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                    Computer-Based Instructional Modules

Author(s):   Consortium for the Future

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FINAL REPORT

LAW ENFORCEMENT TECHNOLOGY APPLICATION, DISSEMINATION AND TRAINING PROJECT

Phase II

COMPUTER-BASED INSTRUCTIONAL MODULES

Project Number 97-LB-VX-K020

Submitted to the
Office of Science and Technology
National Institute of Justice
United States Department of Justice

Submitted by the
Consortium for the Future

Contact
Dr. Larry T. Hoover
Criminal Justice Center
Sam Houston State University
Huntsville, TX 77341
936 294-1636
936 294-1684 (fax)
larryhoover@shsu.edu

Law Enforcement Technology Application, Dissemination, and Training Project
(Advanced Technology Against Crime – ATAC)

Phase Two – Computer-Based Instructional Modules

PROJECT REPORT

INTRODUCTION

The convergence of emergent technology and training for law enforcement can be thought of as involving three broad categories of endeavors:

- **The use of technology to enrich training**. The development of high-speed computers and broad ban networks has allowed a substantial expansion of technology applications to the training environment. Two terms are frequently used interchangeably to describe the employment of new technology for training – computer-based training and distance learning. These two approaches are, of course, not synonymous with one another. Computer-based training is frequently used in a traditional classroom setting as a supplement to other instructional modes. Distance learning may or may not involve the use of emergent technology. Paper and pencil correspondence courses have existed for decades and are properly classified as distance learning. We do not yet have a term in our language to describe the phenomenon of computer enhanced distance learning. However, this is certainly "where the action is". Institutions throughout the country, particularly institutions of higher education, are immersed in developing web-based instructional courses that can be taken by students anywhere on the globe. Additionally, instructional programs are frequently placed on CD ROM or DVD disks for use with a stand alone high-speed personal computer.

- **Training of police to deal with emergent technology.** Computer crime has emerged as a major problem for law enforcement agencies. Computers may be the target of an offense, an instrumentality to an offense, or simply contain tangential evidence. Training entities throughout the country have begun to address law enforcement needs in this respect, offering courses to personnel on dealing with crime that employs emergent technology.

- **Training of law enforcement in the employment of emergent technology.** Emergent technology is presenting vast new opportunities to law enforcement agencies in the form of improving operations efficiency, improving tactics and even offering new strategic opportunities. But, the employment of such technology is always challenging. Given both the operational challenge and the expense involved, it is not unusual for emergent technology to not be employed, or, at the very least, be significantly underemployed, for years and, in some cases, decades. Training can both reduce expenses and help remove obstacles.

The Advanced Technology Against Crime Project (renamed after the award was received, officially Law Enforcement Technology Application, Dissemination and Training Project) was an effort to marry all three of these intersections of emergent technology and training. The endeavor focused upon the development of computer-based instructional modules, one of which provided an orientation to a brand new technology for law enforcement application – Global Positioning Systems, a second provided a carefully guided computer-based format for training officers to better collect blood evidence (an evidentiary element which has assumed a vastly more important role since the development of DNA printing), and a third a computer-based instructional module on the fundamentals of dealing with computer crime.

The Consortium for the Future, composed of five universities and a consulting firm, conducted the project. Sam Houston State University was the lead institution and provided overall project direction, guidance and coordination. The University of Virginia bore responsibility for the development of the computer crime module. Eastern Kentucky University, working in conjunction with AST Incorporated, developed the computer-based module addressing Global Positioning Systems. Weber State University in Ogdon, Utah, assumed responsibility for the Blood Evidence Collection Module. The Ohio State University, in Columbus, played an ancillary, but significant role first developing and administering an extensive survey with regard to law enforcement technology training needs and capabilities, and second, coordinating a detailed product review of the three modules. G&H International, L.L.C., provided liaison services with the Offices of Science and Technology and the National Law Enforcement and Corrections Technology Center System.

Planning Phase

The project was launched on September 30, 1997 with a $50,000.00 award from the National Institute of Justice for planning and concept development. A report on that phase of the project was submitted on March 25, 1998, and is included as an appendix to this document. The planning phase included several meetings among the Consortium for the Future members. Additionally, a Planning and Advisory Committee was convened and met on February 3, 1998 in Washington, D.C. An agenda for that meeting and Roster of Advisory Committee members is included in the final report on this planning phase appended to this report. During the planning phase it was determined that the initial substantive effort would consist of the development of four distinct products – a computer-based training module on Global Positioning Systems, a second on Blood Evidence Collection, and a third on Computer Crime. An additional product

would be the development and administration of a needs assessment with regard to technology trading to be administered by The Ohio State University. The responsibility for the final compilation of these materials into a standardized format and their dissemination rested with Sam Houston State University.

Developmental Process for the Training Modules

Each of the three institutions that bore responsibility for the development of a particular module (Global Positioning Systems – Eastern Kentucky University, Blood Evidence Collection – Weber State University, and Computer Crimes – University of Virginia) engaged in substantial discussion with all Consortium members, as well as representatives of OST, regarding the broad outline of the content of each module. It was decided that a deliberate effort would be made to vary the approach of each of the three modules, partly because such variation seemed logical given the particular content, and partially to test such variation for instructional efficacy. Hence, the emphasis of the Global Positioning Module is upon a broad orientation to the subject aimed at law enforcement managers. It is designed as, in essence, a decision aid for agencies contemplating making the very substantial investment of money and time to install a GPS system. The second module, Blood Evidence Collection, is aimed, in contrast, to operational personnel. It is designed for both patrol officers and investigators as a basic, but very thorough, review of processes and techniques involved in locating, collecting, and preserving for laboratory analysis, blood evidence. The core design involves walking the trainee through a hypothetical scenario involving blood evidence collection, but presenting a variety of issues that are involved in this respect. The module is a step-by-step guided process designed to assure mastery of the subject matter. Questions are posed during the process and must ultimately be answered correctly for the participant to proceed. The Computer Crime Module is a hybrid of the previous

two. It is designed for use across all levels of ranks within a police agency. It is designed to explore the issue in greater depth than the GPS module, but not the kind of mastery level that is involved in the Blood Evidence Collection module. The module goes beyond a mere orientation, and provides guidelines for dealing with the collection of computers and peripherals that may contain evidence. At the same time, the module certainly does not, and could not, function as a complete course on dealing with all of the varied elements of cyber-crime, producing a thoroughly trained investigator.

After institutional staff outlined the fundamentals of each of the modules, the other Consortium members reviewed the drafts. Then, subject matter expertise was sought for each. The University of Virginia, for instance, conferred with the Federal Bureau of Investigation through its National Academy with regard to the specifics for the Computer Crime Module. Eastern Kentucky University conferred with vendors and police agencies that are currently employing GPS systems. Weber State University had on its faculty seasoned forensic scientists. Additionally, the university conferred with forensic laboratory personnel in Utah. The actual drafting of the training module material into computer-based format occurred at each institution through a combination of employing expertise within the respective institution, as well as obtaining outside professional consultants who had experience in developing computer-based training. Additionally, all of the draft content was reviewed by subject matter experts at Sam Houston State University's College of Criminal Justice.

After the development of an initial draft of the computer-based training modules, a conference was convened under the auspices of The Ohio State University in Columbus for a structured review by a range of law enforcement subject matter experts. The agenda and roster for that workshop are appended to this report. Additionally, The Ohio State University complied the diverse observations and comments from the review team into a report prepared by its Office

of Continuing Education entitled *Advanced Technology Against Crime - Qualitative Evaluation*. That report is appended. The 28-page evaluation document provided detailed feedback to each institution regarding both content and process issues. Additionally, of course, representatives of each institution were on site to interact directly with the review team and obtained immediate feedback in that manner.

Concurrently, the draft modules were provided to the Office of Science and Technology Program Monitor assigned to the endeavor, Ms. Sandra Newett. Ms. Newett reviewed each draft carefully and provided feedback regarding both content and design.

Training Needs Assessment

Working in close conjunction with Sam Houston State University, The Ohio State University administered a training needs assessment to concurrently ascertain law enforcement agency level of competence and perception of training needs for a list of 100 technologies. The list of technologies was compiled by the project director at Sam Houston State University and transmitted to The Ohio State University. A custom designed optical scan form was compiled which measured concurrently competency and training needs. The form is appended. In the middle column is the list of 100 technologies. On the left side of the page is a 5-point scale asking respondents to assess the competency of agency members with regard to each technology. The 5-point scale is:

1. Agency does not use this technology;

2. Very little competence by relevant agency members;

3. Some competence by relevant agency members;

4. Reasonable competence by relevant agency members; and

5. Relevant agency members are very competent.

The term "relevant agency members" was employed to make it clear that the assessment intended to measure competence only among those individuals who were required to truly know the technology. On the right-hand column was a 5-point scale to measure agency training needs. The scale anchors are as follows:

1. Training is not needed;

2. Training would possibly be beneficial;

3. Some training is needed;

4. There is a strong need for training; and

5. There is a critical need for training.

Instructions indicated to respondents that the training needs were to be assessed in terms of relevant agency members, not necessarily all agency members.

Three general information queries were included at the end of the list of 100 technologies. Agencies were queried with regard to the type of computer that might be available for use for computer-based training. A second query asked whether the agency had access to the Internet while at work for training purposes. A third inquiry asked whether the agency had ever used any computer-based instructional programs, and if so, which ones.

Preliminary Administration of the Survey Instrument. A single scale version of the training needs assessment was administered to a sample of approximately 200 police managers from Texas and Kentucky by, respectively, Sam Houston State University and Eastern Kentucky University. The individuals surveyed held at least the rank of captain, and represented a full range of agencies from each of these two states. They were administered the survey instrument while they were attending training programs sponsored by each of the institutions. The results of that administration are appended.

National Administration of the Survey. The Ohio State University used a mail survey format to distribute 490 survey instruments nationally. A stratified random sample of agencies were selected from the Department of Justice mailing list of state and local police departments. Although the return rate was not astounding, as might be expected with this type of instrument, a total of 136 inventories were received back. Through an oversight, the names of the responding agencies were not linked to the individual scantron sheets. Hence, analysis by agency type or size is not possible. The data analyst did compile a total listing of the agencies, and did determine that they were representative of the Department of Justice mailing list both in terms of agency size and geography. Unfortunately, however, the data itself can only be analyzed in aggregate in terms of the total responses received. An analysis of that data provided by the Ohio State University is appended.

Review by the Training Systems Design Division of the Naval Air Warfare Center.

Following receipt of the penultimate version of the three computer-based training modules, the NIJ Program Manager, Ms. Sandra Newett, forwarded the modules to the Training Systems Design Division of the Naval Air Warfare Center in Orlando, Florida for review. A thorough review was completed by the Center. However, significant delay occurred in receipt of that review. Ms. Newett's departure from the National Institute of Justice complicated the situation and resulted in some confusion as to whether a review was going to be completed at all. The reviews were finally received one month before the expiration of the grant extension. Consequently, with the grant expiration deadline pending, Sam Houston State University proceeded to reproduce the three CD ROMs as presented to NIJ as the penultimate draft. Additionally, this decision was influenced by the fact that all the grant funds remaining would have to be spent on reproduction and distribution costs, i.e., there were no grant funds remaining

to reimburse the producing institutions for modifications to the CD ROMs presented as final copies. In a telephone conversation with Mr. Steve Schuetz, the newly assigned NIJ Program Manager, it was determined that Sam Houston State University would produce the three CD ROMs as presented. Depending upon receptivity by the field, funding availability, and the cost effectiveness of making any modifications suggested by NAWC, the decision would be made in the future as to whether it would be appropriate to expend additional funds for the recommended changes. The Project Director, Dr. Larry Hoover, reviewed the feedback forms received from NAWC to be certain that there were no "fatal flaws" identified, such as an inability to open the programs, consistent crashing of the programs, extensive confusion regarding navigation, and the like. There were no fatal flaws identified. The reviews received from NAWC describe potential improvements in each of the programs, but do not identify any substantial program deficiencies.

Distribution of the Modules.

As noted previously, Sam Houston State University assumed responsibility for distribution of the three training modules produced. Three hundred copies of each CD-ROM were reproduced. A jewel case for each was ordered, and an attractive jewel case insert was produced. One set of the CD-ROMs was mailed to each of the fifty Peace Officer Standards and Training Commissions. Additional sets were sent to each of the two hundred largest police agencies in the country identified through the Department of Justice mailing list. The sets were addressed to the Chief of Police or Sheriff, with a cover letter explaining the basics of the project, and noting that the sets should be forwarded to the Training Academy Director. The cover letter also noted that if additional sets were required, the agency could contact Sam Houston State University. Sam Houston State University has received approximately twenty such requests. The vast majority of the requests were for one additional set, although one agency

requested 250 additional sets (which we obviously could not provide). Approximately 20 sets were retained by Sam Houston State University for follow through distribution, and approximately 30 were forwarded to the National Institute of Justice.

Summary of the Review Process

Project personnel were concerned from the onset that a thorough review of the computer-based instructional modules be conducted. It was important not only for the purpose of producing an easy to use quality product, but for being certain that appropriate law enforcement procedures were presented that would not conflict with accepted practice. In order to assure a careful and thorough review, then, the following steps were employed:

1. All project personnel, the NIJ Program Monitor, and the Planning Grant Advisory Committee, reviewed initial drafts of the substance of content in outline format.

2. All members of the project team and the NIJ Program Monitor reviewed the draft computer-based modules.

3. A panel of law enforcement experts convened in Columbus, Ohio reviewed the initial draft modules. A carefully documented report of that review was completed by The Ohio State University and provided to each of the three institutions developing a module.

4. The penultimate modules were forwarded to the Training Systems Design Division of the Naval Air Warfare Center. Although the review ultimately completed by the Center was received too late for improvement suggestions to be incorporated into the modules, the reviews were carefully screened by Sam Houston State University to be certain that serious content or process errors did not exist. The NAWC review identified no serious process or content errors.

The Project Director, Dr. Larry Hoover, has served on innumerable training development and advisory groups. He has worked extensively over the years with POST commissions in Illinois, Michigan, and Texas. As a result of that experience, the observation can be made that unanimity regarding the appropriateness of content and presentation will never be achieved. Trainers will argue for hours, for example, about whether the term "traffic accident" is appropriate to use in a law enforcement training curriculum, or, since there are causes for such events, they should more appropriately be called "traffic collisions". Of the three modules prepared under the aegis of this endeavor, the one that received the greatest amount of attention in this respect was Blood Evidence Collection. The Project Director, as well as Weber State University, was very careful to obtain broad input and be certain that forensic experts would agree on the fundamentals presented in the instructional module. Admittedly less attention was paid to the other two modules, but they were not ignored. All three modules underwent a careful review process.

LIST OF APPENDICES

Phase One Report
(without appendices)

FINAL REPORT

LAW ENFORCEMENT TECHNOLOGY
APPLICATION, DISSEMINATION AND TRAINING PROJECT

Phase I

Planning Project

Project Number 97-LB-VX-K020

Submitted to the
Office of Science and Technology
National Institute of Justice
United States Department of Justice

Submitted by the
Consortium for the Future

Contact
Dr. Larry T. Hoover
Criminal Justice Center
Sam Houston State University
Huntsville, TX 77341
409 294-1636
409 294-1684 (fax)
prc_lth@shsu.edu

AWARD

CHECK APPROPRIATE BOX

- [ ] OJP
- [ ] BJS
- [ ] BJA
- [x] NIJ
- [ ] OJJDP
- [ ] OVC

- [ ] GRANT
- [x] COOPERATIVE AGREEMENT

1. GRANTEE NAME AND ADDRESS (Including Zip Code)
San Houston State University
Criminal Justice Center
Huntsville, TX 77341

4. AWARD NUMBER - - -
97-LB-VX-K020

5. PROJECT PERIOD: FROM 09/29/97 TO 02/14/98
BUDGET PERIOD: FROM 09/29/97 TO 02/14/98

1A. GRANTEE IRS/VENDOR NO. 746001430

6. AWARD DATE: September 30, 1997

7. ACTION
- [x] INITIAL
- [ ] SUPPLEMENTAL

2. SUBGRANTEE NAME AND ADDRESS (Including Zip Code)

8. SUPPLEMENT NUMBER

2A. SUBGRANTEE IRS/VENDOR NO.

9. PREVIOUS AWARD AMOUNT $ 0.00

3. PROJECT TITLE
Law Enforcement Technology Training Needs Assessment
Planning

10. AMOUNT OF THIS AWARD $ 50,000.00

11. TOTAL AWARD $ 50,000.00

12. SPECIAL CONDITIONS (Check, if applicable)

- [x] THE ABOVE GRANT PROJECT IS APPROVED SUBJECT TO SUCH CONDITIONS OR LIMITATIONS AS ARE SET FORTH ON THE ATTACHED 05 PAGE(S).

13. STATUTORY AUTHORITY FOR GRANT

- [ ] TITLE I OF THE OMNIBUS CRIME CONTROL AND SAFE STREETS ACT OF 1968, 42 U.S.C. 3701, ET. SEQ., AS AMENDED.

- [ ] TITLE II OF THE JUVENILE JUSTICE AND DELINQUENCY PREVENTION ACT OF 1974, 42 U.S.C. 5601, ET. SEQ., AS AMENDED

- [ ] VICTIMS OF CRIME ACT OF 1984, 42 U.S.C. 10601, ET. SEQ., PUBLIC LAW 98-473, AS AMENDED.

- [x] OTHER (Specify): 1% Set-Aside from LLEBG

14. FUTURE FISCAL YEAR(S) SUPPORT:

SECOND YEAR'S BUDGET PERIOD: N/A

AMOUNT OF FUNDS: N/A TYPE OF FUNDS:

THIRD YEAR'S BUDGET PERIOD: N/A

AMOUNT OF FUNDS: N/A TYPE OF FUNDS:

15. METHOD OF PAYMENT

THE GRANTEE WILL RECEIVE CASH VIA A LETTER OF CREDIT [ ] YES [x] NO

AGENCY APPROVAL | **GRANTEE ACCEPTANCE**

16. TYPED NAME AND TITLE OF APPROVING OJP OFFICIAL
Jeremy Travis, Director
National Institute of Justice

18. TYPED NAME AND TITLE OF AUTHORIZED GRANTEE OFFICIAL
Bobby K. Marks
President

17. SIGNATURE OF APPROVING OJP OFFICIAL

19. SIGNATURE OF AUTHORIZED GRANTEE

19A. DATE
Oct. 9, 1997

AGENCY USE ONLY

20. ACCOUNTING CLASSIFICATION CODE

FISCAL YEAR	FUND CODE	BUD. ACT.	DIV. OFC.	REG.	SUB.	POMS	AMOUNT
X	V	L1	60	00	00		

21.

OJP FORM 4000/2 (REV. 5-87) PREVIOUS EDITIONS ARE OBSOLETE.

FINAL REPORT

LAW ENFORCEMENT TECHNOLOGY
APPLICATION, DISSEMINATION AND TRAINING PROJECT

Phase I
Planning Project
Project Number 97-LB-VX-K020

Submitted by the
Consortium for the Future

The Issue of Technology Dissemination

The impact of advanced technology has begun to receive a great deal of attention within the law enforcement community. There are several ways in which this impact is felt.

The widespread use of advanced technologies among the citizenry has presented the criminal strata with new tools to avoid detection and prosecution. Wireless communication systems, the Internet, computer hacking, and sophisticated electronics are being increasingly employed by criminals to commit and "get away with" crimes. Most law enforcement agencies are ill equipped to combat the effect of these technologies.

At the same time, there is increasing recognition of the benefits of the use of advanced technology in the day to day operations of law enforcement agencies throughout the country. In an era of severe budget limitations, the widespread use of advanced technology is vital as a critical "force multiplier" for law enforcement. The recognition of this fact has led Congress to significantly increase funding of Federal programs designed to assist law enforcement agencies in obtaining the use of advanced technologies.

This attention on technology represents a dramatic change for law enforcement. A few years ago it was difficult to find police departments who had embraced the information

revolution. Indeed, the National Institute of Justice Office of Science and Technology had estimated as recently as three years ago, that over one-half of local police departments were not using computers. As a result, the potential to use computer technology for increasing the efficiency and effectiveness of some departments has not even been explored.

This has begun to change. A recent study by the Bureau of Justice Statistics indicates that approximately two-thirds of the nation's police departments now have their own computers. A small, but increasing number of departments are beginning to tentatively embrace computer technology in a variety of ways. There is increasing discussion of automated booking stations, link analysis software, computerized mapping systems, the Internet and other innovative information system tools. Unfortunately, anecdotal evidence cited by NIJ indicates that while some departments are beginning to employ this technology, most still use computers only as a glorified typewriter.

While information systems are the most obvious of the new technologies that can assist law enforcement, they represent just one area of technological innovation. For example, new forensic technologies are constantly in the process of development and deployment. Technologies to increase officer safety such as non-lethal systems, a "smart gun," weapons detection systems, car stopping devices, and others are in a fairly advanced stage of development. In addition, technologies to assist in hostage rescue situations and special circumstances such as the location and neutralization of a bomb are also in the works. Finally, technologies that can assist in the training of police officers are receiving some degree of attention.

The Training Issue

The development and demonstration of new technological applications is not sufficient. Technology transfer must occur, and training is the critical component of effective transfer. Law enforcement executives and line officers consistently cite the urgent need to improve the quality, availability and frequency of their training. The advent of the use of advanced technologies by both the criminal element and police make this even more critical as law enforcement becomes a more complicated and dangerous task. Unfortunately, this need is not yet being adequately met or addressed.

The National Assessment Program for 1994 sponsored by NIJ indicated that "... 83 percent of the police chiefs and sheriffs who had community policing programs said training should be better." Obstacles to training included making time available, according to some respondents. Others noted the difficulty in 'selling' the new approach. (McEwen, 1994) The draft report of the current National Assessment of Community Policing Training reinforces the observations made in the earlier assessment, "Police agencies vary widely in terms of training budgets, resources, and delivery systems through which community policing is (or might be) available." (p. 1) (McEwen and Pandey, 1997) Research by Langworthy, Hughes, and Sanders (1995) indicates scant resources dedicated to technology training.

Budget reductions and limitations have made it increasingly difficult for agencies to receive the training that they believe they require. For example, most police departments have to send their officers to another site—a state training academy, a private organization etc.—to receive training. Budget limitations are forcing departments to do this with less, not more, frequency. The training provided by the FBI at the National Academy, while world class, is in

practice only available to a relatively few officers. Here, too, budget cuts are negatively affecting the FBI's ability to service the need.

Budget cuts also inhibit the development of appropriate training curricula for law enforcement. Most police officers are not trained to deal with the challenges presented by the use of new technologies and skills by criminals. For example, most officers are not skilled to deal with sophisticated computer crimes. A few officers are trained annually in computer crime at the Federal Law Enforcement Training Center. However, the training necessary to meet demand is certainly not readily available.

At the same time most officers are ill equipped to implement advanced technologies without training. For example, informal surveys by various National Law Enforcement and Corrections Technology Centers of NIJ indicate that a large number of police organizations do not yet utilize resources available to them on the Internet. Nor are they familiar with, or know how to implement, software packages that can make their jobs easier and more productive.

Need for Distance Learning Format

Law enforcement agencies most in need of technology training have the fewest opportunities to obtain the benefit of such instruction. Escalating police workloads, limited staffing and static budgets constrain the ability of peace officers to travel to attend national or regional training opportunities, of local law enforcement agencies to develop their own training, and of the scheduling of collective training for police departments.

Those same factors also combine, however, to make both urban and rural law enforcement professionals ideal candidates for asynchronous training delivered via distance learning technologies. Such training would obviously allow peace officers to acquire increased

awareness of their responsibilities in topics such as crime scene preservation, less than lethal force, and geographic information systems through individual training they could complete at their own learning pace in their own homes and workplaces as time permits. It would also allow them to integrate concepts learned in training with everyday work requirements.

Even in the absence of the forthcoming assessment of technologies for training, it is equally obvious that asynchronous training for law enforcement professionals will have to be developed for delivery via a range of mediums geared to the training platforms available to the individual officer or police department. Given the proliferation of video playback equipment throughout the United States, instruction delivered via VHS-format video cassette is one probable avenue of opportunity. Widespread Internet access points to the need for similar instruction to be delivered through the medium of the World Wide Web. For individuals and departments with access to multi-media personal computers, interactive instruction can also be delivered via CD-ROM, or the new DVD technology.

Technology Dissemination Project

The *Consortium for the Future* proposed to address this void by undertaking a major project focused on technology and training. The project proposed to address the void in this area by undertaking the following initiatives during a pilot phase to be initiated in 1998:

1. Survey of Technology Training Needs

Survey of law enforcement to determine what they see as their priorities for technology training. This will address two areas of training.

- Technology Tools: requirements for training in new law enforcement technologies.

- Technology Countermeasures: requirements for training to counter the criminal use of technologies.

2. Survey of Available Training Curricula

Working with ongoing NIJ projects to develop a database on existing training in both Technology Tools and Technology Countermeasures.

3. Technologies for Training

Survey, assess, and plan the use of new technologies and systems for distance learning, including the Internet, interactive software, simulation etc., to provide law enforcement with high quality training in a more cost-effective way

4. Pilot Projects

Development of six pilot projects employing distance learning technology to offer a better, more cost effective system to augment—but not replace— existing law enforcement training efforts. Prototype training tools will first be developed, then the pilot projects implemented utilizing advanced training tools for law enforcement. These will be conducted by law enforcement training organizations in partnership with the Consortium. The Consortium will evaluate the methods and technologies utilized, the quality of training provided, and the impact of that training.

This report documents the tasks completed under the auspices of Phase One, a planning endeavor. Tasks completed under the auspices of Phase One were designed to allow rapid implementation of the four tasks delineated above as the constituent parts of the pilot project. Phase One, the planning project, was completed on schedule. The products of Phase One are described in subsequent sections.

The *Consortium for the Future*

The *Consortium* consists of the Ohio State University, Sam Houston State University, University of California at Irvine, the University of Virginia, and Weber State University. The Planning Project also included Eastern Kentucky University and PDI, Inc. Both entities are also proposed to be included in Phase II. All seven entities are hereafter referred to as the *Consortium for the Future*. All of the member organizations are currently involved in substantial law enforcement training endeavors.

The lead institution is Sam Houston State University. Sam Houston State University conducts the Texas Law Enforcement Management Institute with a $3.4 million annual budget, the Police Research Center (directed by Dr. Larry Hoover, the project director for this endeavor) with a $500,000 annual budget, and recently received one of the Regional Community Policing Institute awards from the COPS office at $1.0 annually. Sam Houston State University also has extensive experience in developing distance learning formats for law enforcement training. SHSU staff recently developed an extensive distance learning program for the Illinois Law Enforcement Training and Standards Board. Funded by the Office of Community Policing Services, the program converted the entire Illinois 480 hour basic training program to a distance learning format. The Illinois project also involved the Law Enforcement Television Network in Dallas. It was featured as the front page lead story in the November issue of *Law Enforcement News*. The experience of SHSU staff in developing that program are invaluable to this effort.

Further, several of the member organizations are likewise heavily involved in law enforcement technology endeavors. PDI personnel have worked with NIJ on their technology program and have extensive experience in developing innovative training programs as well as in the development of community-based distance learning programs. Likewise, both Eastern

Kentucky University and Weber State University are extensively involved in technology applications.

Eastern Kentucky University, like Sam Houston State University, is the site of one of the Regional Community Policing Institutes. Its College of Criminal Justice employs 37 full time faculty members, serving 1600 majors. Eastern Kentucky University manages several million dollars in grants and contracts annually. The College is located within a Law Enforcement Complex on the EKU campus that also includes modern police, fire, and juvenile services training facilities and the state's Department of Criminal Justice Training, the agency that oversees and delivers most of the police training in Kentucky.

The Criminal Justice program at Weber State University is committed to not only teaching technology applications, but using them as well. In addition to an extensive outreach program, the WSU Criminal Justice Department has been offering credit courses via EDNET, a statewide interactive television system, for a decade. This department sets the standards for law enforcement instruction and certification throughout Utah through its faculty, who have both academic credentials and hands-on experience in supporting law enforcement, and its operation of the Utah Police Academy in cooperation with WSU Continuing Education. Since 1972, the WSU Criminal Justice Department has also operated a forensic crime lab that has supported investigations by law enforcement agencies throughout Northern Utah.

The Policy Development Institute, Inc., likewise possesses enormous experience and expertise in law enforcement. Its staff and consultants have been in significant positions of responsibility in law enforcement, including several chiefs of police of agencies nationally recognized for innovation in the field. Its for profit companion firm, Egan McAlister Associates,

possesses the contract for operation of the National Law Enforcement and Corrections Technology Center, Southeast.

Although not directly part of this planning phase, three other members of the *Consortium for the Future*, the University of Virginia, the University of California at Irvine, and Ohio State University, will participate in Phase II, the Pilot Project. The University of Virginia has, of course, a long-standing relationship with the Federal Bureau of Investigation's National Academy. The National Academy's "for credit" program is offered through the University of Virginia. The University of Virginia also possesses extensive expertise in forensic evidence applications. University faculty are involved in the current review and restructuring of the FBI's National Laboratory. It is hardly necessary to discuss the strengths of state flagship institutions with national eminence such as the Ohio State University and the University of California at Irvine. Every institution in the *Consortium for the Future* possesses some expertise in criminal justice. Every institution has been involved in technology transfer efforts of one kind or another. And every institution employs computer based instructional formats. It is the combination of expertise in both substantive law enforcement issues and distance learning delivery formats which gives this consortium its special status for this project.

Phase One Planning Project Products

Effective 09/29/97 through 02/14/98 a $50,000 Planning Agreement was awarded to Sam Houston State University to initiate this endeavor on behalf of the *Consortium for the Future.* An initial meeting of the entities involved in the Planning Project was held at Eastern Kentucky University on 10/30/97. The agenda is presented in an appendix. The meeting was attended by representatives of Sam Houston State University, Eastern Kentucky University, Weber State University, PDI, Inc., (the four entities directly involved in the $50,000 Planning Project), as well as *Consortium* members Ohio State University, and the University of California at Irvine. David Boyd, Director of the Office of Science and Technology, represented the National Institute of Justice. The group made significant progress in establishing policy and planning initiatives to deliver the products of the Planning Project.

A second meeting of the Consortium members was held with a newly formed advisory committee in Washington D.C. on February 3rd and 4th, 1998. That meeting was likewise attended by David Boyd. The product of that meeting was a refined needs assessment survey instrument. The meeting agenda is presented in an appendix.

The products of the Planning Project are as follows:

1. **Organize Focus Committees**

   Neither the amount of time nor the level of effort devoted to the development of technology training will be meaningful if they are not relevant to law enforcement agencies. The first step was to identify the organizations, and key contacts within those organizations, to provide oversight to this undertaking. We proposed three focus groups, one representing computer utilization, one forensic applications and one patrol applications to provide us feedback to ensure that the training provides all the essential information needed by the respective elements of police agencies. Project staff contacted

individuals who represented diversity in law enforcement mission and organization. Representatives of the *Consortium for the Future* conferred with NIJ staff in Washington, D.C. to discuss Focus Committee membership and set general project parameters.

Members of the Advisory Committee are identified in an appendix. The diversity of membership both in terms of personal and agency characteristics is self evident.

Staff prepared an orientation for the focus committee. The orientation package is included in an appendix.

2. Conduct Initial Focus Committee Meeting

There were three goals for the initial focus committee meeting. The first was education of committee members in technology training concepts; project goals, objectives, and methodology; and roles of project participants. The second goal was to review existing programs for applicability, such as training in computer crime offered by FLETC. The third goal was to draft a list of areas for inclusion in the needs assessment.

Materials were prepared for committee members in advance, including overview information, the project plan, existing related training, and ideas for the needs assessment. Staff also organized session activities for the working portions of the meeting.

3. Staff Research

Both before and after the initial focus group meeting, project staff performed a number of functions. Staff collected relevant technical information from NIJ, the regional technology transfer offices and law enforcement agencies

engaging in advanced technology applications. Staff members also created a database of elements subject to technology training.

The instructional components of the proposed training will be organized into one- and two-hour modules that law enforcement users can complete at their own pace as their schedules permit. It is anticipated that one of the pilot modules will focus on basic principles of crime scene preservation and evidence handling. Development of this module is considered essential for the success of the pilot program. Thus, during this planning phase, a preliminary outline of the content of such a unit was developed. It is included as an appendix. Follow-on modules in the investigative area may focus on the unique challenges involved in various types of incidents, offenses and crime scenes, applying the same set of concepts in each setting.

4. Prepare Needs Assessment

In preparation for distribution of the needs assessment, staff recommendations and issues, based on the prior tasks, were distributed to focus committee members. Project staff reviewed the comments, modified the recommendations, and prepared a modified inventory. It is included in an appendix.

5. Design Training Tool Protocols

As noted previously, prototype training tools were to be developed under the auspices of this proposed phase of this endeavor. Evidence collection was selected as one probable topic. Preliminary protocols for such a training tool are included in the Phase II proposal. Content for a module

on crime scene preservation is. as noted above. included as an appendix to this report.

6. Prepare Design for Future Training

A design for future implementation has been proposed. The design document is in the form of a proposal submitted to NIJ in February. Since that document is available elsewhere, it is not included with this report.

In summary, the planning phase of the project was completed on schedule. All of the objectives delineated in the proposal for the planning phase were accomplished. A proposal for project implementation has been submitted to the Office of Science and Technology.

LIST OF APPENDICES

(PHASE I APPENDICES OMITTED IN FINAL REPORT APPENDIX)

Project Brochure

Advanced Technology Against Crime

Computer-Based Instruction on
Technology Applications in Law Enforcement

Developed by a Consortium of

Eastern Kentucky University

The Ohio State University

Sam Houston State University

University of Virginia

Weber State University

Advanced Technology Against Crime (ATAC) is a distance learning project funded by the National Institute of Justice, Office of Science and Technology, to train police agencies in the use of emergent technology. It is conducted by a university partnership, the *Consortium for the Future*, an affiliation that includes for this project Eastern Kentucky University, Ohio State University, Sam Houston State University, the University of Virginia, Weber State University, and G & H International Services, LLC. The consortium of universities is conducting needs assessments, identifying emergent technology transferable to law enforcement, and developing computer based instruction in distance learning packages to train police specialists. The initial three modules include Computer Crime, Global Positioning Systems, and Serological Evidence Collection.

<u>Contact</u>

Larry T. Hoover, Director
Police Research Center
Sam Houston State University
Huntsville, TX 77341-2296
409 294-1636
prc_lth@shsu.edu

Sponsored by the
National Institute of Justice
Office of Science and Technology

Sample Planning Meeting Agenda

Consortium Meeting
J. W. Marriott Hotel
1331 Pennsylvania Ave., N.W.
Washington, DC 20004
(202) 393-2000
December 16, 1998

Agenda

9:00 a.m. Longworth Meeting Room

I.   Administrative Briefing   Larry Hoover

II.   Progress Reports
- Eastern Kentucky University   Pamela Collins
  "Global Positioning Systems"
- University of Virginia   Cindy Orshek
  "Computer Crime"
- Weber State University   Peg Wherry
  "Serological Evidence Collection"

III.   Demonstration of Media Formats
- Criminal Investigation, West Publishing
- AST Law Enforcement Program
- LETN Illinois Tape
- University of Virginia CD-ROM
- Weber State – CD ROM, Diversity

IV.   Content Issues
- Media Formats
- Degree of standardization
- Length

V.   NIJ Update   Sandra Newett

VI.   Timetable

VII.   Evaluation Issues   Sandy Soghikian

VIII.   Other Issues

Advanced Technology Against Crime (ATAC)   Contact List

Basil, Anthony

Ohio State University
152 Mount Hall
1050 Carmack Rd.
Columbus, OH 43210-1002
Bus: (614) 292-8860
Bus Fax: (614) 292-2124
E-mail: basil.1@osu.edu

Collins, Pamela

College of Law Enforcement
249 Stratton Bldg.
Eastern Kentucky University
Richmond, KY 40475
Bus: (606) 622-1977
Bus Fax: (606) 622-1977
E-mail: iapi@aol.com

Gaskill, Jim

Weber State University
Dept of Criminal Justice
1206 University Circle
Ogden, UT 84408
Bus: (801) 626-6148
Bus Fax: (801) 626-6145
E-mail: jhgaskill@weber.edu

Greenberg, Robert

G&H International Services, LLC
1747 Pennsylvania Ave, NW, Suite 700
Washington D.C. 20006-4604
Bus: (202) 955-9505
Bus Fax: (202) 429-9894
E-mail: rgreenberg@ghinternational.com

Hoover, Larry T.

Criminal Justice Center
Sam Houston State University
Huntsville, TX 77341-2296
Bus: (409) 294-1636
Home: (409) 291-1156
Bus Fax: (409) 294-1684
E-mail: prc_lth@shsu.edu

Newett, Sandra

Office of Science and Technology
National Institute of Justice
810 Seventh N.W.
Washington, D.C. 20531
Bus: (202) 616-1471
Bus Fax: (202) 307-9907
E-mail: newetts@ojp.usdoj.gov

Orshek, Chris

Center for Executive Development
P.O. Box 3697
Univ. of Virginia
Charlottesville, VA 22903
Bus: (804) 982-5366
Bus Fax: (804) 982-5369
E-mail: cgo3w@virginia.edu

Scarborough, Kay

College of Law Enforcement
249 Stratton Bldg.
Eastern Kentucky University
Richmond, KY 40475
Bus: (606) 622-3565
Bus Fax: (606) 622-6392
E-mail: kscarbocop@aol.com

Soghikian, Sandy

Univ. of California at Irvine
University Extension
P.O. Box 6050
Irvine, CA 92616-6050
Bus: (949) 824-2033
Bus Fax: (949) 824-2742
E-mail: slsoghik@uci.edu

Stallard, Sondra F.

Continuing Education
Univ. of Virginia
104 Midmont Ln
Charlottesville, VA 22903
Bus: (804) 982-5206
Bus Fax: (804) 982-5550
E-mail: sondra@virginia.edu

Sterrett, Morris

Weber State University
Dept of Criminal Justice
4001 University Circle
Ogden, UT 84408
Bus: (801) 626-6150
Bus Fax: (801) 626-7130
E-mail: msterrett@weber.edu

Tillerson, Jamie

Police Research Center
Criminal Justice Center
Sam Houston State University
Huntsville, TX 77341-2296
Bus: (409) 294-1704
Bus Fax: (409) 294-1684
E-mail: prc_jlt@shsu.edu

Wherry, Peg

Weber State University
Dept of Continuing Education
4005 University Circle
Ogden, UT 84408
Bus: (801) 626-6990
Bus Fax: (801) 626-7978
E-mail: pwherry@cc.weber.edu

12/14/98

Preliminary Training Needs Assessment Report
(Texas and Kentucky)

Technology Dissemination Project
Consortium for the Future

PRELIMINARY TRAINING NEEDS ASSESSMENT REPORT

Sample of Police Managers from Texas and Kentucky

AGENCY TRAINING NEEDS
PERCENT, MEAN, AND RANK OF ITEMS

Item #	Item	Percent 1 Fully Competent - No Training	2 Competent - Some Training	3 Some Competence - Definitely Training	4 Little Competence - Need Training	5 No Competence - Need Training	Mean	Rank of Mean (using 5 decimal places)
Information Technology								
IT1	Bar Code Devices	8.0	21.3	13.3	12.0	45.3	3.65	9.0
IT2	Bar Code Devices--Prisoner Bands	14.1	11.3	9.9	15.5	49.3	3.75	5.0
IT3	Bar Code Devices--Property Room Inventory	7.8	26.0	13.0	14.3	39.0	3.51	13.0
IT4	Client-Server Records Systems	10.7	36.0	28.0	8.0	17.3	2.85	65.0
IT5	Computer Assisted Dispatch	38.2	39.5	9.2	5.3	7.9	2.05	100.0
IT6	Computer Data Recovery	9.1	35.1	28.6	15.6	11.7	2.86	64.0
IT7	Data Analysis Tools	5.2	22.1	31.2	26.0	15.6	3.25	36.0
IT8	Data Encryption/Electronic Surveillance	2.6	16.9	28.6	32.5	19.5	3.49	15.0
IT9	Data Storage Media	7.8	33.8	29.9	18.2	10.4	2.90	60.0
IT10	Digital Photography	7.8	27.3	33.8	19.5	11.7	3.00	57.0
IT11	Electronic Data Interagency Interchange	5.2	19.5	24.7	20.8	29.9	3.51	13.0
IT12	E-mail Applications	22.1	40.3	19.5	11.7	6.5	2.40	95.0
IT13	Geographic Information System	5.2	22.1	28.6	26.0	18.2	3.30	32.0
IT14	Internet as a Resource	7.8	26.0	35.1	19.5	11.7	3.01	56.0
IT15	Internet Crime	5.2	11.7	20.8	35.1	27.3	3.68	7.0
IT16	Laptop Utilization	11.8	18.4	31.6	22.4	15.8	3.12	52.0
IT17	Laptop Utilization--Replacement of MDT	6.6	19.7	18.4	28.9	26.3	3.49	16.0
IT18	Laptop Utilization--Personal Digital Assistants	5.2	14.3	26.0	19.5	35.1	3.65	10.0
IT19	Laptop Utilization--Upload/Docking Systems	5.3	18.7	29.3	17.3	29.3	3.47	18.0
IT20	Live Scan Fingerprint Devices	14.3	22.1	18.2	16.9	28.6	3.23	38.0
IT21	Person Recognition Devices (e.g. retina scan, fingerprint scan)	6.5	5.2	14.3	26.0	48.1	4.04	1.0
IT22	Telecommunication Theft Technology	3.9	5.2	20.8	29.9	40.3	3.97	2.0
IT23	Template Software	5.3	22.4	25.0	26.3	21.1	3.36	25.0
IT24	Template Software--Word Processing	10.4	26.0	31.2	16.9	15.6	3.01	56.0
IT25	Template Software--Data Bases	7.8	16.9	33.8	16.9	24.7	3.34	28.0
IT26	Template Software--Spread Sheets	9.1	14.3	32.5	19.5	24.7	3.36	24.0
IT27	Template Software--Graphical Programs	7.9	13.2	31.6	19.7	27.6	3.46	19.0
IT28	Wireless Data Transmission	9.3	21.3	33.3	16.0	20.0	3.16	47.0
Patrol Applications								
PA29	Alarm Systems	13.0	37.7	28.6	14.3	6.5	2.64	84.0

AGENCY TRAINING NEEDS
PERCENT, MEAN, AND RANK OF ITEMS

Item #	Item	Percent					Mean	Rank of Mean (using 5 decimal places)
		1 Fully Competent - No Training	2 Competent - Some Training	3 Some Competence - Definitely Training	4 Little Competence - Need Training	5 No Competence - Need Training		
PA30	Alarm Systems--Special Circumstances and Applications	11.7	33.8	24.7	20.8	9.1	2.82	71.0
PA31	Alarm Systems--False Alarm Control	9.1	37.7	24.7	19.5	9.1	2.82	71.0
PA32	Alarm Systems--Portable Systems	10.5	22.4	26.3	23.7	17.1	3.14	51.0
PA33	Alarm Systems--National Manufacturing Standards	6.5	20.8	26.0	22.1	24.7	3.38	23.0
PA34	Alarm Systems--Robbery Alerts	11.7	29.9	31.2	18.2	9.1	2.83	69.0
PA35	Alarm Systems--Burglary Alerts	13.0	28.6	33.8	14.3	10.4	2.81	73.0
PA36	Alarm Systems--Undercover Applications	6.8	23.3	24.7	20.5	24.7	3.33	31.0
PA37	Crowd Control Devices	6.5	27.3	27.3	20.8	18.2	3.17	44.0
PA38	Crowd Control Devices--Video	9.1	23.4	28.6	19.5	19.5	3.17	44.0
PA39	Crowd Control Devices--Sprays	7.9	39.5	30.3	15.8	6.6	2.74	77.0
PA40	Emergency Medical Response Technology	9.2	11.8	31.6	28.9	18.4	3.36	25.0
PA41	Global Positioning Systems	2.6	7.8	29.9	24.7	35.1	3.82	3.0
PA42	Global Positioning Systems--Vehicle Location Systems	3.9	15.6	20.8	24.7	35.1	3.71	6.0
PA43	Global Positioning Systems--Mobile Surveillance	7.8	10.4	22.1	26.0	33.8	3.68	7.0
PA44	Inebriation Measurement Devices	11.8	42.1	22.4	6.6	17.1	2.75	76.0
PA45	Inebriation Measurement Devices--Evasive/Non-evasive	10.4	26.0	32.5	10.4	20.8	3.05	54.0
PA46	Inebriation Measurement Devices--Automobile immobilization	5.2	16.9	32.5	20.8	24.7	3.43	22.0
PA47	Inebriation Measurement Devices--Incapacitated or uncooperative persons	6.5	24.7	26.0	22.1	20.8	3.26	35.0
PA48	Less Than Lethal Force	11.7	42.9	33.8	7.8	3.9	2.49	90.0
PA49	Night Vision Devices	5.2	50.6	28.6	11.7	3.9	2.58	87.0
PA50	Pursuit Termination Technology	5.2	32.5	32.5	18.2	11.7	2.99	59.0
PA51	Remote/Projection Listening Devices	3.9	20.8	37.7	22.1	15.6	3.25	36.0
PA52	Robbery Alert Tracking Devices	7.8	18.2	31.2	18.2	24.7	3.34	28.0
PA53	Stun Devices	7.9	23.7	31.6	14.5	22.4	3.20	41.0
PA54	Traffic Collision Analysis Technology	11.7	26.0	35.1	16.9	10.4	2.88	63.0

Item #	Item	Percent					Mean	Rank of Mean (using 5 decimal places)
		1 Fully Competent - No Training	2 Competent - Some Training	3 Some Competence - Definitely Training	4 Little Competence - Need Training	5 No Competence - Need Training		
PA55	Vehicle Tracking Devices	5.2	24.7	32.5	20.8	16.9	3.19	42.0
PA56	Video Surveillance Devices	5.3	36.8	32.9	13.2	11.8	2.89	61.0
PA57	Individual Prisoner Control Assistance Devices	9.3	22.7	29.3	21.3	17.3	3.15	49.0
PA58	Radio Traffic Recording Devices	22.1	40.3	15.6	11.7	10.4	2.48	91.0
PA59	Traffic Monitoring Devices	6.5	27.3	29.9	15.6	20.8	3.17	46.0
Investigation Applications								
IA60	Arson Investigation Technology	16.4	12.3	24.7	21.9	24.7	3.26	34.0
IA61	Bombing Investigation Technology	7.9	22.4	21.1	26.3	22.4	3.33	30.0
IA62	Death Investigation Technology	14.3	45.5	23.4	7.8	9.1	2.52	88.0
IA63	Death Investigation Technology--Infant Death	10.4	40.3	28.6	10.4	10.4	2.70	81.0
IA64	Death Investigation Technology--Fingerprints from Corpses	15.6	37.7	27.3	6.5	13.0	2.64	84.0
IA65	Death Investigation Technology--Animation of Events	3.9	18.2	32.5	18.2	27.3	3.47	17.0
IA66	Serological Identification	14.5	14.5	23.7	23.7	23.7	3.28	33.0
IA67	Serological Identification--Reconstruction Software	9.3	12.0	24.0	21.3	33.3	3.57	12.0
IA68	Serological Identification--Stain Identification	9.3	16.0	21.3	28.0	25.3	3.44	21.0
IA69	Serological Identification--DNA	12.0	17.3	14.7	25.3	30.7	3.45	20.0
IA70	Drug Identification	15.6	48.1	23.4	7.8	5.2	2.39	97.0
IA71	Electronic Case Files	1.3	29.3	36.0	17.3	16.0	3.17	43.0
IA72	Electronic Case Files--Case Management	2.6	24.7	42.9	14.3	15.6	3.16	48.0
IA73	Electronic Case Files--Combined Digital Storage and Retrieval	1.3	27.6	23.7	30.3	17.1	3.34	27.0
IA74	Electronic Case Files--Encryption and Authentication	2.7	13.3	21.3	32.0	30.7	3.75	4.0
IA75	Electronic Case Files--Computerized Sketching	1.3	14.7	29.3	29.3	25.3	3.63	11.0
IA76	Evidence Processing	9.5	54.1	27.0	2.7	6.8	2.43	94.0
IA77	Evidence Processing--Fingerprints/AFIS	27.6	43.4	10.5	5.3	13.2	2.33	98.0
IA78	Evidence Processing--Impression Casting	14.7	44.0	28.0	6.7	6.7	2.47	92.0
IA79	Evidence Processing--Development Techniques	13.3	40.0	26.7	8.0	12.0	2.65	83.0

Item #	Item	Percent					Mean	Rank of Mean (using 5 decimal places)
		1 Fully Competent - No Training	2 Competent - Some Training	3 Some Competence - Definitely Training	4 Little Competence - Need Training	5 No Competence - Need Training		
IA80	Evidence Processing--Identification and Comparison	14.5	50.0	18.4	5.3	11.8	2.50	89.0
IA81	Photography of Trace Evidence	15.8	34.2	34.2	3.9	11.8	2.62	86.0
IA82	Photography of Trace Evidence--Latent Prints	21.1	43.4	18.4	9.2	7.9	2.39	96.0
IA83	Photography of Trace Evidence--Digital Cameras	6.6	28.9	35.5	14.5	14.5	3.01	55.0
IA84	Photography of Trace Evidence--Image Enhancement Systems	8.0	21.3	34.7	20.0	16.0	3.15	49.0
IA85	Photography of Trace Evidence--Video	8.0	32.0	33.3	16.0	10.7	2.89	62.0
IA86	Trace Evidence Collection	9.3	37.3	32.0	13.3	8.0	2.73	78.0
IA87	Trace Evidence Collection--Illumination Techniques	12.2	35.1	31.1	12.2	9.5	2.72	80.0
IA88	Trace Evidence Collection--Hair	11.8	36.8	30.3	13.2	7.9	2.68	82.0
IA89	Trace Evidence Collection--Soil	12.0	30.7	29.3	17.3	10.7	2.84	67.0
IA90	Trace Evidence Collection--Pollen/Spores	5.5	28.8	26.0	19.2	20.5	3.21	40.0
IA91	Trace Evidence Collection--Glass	10.7	30.7	33.3	14.7	10.7	2.84	68.0
IA92	Trace Evidence Collection--Fiber	11.8	28.9	32.9	17.1	9.2	2.83	70.0
IA93	Trace Evidence Collection--Paint	10.7	30.7	30.7	18.7	9.3	2.85	65.0
IA94	Firearms	17.8	49.3	24.7	4.1	4.1	2.27	99.0
IA95	Firearms--Computerized Data Bases	10.5	23.7	27.6	19.7	18.4	3.12	52.0
IA96	Firearms--Gunshot Residue	12.0	29.3	36.0	13.3	9.3	2.79	74.0
IA97	Firearms--Bullets and Cases	12.0	32.0	34.7	14.7	6.7	2.72	79.0
IA98	Criminal Intelligence Profiling	2.6	18.2	49.4	15.6	14.3	3.21	39.0
IA99	Person Identification	6.5	37.7	39.0	7.8	9.1	2.75	75.0
IA100	Crime Scene Safety	16.9	42.9	24.7	10.4	5.2	2.44	93.0

Item #	Item	Percent					Mean	Rank of Mean (using 5 decimal places)
		1 Fully Competent - No Training	2 Competent - Some Training	3 Some Competence - Definitely Training	4 Little Competence - Need Training	5 No Competence Need Training		
IT21	Person Recognition Devices (e.g. retina scan, fingerprint scan)	6.5	5.2	14.3	26.0	48.1	4.04	1
IT22	Telecommunication Theft Technology	3.9	5.2	20.8	29.9	40.3	3.97	2
PA41	Global Positioning Systems	2.6	7.8	29.9	24.7	35.1	3.82	3
IA74	Electronic Case Files--Encryption and Authentication	2.7	13.3	21.3	32.0	30.7	3.75	4
IT2	Bar Code Devices--Prisoner Bands	14.1	11.3	9.9	15.5	49.3	3.75	5
PA42	Global Positioning Systems--Vehicle Location Systems	3.9	15.6	20.8	24.7	35.1	3.71	6
IT15	Internet Crime	5.2	11.7	20.8	35.1	27.3	3.68	7
PA43	Global Positioning Systems--Mobile Surveillance	7.8	10.4	22.1	26.0	33.8	3.68	7
IT1	Bar Code Devices	8.0	21.3	13.3	12.0	45.3	3.65	9
IT18	Laptop Utilization--Personal Digital Assistants	5.2	14.3	26.0	19.5	35.1	3.65	10
IA75	Electronic Case Files--Computerized Sketching	1.3	14.7	29.3	29.3	25.3	3.63	11
IA67	Serological Identification--Reconstruction Software	9.3	12.0	24.0	21.3	33.3	3.57	12
IT3	Bar Code Devices--Property Room Inventory	7.8	26.0	13.0	14.3	39.0	3.51	13
IT11	Electronic Data Interagency Interchange	5.2	19.5	24.7	20.8	29.9	3.51	13
IT8	Data Encryption/Electronic Surveillance	2.6	16.9	28.6	32.5	19.5	3.49	15
IT17	Laptop Utilization--Replacement of MDT	6.6	19.7	18.4	28.9	26.3	3.49	16
IA65	Death Investigation Technology--Animation of Events	3.9	18.2	32.5	18.2	27.3	3.47	17
IT19	Laptop Utilization--Upload/Docking Systems	5.3	18.7	29.3	17.3	29.3	3.47	18
IT27	Template Software--Graphical Programs	7.9	13.2	31.6	19.7	27.6	3.46	19
IA69	Serological Identification--DNA	12.0	17.3	14.7	25.3	30.7	3.45	20
IA68	Serological Identification--Stain Identification	9.3	16.0	21.3	28.0	25.3	3.44	21
PA46	Inebriation Measurement Devices--Automobile immobilization	5.2	16.9	32.5	20.8	24.7	3.43	22
PA33	Alarm Systems--National Manufacturing Standards	6.5	20.8	26.0	22.1	24.7	3.38	23
IT26	Template Software--Spread Sheets	9.1	14.3	32.5	19.5	24.7	3.36	24
IT23	Template Software	5.3	22.4	25.0	26.3	21.1	3.36	25

| Item # | Item | Percent | | | | | Mean | Rank of Mean (using 5 decimal places) |
		1 Fully Competent - No Training	2 Competent - Some Training	3 Some Competence - Definitely Training	4 Little Competence - Need Training	5 No Competence Need Training		
PA40	Emergency Medical Response Technology	9.2	11.8	31.6	28.9	18.4	3.36	25
IA73	Electronic Case Files--Combined Digital Storage and Retrieval	1.3	27.6	23.7	30.3	17.1	3.34	27
IT25	Template Software--Data Bases	7.8	16.9	33.8	16.9	24.7	3.34	28
PA52	Robbery Alert Tracking Devices	7.8	18.2	31.2	18.2	24.7	3.34	28
IA61	Bombing Investigation Technology	7.9	22.4	21.1	26.3	22.4	3.33	30
PA36	Alarm Systems--Undercover Applications	6.8	23.3	24.7	20.5	24.7	3.33	31
IT13	Geographic Information System	5.2	22.1	28.6	26.0	18.2	3.30	32
IA66	Serological Identification	14.5	14.5	23.7	23.7	23.7	3.28	33
IA60	Arson Investigation Technology	16.4	12.3	24.7	21.9	24.7	3.26	34
PA47	Inebriation Measurement Devices--Incapacitated or uncooperative persons	6.5	24.7	26.0	22.1	20.8	3.26	35
IT7	Data Analysis Tools	5.2	22.1	31.2	26.0	15.6	3.25	36
PA51	Remote/Projection Listening Devices	3.9	20.8	37.7	22.1	15.6	3.25	36
IT20	Live Scan Fingerprint Devices	14.3	22.1	18.2	16.9	28.6	3.23	38
IA98	Criminal Intelligence Profiling	2.6	18.2	49.4	15.6	14.3	3.21	39
IA90	Trace Evidence Collection--Pollen/Spores	5.5	28.8	26.0	19.2	20.5	3.21	40
PA53	Stun Devices	7.9	23.7	31.6	14.5	22.4	3.20	41
PA55	Vehicle Tracking Devices	5.2	24.7	32.5	20.8	16.9	3.19	42
IA71	Electronic Case Files	1.3	29.3	36.0	17.3	16.0	3.17	43
PA37	Crowd Control Devices	6.5	27.3	27.3	20.8	18.2	3.17	44
PA38	Crowd Control Devices--Video	9.1	23.4	28.6	19.5	19.5	3.17	44
PA59	Traffic Monitoring Devices	6.5	27.3	29.9	15.6	20.8	3.17	46
IT28	Wireless Data Transmission	9.3	21.3	33.3	16.0	20.0	3.16	47
IA72	Electronic Case Files--Case Management	2.6	24.7	42.9	14.3	15.6	3.16	48
PA57	Individual Prisoner Control Assistance Devices	9.3	22.7	29.3	21.3	17.3	3.15	49
IA84	Photography of Trace Evidence--Image Enhancement Systems	8.0	21.3	34.7	20.0	16.0	3.15	49
PA32	Alarm Systems--Portable Systems	10.5	22.4	26.3	23.7	17.1	3.14	51
IT16	Laptop Utilization	11.8	18.4	31.6	22.4	15.8	3.12	52
IA95	Firearms--Computerized Data Bases	10.5	23.7	27.6	19.7	18.4	3.12	52
PA45	Inebriation Measurement Devices--Evasive/Non-evasive	10.4	26.0	32.5	10.4	20.8	3.05	54

Item #	Item	Percent					Mean	Rank of Mean (using 5 decimal places)
		1 Fully Competent - No Training	2 Competent - Some Training	3 Some Competence - Definitely Training	4 Little Competence - Need Training	5 No Competence - Need Training		
IA83	Photography of Trace Evidence--Digital Cameras	6.6	28.9	35.5	14.5	14.5	3.01	55
IT14	Internet as a Resource	7.8	26.0	35.1	19.5	11.7	3.01	56
IT24	Template Software--Word Processing	10.4	26.0	31.2	16.9	15.6	3.01	56
IT10	Digital Photography	7.8	27.3	33.8	19.5	11.7	3.00	57
PA50	Pursuit Termination Technology	5.2	32.5	32.5	18.2	11.7	2.99	59
IT9	Data Storage Media	7.8	33.8	29.9	18.2	10.4	2.90	60
PA56	Video Surveillance Devices	5.3	36.8	32.9	13.2	11.8	2.89	61
IA85	Photography of Trace Evidence--Video	8.0	32.0	33.3	16.0	10.7	2.89	62
PA54	Traffic Collision Analysis Technology	11.7	26.0	35.1	16.9	10.4	2.88	63
IT6	Computer Data Recovery	9.1	35.1	28.6	15.6	11.7	2.86	64
IT4	Client-Server Records Systems	10.7	36.0	28.0	8.0	17.3	2.85	65
IA93	Trace Evidence Collection--Paint	10.7	30.7	30.7	18.7	9.3	2.85	65
IA89	Trace Evidence Collection--Soil	12.0	30.7	29.3	17.3	10.7	2.84	67
IA91	Trace Evidence Collection--Glass	10.7	30.7	33.3	14.7	10.7	2.84	68
PA34	Alarm Systems--Robbery Alerts	11.7	29.9	31.2	18.2	9.1	2.83	69
IA92	Trace Evidence Collection--Fiber	11.8	28.9	32.9	17.1	9.2	2.83	70
PA30	Alarm Systems--Special Circumstances and Applications	11.7	33.8	24.7	20.8	9.1	2.82	71
PA31	Alarm Systems--False Alarm Control	9.1	37.7	24.7	19.5	9.1	2.82	71
PA35	Alarm Systems--Burglary Alerts	13.0	28.6	33.8	14.3	10.4	2.81	73
IA96	Firearms--Gunshot Residue	12.0	29.3	36.0	13.3	9.3	2.79	74
IA99	Person Identification	6.5	37.7	39.0	7.8	9.1	2.75	75
PA44	Inebriation Measurement Devices	11.8	42.1	22.4	6.6	17.1	2.75	76
PA39	Crowd Control Devices--Sprays	7.9	39.5	30.3	15.8	6.6	2.74	77
IA86	Trace Evidence Collection	9.3	37.3	32.0	13.3	8.0	2.73	78
IA97	Firearms--Bullets and Cases	12.0	32.0	34.7	14.7	6.7	2.72	79
IA87	Trace Evidence Collection--Illumination Techniques	12.2	35.1	31.1	12.2	9.5	2.72	80
IA63	Death Investigation Technology--Infant Death	10.4	40.3	28.6	10.4	10.4	2.70	81
IA88	Trace Evidence Collection--Hair	11.8	36.8	30.3	13.2	7.9	2.68	82
IA79	Evidence Processing--Development Techniques	13.3	40.0	26.7	8.0	12.0	2.65	83
PA29	Alarm Systems	13.0	37.7	28.6	14.3	6.5	2.64	84

Appendix E

Training Needs Assessment Report
(The Ohio State University)

February 3, 2000

Larry Hoover
Sam Houston State University
Criminal Justice Center
P.O. Box 2296
Huntsville, TX 77341-2296

Dear Larry:

We are pleased to inform you that we have completed the analysis of our survey of law enforcement agencies across the nation. Please accept the two copies enclosed with the following brief description.

We mailed surveys to 490 law enforcement agencies including representation from each state, including state, county, and city agencies. The data set was inclusive in its make-up with rural and urban units, as well as large and small departments represented. Seventeen (17) of the surveys were returned because of incorrect addresses. One hundred thirty-six (136) surveys were returned completed and analyzed. Clearly this 28.7% (136÷473) return rate was sufficiently representative to supply valid information for purposes of this study. Only three states were not represented among the 136 replies; they were Delaware, North Dakota, and Nevada. The distribution by state of the sample as compared to the population is given in Table 4.

Table 1 provides the distribution of responses for perceived competency and training needs sorted by perceived competency means. Mean values for perceived competency range from 1 to 5 with 1 representing "no use of technology" and 5 representing "very competent use of technology". The present results indicate that 'Less Than Lethal Force' has the highest perceived competency with a mean of 3.485.

Table 2 outlines the distribution of responses for perceived training needs and competency sorted by perceived training needs. Mean values for perceived training needs range from 1 to 5 with 1 representing "training not needed" and 5 representing "a critical need for training". The data analysis indicates that 'Crime Scene Safety' has the highest perceived training need with a mean of 2.890.

Distributions of agencies' ability to use computer based instructional programs is described in Table 3. While the largest majority of agencies appear to be using Pentium based computers with 200 MHz processing speed or higher, many (39%) are still using 486 based processors. In addition, a slight majority (55.1%) of the agencies appears to have access to the internet while at work. The results also indicate that a small proportion (27.2%) of the agencies have used some kind of computer based instructional programs.

If you have any questions, please call me or Tony Basil.

Sincerely,

Mac A. Stewart
Associate Provost, Undergraduate Studies
Dean, University College/Continuing Education

AGENCY TRAINING NEEDS QUESTIONNAIRE

LAST NAME	FIRST NAME	M.I.	SOCIAL SECURITY #	DATE OF BIRTH

GENDER
- Female
- Male

RACE
- American Indian
- Asian
- Black
- Hispanic
- White (Non Hispanic)

RANK OR ITS EQUIVALENT

	YRS EXPERIENCE PRESENT RANK	YRS EXPERIENCE PRESENT AGENCY	TOTAL YRS EXPERIENCE LAW ENFORCEMENT
Chief/Sheriff/Commissioner/Superintendent			
Assistant Chief/Deputy Chief/Chief Deputy/Undersheriff			
Major/Captain			
Lieutenant			
Sergeant/Master Sergeant/First Sergeant/Supervisor			
Investigator/Detective			
Corporal/Master Police Officer/Senior Trooper			
Police Officer/Deputy Sheriff/Trooper/Agent			
Non-Sworn Civilian			

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Competency of agency members

1 - Agency does not use this technology

4 - Reasonable competence by relevant agency members

5 - Relevant agency members are very competent

Training needs

5 - There is a critical need for training

1 - Training is not needed

Informational Technology

	Item	
	1. Bar Code Devices	
	2. Bar Code Devices - Prisoner Bands	
	3. Bar Code Devices - Property Room Inventory	
	4. Client-Server Records Systems	
	5. Computer Assisted Dispatch	
	6. Computer Data Recovery	
	7. Data Analysis Tools	
	8. Data Encryption/Electronic Surveillance	
	9. Data Storage Media	
	10. Digital Photography	
	11. Electronic Data Interagency Interchange	
	12. E-mail Applications	
	13. Geographic Information System	
	14. Internet as a Resource	
	15. Internet Crime	
	16. Laptop Utilization	
	17. Laptop Utilization - Replacement of MDT	
	18. Laptop Utilization - Personal Digital Assistants	
	19. Laptop Utilization - Upload/Docking Systems	
	20. Live Scan Fingerprint Devices	
	21. Person Recognition Devices (e.g. retina scan, fingerprint scan)	
	22. Telecommunication Theft Technology	
	23. Template Software	
	24. Template Software - Word Processing	
	25. Template Software - Data Bases	
	26. Template Software - Spread Sheets	
	27. Template Software - Graphical Programs	
	28. Wireless Data Transmission	

Patrol Applications

	Item	
	29. Alarm Systems	
	30. Alarm Systems - Special Circumstances and Applications	
	31. Alarm Systems - False Alarm Control	
	32. Alarm Systems - Portable Systems	
	33. Alarm Systems - National Manufacturing Standards	
	34. Alarm Systems - Robbery Alerts	
	35. Alarm Systems - Burglary Alerts	
	36. Alarm Systems - Undercover Applications	
	37. Crowd Control Devices	
	38. Crowd Control Devices - Video	
	39. Crowd Control Devices - Sprays	
	40. Emergency Medical Response Technology	
	41. Global Positioning Systems	
	42. Global Positioning Systems - Vehicle Location Systems	

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Patrol Applications - Continued from Page 2

43. Global Positioning Systems - Mobile Surveillance
44. Inebriation Measurement Devices
45. Inebriation Measurement Devices - Evasive/Non-evasive
46. Inebriation Measurement Devices - Automobile Immobilization
47. Inebriation Measurement Devices - Incapacitated or uncooperative persons
48. Less Than Lethal Force
49. Night Vision Devices
50. Pursuit Termination Technology
51. Remote/Projection Listening Devices
52. Robbery Alert Tracking Devices
53. Stun Devices
54. Traffic Collision Analysis Technology
55. Vehicle Tracking Devices
56. Video Surveillance Devices
57. Individual Prisoner Control Assistance Devices
58. Radio Traffic Recording Devices
59. Traffic Monitoring Devices

Investigation Applications

60. Arson Investigation Technology
61. Bombing Investigation Technology
62. Death Investigation Technology
63. Death Investigation Technology - Infant Death
64. Death Investigation Technology - Fingerprints from Corpses
65. Death Investigation Technology - Animation of Events
66. Serological Identification
67. Serological Identification - Reconstruction Software
68. Serological Identification - Stain Identification
69. Serological Identification - DNA
70. Drug Identification
71. Electronic Case Files
72. Electronic Case files - Case Management
73. Electronic Case files - Combined Digital Storage and Retrieval
74. Electronic Case files - Encryption and Authentication
75. Electronic Case files - Computerized Sketching
76. Evidence Processing
77. Evidence Processing - Fingerprints/AFIS
78. Evidence Processing - Impression Casting
79. Evidence Processing - Development Techniques
80. Evidence Processing - Identification and Comparison
81. Photography of Trace Evidence
82. Photography of Trace Evidence - Latent Prints
83. Photography of Trace Evidence - Digital Cameras
84. Photography of Trace Evidence - Image Enhancement Systems

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Investigation Applications - Continued from Page 3

Competency						Training needs				
①	②	③	④	⑤	85. Photography of Trace Evidence - Video	○	○	○	○	⑤
①	②	③	④	⑤	86. Trace Evidence Collection	○	○	○	○	⑤
①	②	③	④	⑤	87. Trace Evidence Collection - Illumination Techniques	○	○	○	○	⑤
①	②	③	④	⑤	88. Trace Evidence Collection - Hair	○	○	○	○	⑤
①	②	③	④	⑤	89. Trace Evidence Collection - Soil	○	○	○	○	○
①	②	③	④	⑤	90. Trace Evidence Collection - Pollen/Spores	○	○	○	○	○
①	②	③	④	⑤	91. Trace Evidence Collection - Glass	○	○	○	○	○
①	②	③	④	⑤	92. Trace Evidence Collection - Fiber	○	○	○	○	○
①	②	③	④	⑤	93. Trace Evidence Collection - Paint	○	○	○	○	○
①	②	③	④	⑤	94. Firearms	○	○	○	○	○
①	②	③	④	⑤	95. Firearms - Computerized Data Bases	○	○	○	○	○
①	②	③	④	⑤	96. Firearms - Gunshot Residue	○	○	○	○	○
①	②	③	④	⑤	97. Firearms - Bullets and Cases	○	○	○	○	○
①	②	③	④	⑤	98. Criminal Intelligence Profiling	○	○	○	○	○
①	②	③	④	⑤	99. Person Identification	○	○	○	○	⑤
①	②	③	④	⑤	100. Crime Scene Safety	○	○	○	○	⑤

The following questions relate to your agency's ability to use computer-based instructional programs. Even if your agency does not currently use this mode of instruction, please complete these questions so that we may assess the readiness of the nation's police agencies to provide this type of training now and in the future.

101. Check the following items that your agency would have available for agency members to use in a computer-based training program. (Check all that apply.)

- ① Personal Computer - 486 or equivalent   with CD ROM? ⓨ ⓝ
- ② Personal Computer - Pentium or equivalent with less that 100 MHz   with CD ROM? ⓨ ⓝ
- ③ Personal Computer - Pentium or equivalent with 100 MHz or higher   with CD ROM? ⓨ ⓝ
- ④ Personal Computer - Pentium II or equivalent with 200 MHz or higher   with CD ROM? ⓨ ⓝ
- ⑤ Personal Computer - Pentium III or equivalent with 450 MHz or higher   with CD ROM? ⓨ ⓝ
- ⑥ Other (please list) _____
  _____
  _____

102. Do members of your agency have access to the Internet while at work for training?

- ⊙ YES   If YES, how is your agency connected to the Internet? (Check all that apply.)
- ⊙ NO   ① Dial-up telephone line modems
  - ② High speed connection (e.g., T-1 line, ADSL)
  - ③ Network using municipal/county/state high speed connection
  - ④ Other (please explain) _____
    _____
    _____

103. Have any members of your agency ever used computer-based instructional programs?

- ⊙ YES   If YES, please list the programs/courses you recall agency members using.
- ⊙ NO   _____
  _____
  _____
  _____

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	Competency of agency members							Training Needs					
No Response	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean		No Response	(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
9.2%	21.1%	6.6%	28.9%	63.2%	50.0%	3.485	48. Less Than Lethal Force	9.2%	27.6%	36.8%	46.1%	36.8%	22.4%	2.787
13.2%	15.8%	22.4%	32.9%	53.9%	40.8%	3.235	94. Firearms	13.2%	22.4%	36.8%	60.5%	26.3%	19.7%	2.691
10.5%	13.2%	23.7%	50.0%	44.7%	36.8%	3.206	100. Crime Scene Safety	6.6%	19.7%	39.5%	55.3%	36.8%	21.1%	2.890
11.8%	13.2%	19.7%	53.9%	46.1%	34.2%	3.184	76. Evidence Processing	10.5%	21.1%	44.7%	52.6%	31.6%	18.4%	2.721
9.2%	15.8%	25.0%	40.8%	63.2%	25.0%	3.162	70. Drug Identification	9.2%	15.8%	44.7%	55.3%	32.9%	21.1%	2.838
10.5%	48.7%	9.2%	10.5%	43.4%	56.6%	3.103	44. Inebriation Measurement Devices	11.8%	64.5%	34.2%	44.7%	13.2%	10.5%	2.081
7.9%	30.3%	22.4%	43.4%	48.7%	26.3%	2.971	62. Death Investigation Technology	7.9%	30.3%	30.3%	63.2%	27.6%	19.7%	2.735
5.3%	48.7%	18.4%	27.6%	38.2%	40.8%	2.934	12. E-mail Applications	13.2%	59.2%	36.8%	35.5%	19.7%	14.5%	2.184
7.9%	46.1%	21.1%	25.0%	42.1%	36.8%	2.882	39. Crowd Control Devices - Sprays	14.5%	39.5%	44.7%	44.7%	26.3%	9.2%	2.316
10.5%	46.1%	18.4%	32.9%	40.8%	30.3%	2.772	6. Computer Data Recovery	13.2%	43.4%	42.1%	46.1%	17.1%	17.1%	2.346
7.9%	36.8%	26.3%	48.7%	39.5%	19.7%	2.750	63. Death Investigation Technology - Infant Death	9.2%	30.3%	32.9%	63.2%	21.1%	22.4%	2.691
11.8%	47.4%	25.0%	28.9%	35.5%	30.3%	2.669	40. Emergency Medical Response Technology	10.5%	44.7%	43.4%	50.0%	19.7%	10.5%	2.309

RANK ORDER OF COMPETENCY MEANS

	Competency of agency members								Training Needs				
No Response	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean		No Response	(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
7.9%	40.8%	30.3%	44.7%	36.8%	18.4%	2.654	**14. Internet as a Resource**	9.2%	31.6%	34.2%	52.6%	28.9%	22.4%	2.713
10.5%	51.3%	18.4%	34.2%	39.5%	25.0%	2.647	**29. Alarm Systems**	11.8%	63.2%	48.7%	35.5%	11.8%	7.9%	1.978
10.5%	34.2%	39.5%	39.5%	38.2%	17.1%	2.625	**86. Trace Evidence Collection**	13.2%	23.7%	40.8%	55.3%	27.6%	18.4%	2.647
11.8%	52.6%	19.7%	32.9%	36.8%	25.0%	2.588	**35. Alarm Systems - Burglary Alerts**	7.9%	61.8%	50.0%	38.2%	13.2%	7.9%	2.059
11.8%	32.9%	35.5%	50.0%	38.2%	10.5%	2.566	**99. Person Identification**	13.2%	23.7%	38.2%	59.2%	34.2%	10.5%	2.610
6.6%	81.6%	10.5%	10.5%	30.3%	39.5%	2.529	**58. Radio Traffic Recording Devices**	17.1%	63.2%	35.5%	36.8%	14.5%	11.8%	2.022
9.2%	43.4%	42.1%	35.5%	28.9%	19.7%	2.507	**81. Photography of Trace Evidence**	14.5%	34.2%	31.6%	53.9%	32.9%	11.8%	2.515
9.2%	57.9%	21.1%	32.9%	40.8%	17.1%	2.500	**77. Evidence Processing - Fingerprints/AFIS**	15.8%	43.4%	42.1%	38.2%	21.1%	18.4%	2.338
11.8%	57.9%	22.4%	30.3%	32.9%	23.7%	2.478	**34. Alarm Systems - Robbery Alerts**	10.5%	57.9%	48.7%	38.2%	14.5%	9.2%	2.088
11.8%	44.7%	40.8%	35.5%	25.0%	21.1%	2.449	**82. Photography of Trace Evidence - Latent Prints**	17.1%	32.9%	27.6%	60.5%	27.6%	13.2%	2.493
9.2%	43.4%	40.8%	44.7%	27.6%	13.2%	2.434	**78. Evidence Processing - Impression Casting**	13.2%	34.2%	35.5%	53.9%	27.6%	14.5%	2.515
9.2%	48.7%	39.5%	35.5%	32.9%	13.2%	2.412	**79. Evidence Processing - Development Techniques**	17.1%	35.5%	30.3%	51.3%	27.6%	17.1%	2.493

AGENCY COMPETENCY OF MEMBERS AND TRAINING NEEDS
RANK ORDER OF COMPETENCY MEANS

Competency of agency members								Training Needs					
No Response	**(1) Agency does not use this technology**	**(2) Very Little Competence**	**(3) Some Competence**	**(4) Reasonable Competence**	**(5) Very Competent**	**Mean**		**No Response**	**(1) Training is not needed**	**(2) Training would possibly be beneficial**	**(3) Some training is needed**	**(4) Strong need for training**	**(5) Critical need for training**	**Mean**
9.2%	90.8%	5.3%	10.5%	18.4%	44.7%	2.404	5. Computer Assisted Dispatch	13.2%	76.3%	36.8%	26.3%	10.5%	15.8%	1.956
10.5%	46.1%	43.4%	36.8%	27.6%	14.5%	2.382	93. Trace Evidence Collection - Paint	13.2%	34.2%	42.1%	53.9%	22.4%	13.2%	2.434
11.8%	44.7%	44.7%	35.5%	27.6%	14.5%	2.368	91. Trace Evidence Collection - Glass	13.2%	31.6%	39.5%	57.9%	23.7%	13.2%	2.485
7.9%	61.8%	27.6%	32.9%	36.8%	11.8%	2.360	24. Template Software - Word Processing	15.8%	40.8%	36.8%	48.7%	23.7%	13.2%	2.353
11.8%	44.7%	44.7%	39.5%	22.4%	15.8%	2.353	88. Trace Evidence Collection - Hair	13.2%	31.6%	36.8%	57.9%	25.0%	14.5%	2.522
11.8%	78.9%	11.8%	17.1%	30.3%	28.9%	2.346	4. Client-Server Records Systems	10.5%	68.4%	23.7%	50.0%	14.5%	11.8%	2.140
9.2%	59.2%	30.3%	42.1%	21.1%	17.1%	2.324	60. Arson Investigation Technology	10.5%	40.8%	32.9%	50.0%	32.9%	11.8%	2.500
14.5%	63.2%	18.4%	32.9%	32.9%	17.1%	2.324	50. Pursuit Termination Technology	15.8%	38.2%	39.5%	32.9%	31.6%	21.1%	2.500
10.5%	64.5%	22.4%	42.1%	19.7%	19.7%	2.309	31. Alarm Systems - False Alarm Control	11.8%	63.2%	43.4%	34.2%	15.8%	10.5%	2.059
10.5%	63.2%	28.9%	30.3%	30.3%	15.8%	2.301	30. Alarm Systems - Special Circumstances and Applications	14.5%	56.6%	44.7%	43.4%	10.5%	9.2%	2.037
9.2%	60.5%	32.9%	32.9%	30.3%	13.2%	2.301	64. Death Investigation Technology - Fingerprints from Corpses	14.5%	43.4%	38.2%	52.6%	14.5%	15.8%	2.316
11.8%	53.9%	36.8%	35.5%	26.3%	14.5%	2.301	97. Firearms - Bullets and Cases	13.2%	34.2%	35.5%	51.3%	32.9%	11.8%	2.515

Competency of agency members								Training Needs						
No Response	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean		No Response	(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
11.8%	47.4%	48.7%	34.2%	22.4%	14.5%	2.287	92. Trace Evidence Collection - Fiber	15.8%	32.9%	36.8%	55.3%	23.7%	14.5%	2.456
9.2%	55.3%	47.4%	23.7%	28.9%	14.5%	2.287	80. Evidence Processing - Identification and Comparison	13.2%	42.1%	31.6%	48.7%	32.9%	10.5%	2.434
11.8%	85.5%	7.9%	14.5%	32.9%	26.3%	2.279	45. Inebriation Measurement Devices - Evasive/Non-evasive	17.1%	67.1%	34.2%	36.8%	15.8%	7.9%	1.949
10.5%	68.4%	27.6%	22.4%	38.2%	11.8%	2.250	9. Data Storage Media	15.8%	59.2%	36.8%	38.2%	17.1%	11.8%	2.096
7.9%	75.0%	22.4%	32.9%	22.4%	18.4%	2.235	71. Electronic Case Files	14.5%	46.1%	36.8%	40.8%	26.3%	14.5%	2.346
11.8%	48.7%	50.0%	38.2%	17.1%	13.2%	2.221	89. Trace Evidence Collection - Soil	14.5%	32.9%	35.5%	53.9%	27.6%	14.5%	2.507
11.8%	56.6%	42.1%	35.5%	21.1%	11.8%	2.184	96. Firearms - Gunshot Residue	13.2%	31.6%	39.5%	51.3%	31.6%	11.8%	2.515
9.2%	75.0%	26.3%	30.3%	23.7%	14.5%	2.154	72. Electronic Case Files - Case Management	17.1%	46.1%	34.2%	43.4%	25.0%	13.2%	2.294
10.5%	76.3%	17.1%	35.5%	28.9%	10.5%	2.154	56. Video Surveillance Devices	15.8%	36.8%	43.4%	51.3%	21.1%	10.5%	2.316
10.5%	71.1%	27.6%	36.8%	21.1%	11.8%	2.125	37. Crowd Control Devices	10.5%	44.7%	31.6%	60.5%	23.7%	7.9%	2.368
9.2%	78.9%	21.1%	32.9%	26.3%	10.5%	2.110	54. Traffic Collision Analysis Technology	14.5%	56.6%	27.6%	32.9%	30.3%	17.1%	2.331
13.2%	73.7%	25.0%	34.2%	17.1%	15.8%	2.088	85. Photography of Trace Evidence - Video	13.2%	31.6%	43.4%	48.7%	28.9%	13.2%	2.493

No Response	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean		No Response	(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
9.2%	80.3%	18.4%	38.2%	22.4%	10.5%	2.088	10. Digital Photography	15.8%	40.8%	30.3%	40.8%	31.6%	19.7%	2.507
9.2%	81.6%	21.1%	32.9%	22.4%	11.8%	2.074	7. Data Analysis Tools	15.8%	52.6%	28.9%	40.8%	22.4%	18.4%	2.316
7.9%	73.7%	34.2%	32.9%	21.1%	9.2%	2.074	26. Template Software - Spread Sheets	14.5%	43.4%	40.8%	42.1%	26.3%	11.8%	2.324
10.5%	72.4%	32.9%	28.9%	26.3%	7.9%	2.066	25. Template Software - Data Bases	17.1%	44.7%	38.2%	43.4%	23.7%	11.8%	2.265
6.6%	88.2%	25.0%	21.1%	26.3%	11.8%	2.044	11. Electronic Data Interagency Interchange	17.1%	56.6%	25.0%	39.5%	19.7%	21.1%	2.287
10.5%	69.7%	38.2%	34.2%	14.5%	11.8%	2.044	87. Trace Evidence Collection - Illumination Techniques	14.5%	36.8%	30.3%	55.3%	28.9%	13.2%	2.485
7.9%	80.3%	31.6%	30.3%	14.5%	14.5%	2.037	49. Night Vision Devices	15.8%	46.1%	38.2%	40.8%	23.7%	14.5%	2.301
9.2%	89.5%	21.1%	22.4%	22.4%	14.5%	2.015	59. Traffic Monitoring Devices	18.4%	61.8%	39.5%	32.9%	15.8%	10.5%	1.985
7.9%	90.8%	21.1%	23.7%	23.7%	11.8%	2.000	16. Laptop Utilization	11.8%	51.3%	22.4%	46.1%	26.3%	21.1%	2.485
11.8%	94.7%	18.4%	13.2%	26.3%	14.5%	1.949	47. Inebriation Measurement Devices - Incapacitated or Uncooperative Persons	17.1%	55.3%	39.5%	31.6%	22.4%	13.2%	2.147
11.8%	77.6%	39.5%	26.3%	15.8%	7.9%	1.890	98. Criminal Intelligence Profiling	14.5%	36.8%	25.0%	44.7%	38.2%	19.7%	2.640
9.2%	86.8%	28.9%	31.6%	14.5%	7.9%	1.882	83. Photography of Trace Evidence - Digital Cameras	14.5%	47.4%	19.7%	47.4%	35.5%	14.5%	2.478

Office of Continuing Education
The Ohio State University

Table 1

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	Competency of agency members								Training Needs					
	(1) Agency does not	**(2)**	**(3)**	**(4)**	**(5)**				**(1)**	**(2)** Training would	**(3)**	**(4)**	**(5)**	
No Response	**use this technology**	**Very Little Competence**	**Some Competence**	**Reasonable Competence**	**Very Competent**	**Mean**		**No Response**	**Training is not needed**	**possibly be beneficial**	**Some training is needed**	**Strong need for training**	**Critical need for training**	**Mean**
11.8%	92.1%	21.1%	21.1%	27.6%	5.3%	1.868	57. Individual Prisoner Control Assistance Devices	21.1%	57.9%	43.4%	30.3%	14.5%	11.8%	1.971
7.9%	82.9%	39.5%	30.3%	11.8%	6.6%	1.860	61. Bombing Investigation Technology	10.5%	52.6%	27.6%	39.5%	32.9%	15.8%	2.441
11.8%	94.7%	19.7%	28.9%	10.5%	13.2%	1.838	73. Electronic Case Files - Combined Digital Storage and Retrieval	15.8%	56.6%	34.2%	39.5%	21.1%	11.8%	2.162
10.5%	97.4%	23.7%	19.7%	18.4%	9.2%	1.809	95. Firearms - Computerized Data Bases	17.1%	40.8%	38.2%	48.7%	22.4%	11.8%	2.301
11.8%	81.6%	47.4%	17.1%	9.2%	11.8%	1.809	90. Trace Evidence Collection - Pollen/Spores	14.5%	43.4%	31.6%	47.4%	27.6%	14.5%	2.412
9.2%	90.8%	32.9%	25.0%	18.4%	2.6%	1.779	23. Template Software	18.4%	44.7%	38.2%	43.4%	22.4%	11.8%	2.235
9.2%	97.4%	26.3%	25.0%	11.8%	9.2%	1.779	38. Crowd Control Devices - Video	14.5%	50.0%	44.7%	42.1%	18.4%	9.2%	2.154
7.9%	85.5%	40.8%	34.2%	6.6%	3.9%	1.765	15. Internet Crime	14.5%	39.5%	28.9%	36.8%	28.9%	30.3%	2.654
9.2%	06.6%	22.4%	17.1%	14.5%	9.2%	1.713	28. Wireless Data Transmission	18.4%	48.7%	42.1%	38.2%	15.8%	15.8%	2.176
10.5%	90.8%	42.1%	19.7%	9.2%	6.6%	1.699	27. Template Software - Graphical Programs	19.7%	48.7%	32.9%	44.7%	21.1%	11.8%	2.191
9.2%	98.7%	32.9%	23.7%	11.8%	2.6%	1.654	65. Death Investigation Technology - Animation of Events	14.5%	40.8%	34.2%	52.6%	26.3%	10.5%	2.375
13.2%	03.9%	25.0%	18.4%	11.8%	6.6%	1.618	32. Alarm Systems - Portable Systems	17.1%	64.5%	44.7%	32.9%	10.5%	9.2%	1.904

	Competency of agency members							Training Needs					
	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent			(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	
No Response						Mean		No Response					Mean
11.8%	03.9%	30.3%	17.1%	9.2%	6.6%	1.596	33. Alarm Systems - National Manufacturing Standards	15.8%	80.3%	38.2%	26.3%	7.9%	10.5%	1.787
6.6%	15.8%	19.7%	21.1%	11.8%	3.9%	1.596	51. Remote/Projection Listening Devices	17.1%	63.2%	35.5%	32.9%	18.4%	11.8%	2.044
9.2%	03.9%	38.2%	14.5%	5.3%	7.9%	1.588	84. Photography of Trace Evidence - Image Enhancement Systems	17.1%	51.3%	27.6%	36.8%	31.6%	14.5%	2.324
7.9%	17.1%	21.1%	11.8%	17.1%	3.9%	1.581	13. Geographic Information System	19.7%	69.7%	27.6%	28.9%	18.4%	14.5%	2.000
10.5%	14.5%	21.1%	10.5%	18.4%	3.9%	1.574	8. Data Encryption/Electronic Surveillance	17.1%	78.9%	18.4%	40.8%	7.9%	15.8%	1.949
11.8%	13.2%	18.4%	19.7%	6.6%	9.2%	1.574	75. Electronic Case Files - Computerized Sketching	21.1%	55.3%	36.8%	27.6%	25.0%	13.2%	2.110
10.5%	09.2%	26.3%	18.4%	10.5%	3.9%	1.559	36. Alarm Systems - Undercover Applications	11.8%	65.8%	43.4%	34.2%	13.2%	10.5%	2.015
11.8%	13.2%	21.1%	17.1%	6.6%	9.2%	1.559	66. Serological Identification - DNA	17.1%	73.7%	38.2%	32.9%	6.6%	10.5%	1.831
9.2%	18.4%	25.0%	13.2%	6.6%	6.6%	1.493	68. Serological Identification - Stain Identification	15.8%	78.9%	32.9%	30.3%	11.8%	9.2%	1.838
10.5%	18.4%	25.0%	11.8%	3.9%	9.2%	1.485	69. Serological Identification - DNA	14.5%	80.3%	35.5%	26.3%	11.8%	10.5%	1.846
9.2%	28.9%	18.4%	7.9%	3.9%	10.5%	1.441	19. Laptop Utilization - Upload/Docking Systems	17.1%	77.6%	22.4%	25.0%	19.7%	17.1%	2.022
9.2%	27.6%	18.4%	10.5%	7.9%	5.3%	1.419	55. Vehicle Tracking Device	22.4%	67.1%	35.5%	27.6%	18.4%	7.9%	1.868

	Competency of agency members								Training Needs					
No Response	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean		No Response	(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
6.6%	40.8%	10.5%	9.2%	5.3%	6.6%	1.360	53. Stun Devices	21.1%	82.9%	27.6%	22.4%	14.5%	10.5%	1.765
10.5%	34.2%	13.2%	7.9%	7.9%	5.3%	1.353	17. Laptop Utilization - Replacement of MDT	19.7%	75.0%	19.7%	30.3%	18.4%	15.8%	2.000
6.6%	26.3%	30.3%	10.5%	2.6%	2.6%	1.353	22. Telecommunication Theft Technology	14.5%	64.5%	32.9%	34.2%	14.5%	18.4%	2.140
10.5%	31.6%	17.1%	5.3%	13.2%	1.3%	1.346	46. Inebriation Measurement Devices - Automobile Immobilization	19.7%	68.4%	39.5%	22.4%	19.7%	9.2%	1.897
7.9%	32.9%	23.7%	6.6%	2.6%	5.3%	1.324	67. Serological Identification - Reconstruction Software	17.1%	84.2%	31.6%	26.3%	10.5%	9.2%	1.757
6.6%	42.1%	13.2%	7.9%	3.9%	5.3%	1.309	41. Global Positioning Systems	14.5%	77.6%	27.6%	35.5%	13.2%	10.5%	1.926
13.2%	26.3%	22.4%	10.5%	1.3%	5.3%	1.309	74. Electronic Case Files - Encryption and Authentication	21.1%	63.2%	38.2%	25.0%	18.4%	13.2%	1.978
6.6%	50.0%	1.3%	7.9%	7.9%	5.3%	1.309	1. Bar Code Devices	17.1%	00.0%	30.3%	17.1%	3.9%	10.5%	1.566
5.3%	47.4%	9.2%	3.9%	10.5%	2.6%	1.301	20. Live Scan Fingerprint Devices	15.8%	80.3%	15.8%	28.9%	18.4%	19.7%	2.074
7.9%	43.4%	11.8%	9.2%	2.6%	3.9%	1.257	18. Laptop Utilization - Personal Digital Assistants	15.8%	78.9%	23.7%	25.0%	19.7%	15.8%	2.007
6.6%	48.7%	10.5%	3.9%	3.9%	5.3%	1.250	42. Global Positioning Systems - Vehicle Location Systems	18.4%	75.0%	31.6%	28.9%	17.1%	7.9%	1.860
10.5%	51.3%	1.3%	3.9%	5.3%	6.6%	1.228	3. Bar Code Devices - Property Room Inventory	13.2%	89.5%	35.5%	21.1%	6.6%	13.2%	1.765

	Competency of agency members								Training Needs					
	(1)	(2)	(3)	(4)	(5)				(1)	(2)	(3)	(4)	(5)	
	Agency does not									Training would	Some			
No	use this	Very Little	Some	Reasonable	Very			No	Training is not	possibly be	training	Strong need	Critical need	
Response	technology	Competence	Competence	Competence	Competent	Mean		Response	needed	beneficial	is needed	for training	for training	Mean
7.9%	44.7%	14.5%	9.2%	1.3%	1.3%	1.191	**52. Robbery Alert Tracking Devices**	21.1%	73.7%	31.6%	27.6%	13.2%	11.8%	1.853
6.6%	56.6%	6.6%	5.3%	2.6%	1.3%	1.132	**43. Global Positioning Systems - Mobile Surveillance**	19.7%	90.8%	25.0%	19.7%	15.8%	7.9%	1.691
6.6%	64.5%	0.0%	1.3%	3.9%	2.6%	1.103	**2. Bar Code Devices - Prisoner Bands**	11.8%	30.3%	14.5%	11.8%	3.9%	6.6%	1.360
6.6%	63.2%	2.6%	5.3%	0.0%	1.3%	1.066	**21. Person Recognition Devices(e.g. retina scan, fingerprint scan)**	15.8%	93.4%	25.0%	15.8%	10.5%	18.4%	1.816

| | Competency of agency members | | | | | | | | Training Needs | | | | | |
No Response	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean		No Response	(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
10.5%	13.2%	23.7%	50.0%	44.7%	36.8%	3.206	100. Crime Scene Safety	6.6%	19.7%	39.5%	55.3%	36.8%	21.1%	2.890
9.2%	15.8%	25.0%	40.8%	63.2%	25.0%	3.162	70. Drug Identification	9.2%	15.8%	44.7%	55.3%	32.9%	21.1%	2.838
9.2%	21.1%	6.6%	28.9%	63.2%	50.0%	3.485	48. Less Than Lethal Force	9.2%	27.6%	36.8%	46.1%	36.8%	22.4%	2.787
7.9%	30.3%	22.4%	43.4%	48.7%	26.3%	2.971	62. Death Investigation Technology	7.9%	30.3%	30.3%	63.2%	27.6%	19.7%	2.735
11.8%	13.2%	19.7%	53.9%	46.1%	34.2%	3.184	76. Evidence Processing	10.5%	21.1%	44.7%	52.6%	31.6%	18.4%	2.721
7.9%	40.8%	30.3%	44.7%	36.8%	18.4%	2.654	14. Internet as a Resource	9.2%	31.6%	34.2%	52.6%	28.9%	22.4%	2.713
13.2%	15.8%	22.4%	32.9%	53.9%	40.8%	3.235	94. Firearms	13.2%	22.4%	36.8%	60.5%	26.3%	19.7%	2.691
7.9%	36.8%	26.3%	48.7%	39.5%	19.7%	2.750	63. Death Investigation Technology - Infant Death	9.2%	30.3%	32.9%	63.2%	21.1%	22.4%	2.691
7.9%	85.5%	40.8%	34.2%	6.6%	3.9%	1.765	15. Internet Crime	14.5%	39.5%	28.9%	36.8%	28.9%	30.3%	2.654
10.5%	34.2%	39.5%	39.5%	38.2%	17.1%	2.625	86. Trace Evidence Collection	13.2%	23.7%	40.8%	55.3%	27.6%	18.4%	2.647
11.8%	77.6%	39.5%	26.3%	15.8%	7.9%	1.890	98. Criminal Intelligence Profiling	14.5%	36.8%	25.0%	44.7%	38.2%	19.7%	2.640
11.8%	32.9%	35.5%	50.0%	38.2%	10.5%	2.566	99. Person Identification	13.2%	23.7%	38.2%	59.2%	34.2%	10.5%	2.610

	Competency of agency members								Training Needs					
No Response	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean		No Response	(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
11.8%	44.7%	44.7%	39.5%	22.4%	15.8%	2.353	88. Trace Evidence Collection - Hair	13.2%	31.6%	36.8%	57.9%	25.0%	14.5%	2.522
11.8%	56.6%	42.1%	35.5%	21.1%	11.8%	2.184	96. Firearms - Gunshot Residue	13.2%	31.6%	39.5%	51.3%	31.6%	11.8%	2.515
9.2%	43.4%	42.1%	35.5%	28.9%	19.7%	2.507	81. Photography of Trace Evidence	14.5%	34.2%	31.6%	53.9%	32.9%	11.8%	2.515
11.8%	53.9%	36.8%	35.5%	26.3%	14.5%	2.301	97. Firearms - Bullets and Cases	13.2%	34.2%	35.5%	51.3%	32.9%	11.8%	2.515
9.2%	43.4%	40.8%	44.7%	27.6%	13.2%	2.434	78. Evidence Processing - Impression Casting	13.2%	34.2%	35.5%	53.9%	27.6%	14.5%	2.515
9.2%	80.3%	18.4%	38.2%	22.4%	10.5%	2.088	10. Digital Photography	15.8%	40.8%	30.3%	40.8%	31.6%	19.7%	2.507
11.8%	48.7%	50.0%	38.2%	17.1%	13.2%	2.221	89. Trace Evidence Collection - Soil	14.5%	32.9%	35.5%	53.9%	27.6%	14.5%	2.507
14.5%	63.2%	18.4%	32.9%	32.9%	17.1%	2.324	50. Pursuit Termination Technology	15.8%	38.2%	39.5%	32.9%	31.6%	21.1%	2.500
9.2%	59.2%	30.3%	42.1%	21.1%	17.1%	2.324	60. Arson Investigation Technology	10.5%	40.8%	32.9%	50.0%	32.9%	11.8%	2.500
9.2%	48.7%	39.5%	35.5%	32.9%	13.2%	2.412	79. Evidence Processing - Development Techniques	17.1%	35.5%	30.3%	51.3%	27.6%	17.1%	2.493
11.8%	44.7%	40.8%	35.5%	25.0%	21.1%	2.449	82. Photography of Trace Evidence - Latent Prints	17.1%	32.9%	27.6%	60.5%	27.6%	13.2%	2.493
13.2%	73.7%	25.0%	34.2%	17.1%	15.8%	2.088	85. Photography of Trace Evidence - Video	13.2%	31.6%	43.4%	48.7%	28.9%	13.2%	2.493

Office of Continuing Education
The Ohio State University

Table 2

Competency of agency members								Training Needs					
No Response	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean		No Response	(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
7.9%	90.8%	21.1%	23.7%	23.7%	11.8%	2.000	16. Laptop Utilization	11.8%	51.3%	22.4%	46.1%	26.3%	21.1%	2.485
10.5%	69.7%	38.2%	34.2%	14.5%	11.8%	2.044	87. Trace Evidence Collection - Illumination Techniques	14.5%	36.8%	30.3%	55.3%	28.9%	13.2%	2.485
11.8%	44.7%	44.7%	35.5%	27.6%	14.5%	2.368	91. Trace Evidence Collection - Glass	13.2%	31.6%	39.5%	57.9%	23.7%	13.2%	2.485
9.2%	86.8%	28.9%	31.6%	14.5%	7.9%	1.882	83. Photography of Trace Evidence - Digital Cameras	14.5%	47.4%	19.7%	47.4%	35.5%	14.5%	2.478
11.8%	47.4%	48.7%	34.2%	22.4%	14.5%	2.287	92. Trace Evidence Collection - Fiber	15.8%	32.9%	36.8%	55.3%	23.7%	14.5%	2.456
7.9%	82.9%	39.5%	30.3%	11.8%	6.6%	1.860	61. Bombing Investigation Technology	10.5%	52.6%	27.6%	39.5%	32.9%	15.8%	2.441
10.5%	46.1%	43.4%	36.8%	27.6%	14.5%	2.382	93. Trace Evidence Collection - Paint	13.2%	34.2%	42.1%	53.9%	22.4%	13.2%	2.434
9.2%	55.3%	47.4%	23.7%	28.9%	14.5%	2.287	80. Evidence Processing - Identification and Comparison	13.2%	42.1%	31.6%	48.7%	32.9%	10.5%	2.434
11.8%	81.6%	47.4%	17.1%	9.2%	11.8%	1.809	90. Trace Evidence Collection - Pollen/Spores	14.5%	43.4%	31.6%	47.4%	27.6%	14.5%	2.412
9.2%	98.7%	32.9%	23.7%	11.8%	2.6%	1.654	65. Death Investigation Technology - Animation of Events	14.5%	40.8%	34.2%	52.6%	26.3%	10.5%	2.375
10.5%	71.1%	27.6%	36.8%	21.1%	11.8%	2.125	37. Crowd Control Devices	10.5%	44.7%	31.6%	60.5%	23.7%	7.9%	2.368
7.9%	61.8%	27.6%	32.9%	36.8%	11.8%	2.360	24. Template Software - Word Processing	15.8%	40.8%	36.8%	48.7%	23.7%	13.2%	2.353

	Competency of agency members								Training Needs					
No Response	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean			No Response	(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
10.5%	46.1%	18.4%	32.9%	40.8%	30.3%	2.772	6. Computer Data Recovery		13.2%	43.4%	42.1%	46.1%	17.1%	17.1%	2.346
7.9%	75.0%	22.4%	32.9%	22.4%	18.4%	2.235	71. Electronic Case Files		14.5%	46.1%	36.8%	40.8%	26.3%	14.5%	2.346
9.2%	57.9%	21.1%	32.9%	40.8%	17.1%	2.500	77. Evidence Processing - Fingerprints/AFIS		15.8%	43.4%	42.1%	38.2%	21.1%	18.4%	2.338
9.2%	78.9%	21.1%	32.9%	26.3%	10.5%	2.110	54. Traffic Collision Analysis Technology		14.5%	56.6%	27.6%	32.9%	30.3%	17.1%	2.331
9.2%	03.9%	38.2%	14.5%	5.3%	7.9%	1.588	84. Photography of Trace Evidence - Image Enhancement Systems		17.1%	51.3%	27.6%	36.8%	31.6%	14.5%	2.324
7.9%	73.7%	34.2%	32.9%	21.1%	9.2%	2.074	26. Template Software - Spread Sheets		14.5%	43.4%	40.8%	42.1%	26.3%	11.8%	2.324
9.2%	81.6%	21.1%	32.9%	22.4%	11.8%	2.074	7. Data Analysis Tools		15.8%	52.6%	28.9%	40.8%	22.4%	18.4%	2.316
7.9%	46.1%	21.1%	25.0%	42.1%	36.8%	2.882	39. Crowd Control Devices - Sprays		14.5%	39.5%	44.7%	44.7%	26.3%	9.2%	2.316
9.2%	60.5%	32.9%	32.9%	30.3%	13.2%	2.301	64. Death Investigation Technology - Fingerprints from Corpses		14.5%	43.4%	38.2%	52.6%	14.5%	15.8%	2.316
10.5%	76.3%	17.1%	35.5%	28.9%	10.5%	2.154	56. Video Surveillance Devices		15.8%	36.8%	43.4%	51.3%	21.1%	10.5%	2.316
11.8%	47.4%	25.0%	28.9%	35.5%	30.3%	2.669	40. Emergency Medical Response Technology		10.5%	44.7%	43.4%	50.0%	19.7%	10.5%	2.309
10.5%	97.4%	23.7%	19.7%	18.4%	9.2%	1.809	95. Firearms - Computerized Data Bases		17.1%	40.8%	38.2%	48.7%	22.4%	11.8%	2.301

AGENCY COMPETENCY OF MEMBERS AND TRAINING NEEDS
RANK ORDER OF TRAINING MEANS

| Competency of agency members | | | | | | | | Training Needs | | | | | |
No Response	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean		No Response	(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
7.9%	80.3%	31.6%	30.3%	14.5%	14.5%	2.037	49. Night Vision Devices	15.8%	46.1%	38.2%	40.8%	23.7%	14.5%	2.301
9.2%	75.0%	26.3%	30.3%	23.7%	14.5%	2.154	72. Electronic Case Files - Case Management	17.1%	46.1%	34.2%	43.4%	25.0%	13.2%	2.294
6.6%	88.2%	25.0%	21.1%	26.3%	11.8%	2.044	11. Electronic Data Interagency Interchange	17.1%	56.6%	25.0%	39.5%	19.7%	21.1%	2.287
10.5%	72.4%	32.9%	28.9%	26.3%	7.9%	2.066	25. Template Software - Data Bases	17.1%	44.7%	38.2%	43.4%	23.7%	11.8%	2.265
9.2%	90.8%	32.9%	25.0%	18.4%	2.6%	1.779	23. Template Software	18.4%	44.7%	38.2%	43.4%	22.4%	11.8%	2.235
10.5%	90.8%	42.1%	19.7%	9.2%	6.6%	1.699	27. Template Software - Graphical Programs	19.7%	48.7%	32.9%	44.7%	21.1%	11.8%	2.191
5.3%	48.7%	18.4%	27.6%	38.2%	40.8%	2.934	12. E-mail Applications	13.2%	59.2%	36.8%	35.5%	19.7%	14.5%	2.184
9.2%	06.6%	22.4%	17.1%	14.5%	9.2%	1.713	28. Wireless Data Transmission	18.4%	48.7%	42.1%	38.2%	15.8%	15.8%	2.176
11.8%	94.7%	19.7%	28.9%	10.5%	13.2%	1.838	73. Electronic Case Files - Combined Digital Storage and Retrieval	15.8%	56.6%	34.2%	39.5%	21.1%	11.8%	2.162
9.2%	97.4%	26.3%	25.0%	11.8%	9.2%	1.779	38. Crowd Control Devices - Video	14.5%	50.0%	44.7%	42.1%	18.4%	9.2%	2.154
11.8%	94.7%	18.4%	13.2%	26.3%	14.5%	1.949	47. Inebriation Measurement Devices - Incapacitated or Uncooperative Persons	17.1%	55.3%	39.5%	31.6%	22.4%	13.2%	2.147
11.8%	78.9%	11.8%	17.1%	30.3%	28.9%	2.346	4. Client-Server Records Systems	10.5%	68.4%	23.7%	50.0%	14.5%	11.8%	2.140

	Competency of agency members							Training Needs					
	(1)	(2)	(3)	(4)	(5)				(1)	(2)	(3)	(4)	(5)
	Agency does not use this technology	Very Little Competence	Some Competence	Reasonable Competence	Very Competent				Training is not needed	Training would possibly be beneficial	Some training is needed	Strong need for training	Critical need for training	
No Response						Mean		No Response					Mean
6.6%	26.3%	30.3%	10.5%	2.6%	2.6%	1.353	22. Telecommunication Theft Technology	14.5%	64.5%	32.9%	34.2%	14.5%	18.4%	2.140
11.8%	13.2%	18.4%	19.7%	6.6%	9.2%	1.574	75. Electronic Case Files - Computerized Sketching	21.1%	55.3%	36.8%	27.6%	25.0%	13.2%	2.110
10.5%	68.4%	27.6%	22.4%	38.2%	11.8%	2.250	9. Data Storage Media	15.8%	59.2%	36.8%	38.2%	17.1%	11.8%	2.096
11.8%	57.9%	22.4%	30.3%	32.9%	23.7%	2.478	34. Alarm Systems - Robbery Alerts	10.5%	57.9%	48.7%	38.2%	14.5%	9.2%	2.088
10.5%	48.7%	9.2%	10.5%	43.4%	56.6%	3.103	44. Inebriation Measurement Devices	11.8%	64.5%	34.2%	44.7%	13.2%	10.5%	2.081
5.3%	47.4%	9.2%	3.9%	10.5%	2.6%	1.301	20. Live Scan Fingerprint Devices	15.8%	80.3%	15.8%	28.9%	18.4%	19.7%	2.074
11.8%	52.6%	19.7%	32.9%	36.8%	25.0%	2.588	35. Alarm Systems - Burglary Alerts	7.9%	61.8%	50.0%	38.2%	13.2%	7.9%	2.059
10.5%	64.5%	22.4%	42.1%	19.7%	19.7%	2.309	31. Alarm Systems - False Alarm Control	11.8%	63.2%	43.4%	34.2%	15.8%	10.5%	2.059
6.6%	15.8%	19.7%	21.1%	11.8%	3.9%	1.596	51. Remote/Projection Listening Devices	17.1%	63.2%	35.5%	32.9%	18.4%	11.8%	2.044
10.5%	63.2%	28.9%	30.3%	30.3%	15.8%	2.301	30. Alarm Systems - Special Circumstances and Applications	14.5%	56.6%	44.7%	43.4%	10.5%	9.2%	2.037
6.6%	81.6%	10.5%	10.5%	30.3%	39.5%	2.529	58. Radio Traffic Recording Devices	17.1%	63.2%	35.5%	36.8%	14.5%	11.8%	2.022
9.2%	28.9%	18.4%	7.9%	3.9%	10.5%	1.441	19. Laptop Utilization - Upload/Docking Systems	17.1%	77.6%	22.4%	25.0%	19.7%	17.1%	2.022

	Competency of agency members								Training Needs					
	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean			(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
No Response								No Response						
10.5%	09.2%	26.3%	18.4%	10.5%	3.9%	1.559	36. Alarm Systems - Undercover Applications	11.8%	65.8%	43.4%	34.2%	13.2%	10.5%	2.015
7.9%	43.4%	11.8%	9.2%	2.6%	3.9%	1.257	18. Laptop Utilization - Personal Digital Assistants	15.8%	78.9%	23.7%	25.0%	19.7%	15.8%	2.007
7.9%	17.1%	21.1%	11.8%	17.1%	3.9%	1.581	13. Geographic Information System	19.7%	69.7%	27.6%	28.9%	18.4%	14.5%	2.000
10.5%	34.2%	13.2%	7.9%	7.9%	5.3%	1.353	17. Laptop Utilization - Replacement of MDT	19.7%	75.0%	19.7%	30.3%	18.4%	15.8%	2.000
9.2%	89.5%	21.1%	22.4%	22.4%	14.5%	2.015	59. Traffic Monitoring Devices	18.4%	61.8%	39.5%	32.9%	15.8%	10.5%	1.985
13.2%	26.3%	22.4%	10.5%	1.3%	5.3%	1.309	74. Electronic Case Files - Encryption and Authentication	21.1%	63.2%	38.2%	25.0%	18.4%	13.2%	1.978
10.5%	51.3%	18.4%	34.2%	39.5%	25.0%	2.647	29. Alarm Systems	11.8%	63.2%	48.7%	35.5%	11.8%	7.9%	1.978
11.8%	92.1%	21.1%	21.1%	27.6%	5.3%	1.868	57. Individual Prisoner Control Assistance Devices	21.1%	57.9%	43.4%	30.3%	14.5%	11.8%	1.971
9.2%	90.8%	5.3%	10.5%	18.4%	44.7%	2.404	5. Computer Assisted Dispatch	13.2%	76.3%	36.8%	26.3%	10.5%	15.8%	1.956
11.8%	85.5%	7.9%	14.5%	32.9%	26.3%	2.279	45. Inebriation Measurement Devices - Evasive/Non-evasive	17.1%	67.1%	34.2%	36.8%	15.8%	7.9%	1.949
10.5%	14.5%	21.1%	10.5%	18.4%	3.9%	1.574	8. Data Encryption/Electronic Surveillance	17.1%	78.9%	18.4%	40.8%	7.9%	15.8%	1.949
6.6%	42.1%	13.2%	7.9%	3.9%	5.3%	1.309	41. Global Positioning Systems	14.5%	77.6%	27.6%	35.5%	13.2%	10.5%	1.926

	Competency of agency members								Training Needs					
No Response	(1) Agency does not use this technology	(2) Very Little Competence	(3) Some Competence	(4) Reasonable Competence	(5) Very Competent	Mean			No Response	(1) Training is not needed	(2) Training would possibly be beneficial	(3) Some training is needed	(4) Strong need for training	(5) Critical need for training	Mean
13.2%	03.9%	25.0%	18.4%	11.8%	6.6%	1.618		32. Alarm Systems - Portable Systems	17.1%	64.5%	44.7%	32.9%	10.5%	9.2%	1.904
10.5%	31.6%	17.1%	5.3%	13.2%	1.3%	1.346		46. Inebriation Measurement Devices - Automobile Immobilization	19.7%	68.4%	39.5%	22.4%	19.7%	9.2%	1.897
9.2%	27.6%	18.4%	10.5%	7.9%	5.3%	1.419		55. Vehicle Tracking Device	22.4%	67.1%	35.5%	27.6%	18.4%	7.9%	1.868
6.6%	48.7%	10.5%	3.9%	3.9%	5.3%	1.250		42. Global Positioning Systems - Vehicle Location Systems	18.4%	75.0%	31.6%	28.9%	17.1%	7.9%	1.860
7.9%	44.7%	14.5%	9.2%	1.3%	1.3%	1.191		52. Robbery Alert Tracking Devices	21.1%	73.7%	31.6%	27.6%	13.2%	11.8%	1.853
10.5%	18.4%	25.0%	11.8%	3.9%	9.2%	1.485		69. Serological Identification - DNA	14.5%	80.3%	35.5%	26.3%	11.8%	10.5%	1.846
9.2%	18.4%	25.0%	13.2%	6.6%	6.6%	1.493		68. Serological Identification - Stain Identification	15.8%	78.9%	32.9%	30.3%	11.8%	9.2%	1.838
11.8%	13.2%	21.1%	17.1%	6.6%	9.2%	1.559		66. Serological Identification - DNA	17.1%	73.7%	38.2%	32.9%	6.6%	10.5%	1.831
6.6%	63.2%	2.6%	5.3%	0.0%	1.3%	1.066		21. Person Recognition Devices(e.g. retina scan, fingerprint scan)	15.8%	93.4%	25.0%	15.8%	10.5%	18.4%	1.816
11.8%	03.9%	30.3%	17.1%	9.2%	6.6%	1.596		33. Alarm Systems - National Manufacturing Standards	15.8%	80.3%	38.2%	26.3%	7.9%	10.5%	1.787
10.5%	51.3%	1.3%	3.9%	5.3%	6.6%	1.228		3. Bar Code Devices - Property Room Inventory	13.2%	89.5%	35.5%	21.1%	6.6%	13.2%	1.765
6.6%	40.8%	10.5%	9.2%	5.3%	6.6%	1.360		53. Stun Devices	21.1%	82.9%	27.6%	22.4%	14.5%	10.5%	1.765

	Competency of agency members								Training Needs					
	(1) Agency does not	(2)	(3)	(4)	(5)				(1)	(2) Training	(3)	(4)	(5)	
No Response	use this technology	Very Little Competence	Some Competence	Reasonable Competence	Very Competent	Mean		No Response	Training is not needed	would possibly be beneficial	Some training is needed	Strong need for training	Critical need for training	Mean
7.9%	32.9%	23.7%	6.6%	2.6%	5.3%	1.324	67. Serological Identification - Reconstruction Software	17.1%	84.2%	31.6%	26.3%	10.5%	9.2%	1.757
6.6%	56.6%	6.6%	5.3%	2.6%	1.3%	1.132	43. Global Positioning Systems - Mobile Surveillance	19.7%	90.8%	25.0%	19.7%	15.8%	7.9%	1.691
6.6%	50.0%	1.3%	7.9%	7.9%	5.3%	1.309	1. Bar Code Devices	17.1%	00.0%	30.3%	17.1%	3.9%	10.5%	1.566
6.6%	64.5%	0.0%	1.3%	3.9%	2.6%	1.103	2. Bar Code Devices - Prisoner Bands	11.8%	30.3%	14.5%	11.8%	3.9%	6.6%	1.360

AGENCY ABILITY TO USE COMPUTER BASED INSTRUCTIONAL PROGRAMS

Equipment available for agency members to use	Freq	Percent	with CD ROM	Percent
Personal Computer - 486 or equivalent	53	39.0%	39	28.7%
Personal Computer - Pentium or equivalent with less than 100 MHz	23	16.9%	20	14.7%
Personal Computer - Pentium or equivalent with 100 MHz or higher	44	32.4%	39	28.7%
Personal Computer - Pentium or equivalent with 200 MHz or higher	59	43.4%	58	42.6%
Personal Computer - Pentium or equivalent with 450 MHz or higher	23	16.9%	23	16.9%
Other	3	2.2%	NA	NA
Lap top	1	0.7%	NA	NA
Color printers, digital camera, scanner	1	0.7%	NA	NA
Scanner, CD Recorder, 24 GHz backup recorder	1	0.7%	NA	NA
No equipment available	7	5.1%	NA	NA

Internet Access	Have Access		Do Not Have Access	Percent
Members with Access to the Internet while at Work	75	55.1%	55	40.4%
Dial-up telephone line modems	42	30.9%	NA	NA
High speed conection (e.g., T-1 line, ADSL)	3	2.2%	NA	NA
Network using municipal/county/state high speed connection	27	19.9%	NA	NA
Other	4	2.9%	NA	NA
Personal connections	2	1.5%	NA	NA
Unit has no computers	2	1.5%		

Computer-based instructional programs	Freq	Percent
No Response	4	2.9%
Have not used computer-based instructional programs	95	69.9%
Have used computer-based instructional programs	37	27.2%
LEMIS, FACES	1	0.7%
COREL SOFTWARE	1	0.7%
LAW ENFORCEMENT TRAINING NETWORK	1	0.7%
STARR PROGRAM	1	0.7%
MICROSOFT OFFICE	2	1.5%
CONSTITIONAL LAW TRAINING	1	0.7%
WIN 95-98	3	2.2%
FIRE ARMS, USE OF FORCE	2	1.5%
MICRON - OFFICE SERVICES	1	0.7%
CRIS, IMPACT	1	0.7%
INTERACTIVE & SATELITE	1	0.7%
STATE LAW UPDATE	1	0.7%
SHUT DON'T SHUT	1	0.7%
CRIME SCENES	1	0.7%
TRAFFIC STOP	1	0.7%
DUI STOP'S	1	0.7%
POST TRAINING COURSES	1	0.7%
THE BACK-UP CD ROM TRAINING	1	0.7%
POWER POINT	2	1.5%
CAD	1	0.7%
ICLEOSE MANDATED TRAINING	1	0.7%
DRIVER TRAINING	1	0.7%
FIRST AID	1	0.7%
COMM. DIS	1	0.7%
HAC MRT	1	0.7%
RANGE TRAINING	1	0.7%
TOTAL PROGRAMS	31	22.8%
NO RESPONSE	15	11.0%

Office of Continuing Education
The Ohio State University   Table 3   1

Proportion of Surveys Returned from Sample Compared to Population Totals

State	Sample Freq	Sample Percent	Population Freq	Population Percent
AK	1	0.74%	69	0.34%
AL	2	1.47%	453	2.22%
AR	4	2.94%	426	2.08%
AZ	2	1.47%	133	0.65%
CA	7	5.15%	547	2.68%
CO	1	0.74%	307	1.50%
CT	2	1.47%	140	0.69%
DC	1	0.74%	5	0.02%
DE	0	0.00%	46	0.23%
FL	5	3.68%	395	1.93%
GA	3	2.21%	742	3.63%
HI	1	0.74%	8	0.04%
IA	1	0.74%	521	2.55%
ID	2	1.47%	168	0.82%
IL	6	4.41%	1064	5.21%
IN	6	4.41%	640	3.13%
KS	1	0.74%	427	2.09%
KY	2	1.47%	419	2.05%
LA	3	2.21%	424	2.07%
MA	1	0.74%	397	1.94%
MD	1	0.74%	159	0.78%
ME	1	0.74%	142	0.69%
MI	5	3.68%	613	3.00%
MN	3	2.21%	573	2.80%
MO	4	2.94%	756	3.70%
MS	2	1.47%	365	1.79%

State	Sample Freq	Sample Percent	Population Freq	Population Percent
MT	1	0.74%	141	0.69%
NC	1	0.74%	553	2.71%
ND	0	0.00%	169	0.83%
NE	2	1.47%	281	1.38%
NH	1	0.74%	237	1.16%
NJ	3	2.21%	575	2.81%
NM	2	1.47%	145	0.71%
NV	0	0.00%	64	0.31%
NY	5	3.68%	656	3.21%
OH	10	7.35%	988	4.84%
OK	2	1.47%	464	2.27%
OR	4	2.94%	194	0.95%
PA	3	2.21%	1336	6.54%
RI	1	0.74%	52	0.25%
SC	3	2.21%	298	1.46%
SD	1	0.74%	216	1.06%
TN	4	2.94%	400	1.96%
TX	7	5.15%	1869	9.15%
UT	2	1.47%	141	0.69%
VA	4	2.94%	348	1.70%
VT	1	0.74%	69	0.34%
WA	3	2.21%	299	1.46%
WI	5	3.68%	635	3.11%
WV	1	0.74%	261	1.28%
WY	3	2.21%	104	0.51%
Total	136		20,434	

Module Review Report
(The Ohio State University)

THE
OHIO
STATE
UNIVERSITY

152 Mount Hall
1050 Carmack Road
Columbus, OH 43210-1002

Phone 614-292-8860
FAX 614-292-0049
E-mail AskCED@gate.ce.ohio-state.edu

December 21, 1999

Larry Hoover
Sam Houston State University
Criminal Justice Center
P.O. Box 2296
Huntsville, TX 77341-2296

Dear Larry:

It was enjoyable to see you and be part of the two-day program discussing the results of our survey and evaluation of the (3) training modules. We trust that you and all those attending had a productive meeting.

You will be glad to know that we have begun the analysis of the survey and we are pleased to report that we have had a 28.7% response rate.

Attached is the report of the evaluation rendered by Mr. Greg Ashe. We are extremely pleased with it and we feel certain that you will agree. The recommendations of the group will undoubtedly provide the impetus to the developers to refine the CDs.

Please let us know how the recommendations are received. We also would like to hear or see what the group from Florida said concerning the modules.

If you have any questions, please call me or Tony Basil.

Sincerely,

Mac A. Stewart
Associate Provost, Undergraduate Studies
Dean, University College/Continuing Education

Advanced Technology against Crime

Qualitative Evaluation

Prepared for:

The Ohio State University

Office of Continuing Education

In cooperation with
The National Institute of Justice

Prepared by:

Gregory J. Ashe

Facilitator

A

December 10, 1999

Table of Contents

Executive Summary

The evaluation team worked diligently to thoroughly review the computer based instruction (CBI) modules and to provide constructive feedback. The concern for helping the development team to produce a high quality training instrument was evident from the insightful and thoughtful comments offered. The team was largely impressed with the design and development work that had been accomplished by the consortia of Universities. Positive comments were also offered relating to the evaluative process. As with any endeavor of worth, the tasks involved were not simple and there are areas that can be improved upon. Having said that, it was clear that the panel of experts recruited to evaluate the product were impressed with the results. This report contains interpretations of comments supported by direct quotes culled from two hours of discussion relating to the evaluator's experience with the CBI modules. The highlights of this discussion are presented in bulleted format below:

Module # 1 Global Positioning Systems

- Appears to be directed more towards administrative decision-makers than rank and file officers.

- Evaluators would like to see more examples of how the GPS technology can be deployed in the field.

- The viability of Web page links over time may impact the "shelf life" of the GPS module.

- Evaluators were pleased with the look, feel, and presentation of the material.

- The demands that the media presentation placed on the PCs suggest that minimum machine specifications should be stressed.

Module # 2 Computer Crime

- The Multi-Media special effects were described as very impressive.

- The evaluators would like to see more instructional content (how to perform tasks) over informational content.

- The user interface should be modified to allow learners to easily review or skip portions of the program. A "bookmark" or pause feature would be an important modification.

- The evaluators suggest that this training module could be used to raise awareness level of the growing problem of crimes related to computers and the Internet.

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- It is easy to become confused with the game process, the evaluators suggested simplifying the process or adding a "help" feature.

Module # 3 Blood Evidence

- Evaluators gave the Blood Evidence high marks as an introduction to a critical skill set.

- The break-in scenario was deemed an outstanding teaching strategy; one that is very familiar to the intended audience.

- Improvements in navigational control to skip or review segments.

- Clarify instructions on the use of the "bookmark" feature.

- Praise was given for clearly stated objectives that were achieved.

- Expert critique was offered relating to procedural and safety issues (for details, see Expert Comments in the Blood Evidence section p. 15).

- Evaluators identified a number of practical applications for this module in the field, including Academy training, new officer orientation, general information dissemination and reference source.

Note: Participants agreed that it would be beneficial to include an audit trail or certification process in all three modules to verify satisfactory completion of the training for official personnel records.

Introduction

Background

As a result of technology improvements and increasingly sophisticated investigation techniques, today's law enforcement officers require ongoing "in-service" training to stay at the leading edge of current crime fighting methods. In an effort to address the continuing education requirements of the nation's law enforcement forces, the National Institute of Justice (NIJ) sponsored a nationwide training needs assessment survey to identify training priorities. The survey results revealed Global Positioning systems (GPS), Serological Identification (Blood Evidence), and Internet/Computer (aka Cybercrime) as high priority training needs. The next phase of this research project involved commissioning four higher education institutions to develop the training programs utilizing multi-media, interactive, computer based instruction (CBI). Three CBI training modules were developed as result of the collaborative efforts of Eastern Kentucky University, Sam Houston State University, University of Virginia and Weber State University. Initial needs assessment and training module evaluation was and continues to be the responsibility of The Ohio State University's Continuing Education department.

Purpose

The purpose of this paper is to present a written summary of a qualitative evaluation that is based upon a critique by a panel of Law Enforcement experts. The feedback will be used to modify and otherwise improve the pilot versions of the training modules.

Objectives

The objective of the evaluation process was to obtain "first-hand" feedback from the audience that will utilize the end product. The product performance dimensions that will be addressed include:

> Training Objectives
> Presentation of Materials
> Accuracy of Information
> Usefulness in Practice on the Job
> Use of the Technology
> Recommendations for Improvement
> General Feedback

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Methodology

Law enforcement officers from around the state of Ohio were invited to a two-day workshop to learn about the project, spend several hours using two or more (time permitting) of the training modules, and engage in a two-hour facilitated focus group. A cross-section of rural and urban police departments were purposely chosen to reflect the different training requirements of variously sized departments. A total of fourteen officers, training developers and other concerned people were invited (see attachments). The names of those actually participating in the focus group session are listed below.

Attendee	Representing
Captain John Arcudi	Mansfield Police Department
Dr Tony Basil	Ohio State University
Pam Collins,	Eastern Kentucky University
Major Jaruth Durham-Jefferson	Dayton Police Department
Dr. Larry Hoover	Sam Houston State University
Dr. Thomas Jurkanin	Illinois L E Training & Standards Board
Phil Lucas	Ohio Bureau of Criminal Investigation
Chief Wayne McCoy	Worthington Police Department
Sgt. Jeff Miller	Columbus Police Department
Kay Scarborough	Eastern Kentucky University
Officer Tony Tambasco	Mansfield Police Lab
Matt Williams	Grad Student – Youngstown State

OSU and NIJ developed a set of organizing questions. The facilitator condensed the questions for ease of use in the focus group careful not to loose original intent. The questions as presented during the focus group appear at the end of this section. The session format was open discussion in relation to each organizing question/ statement. The session was tape recorded to ensure accuracy of statements. A general overview of findings is written in the Executive Summary section. More detailed comments appear under the appropriate training module sections. Each training module section is subdivided into the seven organizing questions/ statements mentioned previously.

Module # 1 Global Positioning Systems

Initial/Immediate reaction

Participants initially expressed concerns about the target audience for the GPS training. Several participants felt the training was better suited for administrative types as opposed to the typical officer. The following quote reflects the tenor of the comments during this segment of the discussion:

- "The practical application of this educational material could have different value depending on where you come in. For example, the vehicle locator system – I thought it was a sales pitch."

Instructional design consultants offered some insight into the design rationale for the GPS module:

- *"These modules were designed with different audiences in mind. For example, GPS was designed as a decision making tool to provide decision makers a tool to use – so that you don't buy things you won't use for your organization, not as a training tool as some of the others."*

Objectives

Feedback addressing whether the objectives of the GPS module were clearly stated related more to the effectiveness and intent of the program. Most participants felt that the program was more an informational or marketing piece than a training or "how to" program. However, this was not considered a problem and indeed the largely supervisory level group saw the merit in this design strategy. There was a request for a more thorough treatment of the various GPS applications that are available for police work and possibly a follow-up module more oriented toward training. The following quotes make clear the group's concerns.

Effectiveness/ Intent

- *"I saw the GPS basically as a sell."*

- *"Now I understand better, but when I sat down I thought it was more a training module for in house use and not just for upper management. Once you try to implement a product in your ranks, they must be able to see how it's going to work for them. But if it is just to be used by the person making the decision, then maybe*

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a follow-up (program for training) to it."

- *"As CEO of a small agency, I am kind of the person that GPS is suppose to impact and I didn't think it met its objective. I had a lot of error screens come up, whether it was the computer or the software, I don't know."*

- *"I thought as a CEO, maybe topic of GPS as it is being suggested is a little premature, because every option I selected it discouraged me from selecting that option, so I got a little discourage. Some of things I thought would be very useful but I was told you can't afford this, better use something else, based on the variables you input."*

- *"I think it would have helped me with my city administrators as to why I was or was not recommending it."*

- *"As to basic understanding of the subject — Yes, considering the target audience, it was okay. As to learning how to use GPS as a specific instrument — It didn't do that but it wasn't suppose to do that."*

- *"I had a practical application in GPS. Using it for tracking a suspect's car; it wasn't mentioned in there. Objectives should include what GPS is used for. I was hoping I would see some other applications of my use. I didn't see it. It was just finding police."*

A suggestion was offered to approach the budgeting aspect of the decision support segment differently. Rather than ask the decision maker for a budget first, have the decision maker input the needs criteria e.g., how many patrol cars, how many officers on foot patrol etc. and then have the program keep a running tally of expenses given the needs.

Accuracy, Completeness and Currency of Information

No new information was offered during the discussion, however a number of written comments about the GPS module were submitted to the facilitator after the discussion. Comments pertaining to this discussion point appear below:

- *"Avoid abbreviations such as DGPS whenever possible"*

- *"Use English measurements in addition to Metric for ease of use."*

- *"It's nice that the Hotlinks are there. What about including links to Web Pages that can be updated over time. The CD may be viewed years later so the link should be to an updated site."*

Practical Use

Participants discussed the primary use of the GPS training module as being a good tool to use for justifying the technology to those responsible for allocating funding. The prevailing opinion is that this module is less a training tool and more a marketing tool. The group did however appear to be intrigued by the possibilities for applications of the technology and spent some time discussing how GPS operates. Comments made during this segment are as follows:

- *"I see a good application. If you as an official were trying to get budgetary funds and you had a group of trustees or council members who didn't have a clue what global positioning was, this training module could be a part of the documentation that helps to justify the expenditure."*

- *"We have a person who is responsible for researching grant opportunities and this program would be very useful for that individual."*

- *"GPS technology does much more and other departments need to know that."*

Look and Feel (Content, Organization & Technology)

The participants commented favorably on the overall look and feel of this training module. Some discomfort was expressed relating to the quality of the audio. Another concern relates to the viability of the WEB site references as time passes. Point being that a given Web Site could be changed or removed after the CD has been distributed. Minimum machine specification issues were also evident. Specific participant feedback relating to these issues follow.

" I thought it was easy to use and easy to understand but I had the same problem that someone else mentioned. When the two officers were talking in the car, I turned the volume up and then the music would come on and about knock me off my chair – I'm not sure whether it was just my computer or if it was an issue with the program."
Note: others indicated that they had the same problem as stated above.

"I like the references to the Internet but I noticed that (with the Computer Crime program) it took you to the exact page; that was not the same with the GPS it took you to the home page of the site as opposed to the exact page."

"In my computer (and maybe I was using an under powered machine) when I went to a link on the GPS, it would not appear until I exited from the CD."

"Is there a concern about links and sites going away"?

Everyone acknowledged that this is one of the shortcomings of using the Web as a source of material; there is no guarantee that sites will remain viable.
One officer proposed a straw pole on how many officers had access to a computer that can connect to the Internet in order to use training with embedded WEB page links.
The straw pole indicated that most police departments provide only limited access to officers with administrative responsibilities – this condition may have implications for the extent to which the training relies on the WEB or indicate a requirement for WEB access along with basic machine specifications in the training documentation.

Did the Training Meet Expectations

The group recognized the value of the design strategy and content but hastened to add that their need for a more in depth instructional training piece on GPS is needed to compliment what has been done with the pilot program. Participant comments follow:

- *"Both the CyberCrime and the Blood Evidence met my expectations but I wanted more out of GPS. I wanted it to teach me more because I don't know a whole lot about it and there were some applications like Jeff brought up about tracking a vehicle that wasn't in there that I know would be a big selling point for my Chief."*

- *"Yes, I agree with the previous comments, I was expecting more of an investigative slant to the GPS training."*

Improvements

Suggestions for improvement include field testing the final product and incorporating an accreditation process into the training modules. Minimum machine specification issues were raised for a second time (Note: the first comment appears under the previous heading).

- *"Give it the American Touristor test (older TV commercial touting luggage quality) put them out their and try to 'wreck em' before a general release. Hit function keys and such – I think everything is logically presented but I think things could be made more GUI (graphical user interface) sensitive."*

One participant's asked if consideration should be given to police departments that don't have faster machines. On this point, most agree that too much would be lost if the CD ROM programs were downgraded to accommodate slower machines.

- *"I wonder if these training aids could be accessible on-line, something like the LEONet (Law-Enforcement on-line)."*

One of the participants inquired about intellectual or copyrights for to the material. The response from Larry Hoover (Project Director) is that because this project was funded by

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the Federal Government the material is essentially public domain.

Another participant suggested incorporating a training audit trail for continuing education credit and/or certification. Further, describing this function as a way to document the fact that the individual learner has satisfactorily completed certain training modules and therefore has achieved certain required levels of competency. There was a strong consensus from both the evaluators and the program developers on this idea of accrediting and documenting the learner's participation in these programs.

The following comment was typical:

- *"For liability purposes, it is absolutely crucial that we are able to document that the person did take the training; just saying it alone is not sufficient."*

- *"Yes, and if the certification could be COLEA approved, that would be even better."*

Module # 2 Computer Crime (a.k.a. Cyber-Crime)

Initial/Immediate reaction

Evaluators were really excited about the use of the Multi-Media special effects built into the Computer Crime module. A few felt that the material was heavy on the technical side – but it is clear that this is necessarily a technical subject. A small concern about the target audience was raised but there was consensus around the need for raising awareness of computer crimes among all officers. Comments were as follows:

- *"I thought the graphics were quite attractive and the balance between the voice overviews and the music background was much better than the other two."*

- *"I too liked the Cyber Crime, it was just captivating, it moved fast with the multi-media effects."*

- *"I think someone from intelligence might use this stuff but the one on the street would not find a practical application."*

Objectives

A few brief comments were made relating to the Computer Crime(CC) module's treatment of the objectives. Similar to the comments on the GPS module, participants perceived the CC module as more informational than training oriented. Comments bespeak a group preference for more instructionally oriented materials.

- *"I saw the Cyber Crime more as an informational program."*

- *"I would like to see if the Cyber Crime could have more of a training aspect to it like the Blood Evidence. It needs more detail; I found steps like put the computer in the back seat of the truck as kind of insulting especially since you just saw that before hand. I wanted a little more detail, for example if you walk into a room and there is a door and a window, how do you get that computer out."*

Accuracy, Completeness and Currency of Information

Participants experienced trouble navigating backwards to review portions of the program and generally struggled with the game process. Observant evaluators identified some typographical errors. Summary comments appear below.

- *"I liked the Hotlinks to the Internet as reference sources."*

- *"I needed a little more of a tutorial to play the game, I kept going back to the donut shop; somebody help me!"*

- *"I couldn't get the game to work – maybe we are just too old to do this – my kids could whip right through."*

- *" I spotted a couple of typos; check the printing on page 3 of the search and seizure there are some major font issues – being able to print the script is great to have."*

Other typographical errors:

- *"During the audio presentation, Special Agent Morgan speaking from the FBI academy – underneath his title it says SA Morgan, FBI 'academyary'." You should also check Stephen Moore during his video piece the words Kansas and Stephen are run together."*

- *"On the CyberCrime in the game; were the movie vignettes random or programmed? During the game I could not tell if I was triggering the movie vignettes or not".*

- *"I couldn't tell if my trouble with the game was caused by me (user error) or the game or the machine I was using."*

- *"I could have really used an F1 or 'HELP' button."*

- *"I missed the interview during the game and I couldn't go back and that hurt me big-time."*

<u>Practical Use</u>

Participants appreciated gaining perspective on the growing problem of Computer Crime. The group recognizes the need for a paradigm shift in how technology is changing the way we live on both sides of the law. While the CC game vexed several of the participants in the group, it was generally held that there was value in introducing the subject in this format. According to the discussions, the game inside the module may require some changes to make the module more user friendly." The group offered the following comments on this topic:

- *"I went into this module with a lot of enthusiasm, but when I finished, I was still not sure how you track somebody backwards and find out who the suspect would be."*

- *"It lets law enforcement know that computer crime, may not be your responsibility now, but it is going to be for local law enforcement in the future. It raises*

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awareness and maybe 'wets your appetite' for more knowledge."

- *"The good point, it helps us to see the transition from going to and knocking on doors to look for the criminal to searching for them as they commit crimes online."*

Look and Feel (Content, Organization & Technology)

Participants were pleased with the presentation of the material and the level of learner interaction designed into the Computer Crime module. Navigating the program, particularly reviewing frames and stopping the action was problematic for several of the evaluators. The following comments summarize the group's concerns:

- *"The program was interesting and it held my attention. It was fast paced and interactive. The law enforcement officers coming into the department today, most of them are computer literate and they may find the old way of doing things a bit archaic so I think programs like this help to address the generation gap issues."*

- *"All of the programs are quite lengthy and they need an easy way to pause or take a break." You need to be able to stop and pick-up later where you left off."* Note: Much of the group agreed with the preceding statements.

- *"You need a reverse button to go with the pause too – there was one point in time when it flash backed to the instructor page before I was finished with the screen I was using and I could not review."*

Did the Training Meet Expectations

Many participants agreed that the Computer Crime training module did not disappoint, the video portion was deemed excellent. This module, save a few user interface issues was generally considered ready for production. Group sentiments suggesting that the module clearly met expectations follow:

- *"The video parts of the program exceeded my expectations – I surf the WEB with Road Runner (cable modem service) which is really good but even still, I thought the video quality was excellent!"*

- *"Both the Computer Crime and the Blood Evidence met my expectations but I wanted more out of GPS..."*

- *"They (Blood Evidence & Computer Crime) hit the mark; Blood Evidence and Computer Crime could actually be issued at this point; things can always be improved but they are basically ready to go."*

- *"From the letter that I received, I thought this program was going to be about criminal profiling not computers."*

Improvements

Recommendations for improvements relate to either simplifying the game process or adding a hints/help feature to the program. Adding a pause or bookmark feature was also mentioned during open discussions. Similar comments were previously expressed and noted under the Accuracy and Completeness heading of the Computer Crime section.

- "Give us help or hints in this game, no one was able to beat the game."

Note: Please also review comments recorded under the Improvements heading of the GPS section since some may also apply to Computer Crime.

Module # 3 Blood Evidence

Initial/Immediate reaction

General initial reactions were mixed with more favorable comments than unfavorable. There were three issues identified by the participants with the majority of the comments centered on software navigation issues. Other comments were concerned with the slowness of pace and the repetitiveness of some chunks of information. The following quotes reflect the concerns expressed by the group:

Generally Positive Initial Reaction

Several participants relate a positive first impression of the Blood evidence module. Distilling a complex subject into a familiar scenario was viewed as an effective teaching technique. One evaluator had this to say:

- *"I thought it (Blood Evidence) was excellent in its detail. If I had a young officer who I was working with who had not done this, I think it would be a good way to get them through some excellent detail."*

Software Navigation

- *"When you went into the evidence kit, there was no way for me to get back to the control icon. I need a quicker way to get back to the icon. If I know all the information on a given point of fact, I don't want to spend a lot of time reviewing. For example, the rubber gloves, I already know what I am going to do with the rubber gloves, so I don't need to hear that."*

- *"We got to some screens and you were stuck there and you had to listen until the spiel was done."*

- *"I got into the evidence area (before I wanted to) and I was not able to go back – I needed to go through the whole section."*

Repetition/ Pace

Several participants found the Blood Evidence module to be somewhat repetitive and slow moving at times. However, everyone acknowledged that this might be caused by the complex nature of the subject matter. On that note, some expressed concerns that

the material may be too technical for some front-line staff. Participants made the following comments:

- *"The collecting of blood evidence was just a little dry in places and repetitive."*

- *"It was a little long – got bored at the end"*

- *"I, too had a little trouble with the repetition after awhile, but the level of information was excellent in that adventure thing."*

The instructional design consultant responded to the repetition issue by informing the group of the design intent:

- *"There are certain things we wanted to emphasize and one of the ways we did it was making you listen more than once. If you think you are listening more than you need to, we need to work on that."*

Objectives

The participants felt that the Blood Evidence module offered and met a clear set of objectives. The participants viewed the structured scenario approach used to convey the Blood Evidence content as a preferred training technique. As suggested by the following statements, the group achieved a large measure of consensus on this discussion point.

Excellent Training Technique

- *"The objectives of the Blood Evidence were very clear and while it could be shortened just a little bit, I thought it was very good at accomplishing what they were trying to do."*

- *"I love the format of the Blood Evidence, going through the house, following a step by step process. It kept me more interested. I thought it was a good way to handle it, I actually did handle a call. I thought it was a good way to set that up."*

- *"The Blood Evidence seems more like a first training thing. If you didn't have any kind of concept of the subject it would be a good first step of training."*

Accuracy, Completeness and Currency of Information

This discussion point addresses several dimensions relating to the appropriateness of the training module content. Two of the officers present are experts in serology and were able to offer some insightful and in-depth comments on the module. Their

comments will serve to further support the instructional design choices and to identify any soft spots in the Blood Evidence program. To aid in the analysis of qualitative statements and to focus the feedback for program developers, expert comments will be grouped separately.

Expert Comments

The concerns of the experts related to stressing safety more in the use of hazardous chemicals, ensuring that the first officer on site knows how to preserve the scene and when to call for a lab expert and several points relating to the proper collection of blood evidence.

- *"When I first saw it was going to go into a "spatter" interpretation of a crime scene, I was concerned because it (spatter interpretation) is very serious training in its own right."*

- *"The use of chemicals for Field Tests used to detect blood represent a safety concern – for example, Luminol is actually three chemicals that you mix together and you should wear a mask because there are respiration concerns." I'm afraid that if NIJ distributes this material on a widespread basis, that some unskilled officer may perform these procedures improperly. Another example, Hydrogen Peroxide at 30% concentration can become explosive if left un-refrigerated."*

- *"If we use a cotton swab to take a sample from a wall and then we take a substrate control we should use a new swab not a alcohol swab as the picture in the training piece seems to indicate."*

Note: Jim Gaskill (instructional design developer) indicated that using the alcohol swab was not the intent.

- *"The shoe covers are a great idea but we don't throw them away because we consider them for trace evidence."*

- *"When using the scalpel to collect, take the blank first then take the stained area that way you don't throw that first scalpel away."*

- *"The footprints aren't realistic, there is no smear or smoosh in the pattern"*

- *"I really liked the documentation and the repetition of procedures that is the way I train new people. I want zero excuses."*

- *"Document, document, document."*

- *"There was no instruction on how to properly seal the brown paper evidence storage bag. Folding it over and stapling it is an improper seal. A tape seal is the only way."*

- *"We may need to add the latest technology which is a blood screening test used to ensure that we are testing human blood."*

General Comments

Participants other than those working in forensics appreciated the detailed overview but felt that the Blood Evidence module could be overwhelming without some expert guidance available for learners that are new to the subject.

- *"For a new detective, this could be information overload."*

- *"I think an expert should debrief the learners after they go through the training to emphasize the safety issues."*

The program developer explained that one of the objectives of this training and orientation is to help the learner recognize when to call in an expert. It was then suggested that this idea be incorporated more overtly into the program.

Practical Use

Everyone agreed that the Blood Evidence training module has substantial applications in the actual (law enforcement) work environment. Participants felt the information has broad applications from the training academy to the experienced officer. The following comments suggest that the Blood Evidence program will be well received in the law enforcement community; with particular value to those charged with training personnel.

- *"Good basic training for crime team technician."*

- *"It will raise awareness for street personnel and help them understand what not to mess up, even if they are initially just holding a scene."*

- *"This training is of less value to a street officer in Columbus, he already knows to get out of there. When a first officer gets out there and they know they are in over their heads they get out of there and put up the tape. If there are a couple of bodies at the scene, its time to go."*

- *"On the other hand, I feel it would be good for a first respondent. I think one of the mistakes we make in law enforcement is that we compartmentalize responsibilities and we don't share what the other person is doing; maybe having a clear*

understanding of what the lab person needs to get their job done would be helpful."

- *"Maybe this training has application in a police academy. Have the young people who are just going though a lecture on a crime scene, learn how to process a crime scene, then put them on the computer and let them play and process their own crime scene based upon what they just learned."* (Overall agreement on that point.)

- *"I probably get six or seven calls a day to come and train and I could say here is a NIJ CD. This would help us out tremendously, with the Attorney General's Office Bureau of Investigation, Crime Scene Unit. It would teach learners how to treat a crime scene with respect."*

Look and Feel (Content, Organization & Technology)

During a discussion on the need to add a pause and reverse feature to the Computer Crime module Jim Gaskill asked the group how well the 'bookmark' feature worked in the Blood Evidence module. Everyone liked the idea in concept but had trouble getting the feature to work.

- *"I didn't do it right – the instructions weren't clear in the beginning".*

- *"I think the ability to go back to a page is needed – because when you move forward, you need to be able to skip certain spiels (that you are familiar with) and move along."*

Did the Training Meet Expectations

Feedback from the evaluators clearly indicates a high level of satisfaction with the design and content of the Blood Evidence training module. The following statements support this assertion:

- *"Both the Computer Crime and the Blood Evidence met my expectations but I wanted more out of GPS..."*

- *"They (Blood Evidence & Computer Crime) hit the mark; Blood Evidence and Computer Crime could actually be issued at this point; things can always be improved but they are basically ready to go."*

Improvements

Jim Gaskill asked the experts in the room if cautions or warnings needed to be added to the Blood Evidence module to address concerns about safety raised earlier during the discussion.

The Crime lab experts responded as follows:

- *"The issue is collection rather than interpretation; get those things collected properly, get them air dried properly, get them packaged, labeled and out of there."*

- *"We (Attorney General's Office) put together a State training initiative on the proper collection of DNA evidence and the thing we focused on was the street officer and the proper collection, documentation, packaging and transporting to the lab; stressing that the less the evidence is handled between scene and lab, the better."*

Officer Tambasco described how evidence is collected at the Mansfield police lab as follows:

- *"Our entire DNA is collected by swab. I have some swatches in from a homicide case right now and here is an example of what happens. They collected the swatches, they threw them in a paper bag. I cut them open and opened them and I tested the blood on the paper bag because the swatches were just glued to the bag. When I pulled them off I had more blood left on the bag than on the swatch. I cut the paper bag up and used that for the DNA test. I think the program can be tweaked, I like it."*

Appendix

Evaluation Discussion topics

Give us your initial/ immediate reaction to these training products.

Were the training objectives clearly stated?

Drawing upon your own knowledge of the subject matter content is the information:
Accurate?
Complete?
Current and Up-to-date?

If these training programs are made available in your own work setting, how could they best be used?

Did these training programs meet your expectations?

Talk about the look and feel of the programs:
Content --(Did the program hold your attention)
Organization (Did the material flow in a logical progression for you?)
Technology

Ease of Use

How does CBT compare to other forms of training?

Now tell us how this product can be improved upon.

Advanced Technology against Crime Evaluation (11.17.99)
Ohio State University – Office of Continuing Education

MANSFIELD POLICE DEPARTMENT

30 NORTH DIAMOND STREET • MANSFIELD, OH 44902-1702
(419) 755-9724 • FAX (419) 755-9737

L.E. HARPER
Chief of Police

An Internationally
Accredited Agency

December 6, 1999

Dr. Tony Basil
Ohio State University
152 Mount Hall
1050 Carmack Rd.
Columbus, Ohio 43210-1002

Dear Tony:

I would like to address several issues which I commented on during the evaluation session on November 17, 1999. I will limit these comments to the proposed Crime Scene/Serology CD based training program.

The overall structure of the program I feel is very well put together and the goal of providing on site training without the travel and tuition is beneficial to all law enforcement agencies. The final product that will be provided by NIJ will be viewed as authoritative in nature, regardless of content. I am concerned with several areas which will be viewed as a standard procedure with respect to the collection and preservation of physical evidence specifically those crime scenes involving blood stain analysis.

There is really no discussion of how to prepare a "set up/staging area" for your equipment in order to efficiently process the scene. The investigator may disturb potential evidence by repeated trips to get the necessary tools required for the collection of the evidence. The photography aspects presented are well documented. Overalls followed by medium photos with and without reference scale). Shoe covers should be maintained for any potential trace evidence In addition the marking of the patio door glass, with respect to which side is inside the residence and which is outside will aid in determining the side where the force originated in breaking the glass. I think additional aspects such as potential fingerprint and trace evidence should be mentioned.

The interpretation of blood spatter at the crime scene is an entire area of expertise in itself. Proper photographic documentation will provide a blood spatter expert the opportunity to provide an opinion based upon this documentation. The interpretation of the blood spatter dictates a scenario which is complex and will not be a routine interpretation as indicated. One could offer more than the interpretation provided.

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The utilization of the presumptive tests may be of value with respect to the screening of a number of stains which are being considered for submission to the forensic science laboratory. However, the CD training lacks specific instruction in the proper use of both positive and negative controls and the preparation of the reagents. With the exception of the hemastix, the other presumptive exams require some preparation of chemicals prior to use and these chemicals may have a limited shelf life. Safety issues that I am concerned about specifically include the use of Hydrogen Peroxide. The concentration of 3% hydrogen peroxide is the standard dilution used in the forensic science laboratory to initiate the peroxidase activity involved in the positive reactions which are noted. I am concerned that a law enforcement agency may simply think that hydrogen peroxide is hydrogen peroxide and order a 30% concentration from a chemical supplier and then place it in the trunk of a cruiser until it is required for use. This concentration must be kept refrigerated in order to prevent the formation of a potential explosive. The most beneficial use of Luminol is in a case in which blood has been cleaned up at a crime scene. It helps lead us to hidden blood stains that may be obstructed by carpet, fabric, etc. The example in the CD utilizes a sink, common household items such as bleach may cause a false positive with Luminol[1], also, the application of the chemical is as a spray and requires a mist respirator and goggles. The chemicals involved, sodium bicarbonate, sodium perborate and luminol in combination are respiratory irritants.

The latest technology includes the ability to identify human blood with no chemical preparation. A small portion of sample is allowed to elute in a provided buffer and placed in a disposable reaction plate. The observations are noted and the plate can be disposed of. In addition, the storage of these kits is at room temperature and have an established shelf life of several months.

The CD indicates that it is necessary to collect substrate controls from area which are sampled yet it failed to be consistent throughout. In the area of the carpet, an unstained sample is removed and the suspected blood stained area is collected. Yet in the areas of the floor. and on the bathroom floor where stains are collected, no substrate control is sampled. However, a substrate control is collected on the wall of the bedroom where the spatter on the wall is, this sample is collected with a swab and the substrate control with alcohol wipe. This collection should utilize identical collection methods. My concern is, if the project staff is unable to secure a suitable collection device(swatch) to do this, how will the officer in the street.

The collection of a dried blood stain with a scalpel by scrapping will initiate an aerosol of the dried blood. In addition to gloves the collecting individual should wear a dust/mist respirator and goggles.

In the laboratory scalpels are rinsed with bleach and distilled water between sampling. This is sufficient to prevent any carry over between samples. The collection of every scalpel will be somewhat expensive and potentially hazardous..

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[1] Interpretation of Bloodstain Evidence at Crime Scenes. Eckert, W G & James, S H , pg 122.

It is implied that additional photos of the bloody foot prints were made prior to attempts to chemically enhance the footwear stain. Proper photographs may be sufficient for footwear identification, however, there is no source for the bloody foot prints as depicted in the CD. There must be a pool or large enough stain to have stepped in to deliver the stain.

The use of luminol and the collection of the trap from the utility room is not routine, the only time a trap will be evaluated will be if there has been a complete clean up of the scene.

My greatest issue within the CD training is the absence of what is a proper seal with respect to the submission of blood stained evidence collected from a crime scene which is to be submitted to a forensic science laboratory for analysis. This should be as repetitive as the described proper documentation of the evidence. A proper seal is outlined in section 1.4.1.3 of the accreditation guidelines of the American Society of Crime Laboratory Directors/Laboratory Accreditation Board. This is an essential component required for laboratory accreditation. I have attached the standard for your review.
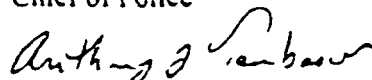
Laboratory policies are beginning to dictate what will and what will not be examined by a laboratory with a specific case that is submitted. It is unfortunate that some laboratories will limit the analysis and follow a best evidence policy simply due to the overwhelming amount of physical evidence that is being submitted to laboratories. Enzyme and blood typing procedures have been eliminated in most of the forensic science laboratories and have been replaced with DNA analysis. This analysis is more probative, has greater discrimination and will be detectable in blood stains that were once impossible to analyze.

This CD training tool will effect every laboratory in the country. It has a number of very positive and structured protocols with respect to photography, documentation, notes and the approach to the collection of physical evidence at the crime scene. Perhaps the set up can be restructured to go through the crime scene, including the proper documentation and collection, then, in the end provide the information necessary for the utilization of the available presumptive testing for the presence/identification of blood. The optional testing could be performed after collection prior to submission to the laboratory. This would emphasize the proper collection and preservation of serology/DNA evidence

I appreciate the opportunity to participate in the review. Please feel free to contact me at (419) 755-9732 or tabcat@aol.com should you have any questions.

Sincerely,

L.E. Harper
Chief of Police

Anthony J. Tambasco
Laboratory Director

of the evidence

1.4.1.3   IS EVIDENCE STORED UNDER PROPER   (E)
SEAL?   Y N N/A

DISCUSSION

Proper seals may be accomplished in various ways such as heat seal,
tape seal and lock seal. All seals must be initialed or otherwise
marked to document the person sealing the evidence. (1.4.1.3)

A container is "properly sealed" only if its contents cannot
readily escape and only if entering the container results in
obvious damage/alteration to the container or its seal.

Tape used to seal containers must be initialed (or otherwise
identified) to document the person sealing the evidence (1.4.1.3).
Heat sealed packages must have initials or other identification
across the heat seal to be properly sealed.

Packaged evidence received by a laboratory which does not bear the
initials or identification of the person sealing the evidence
container is not considered to be properly sealed.. The laboratory
therefore must have a procedure whereby it establishes a proper seal
on the container. Examples of ways to accomplish this include: (1)
placing a piece of evidence tape perpendicularly across the seal
with the initials of the person receiving the evidence and (2)
resealing the complete package in a heat sealed envelope or other
container with proper initials. Laboratories receive evidence from
numerous sources, making it very difficult to ensure that all
evidence submitted is properly sealed. However, the laboratory must
ensure that evidence stored in the laboratory is properly sealed.

*Procedural precautions must exist which reduce the risk of evidence
loss, cross transfer, contamination and/or other deleterious change.*

1.4.1.4   IS EVIDENCE PROTECTED FROM LOSS,   (E)
CROSS TRANSFER, CONTAMINATION AND/OR   Y N N/A
DELETERIOUS CHANGE?

DISCUSSION

There are many factors involved in the protection of evidence from
loss, cross transfer, contamination and/or deleterious change.
These factors include the proper identification, packaging, sealing
and storage of evidence. A laboratory must take all of these
factors into consideration in the processing of evidence.
Biological evidence, of both plant and animal origin, is generally
most subject to experiencing deleterious change.