Alsoa feature available on some intelligent fixtures.



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