

BEK TEK LLC

Audio/Video Forensic Consultants

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CURRICULUM VITAE OF DOUGLAS S. LACEY

Professional Positions

October 1999 – Present BEK TEK LLC, Clifton, Virginia. Private consultant, examiner, and researcher. Conducts forensic examinations of audio and video media (analog and digital), including authentication of recordings, intelligibility enhancement, identification/classification of non-voice signals, digital data retrieval/analysis, and other related examinations. Presents expert testimony and assists attorneys with preparing for cross-examination of opposing experts. Evaluates appropriate recording and analysis equipment. Conducts research in forensic audio and video related fields.

September 1996 – June 2003 Electronics Engineer / Forensic Examiner, Forensic Laboratory, Federal Bureau of Investigation (FBI), Quantico, Virginia. Conducted examinations of audio recordings produced or collected by federal, state, local, and foreign law enforcement and judicial agencies. These examinations included authentication of recordings, intelligibility enhancement, identification and classification of non-voice signals, digital data retrieval/analysis, and other related examinations. Additional duties included the presentation of expert testimony in criminal matters, support to FBI field offices and other law enforcement agencies regarding technical assistance pertaining to audio recordings, and training of FBI personnel in the analysis of proprietary digital recording devices. Held a full-field, TOP SECRET clearance for the entirety of the employment.

Formal Education

Bachelor of Science Degree, University of Miami, major of Electrical Engineering (Audio Engineering Program)

Additional undergraduate courses at the University of Florida.

Work and Testimony Experience

Have conducted examinations on over 2,800 separate audio and video recordings in over 730 criminal, civil, and administrative matters, which include submissions from 45 states, the District of Columbia, Canada, Chile, Croatia, Indonesia, Italy, the Netherlands, Puerto Rico, Romania, Singapore, Turkey, and the United Kingdom.

Have testified as an expert in the fields of audio intelligibility enhancement, video enhancement, audio and video authenticity, and signal analysis in federal and state courts and depositions in Arizona, California, Illinois, Minnesota, Mississippi, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Texas, Virginia, Washington, D.C., West Virginia, and in front of the Ukrainian Parliament.

Have conducted forensic examinations in numerous significant investigations/cases, including: the data recovery and intelligibility enhancement of the cockpit voice recording from United Airlines Flight 93, which crashed in Shanksville, PA on September 11, 2001; the authenticity analysis of the Linda Tripp/Monica Lewinsky telephone recordings involving the investigation of President William J. Clinton; the analysis of digital recordings related to the Washington D.C.-area sniper shootings; the authenticity examination of digital audio recordings from the office of former Ukrainian President Leonid Kuchma; the audio and image enhancement analyses plus transcription preparation in the Duke University Lacrosse Team case; the authenticity analysis of audio microcassette recordings in the Canadian Prime Minister Stephen Harper vs. The Liberal Party of Canada civil case; the authenticity examination of recordings surrounding the Texaco obstruction of justice investigation; and the authenticity examination of a recording related to the Abner Louima police brutality investigation.

Specialized Short Courses and Professional Training

ABCs of Video & Digital Technology, presented by the Sony Training Institute, in Lanham, MD

Advanced Forensic Audio Processing Techniques, presented by Digital Audio Corporation, Inc., in Raleigh, NC

FBIRD Training, presented by Adaptive Digital Systems, Inc., in Quantico, VA

FBIRD Training (Personalized Instruction), presented by Adaptive Digital Systems Inc., in Irvine, CA

Fast Fourier Analysis, presented by Signal Processing Systems, in San Diego, CA

File Systems Revealed, presented by X-Ways Software Technology AG, in Seattle, WA

Specialized Short Courses and Professional Training (continued)

Forensic Audio Filtering and Tape Enhancement, presented by Digital Audio Corporation, Inc., in Quantico, VA

Forensic Authentication of Digital Audio workshop, presented by the National Center for Media Forensics, University of Colorado, Denver, CO

Forensic Image and Video Processing, presented at the American Academy of Forensic Sciences, in San Antonio, TX

Image and Video Processing Using MATLAB, presented by MathWorks, in Vienna, VA

New Professional Core Curriculum Training Program, Phases I and II, presented by the Federal Bureau of Investigation, in Quantico, VA

Principles of Acoustics and the Measurement of Sound, presented by Brüel & Kjær, in Livonia, MI

Principles of Vibration Measurement and Analysis, presented by Brüel & Kjær, in Livonia, MI

R-DAT Format Training, presented by Sony Corporation, in Quantico, VA

Signal and Image Processing and Analysis for Scientists and Engineers, presented by Applied Technology Institute, in Laurel, MD

Spectrum Analysis of Sound & Vibration, presented by Brüel & Kjær, in Livonia, MI

Technical Recovery of Electronic Evidence, presented by Computer Security Institute, in Rancho Cucamonga, CA

Video Analyst System Training, presented by Intergraph, in Huntsville, AL

Video Capture, Enhancement and Analysis, presented by The Institute for Forensic Imaging (in association with Indiana University and Purdue University), Indianapolis, IN

X-Ways Forensics, presented by X-ways Software Technology AG, in Seattle, WA

Peer-Reviewed Publications

Koenig, Bruce E.; Lacey, Douglas S.; Richards, Gerald B. Video Frame Comparisons in Digital Video Authenticity Analyses. Peer-reviewed and accepted for publication in the *Journal of Forensic Identification* with a tentative issue date of March/April **2012**.

Lacey, Douglas S.; Koenig, Bruce E. Identification of Identical and Nearly-Identical Frames from a Lawmate PV-500 Digital Video-Audio Recorder. *Journal of Forensic Identification* **2012**, 62(1), pp 36-46.

Koenig, Bruce E.; Lacey, Douglas S. An Inconclusive Digital Audio Authenticity Examination: A Unique Case. *Journal of Forensic Sciences* **2012**, 57(1), pp 239-245.

Lacey, Douglas S.; Koenig, Bruce E. Audio Extraction from Silicor Technologies' Digital Video Recorder File Format. *Journal of Forensic Identification* **2010**, 60(5), pp 573-588.

Koenig, Bruce E.; Lacey, Douglas S. Evaluation of Clipped-Sample Restoration Software. *Forensic Science Communications* **2010**, 12(2). [LINK](#)

Koenig, Bruce E.; Lacey, Douglas S. Forensic Authentication of Digital Audio Recordings. *Journal of the Audio Engineering Society* **2009**, 57(9), pp 662-695.

Koenig, Bruce E.; Lacey, Douglas S. Distinctiveness of Non-Standard VHS Head Parameters. *Journal of Forensic Identification* **2009**, 59(1), pp 97-126.

Lacey, Douglas S.; Koenig, Bruce E. Identification of an Eccentricity in the Date/Time Metadata of a PAL MiniDV Recording. *Journal of Forensic Sciences* **2008**, 53(6), pp 1417-1423.

Koenig, Bruce E.; Lacey, Douglas S.; Killion, Steven A. A Digital System for Imaging Bitter Patterns. *Journal of Forensic Identification* **2008**, 58(2), pp 238-264; 58(3), pp 281-282.

Koenig, Bruce E.; Lacey, Douglas S. Audio Record and Playback Characteristics of Small Solid-State Recorders. *Journal of Forensic Identification* **2007**, 57(4), pp 582-598.

Koenig, Bruce E.; Lacey, Douglas S.; Killion, Steven A. Forensic Enhancement of Digital Audio Recordings. *Journal of the Audio Engineering Society* **2007**, 55(5), pp 352-371.

Koenig, Bruce E.; Lacey, Douglas S.; Herold, N. Video and Audio Characteristics in VHS Over-Recordings. *Forensic Science Communications* **2006**, 8(3). [LINK](#)

Peer-Reviewed Publications (continued)

Lacey, D. S. Burning Digital Audio Files to Standard Audio Compact Discs: More Than Drag and Drop. *NATIA News*. Summer 2005.

Koenig, Bruce E.; Lacey, Douglas S.; Killion, S. A. Analysis of the Radio Shack Micro-30 and the Olympus PearlCorder S950 Time Code. *Journal of Forensic Identification* **2004**, 54(4), pp 442-451. Authors' Response to Letter. *Journal of Forensic Identification* **2004**, 54(6), pp 629-632.

Koenig, Bruce E.; Lacey, Douglas S.; Herold, Noel. Equipping the Modern Audio-Video Forensic Laboratory. *Forensic Science Communications* **2003**, 5(2). [LINK](#)

Testimony

1. 12/21/2011; Chicago, IL; Civil Trial (miscellaneous video) [Case # 08 L 4878, Circuit Court of Cook County];
2. 10/26/2011; Los Angeles, CA; Deposition (miscellaneous audio) [Case # BC363201, Superior Court of California (deposition in Washington, D.C.)];
3. 04/20/2011; Washington, D.C.; Criminal Trial (miscellaneous audio) [Case # 2010 DVM 002499; Superior Court of the District of Columbia];
4. 03/30/2011; Leesburg, VA; Civil Trial (video duplication and authenticity) [Case # CL00059123-00; Circuit Court of Loudon County];
5. 03/17/2011; Los Angeles, CA; Deposition (miscellaneous audio) [Case # BC363201, Superior Court of California (deposition in Naples, FL)];
6. 12/20/2010; Chicago, IL (via video teleconference from Herndon, VA); Deposition (video enhancement) [Case # 07L2399, Circuit Court of Cook County];
7. 12/13/2010; Charlotte, NC; Criminal Trial (audio enhancement and miscellaneous audio) [Case # 09CR260997, 09CR260999; Mecklenburg County District Court]
8. 12/03/2010; Minneapolis, MN; Hearing (miscellaneous video) [Case # 82-CR-09-7129; Hennepin County District Court];
9. 10/25-26/2010; Vicksburg, MS; Hearing (audio authenticity) [Case # 05-0004; Chancery Court of Issaquena County];
10. 07/29/2010; Williamson, WV; Hearing (video authenticity) [Case # A10-F88, A10-F102; Circuit Court of Mingo County];
11. 11/02/2009; New York, NY; Criminal Trial (miscellaneous audio and voice comparison) [Case # 03-CR-987-DAB; Federal District Court];
12. 08/26/2009; Tucson, AZ; Criminal Trial (video enhancement) [Case # CR-20063636; Pima County Superior Court];
13. 05/20/2009; Staunton, VA; Hearing (video authenticity and miscellaneous video) [Case # CL06-000002; Augusta County Circuit Court];
14. 01/27/2009; Providence, RI; Deposition (miscellaneous video) [Case # 06-5785; Providence County Superior Court];
15. 12/13/2007; Yorktown, VA; Hearing (audio authenticity) [Case # CR06R38229-01; York County-Poquoson Circuit Court];

Testimony (continued)

16. 09/27/2007; Tucson, AZ; Criminal Trial (video enhancement) [Case # CR-20063636; Pima County Superior Court (via telephone from Clifton, VA)];
17. 09/13/2007; New York, NY; Deposition (audio authenticity) [Case # 06-CV-1944, US District Court for the Eastern District of Pennsylvania];
18. 09/05/2007; Kingwood, WV; Criminal Trial (signal analysis and audio enhancement) [Case # 07-F-5; Preston County Circuit Court];
19. 01/08/2007; Washington, D.C.; Daubert hearing (audio enhancement and signal analysis) [Case # 05-CR-00151; US District Court for the District of Columbia];
20. 09/15/2006; Kiev, Ukraine; Hearing in front of the Ukrainian Parliament (audio authenticity);
21. 11/04/2005; High Point, NC; Criminal Trial (audio enhancement) [Case # 05-CRS-23105; Guilford County Superior Court];
22. 10/11/2005; Portland, OR; Criminal Trial (audio authenticity) [Case # 9906-34654; Multnomah County Circuit Court];
23. 02/23/2005; Roanoke, VA; Hearing (audio authenticity) [Case # 7:03CR00049-4; US District Court for the Western District of Virginia];
24. 02/04/2005; New York, NY; Deposition (audio enhancement) [Case # 99-CV-862-K(J), US District Court for the Northern District of Oklahoma];
25. 10/09/2001; Houston, TX; Criminal Trial (audio enhancement) [Case # 0845174; 176th District Court of Harris County];
26. 10/07/2001; Houston, TX; Hearing (audio enhancement) [Case # 0845174; 176th District Court of Harris County]; and
27. 05/13-14/2001; Philadelphia, PA; Hearing (audio enhancement) [Case # CR 01-88; US District Court for the Eastern District of Pennsylvania].

Professional Associations and Seminars

American Academy of Forensic Sciences [Fellow, Secretary of the Digital and Multimedia Sciences section (2010–present)]

Audio Engineering Society (member)

International Association for Identification (Active Member)

Member of the Editorial Board for the *Journal of Forensic Identification* (2011)

Former member of the IAI's Forensic Video Analysis Certification Study Committee

National Technical Investigators Association (NATIA) (former member)

Have attended seminars and conferences of the Audio Engineering Society, the International Association for Identification, the American Academy of Forensic Sciences, the National Technical Investigators Association (NATIA), and a regional meeting of the Acoustical Society of America.

Presentations

American Academy of Forensic Sciences (AAFS) – “Analysis of MiniDV Recording Date/Time Information”; “Considerations for the Forensic Authentication of Digital Audio Recordings”; “Conversion of AVI ‘txts’ Stream Data to Adobe® Premiere Pro® Title Files”

Audio Engineering Society (AES) – “Considerations for the Forensic Authentication of Digital Audio Recordings” (Washington DC Section); overview of the forensic audio field (University of Miami chapter)

International Association for Identification (IAI) – “Audio Extraction from Silicor Technologies, Inc.’s Digital Video Recorder Format”

National Technical Investigators Association (NATIA) – “Authentication of Forensic Audio Recordings: Practices and Considerations”

Scientific Working Group on Digital Evidence (SWGDE) – overview of forensic audio enhancement tools

Various presentations to FBI and Department of Justice personnel