

## **Annotated Bibliography for “D5: The Mighty VTR”**

**“4:2:2, 4:4:4, and 4:4:4:4 Video Explained.” *Blackmagic Design* 13 September 2005, <<http://www.blackmagic-design.net/support/detail.asp?techID=13>>.**

The Blackmagic Design website showcases the company’s commitment to creative video technology, most famously their line of codecs. The website offers downloads, products for purchase, and support notes for customers who have questions about a particular field of technology. This support note discusses the difference between 4:2:2, 4:4:4 and 4:4:4:4 compression rates in a concise, clear manner.

**Abramson, Albert. *The History of Television 1942-2000*. Jefferson, NC: McFarland, 2003.**

Abramson's exhaustive tome examines the history of television from its conception during WWII up until the new millennium. Along the way, he discusses many of the core technologies that have helped shape the medium into what it is today while displaying a keen grasp of both technical and historical knowledge. Towards the end of the book, he delves into high-definition television, in which the development of HD D-5 has played a crucial role.

**Anderson, Gary H. *Video Editing and Post-production: A Professional Guide*, 4th ed. St. Louis, MO: Focal Press, 1998.**

In this fourth edition of *Video Editing and Post-production*, Anderson comprehensively updates on then-recent video technologies used in editing, such as component vs. composite signal processing, SMPTE time codes, and digital video recording. Anderson mentions an "all-out format war" taking place at the time of publishing between the D-series formats (including D-5), Digital Betacam and DVCPRO, with a brief, not overly technical explanation of each format.

**Bankston, Douglas and Jay Holben. "Complete Post Fine-Tuned for HD." *American Cinematographer*, Oct. 1999, 80(10), pp. 109-10.**

This article in *American Cinematographer* announces the Complete Post House postproduction company's success with utilizing Panasonic HD equipment in their facility. D-5 HD is referred to by Bob Blanks, Complete Post's VP of engineering, as an "excellent standard," and also says that the technology has met the many demands of Complete Post.

**Barclay, Steven. *The Motion Picture Image: From Film to Digital*. St. Louis, MO: Focal Press, 1999.**

Barclay's text provides a technical-historical view of the evolution of moving picture technology from film cameras to digital video recorders. Entire chapters are devoted to topics such as filters, camera exposure, sensitometry, lenses and depth of field, and

laboratory development. The last few chapters in the book are devoted to a discussion of video, including digital scanners and computer-based video technologies.

**Biesemeyer, Ralph and Phil Livingston. “High Speed Data Recording: Video Recorders Find a New Application.” Notes from a presentation at the THIC Denver conference, July 16, 1996,**

**<<http://www.thic.org/pdf/Jul96/panasonic.biesemeyer.pdf>>.**

These notes from a presentation delivered at the THIC Denver conference in 1996 propose that D-5's ability to record data at a high speed rate and to play multiple formats while still maintaining accuracy make it an ideal step in the workflow chain of digital graphics workstations. As such, it can be partnered with HDTV compression technology in fruitful ways.

**Browne, Steven E. *High Definition Postproduction: Editing and Delivering HD Video*. St. Louis, MO: Focal Press, 1999.**

*High Definition Postproduction* examines the role of HD video in postproduction, dispelling a number of myths that skeptical editors may have about the format and explaining the many advantages that HD has to offer. There is an emphasis on both the technical side of HD and of the actual use of HD technologies (such as D-5) in editing and postproduction.

**Caranicas, Peter. "The road to NAB: Panasonic to stress digital video with D-5; will also push D3, MII and S-VHS." *SHOOT*, Feb. 18, 1994, 35(7), pp. 7.**

This article, one of the first to mention D-5, announces Panasonic's intention to push D-5 onto the digital video market. The brief article documents the National Association of Broadcasters' summit where Panasonic made the announcement, including a statement by a Panasonic representative declaring that Panasonic will now no longer be thought of as a minor electronics manufacturer.

**Dickson, Glenn. "Fox enters the campaign fray; network is developing staff and facilities for national coverage." *Broadcasting & Cable*. Jan. 1, 1996, 126(1), pp. 44-48.**

This very brief announcement in an issue of *Broadcasting and Cable* describes a Seattle affiliate of the Fox Broadcasting Corporation's intention to use D-5 as an all-purpose broadcast mechanism. D-5, the station manager announces, will be used for "master control, production and post-production, dubbing, archiving, spot playback and satellite feed recording and playback."

**Gerbarg, Darcy, ed. *The Economics, Technology, and Content of Digital TV*. New York: Springer, 1999.**

Gerbarg and a variety of contributing writers from all spheres of the television industry

examine the transition from analog to digital television broadcasting and the various economic, social and industrial forces that have helped to facilitate these changes. The book is divided into four sections: the first deals with the core technologies themselves, the second examines the nature of the consumer relationship with television and how digital TV is significantly altering this relationship; the third examines the financial and economic dimensions of digital television; and the final section takes a look at the international television market and digital television's presence in it. Peter Seel contributes a chapter, "The Path from Analog HDTV to DTV in Japan," in which the development of D-5 and other digital formats is discussed at some length.

**Giardina, Carolyn. "Post facilities place their bets on HD D5." *SHOOT*, Dec. 5, 1997, 38(49), p. 8.**

This brief article in *SHOOT* magazine notes the general trend of postproduction facilities adopting HD technology and, in the process, adopting D-5 as a standard format for postproduction jobs. Though the article mentions that while some post houses were wary of adopting D-5 as a recording standard, many others enthusiastically embraced the technology, citing it as a cost-effective alternative to much existing HD technology.

**Hewins, Craig R. "Products with promise." *Video Systems*. Overland Park: Jun. 1999, 25(6), pg. 64-9.**

This article in *Video Systems* discusses the impending release of the Panasonic AJ-

HD3000 D5 HD 24p mastering video tape recorder. Panasonic's product marketing manager, Jeff Merritt, asserts that the recorder "will set new performance criteria for telecine mastering applications," and a description of the AJ-HD3000's recording and playback capabilities is given that attests to the format's versatility for postproduction purposes.

**“Hollywood love scene: 1080/24P, roll ‘em.” *World Broadcast Engineering*, Mar. 2000, 23(3), p. 14.**

This article in *World Broadcast Engineering* announces that the Four Media Company signed an agreement with Panasonic that they would establish the AJ-HD3700 D-5 HDTV multimedia format VTR as the in-house postproduction standard for feature films, broadcast television and commercials. There is a brief mention at the end of the article that both Panasonic and Sony were competing with each other to equip post facilities around the country with their HDTV hardware.

**Hunold, Kenneth. “Digital videotape formats.” *Broadcast Engineering*: July 1999, 41(8), pp. 80-85.**

Hunold’s article recounts the history of digital videotape formats from a largely technical standpoint, starting with the D-1 standard up until 1999. Many of the key features of D-5, including its backwards compatibility with D-3, are mentioned. The article also discusses the growing trend towards HDTV, noting that recent D-5 VTRs, instead of

needing to be hooked up to an HD compressor, are equipped with an internal 4:1 compression adapter.

**Kaufman, Debra. "The Post Group and Panasonic Announce HDTV Partnership." *American Cinematographer*, Mar. 2000, 81(3), p. 12, 14.**

This short article from *American Cinematographer* describes the unique partnership between the Post Group production facility in Los Angeles and the Panasonic corporation. In exchange for purchasing the latest and highest-quality equipment from Panasonic for their facilities, Panasonic agreed to work closely with the Post Group towards developing new HD technologies. This is seen as a rather significant change in the relationship between equipment manufacturers and production houses, which had previously been unstable due to the strains that outfitting facilities with HD had put on both parties.

**Luther, Arch C. *Principles of Digital Video and Audio*. Boston: Artech House, Inc., 1997.**

Luther's book, intended for engineers or engineering students, focuses on the fundamental concepts, philosophies and applications of digital audio and video. The book covers a wide variety of topics relating to the field, including compression, video displays, digital recording and storage, A/V postproduction and digital multimedia, to name a few. D-5 is briefly discussed in terms of the larger history of digital formats in a

chapter on video fundamentals, and is discussed in a much more technical way in another chapter on digital videotape recorders.

**Luther, Arch C. and Andrew F. Inglis. *Video Engineering*, 3<sup>rd</sup> ed. New York: McGraw-Hill Professional, 1999.**

Luther and Inglis' text is designed to meet the needs of engineers working in video. The comprehensive book is updated for the burgeoning Internet age, with a number of chapters devoted to not just the basics of audio and video but also to computer-based digital video systems, fiber-optic transmission systems and Internet video.

**Mee, C. Denis and Eric D. Daniel, eds. *Magnetic Storage Handbook*, 2<sup>nd</sup> ed. New York: McGraw-Hill Professional, 1996.**

This book serves as an excellent resource for data storage on magnetic media from an engineering perspective. The book covers the various options available to engineers at the time of writing, including storage on rigid disks, flexible disks and tape, analog and digital video and audio recording, and signal and error correction coding.

**Mellor, David. *A Sound Person's Guide to Video*. St. Louis, MO: Focal Press, 2000.**

Mellor's book, written for audio professionals, emphasizes the fact that sound does not exist in isolation from other art forms, especially in the digital realm. The book is geared

towards explaining not just video technologies but also those of film, multimedia and live performance as well. The book balances a consideration between historical formats and how they have shaped today's video technology and recent, cutting-edge formats.

**Owen, S.J., I. Ogura and K. Suesada. "D5: 1/2" full-bit component digital VTR format." *International Broadcasting Convention, 1994. 16-20 September, 1994,* <<http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=738141&isnumber=7854>>.**

This excerpt from the International Broadcasting Convention's 1994 conference publication explains some basic technical information about the D-5 format. The authors place the format in the context of television recording, explaining the full-bit implications of the VTR and how the signal is processed in D-5. The article considers that D-5 might be an excellent format for use in archiving, enhanced definition recording and high definition television.

**Panasonic Broadcast & Television Systems Company. *Multi Format Digital HD Video Cassette Recorder Operating Instructions (Hardware): Model no. AJ-HD3700B.* Secaucus, NJ: Panasonic, 199(?),** <[http://www.farmgroup.tv/rent/support/vtr/d5/3700bpe\\_h.pdf](http://www.farmgroup.tv/rent/support/vtr/d5/3700bpe_h.pdf)>.

Panasonic released a handbook to accompany sales of the AJ-HD3700B model of HD D-5 VTRs. The handbook contains a complete list of the machine's features, controls, operations and specifications, as well as detailed instructions for either home or studio

use of the recorder.

**Phillips, M., et al. "Super 16 and Digital Intermediates." *American Cinematographer*, Apr. 2006 supp., p. 9.**

The author, in this article in *American Cinematographer*, addresses a reader query about an inexpensive solution to finishing a super 16 feature film in HD. The author responds that one could very easily and cheaply perform this task through the use of a digital intermediate such as HDCAM, D5, or HDCAM SR.

**Silberg, Jon. "Heroes Takes Flight; Post on the NBC Series." *Videography*, Nov. 1, 2006, p. 34. (issue #?)**

This article from *Videography* guides the interested broadcast television enthusiast to the behind-the-scenes production of the popular NBC show *Heroes*. The article highlights the unique number of problems involved in the postproduction of the show, which blends fantastical elements with more realistic scenes. A step-by-step procedure towards the postproduction of *Heroes* is explained, with the use of D5 an important intermediate step for both telecining and for creating special effects for the show.

**Utz, Peter. "Tale of the Tape." *Video Systems*. Overland Park: Jan. 2000, 26(1), p. 76-80.**

Utz's article for the January 2000 issue of *Video Systems* conducts a thorough comparison between four popular brands of high definition digital videotape. Panasonic's D-5 HD and D-7 HD, Sony's HDCAM and JVC's D9-HD undergo a cost-benefit analysis and a more technical description of the capabilities of each recorder. Utz concludes that HD D-5 ensures the best image quality of the four recorders, with the major drawback to the VTR being that it is a studio configuration only (the other formats all use camcorders).

**Vaughan, Tay. *Multimedia: Making It Work*, 7th ed. New York: McGraw-Hill Professional, 2006.**

Vaughan discusses new advancements in multimedia technology from a user-based standpoint. The book cleanly illustrates the basics of multimedia, such as images, video, and animation, and discusses them from a technical and practical standpoint.

**Watkinson, John. *The Digital Video Tape Recorder*. Oxford: Focal Press, 1994.**

*The Digital Video Tape Recorder* explains in thorough technical detail the ins and outs of digital videotape recorders. Watkinson moves from the essential principles of digital video to its functions, such as channel coding and error correction, to the actual equipment which constitutes digital VTRs (i.e. rotary head tape transports). The book is peppered with diagrams that spell out the somewhat abstract functions Watkinson discusses.

**Weise, Marcus and Diana Weynand. *How Video Works: From Analog to High Definition*, 2<sup>nd</sup> ed. Amsterdam: Focal Press, 2007.**

*How Video Works* covers the wide-reaching history of video technology. The 2007 edition offers easy to understand explanations of the core technologies underlying video, dating back from 2” quadruplex up until current digital technologies and high-definition video and television, complete with a comprehensive glossary of pertinent terms.

**Zettl, Herbert. *Video Basics 2*. Belmont, CA: Wadsworth Publishing Company, 1998.**

*Video Basics 2* is a textbook aimed at television production students. The book discusses video processes, production tools and techniques, as well as the production environment. Digital formats such as D-5 are explained through graphics and charts as well as through Zettl’s concise, informative text.