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Desktop Video: Glossary of Terms (N-P) (8/93)

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TOPIC -----

This article describes desktop video terminology, words "N" through "P".

DISCUSSION -----

Neutral colors

The range of gray levels, from black to white, but without color. For neutral areas in the image the RGB signals will all be equal, in color difference formats the color difference signals will be zero.

NTSC

(1) Abbreviation for National Television Standards Committee, which standardized the NTSC color broadcasting system which is used today in the in the US, Japan and elsewhere.

(2) The standard video format defined by the NTSC, also called composite because it combines all the video information, including color, into a single signal. See NTSC composite.

NTSC color bars

A pattern generated by an NTSC generator consisting of eight equal width color bars. Colors are white (75%), black (7.5% set-up level), 75% saturated pure colors red, green, and blue, and 75% saturated hues of yellow, cyan, and magenta. (Mixtures of two colors in 1:1 ratio without third color).

NTSC composite

A video signal standard proposed by the National Television Standards Committee of the Electronics Industries Association and adopted by the FCC for broadcast television in the United States. The signal is a composite video signal of 525 lines, interlaced, 60 fields per second (30 frames per second) with a bandwidth limited to 4 MHz so that it will fit into a 6 MHz broadcast television channel without interfering with adjacent channels. NTSC is also the standard system for Japan.

The standard was created to allow color television signals to be compatible with existing monochrome (black and white) television. The restriction of compatibility with the earlier technology results in compromises in color

image quality. The NTSC composite signal format is required for video recording except with devices which support component video.

Though there are 525 scan lines, more than 40 lines are blanked during vertical retrace periods. Overscanning and poorly adjusted televisions reduce the number of visible lines further, leaving viewers around 360 lines of video information in a normal television picture.

Macintosh video can be converted to NTSC composite using an encoder or scan converter. When using an encoder with a Macintosh video card there is an unavoidable reduction in image quality and single pixel lines, for instance, will flicker (unless the video card supports convolution) due to the interlaced nature of the NTSC signal. Images intended for NTSC use should be designed according to the limitations of the format, unless a more expensive scan converter is being used. See encoder and scan converter.

NTSC RGB

Interlaced red, green, and blue video signals timed to NTSC standards. Refers to three monochrome signals representing the primary colors of the image. This is a superior signal format to composite video which is one signal encoded from the three signals. An NTSC RGB signal differs from a component video signal which consists of Y, R-Y, and B-Y signals.

Off-line, off-line editing

The preliminary or rough edit usually done on a low-cost editing system using videocassette work tapes. In an increasing number of situations random-access non-linear editing system using digitized video or laserdiscs are being used for off-line editing. Allows editors to make decisions and gain necessary approvals before making the more expensive and demanding on-line edit.

Since the actual edit session in a professional video facility is very expensive, it is always best to make all editing decisions in advance. This is called off-line editing or off-lining. See window dubs, on-line, special effects.

On-line, on-line editing

The final edit of a video using original master tapes to produce the finished piece. An on-line edit suite usually has a full range of high-end video devices (switcher, TBCs, DVE, character generator, etc.) which would normally be too expensive to use during an off-line edit session.

The on-line session is where the actual editing and effects take place. It occurs in an edit suite with a professional editor (known as the on-line editor). Again, the more prepared you are, the better since "things happen." It is very easy to go way over your budget estimate for an off-line edit if your EDL contains little surprises like a mislabeled in-point. Computer based editing systems like the Digital F/X and Avid Media Composer automatically generate EDLs which are very accurate, reducing on-line time considerably. See CMX, special effects, window-dubs. Compare off-line.

Opticals

Visual effects produced optically using an optical printer that contains one camera head and several projectors. The projectors are precisely aligned in order to produce multiple exposures in exact registration on the film in the camera head. Rapidly being replaced with special high-resolution video devices for all but feature applications.

Overscan

- (1) The television picture beyond area of normal screen size.
- (2) A method by which the video image is scanned beyond the normal viewing area of the screen. Compare underscan.

Paintbox

Paintbox is the trade name for a device made by Quantel, however, it is generally used to describe a digital video paint program capable of drawing and shading images from scratch or from digitized video frames. The Paintbox creates only still images, but sequences of animated images can be made from the still images by loading frame by frame onto a Harry or equivalent.

PAL

Phase Alternative Line system. The television broadcast standard for most of western Europe. Based on the 50 Hz power system, it displays 625 lines interlaced at 50 fields per second (25 frames per second). By reversing the relative phase of the color signal components on alternate scanning lines, this system avoids the color distortion that appears in NTSC reception. PAL is not compatible with NTSC or SECAM, though conversion between the standards is possible. Video products to be used in Europe require compatibility with PAL standards.

Pedestal

See blanking level.

Period

The time elapsed during one complete cycle of a wave.

Phase

(1) A stage in a periodic process; a point in a cycle. (2) The relationship between two periodic signals or processes. (3) The amount by which the cycles of one wave precede or lag behind the cycles of another wave of the same frequency. (4) Some fraction of a wave cycle (measured from a fixed point on the wave).

Pre-roll

Almost all videotape decks need a running start to get up to speed. This is called pre-roll, and varies between machines from about 3 to 10 seconds. This means that for every edit, source and record decks must first stop, count backward the exact number of frames required for pre-roll, begin playing simultaneously, then at the precise edit point begin recording. It is a mechanical and electronic marvel that video editing can be frame-accurate at all. See sync.

Primary colors

Colors, usually three, which are combined to produce the full range of other colors within the limits of a color system. All non-primary colors are mixtures of two or more of the primary colors. In television, the primary colors are a specific set of red, green and blue.

Pulse

A current or voltage which changes abruptly from one value to another and back to the original value in a finite length of time. Used to describe one particular variation in a series of wave motions.

Pulse distribution amplifier

An amplifier designed to boost the strength of the sync as well as other control signals to the proper level for distribution to a number of cameras, special effects generators, or other equipment.

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