

# FORENSIC VIDEO ANALYSIS



During a class of *Advanced Forensic Video Analysis and the Law*, instructor Grant Fredericks leans in to assist student Dean Brown of the FBI.

## Training and certification help video analysts approach their jobs with a new level of confidence

Written by Kristi Mayo

**L**IKE MANY PEOPLE who are just starting out in the field of forensic video analysis, Paul Hartzell initially felt completely alone. He began working as a graphic artist at the Hennepin County Attorney's Office in Minneapolis, Minnesota. His main job was preparing crime-scene exhibits for court, although he would occasionally do some video editing. When Hartzell recognized an influx of surveillance and digital video, he urged the Attorney's Office to help set up a forensic video analysis system.

Hartzell had a degree in radio and television, which had given him some experience with linear video editing. It did not take long, however, for him to realize he needed some help.

"When I started out, I was trying

to extract images using a VCR (video cassette recorder)," he recalled. "It was a mess. I didn't have the right tools. And at that point, I had absolutely no training in video forensics. I was just trying to survive—because I was asked to do this job, and there was no one else to do it."

In 2002, Hartzell signed up for a course entitled *Basic Forensic Video Analysis and the Law* that was being offered by the Law Enforcement and Emergency Services Video Association (LEVA), a non-profit organization. As soon as the course began, Hartzell realized this was the kind of training he had been needing for so long.

"It was everything that I had been craving," he said. "It's kind of like when you have a disease, and you

finally figure out the cure. You really feel good when you start treatment. For me, taking this course was like a breath of fresh air."

Since LEVA began offering its basic forensic video analysis course in 2000, it has provided a "breath of fresh air" to 653 students like Hartzell who sought intensive, practical training in their field. But as these students will tell you, the basic course—and, in fact, the entire program that is offered by LEVA—goes far beyond the traditional definition of training. In fact, some will tell you they did not simply "pass" the courses—they "survived."

**The LEVA concept is training for insatiable minds**  
Since 1989, LEVA has served the public-safety community by providing

a source of information, education, and networking for professionals working with video production and forensic imaging. Every year, LEVA sponsors a national training conference that focuses on the pressing issues facing the law-enforcement and emergency-services communities.

Initially, LEVA focused its efforts on video production. But, in the late 1990s, that focus began to shift as more of the video editors working in law enforcement started performing more technically oriented forensic video analysis, as well. In October 1999, LEVA responded to a trend in law enforcement by holding a pre-conference class dealing with forensic video technology and crime-scene videography. According to LEVA training vice president Jan Garvin, their membership made it clear that this kind of training was greatly needed in the community.

"There was a tremendous response to that first class," Garvin said. "The need to have trained video analysts working for police agencies seemed to be growing enormously throughout North America."

Inspired by the response to the October 1999 pre-conference class, several LEVA members with a passion for forensic video analysis developed

## The Law Enforcement and Emergency Services Video Association offers in-depth training and certification for those who wish to become experts in this rapidly emerging field.

a three-day class (*Forensic Video Analysis and the Law*) for interested parties. The first class was held in July 2000 at the FBI Academy in Quantico, Virginia. Once again, LEVA received a positive response.

"People asked for more. They wanted the class extended," Garvin said. "So, the next year we made it a four-day class. But those who took the class clamored for more time. So we made it a five-day class. And that's where it stands today: five days of intensive training."

The new five-day class, which is now offered twice each year, serves the basic needs of law-enforcement professionals faced with the task of

video analysis. The students have the opportunity to work with some of the top experts in this field who instruct the class on an entirely voluntary basis. A number of former LEVA students who have demonstrated excellent skills in analysis and interpersonal relationships also volunteer to serve as laboratory assistants during the courses.

Even with this in-depth basic course, the desire of the students to obtain more training seemed almost insatiable.

"People said: 'We have achieved this basic, fundamental level of understanding about forensic video analysis—but now, we need more.' So LEVA developed another class: *Advanced Forensic Video Analysis and the Law*. And, along with that, we introduced the Forensic Video Analyst Certification Program, the first of its kind."

With the decision to develop the certification program, the core instruction team of the basic training course took on new roles as LEVA's Forensic Video Analysis Certification Committee. This group of volunteers consisted of Jonathan Hak, Crown Prosecutor for the Department of Justice in Alberta, Canada; Dorothy Stout, senior analyst with General Dynamics for the U.S. Department of Defense; Grant Fredericks, manager of Avid Technology's



Students in the LEVA training programs are exposed to the latest in forensic video technology and procedures. In the photo on the left, Nicole Gajraj of the Centre of Forensic Science in Toronto scans a video during an advanced class. Students need those tools and skills, because one of their assignments is to take a video cassette after it has been crushed to little pieces by a truck tire (photo, above) and restore it to shape so its evidence can be viewed.

(Photos in this article courtesy of LEVA)

Forensic Video Solutions and former police officer; and Phil Williams of the FBI's Counterterrorism and Forensic Science Research Unit.

In July 2003, the committee members sequestered themselves in a hotel conference room in Herndon, Virginia. After two and a half days of deliberations, the committee emerged with the framework for *Advanced Forensic Video Analysis and the Law*, a five-day course that would take video analysts a step beyond the information covered in the basic course.

The advanced course served as a cornerstone for the new certification program, which was approved by the LEVA board of directors on January 9, 2004. Once students have completed the advanced course, they are eligible to apply for the certification program.

Another change occurred later that same year: Beginning in October, the basic and advanced courses were moved from the FBI Academy to the University of Indianapolis. There, the five-day courses count as accredited semester hours and can be counted toward a college degree.

## Students in LEVA's training programs have different backgrounds ...but they have one thing in common: the desire to excel.

At the center of the LEVA forensic video analysis training trilogy—the basic course, the advanced course, and the certification program—is one key concept: Thoroughly prepare analysts by giving them their money's worth.

"When students go to Indianapolis, it is not to enjoy the sights," said Garvin. "They are required to attend every minute of every class, or else they will not pass. We tell them ahead of time to be prepared to learn. Yes, it's a lot of information. But training funds are at a premium today in law-enforcement agencies. We take that seriously. We do not want to waste the agencies' money."

## The basic course is all about fundamentals

Students in the basic course tend to come from a variety of backgrounds and have different levels of experience. The majority of students work with local law-enforcement agencies, but there is a strong contingent from state and federal agencies, as well as those from countries around the world. Many of the students in the basic course already have some experience working with forensic video analysis systems, but some may be learning it for the first time. According to Garvin, that's okay—because the basic course starts at the beginning.

"The first day of the basic course covers forensic video technology," said Garvin. "Grant Fredericks teaches a full day on background, starting with explaining what video is. This covers the basics—the things they need to know if they are going to do forensic video analysis and, ultimately, present it in court."


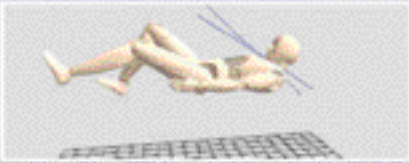
Successive days cover concepts such as "the forensic mindset," where

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# VISTA

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instructor Phil Williams explains the importance of adopting an objective, ethical frame of mind while working on forensic video analysis. A section that is taught by Jonathan Hak covers the legal aspects surrounding the use of forensic video, including admissibility issues.

Another crucial segment deals with closed-circuit television (CCTV), taught by Dorothy Stout. "With the unbelievable amount of digital CCTV technology that's permeated society on every street corner," said Garvin, "it is important that forensic video analysts know the process of how to retrieve these images from digital video recorders as well as from the older analog systems."

On the third day of the course, the students watch while the tires of a large vehicle are run over videotape cassettes, completely crushing them. "The students then have to pick up what's left of their video evidence and take it back to class, where they try to put it back together in a new cassette case—with the object of trying to get some usable images off of it," explained Garvin.

In just five days, students of the basic class are exposed to the crucial concepts that will qualify them to be able to perform their job and, perhaps most important, to be able to articulate what they do and why they do it.

For Eddie Burns, a video production specialist and forensic video analyst for the Chandler (Arizona) Police Department, the intensity of the basic course took him by surprise. He had come to expect that the word *training* really meant *seminars*. Instead, he found himself in a course where the lectures required extensive notes, the hands-on work meant that the students spent about 80 percent of their time behind the computers working on a case, and an extensive written exam waited at the end of it all.

"The training that we get through LEVA is so comprehensive, you are forced to retain the knowledge that they give you," said Burns. "To me, that is outstanding. It's not just a matter of popping the tape into the VCR and getting a still image. Instead, LEVA makes sure you understand the engineering that is behind how that videotape operates. They want you to

## LEVA's training provides an analyst with the technical skills ...and the confidence... to present conclusive evidence in court.

know how light works, how computer systems work...all the way through to how the legal system works."

Jason Latham, a forensic video analyst for the video section of the Johnson County (Kansas) Sheriff's Office Criminalistics Laboratory, said that before he took the basic course, he had tried to piece together for himself an education in forensic video analysis.

"I was trying to network with the people in the know, calling some three-letter agencies and seeing how they were doing it, and I was basically self-taught," recalled Latham. "Then, I found out about the basic LEVA class. I had been processing cases for about six months before I took that class."

Latham laughed. "The first day in the course was an eye-opener. *Ding!* The clouds parted—and it all started to make more sense."

When students successfully complete LEVA's basic course, they have acquired the training necessary to approach their jobs at their agencies with a new level of confidence.

Paul Hartzell at the Hennepin County Attorney's Office said it did not take long for him to recognize the results of his training.

"The month following training, I was able to enlarge an area of video to actually show the jury a man pulling the trigger on a shotgun," Hartzell said. "We won that case. There was no way I could have done that analysis without the training."

Latham said he also noticed the results of the training immediately. "It was the first day back—within hours of being back," he said. "As a matter of fact, we were in the process of getting our laboratory ASCLD/LAB

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(Continued from Page 17)

accredited, and I took what I learned in the basic class and implemented those things into our protocols.”

**The next step is the advanced course...and beyond**  
After completing the basic course, students may apply for the advanced course. This is not as easy as signing up, however. In order to qualify for the advanced course, applicants must

put in some time working real-world cases. Enrollment for each class is limited to 20 applicants.

As students may come to expect from the basic course, being accepted into the advanced course is actually the easy part. The really hard part begins when students arrive on the first day of the class and they begin to be subjected to non-stop learning.

“The advanced course was far more difficult than anything I had ever taken,

including my time in the university,” said Burns. “We lost a lot of sleep.”

The advanced course focuses on the legal issues surrounding forensic video analysis. Students bring along their own systems in order to work on their projects and they do not receive any assistance with operating the system. A combination of lecture and hands-on work culminates in a day-long exam matrix that involves a practical exam, a written exam, and—the cornerstone of the course—the moot court.

The moot court features Jonathan Hak as the prosecuting attorney, and Grant Fredericks as the tough defense attorney. “And the students fear facing Grant!” said Garvin.

“Grant Fredericks just absolutely grilled you on the cases and evaluated how well you processed this case and how well you defend what you know about video in a courtroom environment,” said Latham.

Burns added that successfully facing the moot court was a very rewarding experience “...because when you were finished, you knew that if you could handle a cross-examination from Grant Fredericks, then you could probably handle a cross-examination from any defense attorney in the country.”

Ironically, many of those who have completed the advanced course report that they rarely find themselves called to testify in court.

“Of the 150 cases I have processed, I have only been called to testify four times,” said Latham. “I’m sure this is true for a lot of my colleagues. Why? Because if you do your job correctly, when you give your discovery to the defense council, they take one look at it and the next thing you know, you get a call from the district attorney’s office saying they pled.”

This kind of testimonial is rewarding for the LEVA training committee to hear. “The most gratifying thing that we can hear from a student who goes through the advanced course is, ‘I have never been asked to testify.’ That is not because their work is inferior. It is because their work is so good that they haven’t had to. The subject on the video just elects to plead out. This happens time and time again.”

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# LEVA TRAINING

After successfully completing the advanced course, an individual is eligible to apply for entry into the certification program. After being accepted into that program, he or she has four years to complete certain requirements in order to move on to certification. Those requirements include additional training, experience, education, and endorsements. When these requirements are met, the applicant takes a written and oral exam to obtain the actual certification.

The certification requirements are tough and require quite a bit of time to complete. In fact, since the certification program was approved in January 2004, no one has received LEVA's Forensic Video Analyst Certification.

"About half a dozen people have enrolled in the program, but they have not yet met all the requirements. Maybe next year there will be one or two who will make it," said Garvin.

He emphasized the fact that the LEVA certification is more than a piece of paper.


"It is not easy, and it is not a rubber stamp," Garvin said. "Some people may think that this is just a simple certification that they can buy. Well, they can't buy it from LEVA."

Hartzell, who is currently enrolled in the certification program, said that when he receives his certification, he will know that he earned it.

"For me, to be certified by LEVA means they have recognized that I worked really hard to get there," he said. "I think that's what motivates me."

As Burns works toward his LEVA certification, he knows that the courses he has taken so far have prepared him to do his job well—and to defend what he does in a courtroom setting.

"Of the 250 cases that I have worked, I have yet to go to court," he said. "I tell the officers here in the department that I want to get that first one out of the way, and they look at me like I'm crazy because they have to go to court all the time."

"But I am certainly prepared to go. In fact, I let the prosecutors know that if this science is questioned, I can defend the science of forensic video analysis—because of the training I have received from LEVA." 

## TO LEARN MORE ABOUT LEVA TRAINING AND CERTIFICATION:

Two classes are currently scheduled for the near future:

**Basic Forensic Video Analysis and the Law: Feb. 27 - Mar. 3, 2006**

**Advanced Forensic Video Analysis and the Law: May 1 - May 5, 2006**

For more information, just go to the organization's website: [www.leva.org](http://www.leva.org)  
...or you can contact them by e-mail: [training@leva.org](mailto:training@leva.org)

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