

TELE 5560: Digital and Broadcast News Production

Video Production Terminology

1080i: A high-definition video format that has 1080 lines of vertical resolution and uses interlaced scanning.

1080p: A high-definition video format that has 1080 lines of vertical resolution and uses progressive scanning.

16:9: A widescreen aspect ratio that is 16 units wide by 9 units high. The aspect ratio of high-definition television (HDTV).

3D: Three-dimensional, or having appearance the appearance of three-dimensional depth. 3D images can refer to stereoscopic images (one image for each eye) or computer-generated images based on three-dimensional modeling.

4:1:1: A video compression ratio in which the chroma (color) is sampled at one quarter the rate of luminance (brightness).

4:2:2: A video compression ratio in which the chroma is sampled at one half the rate of luminance.

4:4:4: A video compression ratio in which the chroma is sampled at the same rate as luminance.

4:3: The traditional television aspect ratio, 4 units wide and 3 units high. This aspect ratio is being replaced by 16x9.

4:3 Safe: A method of shooting widescreen footage while still retaining a "safe area" that can be cropped and used for 4x3 aspect ratio.

5.1 Audio: A surround sound system that provides five separate audio signals: Left, middle, right, rear left, rear right. An additional low frequency (LFE) channel is also provided.

720p: A high-definition video format that has 720 lines of vertical resolution and uses progressive scanning.

3-point editing: an editing technique that uses a three "in" and "out" points (or marks) to determine how much source material will be edited into a specific location in a sequence.

3-point lighting: a common lighting technique that requires three instruments – a key light, a fill light, and a back light. The lights are arranged around the subject in triangular fashion produce portrait-type lighting.

A-roll: videotape that contains primary action footage and/or interviews. Used in A/B roll editing.

A/B Roll: The use of alternating scenes, recorded on separate videotape reels (an A roll and a B roll), to perform dissolves, wipes or other types of video transitions.

AGC (automatic gain control): Electronic circuitry that compensates for either audio or video input level changes by boosting or lowering incoming signals to match a preset level. Using AGC, changing input levels can output at a single constant setting.

ambient sound: A representative sample of background audio (such as a refrigerator hum or crowd murmur) particular to a shooting location. Ambient sound is gathered in the course of a production to aid the sound editor in making cuts or filling in spaces between dialogue. Also called room tone or **natural sound**.

analog: A continuously varying electronic signal. Audio and video analog signals stored on tape deteriorate with each copy or generation.

analog recording: The common form of magnetic recording where the recorded waveform signal maintains the shape of the original waveform signal.

A-only edit: Audio-only edit, sometimes called a “radio” edit.

aspect ratio: A measure of screen size as articulated by the ratio of width to height. HDTV is 16:9. Standard definition TV is 4:3.

audio mixer: A component that combines more than one sound input for composite output.

B-roll: Video that consists of cutaways and other shots (usually with natural sound) that illustrate a story. If a reporter is talking about horseback riding in a news package, then the b-roll would be the shots of people riding horses.

barn doors: Two- or four-leafed metal blinders mounted onto lights to control brightness or direction.

bit depth: The number of bits used to indicate the color of a single pixel in a bitmapped image or video frame. The higher the color bit depth, the higher the **color precision**. A higher color bit depth means more variety, more choices on how much color can be used for each pixel. Video used in broadcast television has an **8-bit** color system.

BNC connector: A type of locking connector on a video cable. The letters BNC stand for “bayonet neil-councilman,” which refers to the type of pin in the connector (bayonet) and the names of the two engineers who designed the connector (Neil and Councilman).

boom: A “fishing pole” or arm-like microphone or camera support that allows audio or video equipment to be held close to its subject without breaking the frame of the shot.

breakdown: A written accounting of the shooting schedule and production resources.

breakup: Disturbance in the picture or sound signal caused by loss of sync or by videotape damage.

broadband: A general term to describe an internet connection faster than 56K. Broadband usually means 512K or greater.

CCD (charged coupled device): The image sensor in a video camera that converts light into an electronic video signal. In most professional cameras, three CCD sensors are mounted on an imaging block to produce superior image quality.

character generator: Electronic device which produces graphics and characters for creating video titles. Also known as “CG”.

chroma: Video color, or saturation. Expressed as “C” when used in conjunction with luminance “Y”.

chroma key: A technique for replacing a colored background with another image. Usually performed with a green screen or blue screen background.

chrominance: Saturation and hue characteristics of color television.

clip files: in non-linear editing, this refers to the clips that are stored in “bins” in an editing project. Clips do not contain any audio or video material. They are actually **metadata** files that are linked to **media files**. You can manipulate a clip file without changing its associated media files.

closed captioning: A method of embedding subtitles within the video signal. The subtitles can be descrambled and viewed on the television screen with the use of special decoding equipment.

close up: A camera shot that is tightly framed, with its figure or subject filling the screen. Often qualified as medium close up (MCU) or extreme close up (ECU).

CMOS (complementary metal oxide semiconductor): A type of image sensor in video cameras that converts light into electronic video signals. CMOS sensors consume less energy than CCD sensors and are typically less expensive. These are more commonly found in consumer and “prosumer” video cameras.

codec: a shortened version of the words “**compressor/decompressor.**” A software program used to compress and decompress audio or video signals. Some commonly used video codecs are DV, Apple ProRes, Avid DNxHD, MPEG-2, and H.264.

color bars: Standard color test signal, displayed as rows or bars of color, used in the alignment of color video equipment.

color temperature: A standard of measuring the characteristics of light, measured in units called *kelvins*.

component video: Video signal in which the luminance and sync information are recorded separately from the color information. Superior to composite video.

composite video: Video signal that combines both luminance and chrominance in a single signal. Inferior to component video.

composition: The framing of a video shot.

compression: The process of “packing” or folding audio or video signals during encoding, which allows the audio or video to be stored more efficiently. There are two kinds of compression – **lossless** and **lossy**: As the names imply, lossless techniques retain all of the original information in a more efficient form, whereas lossy techniques discard or approximate some information. Lossy compression is the most dominant and there is an art to finding a compromise between acceptable quality loss, and file size reduction. When it comes to **video compression**, we also have to deal with **intra-frame** and **inter-frame** methods. **Intra-frame** involves the compression of each individual frame of video, which is better for editing and special effects processing. **Inter-frame** takes advantage of visual redundancy between neighboring frames (a background object that never moves) so it doesn’t have to compress each and every frame. This is fine for distributing or archiving video files, but not so good for editing.

container: A file that contains audio/video signals along with metadata. Example: a Quicktime Movie (.mov) file. Not to be confused with a **codec**.

contrast: The difference between the brightest and darkest parts of the picture.

control track: The portion of the videotape that records the electronic pulses used to synchronize video during recording and playback.

cut: In editing, an immediate switch from one image to another, without the aid of transitions such as the dissolve or wipe.

decibel (dB): Unit of measurement for sound levels. The audio meters in most editing software show volume in dBFS (decibels full scale) where 0 dB is the maximum possible level.

decompression: The process of “unpacking” audio/video signals during playback.

depth of field (DOF): The range within which all subjects, though located at different distances from the camera, are in focus.

digital: Electronic system which functions by converting the analog signal into a series of discrete binary bits (ones and zeros).

dissolve: A video transition in which the existing image is partially or totally replaced by superimposing another image. One image fades in as the other fades out. This represents a transition in time or place.

distribution amplifier: Amplifier that allows one video or audio signal to be sent to several pieces of equipment simultaneously.

drop-frame time code: SMPTE time code format that skips (drops) two frames per minute except on the tenth minute, so that the time code stays coincident with real time. The television broadcast standard for time code.

dropout: Drop in the playback radio frequency level, resulting from an absence of oxide on a portion of the videotape, causing no audio or video information to be stored there. Dropout usually appears as a quick streak in the video.

dub: To make a copy of a video recording.

dynamic range: An audio term which refers to the range between the softest and loudest levels a source can produce without distortion.

edit decision list (EDL): List of edits performed during off-line editing. The EDL can be handwritten list or computerized set of instructions used to direct the final online editing assembly of the video/film program.

ENG (Electronic News Gathering): This term was introduced with the evolution of video cameras for shooting news in the field (as opposed to film cameras). It is still widely used to describe mobile news crews.

Exposure: The amount of light which is passed through the iris, and which the CCD or film is exposed to.

equalization (EQ): The process of adjusting selected ranges of audio frequencies in order to correct

or enhance the characteristics of a signal.

feed: The transmission of a video signal from point to point.

feedback: A loop caused by audio or video signal being fed back into itself. In video the effect is caused when a camera is directed at its receiving monitor. In audio the effect, manifested as an echo or squeal, is caused when a microphone is aimed at a speaker.

firewire: A hardware interface for data transfer and high-speed communication developed by Apple in the 1990s. Used primarily to connect external devices to a computer. Sony uses the term "i.LINK" to refer to this type of interface. The technical name for the interface is IEEE 1394 High Speed Serial Bus. There are two firewire speeds: **400 MBs** and **800 MBs**.

fluid head: Refers to a tripod mount that contains lubricating fluid which decreases friction and enables smooth camera movement.

focal length: The distance from the center of the lens to the camera's image sensor.

frame: One complete video picture. The frame rate for standard-definition NTSC video is 29.97 frames per second.

FPS (Frames Per Second): The number of video or film frames which are displayed each second.

frequency: A measurement of a signal's vibration, represented as cycles per second or Hertz (Hz).

f-stop: Measurement of aperture. The higher the f-stop number, the smaller the aperture.

gain: The volume/amplification level of an audio or video signal.

generation: Copy of original video program material stored on tape. The original videotaped material is the first generation. A copy of the original is a second generation tape and so on. Generally the edited master tape is a second generation tape. Quality diminishes with each generation.

HDMI (High-Definition Multimedia Interface): A digital connection used in home entertainment systems and increasingly in professional video production.

headroom: In composition, the space between a subject's head and the upper boundary of the frame.

hertz (Hz): A unit used to measure frequency. One hertz equals one cycle per second.

hiss: Background signal interference in audio recording.

hue: The shade of color. On a TV set, hue is called "tint."

IFB (interruptible foldback): a communication system used in broadcasting and filmmaking. Allows one-way communication from a director or producer to on-air talent either in studio or in a remote location.

in point: Starting point of an edit.

iris: The video camera's lens opening which regulates the amount of light entering a camera.

jitter: Jumping or instability in the television picture, often caused by synchronization or tracking errors.

jump cut: A mismatched edit that creates a visual disturbance when replayed. Usually occurs when cutting between two images that share an identical subject but show the subject at different positions in the frame.

lavalier mic: A small microphone clipped to clothing or hung around the neck.

linear editing: A form of analog editing in which sequential edits are laid out in a linear fashion from the start to the end of the tape. Precludes inserting footage without re-recording all following edits. In contrast to nonlinear editing.

long shot: Camera view of a subject or scene, usually from a distance, showing a broad perspective. Often called a wide shot (WS) or establishing shot.

luminance: Amplitude (strength) of the gray scale or black-and-white portion of the video signal. Expressed as "Y".

media files: in non-linear editing, this refers to the actual audio and video files stored on a hard drive. This material is typically captured, copied, or imported to the hard drive. Media files are linked to **clip files** that are stored in the "bins" of an editing project.

medium shot: Camera perspective between long shot and close up, whereby subjects are viewed from medium distance, usually from the waist up.

memory effect: Loss of power storing capability in NiCad (video camera) batteries which occurs when batteries are habitually discharged only partially before recharging. To avoid the memory effect, always fully discharge batteries before recharging.

metadata: descriptive and technical information about audio and video files that is used to identify, organize, and track the files. This type of data can be **automatically** embedded into a file when it is created by a camera or other recording device (timecode, resolution, video codec, frame rate, sample rate) or it can be **manually** written to a file after it has been imported into an editing program or other processing system (the transcript of an interview, shot descriptions, producer's comments, etc.).

mixing: Combining more than one audio sources into a single audio signal output.

MMJ (multimedia journalist): A journalist responsible for all facets of story production – videography/photography, writing, editing, graphics, etc. Also called a "backpack journalist" or "video journalist."

ND (neutral density) filter: A filter that reduces the amount of light coming through the camera lens, without affecting its color temperature. Kind of like sunglasses for the camera lens, but without any change in color.

NiCad (nickel cadmium): Common rechargeable video camera battery type.

non-linear editing: Digital editing in which video and audio are stored on a hard drive rather than tape. Allows random access to **clip files** and "cut and paste" style arrangement of footage. Allows individual edits to be changed without necessitating the alteration of following edits. In contrast to linear editing.

NTSC: National Television Standards Committee, the group that established the color TV transmission system used in the US.

NTSC color video standard: The US standard for standard definition color television transmission, calling for 525 lines of information, scanned at a rate of 29.97 frames per second. (also see PAL).

off-line editing: Preliminary post-production editing session, used to establish editing points and to prepare an edit decision list (EDL). The result of an off-line edit is a rough cut. Compare to on-line editing.

off-line editor: Video crew member who edits footage shot during production in order to aid director in building the story aspect of the program in the form of a rough cut. Focuses on content, looking at transitions, juxtapositions and pacing throughout the entire piece.

on-line editing: Final editing session, the stage of post-production in which the edited program is assembled from the original production footage, usually under the direction of an edit decision list (EDL).

out point: Ending point of an edit.

on-line editor: Video crew member who, guided by the rough cut from the off-line edit, edits the final piece using the camera masters. Possesses a mix of high-end technical proficiency and aesthetic skills to help the director and producer refine transitions and sound levels efficiently.

PAL (phase alternate line): The European standard for color television transmission, calling for 625 lines of information, scanned at a rate of 25 frames per second (also see NTSC).

pan: A horizontal camera pivot (from right to left or left to right) from a stationary position.

paper edit: Rough edit decision list made by screening original material, but without actually performing edits.

PCM (Pulse Code Modulation): A digital audio format.

phantom power: A means of distributing a DC current through audio cables to provide power for microphones and other equipment.

pixel: picture element.

playback: The viewing of recorded video footage.

PPM (Peak Program Meter): An audio level meter. The *rise time* of a PPM (the time it takes to register the level of a sound) is much faster than a **VU meter**, typically 10 milliseconds compared to 300 milliseconds. This makes transient peaks easier to measure. The *fall time* of a PPM (the time it takes the meter to return to a lower reading) is much slower. PPMs are very good for reading fast, transient sounds. This is especially useful in situations where pops and distortion are a problem.

post-production (post): All production-related tasks that occur after shooting is completed. Editing, titling and sound mixing are common post-production activities.

pre-production: The tasks that must be completed before shooting begins. Includes research, production planning, scheduling, and equipment rental/check-out.

prosumer: a combination of the words “professional” and “consumer”. This refers to audio and video equipment that combines professional and consumer features.

RAM (random access memory): A system of computer memory in which data can be retrieved in any order with equal speed.

raster image: a dot matrix data structure representing a generally rectangular grid of pixels, or points of color.

raw footage: Video recordings that have not been edited.

remote: Shooting video or film outside of the studio environment.

RGB: Abbreviation for the primary colors of light: red, green and blue.

resolution: The amount of detail in an image or signal. On a computer screen, the resolution is the number of pixels. In a video video signal, the resolution is the number of horizontal lines. In digital audio, the resolution is the number of samples per second.

rough cut: Preliminary edit of raw footage to establish tentative sequence, length approximate sequence and content of the eventual video program.

rule of thirds: A technique in camera framing where the frame is divided into imaginary sections to create reference points

sample: A near-instantaneous recording of a signal, measured in thousandths of a second. Digital signals are constructed by sampling analog signals thousands of times per second. Each of these individual samples are strung together to make a close approximation of the original signal.

sample rate: the number of samples per unit of time (usually seconds) taken from a continuous signal to make a discrete signal. The standard audio sampling rate used by professional digital video equipment is **48,000 Hz**, also expressed as **48 kHz**.

saturation: Amount of color in the television picture.

SDHC (secure digital high capacity): A memory card format that is used in portable devices including a wide range of consumer and prosumer video cameras. Storage limit on SDHC cards is 32 GB.

SDXC (secure digital extended capacity): Similar to SDHC cards but supports storage limits up to 2 TB.

SDI (serial digital interface): A system of cables, connectors, and input/output devices used to transmit broadcast quality digital video (and sometimes embedded audio) signals.

sequence: in non-linear editing, this refers to the edited material in the timeline. A sequence is basically a collection of subclips (small portions of clip files) that are linked to the captured or imported media files.

shotgun mic: A long and narrow highly directional microphone. Aimed at its subject, the shotgun mic is designed to capture sound from long distances. Sometimes attached to a “fishpole” which extends the reach of the sound recordist.

SLR (Single Lens Reflex): a popular type of still photography camera that uses a moveable mirror to synchronize the lens and viewfinder images. If the camera produces digital images, it’s referred to as a **DLSR** camera.

SMPTTE: Society of Motion Picture and Television Engineers.

SMPTTE time code: Binary time code denoting hours, minutes, seconds and frames. See also time code.

stereo: Sound received from two separate sources. Simulates human hearing with a Left and Right audio channel.

storyboard: A sequential series of sketches illustrating stages or scenes in a production. Used as a visual script or shooting plan.

submaster: High quality copy of a master tape used to make additional copies. See also dub.

S-video (Y/C video): Video signal that transmits chrominance and luminance information separately to minimize loss of picture quality.

sweetening: The final combining and enhancing of a video program's audio tracks.

switcher: Device for mixing multiple video signals. Used for special effects, transitions, generating titles.

sync: Abbreviation of synchronization. Usually refers to the synchronization pulses necessary to coordinate the operation of several interconnected video components. When the components are properly synchronized, they are said to be "in sync."

telephoto: A setting on a zoom lens with a long focal length and narrow field of view. Opposite of wide-angle, also called “zoomed in.”

tilt: A vertical camera pan from a stationary position. The camera pivots up or down from a fixed point.

timecode: Electronic indexing method used for editing and timing video programs. Time code denotes hours, minutes, seconds and frames elapsed on videotape.

titles: On screen text such as credits or dialog translation.

transcoding: The process of converting from one digital format to another, or re-encoding a digital file in order to change one or more parameters.

thunderbolt: A hardware interface for connecting external external devices to a computer. Developed by Intel and implemented by Apple starting in 2011. Promises transfer speeds of **10 GBps**.

USB: Universal Serial Bus. A high-speed communication and data transfer system consisting of cables, connectors and protocols. Used primarily for connecting external devices to a computer. USB 2.0 has data transfer speed of **480 MBps**, while the new USB 3.0 is much faster at **5 GBps**.

vector image: A graphic image, which exists as a series of geometric shapes, rather than as a series of values for each pixel. Has the advantage of being resizable without loss of quality.

VTR: Videotape recorder.

viewfinder: Camera feature that allows operator to view the image as it is being recorded. Video viewfinders typically depict the recorded image in black-and-white.

VU (Volume Unit): a unit to measure the volume of an audio signal.

VTR: Videotape recorder.

waveform (video) monitor: An oscilloscope specifically designed to display the waveforms of video signals. Used to monitor signal strength, sync timing, etc.

waveform (audio) plot: a graph showing the varying quantity of an audio signal against time. Used to monitor the amplitude (intensity) of a signal.

white balance: A camera function which gives a reference to "true white", in order for the camera to interpret all colors correctly. White balance is set prior to shooting by aiming the camera at a uniformly white object.

wide-angle: A setting on a zoom lens with a short focal length and broad horizontal field of view. Opposite of telephoto setting, often called "zoomed out."

XML (Extensible Markup Language): a versatile markup language used in computer programming and web development.

XLR: a type of professional audio connector with three prongs that consists of the "hot" signal, the "cold" signal, and the ground wire.

zoom: Expanding an image within the frame by bringing the subject into closeup.

zebra stripes: A feature of professional cameras, which places diagonal lines across any parts of the picture in the viewfinder reaching a specified exposure level. These stripes will not show on the output/recorded picture, they are only there as a guide for the camera operator.