



Video Tape Recording Glossary

Generated by the Working Group on Nomenclature under the chairmanship of R.N. Hurst, the following terms and definitions were approved by the Video Recording and Reproduction Committee. The group is continuing to define the most commonly used terms in the field and the glossary will be expanded and modified to reflect current usage. Comments on the glossary should be sent to Albert A. Conte, Television Engineer, at Society Headquarters.

- Abrasive.** adj. 1. Of video tape, having the property of wearing down the surfaces it contacts as it passes through the tape path; especially, having the property of wearing down the video heads. 2. Derog. Of a video tape, having the property of wearing down the video heads at an excessive rate.
- AB Roll, A-B Roll.** n. 1. A technique by which information is played back from two tape machines rolled sequentially, usually for the purpose of dubbing the sequential information onto a third tape. 2. A recording thus produced.
- A-B Switch.** n. 1. A video switch performed so as to change a video feed from one source to another. 2. The program in the (time) vicinity of such a switch. v. To perform such a switch.
- ADA.** n. An Ampex proprietary acronym for Automation Data Accessory; an apparatus which identifies cassettes from information recorded on the cassette cue track. Compare with IDA.
- Add-on.** v. Alternate term for assemble.
- Air Bearing.** n. A very low friction bearing in which air under pressure is forced between the stationary and rotary sleeves constituting the bearing; the air thus becoming the lubricant of the bearing.
- Alignment.** n. 1. The adjustment of the mechanical and electrical parameters of a VTR so as to provide optimum performance of the equipment. 2. The condition resulting from such adjustment.
- Alternate Azimuth Heads.** See chevron pattern.
- AMTEC.** n. An Ampex proprietary acronym for Ampex Timing Error Corrector, a time base corrector used in certain Ampex equipment.
- Anhysteresis.** n. Magnetization by means of an unidirectional field upon which is superposed an alternating field of gradually decreasing amplitude.
- Anhysteretic Duplication.** n. A tape-duplication method employing anhysteresis.
- Apparent Quadrature Error.** n. A picture fault closely resembling the fault caused by quadrature error but arising from a different cause; e.g., excessive oxide build-up on one head.
- ASR.** See automatic sequence register.
- Assemble.** v.t. To join together successive program segments so as to form a continuous program tape. v.i. To direct or carry out such joining. adj. Of a recording apparatus, pertaining to that mode designed to carry out such joining. See insert.
- Assemble Mode.** n. A mode of VTR operation for editing which permits the machine to assemble.
- A to B Dub.** v. In cartridge or cassette recorder operation, to dub a recording by replaying it on the "A" deck and recording the information thus produced on the "B" deck. n. A recording thus produced.
- Audio Buzz.** n. A low-frequency disturbance in the reproduced audio signal from a VTR; especially that disturbance noted when the video tracks have been re-recorded and the prior audio information has been retained.
- Audio Channel.** n. 1. That portion of a video tape recording machine devoted to the recording and replay of the audio signals accompanying the video. 2. By extension, the signals in such a channel or the output of the channel.
- Audio No. 1 Track.** n. 1. An audio track so designated in a format drawing and generally used as the primary program audio track. 2. In quadruplex recording, a synonym for program audio track.
- Audio No. 2 Track.** n. 1. An audio track so designated in a format drawing and generally used as second program audio track or a cue track. 2. In quadruplex recording, a synonym for cue track.
- Audio No. 3 Track.** n. An audio track so designated in a format drawing. (If the several audio tracks of a VTR are of varying quality, the higher numbers designated usually indicate lower quality.)
- Audio Post.** n. A post which supports one or more audio heads.
- Audio Record.** n. (RECORD) A record corresponding to an audio signal.
- Audio Record No. 1.** n. The record in audio No. 1 track. (In present practice, the audio record number and the audio track number are identical; e.g., audio record No. 3 is found in audio track No. 3.)
- Audio Track.** n. A track containing an audio record.
- Autochroma.** n. An Ampex proprietary term for automatic chroma control.
- Automatic Chroma Control.** n. An apparatus for sensing and automatically correcting errors in chrominance amplitude.
- Automatic Sequence Register (ASR).** n. 1. An RCA proprietary name for an apparatus in a video cartridge recorder which permits the replay of a series of groups of cartridges, the replay of each group being initiated by a single command. 2. The panel control used to pre-program such an apparatus.
- Automatic Threading.** n. The act of placing the tape in the tape path by means of automatic machinery.
- Azimuth.** adj. Pertaining to the angle between the direction of head travel and the pole-tip gap. (For optimum interchange, this angle is usually 90°; however, also see chevron pattern.)
- Azimuth Error.** n. The angle between the playback pole-tip gap and the record made by the recording pole-tip gap.
- Backing.** n. 1. The base film of a video tape. 2. A material applied to the backside of the base film, more properly called backside coating.
- Back-Porch Switching.** n. A method of accomplishing video head switching, in which the switchover from head to head occurs during the back-porch of the reproduced video signal. See front-porch switching and sync-tip switching. (This method of switching was

- employed in the early days of video tape recording.)
- Backside.** adj. Pertaining to that side of a video tape which does not have a coating of magnetizable material.
- Backside Coating.** n. Of a video tape, a material applied to the backside of a base film, usually for the purpose of minimizing cinching and stiction.
- Backside Transport.** n. A tape transport, the majority of whose elements touch only the nonoxide side of the video tape.
- Band-by-Band Correction.** n. An automatic correction method wherein the errors of an entire head band are sensed and an average correction applied. See *line-by-line correction*. (The parameter most often corrected by this method is the chroma amplitude error.)
- Banding.** n. A picture fault characterized by a visible difference in the reproductions of the head bands of the picture.
- Band-"S".** n. A type of banding characterized by an s-shaped timing error within a head band.
- Bias.** n. In audio recording, an ultrasonic signal applied to the record head, together with the signal to be recorded, for the purpose of improving the linearity of the reproduced signal.
- Bifilar.** adj. In video tape duplication, pertaining to a method of winding two tapes together, oxide surfaces facing, onto a single reel.
- Binder.** n. In video tape, the material used to bond the magnetic particles to each other and to the base film.
- Bobbin.** n. 1. See *reel*. A small reel, such as might be employed in a cartridge or cassette. (Infrequent use.)
- Breakup.** n. A picture fault characterized by a complete scrambling of the reproduced picture. The effect is often caused by servo unlock. v. Of a VTR, to produce such a picture fault.
- Broomsticking.** n. See *flagging*.
- Buffer.** n. 1. In a VTR, an apparatus capable of storing at least a TV line of the reproduced picture, and functioning as a TBC. 2. A device on a tape transport, usually pneumatic in operating principle, which can store a variable length of moving tape as it passes over the transport. 3. Any device capable of storing but not processing a signal.
- CAC.** n. A proprietary RCA abbreviation for chroma amplitude corrector, a device which automatically senses and corrects deficiencies in playback chroma amplitude.
- Canoe.** n. That portion of tape in a quadruplex transport which lies between the tape input guide and tape output guide and is cupped by the vacuum guide. adj. Pertaining to that portion of the tape or to the elements which shape it.
- Capstan.** n. The driven spindle in a tape machine, sometimes the motor shaft itself, which rotates in contact with the tape and meters the tape across the tape transport. adj. Pertaining to the spindle or the circuits and apparatus associated with it to carry out the metering function.
- Capstan Servo.** n. A servomechanism which controls the start-up and running of the capstan.
- Carrier (FM).** n. 1. The unmodulated signal from the modulator of a VTR. 2. The J_0 term of a Bessel function representing the spectral distribution of an FM wave during a relatively long period of constant luminance.
- Carrier (Head Assembly).** n. A device for holding a video head and providing a convenient means for mounting it in a headwheel or scanner.
- Carrousel.** n. A mechanism of a video cassette recorder designed to hold a number of cassettes and deliver them, on command, to a transport for record or playback.
- Cartridge.** n. An assembly composed of a case and one or more spools for storing or reeling tape, designed to be inserted into a transport for automatic play or record.
- Cassette.** See *cartridge*.
- CAVEC.** n. Proprietary RCA abbreviation for chroma and velocity error corrector.
- Center Span Tension.** n. A calculated value of tape tension at a point midway between tape entrance and exit guides of the scanner in a video tape recording system.
- Channel.** n. An isolated signal path, especially a signal path dedicated to the conveyance of signals to or from a single record/playback head. See *head channel* and *audio channel*.
- Chevron Pattern.** n. A track pattern recorded on tape characterized by an alternation of the azimuths of the recorded video tracks, which minimizes the crosstalk resulting from mistracking and permits the reduction or elimination of guard bands.
- Chroma Flutter.** n. A picture fault characterized by a rapid nonsynchronous fluctuation of chroma level.
- Chroma Noise.** n. 1. Noise appearing predominantly in that portion of the spectrum conveying chrominance information. 2. The picture fault resulting from such noise. 3. A picture fault characterized by unwanted hue and chrominance shifts, usually at a scan line rate. Often called *streaky noise*.
- Cinching.** n. The tangential slippage between tape layers occurring when a loosely-wound reel of tape is subjected to high rotational acceleration or deceleration. This interlayer slippage results in physical distortion of the tape, manifesting itself as a series of buckles, creases, or folds in the areas that have slipped.
- Coating.** n. Of video tape, substance applied to the base film, such as the magnetic coating or backside coating.
- Cobalt-Doped Oxide.** n. An oxide, usually of gamma ferric oxide, which has a high coercivity as a consequence of small quantities of cobalt added during manufacture.
- Coercivity.** n. That property of a magnetic material characterized by the maximum coercive force ever needed to cancel the largest remanent magnetism possible for that material; i.e., the remanent magnetism resulting from saturation induction of the material. (In magnetic tape, coercivity becomes an indicator of the maximum energy available from a recorded tape.)
- Color ATC.** n. An RCA proprietary term used to describe an ATC capable of providing timing correction to a color television signal.
- Color Noise.** n. See *chroma noise*.
- Colortec.** n. An Ampex proprietary name used to describe an analog automatic time-base corrector capable of providing timing correction to a color television signal.
- Concentricity.** n. Of a rotary video head assembly, that condition in which the center of rotation of the heads coincides with the center of curvature of the vacuum guide. See SMPTE Recommended Practice RP 11.
- Conductive Coating.** n. A low-resistance, nonmagnetic, backside coating on video tape, used to lessen the build-up of static charges.
- Contact Print.** n. A copy of a magnetic recording made by placing the tape to be copied in close contact with the blank tape which is to become the copy, and exposing the tapes to some process such as the anhysteretic duplication process, designed to accomplish the transfer of the flux patterns to the blank tape.
- Contouring.** n. The action by which the shape of a video head's tape-contacting surface slowly adapts itself to the tensions and pressures of the tape it is contacting. The result of such action is normally an improvement in the intimacy of head-to-tape contact and, hence, better performance.
- Control Track.** n. The area of the tape containing a recording used by a servomechanism primarily to control the longitudinal motion of the tape during playback in a VTR system.
- Control Track Head.** n. A head positioned in the transport so as to record or replay the control track record. (The control track head intended for recording is normally positioned very close to the rotating head assembly in order to minimize errors caused by variable tensions in the tape.) See *control track simulplay head*.
- Control Track Record.** n. The record in the control track.

Control Track Signal. n. The signal recorded on the control track.

Control Track Simulplay Head. n. A head used to monitor the control track signal. (The positioning of this head is less critical than the positioning of the control track head.)

Coplanarity. n. 1. Of a rotary video head assembly, that condition in which all heads rotate in a common plane. 2. The degree to which that condition is met.

Copy. v. 1. To dub. 2. To duplicate a tape by any means, including direct recording as well as contact duplication methods. n. A tape produced by a duplication process.

Cosine Equalizer. n. 1. A filter exhibiting a cosinusoidal amplitude vs frequency response and a linear phase vs frequency response. 2. In a video tape recorder, a filter used for compensation of high-frequency losses inherent in pole-tip gap dimensions.

Count-Down. n. 1. A signal recorded just ahead of the desired program, providing an aural and visual indication of the number of seconds remaining before the start of program. 2. That portion of a tape containing such a signal.

Crease. n. 1. A tape deformity remaining after a fold has been corrected. 2. The picture degradation resulting from such a deformity.

Cue, Cuetone. n. A tone recorded on the cue track or audio track marking the point at which the tape is to be cued.

Cue Channel. n. 1. That portion of a video tape recording machine devoted to the recording and replay of the cueing information or time code signals relating to the video. 2. By extension, the signals in such a channel or the output of the channel.

Cue Post. n. A post which supports cue heads.

Cue Track. n. The area reserved on the tape for audio information relating to production requirements, electronic editing information, or an ancillary program signal.

Cue Up, Cue. v. To prepare a tape and machine for playback by positioning the tape in the transport at a point just prior to the beginning of program.

Cupping. n. Undesired curvature of a tape in the lateral direction.

Curie Point. n. That temperature above which a ferromagnetic substance loses virtually all of its ferromagnetic properties.

Curl, Transverse. See cupping.

Deck. n. 1. The plate of a transport which serves as the main support for the elements of the transport. 2. The transport itself in its entirety.

Dedicated Machine. n. A video tape recorder or player whose versatility is limited, either by its construction or by its operator, so as to optimize its

performance of a particular function. Examples include a record-only machine, a commercial-playing machine, and a network delay machine.

De-emphasis. n. An operation, complementary to pre-emphasis, by which signal frequencies emphasized before transmission or recording are restored to their normal relative amplitudes.

Degauss. v. To remove remanent magnetism from a magnetic material by subjecting it to an alternating magnetic field of gradually diminishing strength.

Demodulator. n. 1. The apparatus for recovering from a signal the information imparted to it by a modulator. 2. In a video tape recorder, the apparatus which recovers the original video from the played back FM signal.

Deviation. n. 1. In FM systems used for video tape recording, the difference between the frequency corresponding to sync tip and the frequency corresponding to peak white. 2. In descriptions of the spectra generated by color television recording, the difference between the frequency corresponding to a given instantaneous luminance and the frequency corresponding to the peak subcarrier excursion related to that luminance.

Dispersant. n. In video tape, an additive whose purpose is an improvement in dispersion.

Drop-out Compensation. n. The action of a drop-out compensator, especially in the sense of Def. 2.

Drop-out Compensator. n. 1. An apparatus which detects the presence of a drop-out and acts to minimize its visibility in the reproduced picture. 2. An apparatus which accomplishes the foregoing by replacing the missing information with statistically similar information from another part of the signal; e.g., from the preceding scan line.

Drop-out Rate. n. The rate at which drop-outs occur, usually measured in drop-outs per minute.

Drum Servo. See headwheel servo.

Dry Shoe. n. A tape guide which is physically similar to a vacuum guide, and serves much the same function, but does not apply vacuum to the tape.

Dual Head Post. n. A post which supports two heads.

Dub. v. To make a copy of a recording by rerecording. n. A copy thus made.

Dupe. n. A duplicate tape.

Duplicate, Duplicate Tape. n. A tape recording produced by duplication; a replica.

Duplication. n. The act of producing a replica of a pre-recorded tape, either by dubbing, anhysteretic duplication, thermal duplication, or any other suitable process. See anhysteretic duplication and thermal duplication.

Durability. n. Of a video tape, that quality which enables it to resist deterioration through passage over the tape

transport. See durability index.

Durability Index. n. A measure of the durability of a tape expressed as the number of passes that can be made before a significant degradation of output occurs, divided by the corresponding number that can be made using a reference tape.

Edge Beat. n. A picture fault characterized by a twinkling of sharp transitions. Also called **twinkle** and **light bearding**.

Edit. v.t. To alter the content of a pre-recorded tape, either by selectively erasing a portion of the tape and recording new material, or by appending new material in the previously unrecorded section at the end of the earlier recording, or by physically cutting out a section of the tape and inserting another segment of pre-recorded tape. v.i. To direct or carry out such an operation. n. 1. A point or location in a tape at which such an alteration has been made. 2. The program material in the immediate vicinity of such an alteration.

Edit Code. n. 1. Generally, any pulse train used as a code to facilitate or aid the tape editing process by locating program segments on a tape. 2. Specifically, the SMPTE Edit Code as described in American National Standard ANSI C98.12. 3. The magnetic pattern on a tape representing such a code. Also called Time and Control Code, Time Code, or Time and Location Code.

Editor. n. 1. An apparatus designed to accomplish or facilitate the editing of a recorded tape. 2. A person who edits tape recordings or directs such editing.

Edit Pulse. n. 1. A pulse derived from and occurring during the vertical interval of the even field of the TV signal, and recorded on the control track, originally to facilitate mechanical editing procedures and, in later equipments, to control electronic editing equipment. Occasionally called editing pulse. 2. The magnetic pattern recorded on tape representing such a pulse. 3. The pulse replayed from such a magnetic pattern. (The preferred term for Def. 1 and 2 is **frame pulse**; equipment descriptions often distinguish between Def. 1 and 3 by calling the first **frame pulse** and the second **edit pulse**.)

Effective Drum Diameter. n. A value of drum diameter which, when used in theoretical calculations, will correspond to the actual video record produced in a helical-scan video tape recording system. The effective value is equal to or greater than the actual drum diameter.

Electronic Edit. n. An edit carried out by electronic means, without recourse to physical cutting and rejoining of tapes.

Entrance Radius. n. Of a vacuum guide, that radius which defines the curvature of the uppermost section of the active

- guide surface, where the guide surface curves away from the tape to facilitate an impact-free entrance of the video head onto the tape.
- EOT.** n. Abbreviation for end of tape. In a video cartridge or cassette, a mark placed near the end of the unrecorded tape to allow appropriate sensors to detect the approach of the end of the tape. (In RCA equipment, the EOT is a 1 x 1/4" reflective foil; in Ampex equipment, the EOT is a 1/4" hole in the tape.) See SOT.
- EPIS.** An RCA proprietary abbreviation for Electronic Program Identification System. n. 1. An apparatus for detecting and displaying brief alphanumeric identifications recorded in the cue track of a cartridge, and for recording new identifications. 2. The recorded code itself. 3. The alphanumeric display of the code.
- Equalize.** v.t. To adjust an equipment so as to obtain optimum equalization.
- Equalizer.** n. An apparatus designed to carry out equalization.
- Erasure.** n. 1. The process by which a signal recorded on tape is removed and the tape is prepared for a new recording. 2. An area or segment of tape which has been erased. 3. The act of erasing.
- EVDL.** n. Abbreviation for Electronically Variable Delay Line. A delay line whose electrical length can be altered by means of an electrical control signal.
- Helix Angle.** n. The angle formed between the path of the rotating pole tips and the tape reference edge-guiding system on the scanner of a helical-scan video tape recording system.
- Label.** n. A slip of paper or similar material affixed to a tape reel or tape reel container to identify the program recorded on the tape.
- Lace.** v. See thread. Often used in British publications as the equivalent of thread.
- Lands.** n. Concave cylindrical surfaces of a vacuum guide which support and curve the tape as it approaches and leaves the vacuum slot.
- Lap.** v. To deliberately abrade the pole tips of a headwheel or scanner in such a way as to shape them for more intimate tape contact in normal use.
- Lapping Tape.** n. A special tape having an abrasive surface which is used to lap the pole tips of a headwheel or scanner.
- Layer-to-Layer Adhesion.** See adhesion.
- LBC.** Abbreviation for low-band color. See low-band.
- LBM.** Abbreviation for low-band monochrome. See low-band.
- Leader.** n. 1. That section of tape which precedes the program and provides alignment signals and slate information. 2. The information recorded on such a section of tape.
- Lift.** n. An image representing recorded flux patterns, obtained by placing on the recorded tape a suspension of fine carbonyl iron in a volatile fluid, allowing the volatile fluid to evaporate, and then removing the resultant powdered-iron image by pressing transparent adhesive tape against the image.
- Lift off.** v. Of a tape, especially during rewind, to lose contact with a support-
ing element or guide as a consequence of an air film pumped between the guide and the tape by the rapid motion of the tape.
- Limited-Playback Machine.** n. A video-tape machine, usually portable, capable of only moderate-quality or monochrome-only replay, for the primary purpose of checking a recording in the field, before returning the tape to the studio.
- Line-by-line Correction.** n. Of an automatic chroma equalizer, the action of measuring and correcting the faults of each TV line individually as opposed to band-by-band correction.
- Linelock.** n. An RCA proprietary term describing a headwheel servo or a mode of a headwheel servo, in which the servo lock is obtained by comparing horizontal pulses from the tape against a locally generated horizontal reference, such as house sync.
- Line Pulling.** n. A picture fault characterized by the horizontal displacement of a single line or small group of lines.
- Lower Drum.** n. That part of the drum in a helical-scan video recording system which contacts the reference edge of the tape and usually contains tape-guiding elements.
- Scanner.** n. A mechanical assembly comprising a drum, rotating pole tips, and tape-guiding elements. It is used to record and reproduce video tape recordings.
- Upper Drum.** n. That part of the drum in a helical-scan video recording system which does not contact the reference edge of the tape.