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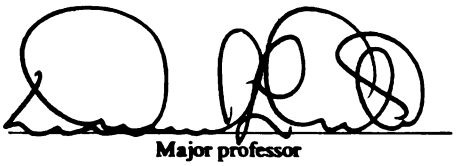

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COMPUTER ASSISTED INVESTIGATIONS

By

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ABSTRACT

COMPUTER ASSISTED INVESTIGATIONS

By

David C. Palmatier

The use of computers to assist criminal investigators has dramatically affected the American criminal justice system. Many investigators, especially new investigators, would be hard pressed to do their jobs without the use of computers. This study examines the relationship between computer assisted investigative techniques and the productivity levels of investigators. Specifically, this study was designed to answer the following questions: Do computer assisted investigations affect the productivity of investigators? If there is a causal relationship between these two variables, what is the statistical significance of the relationship? In an effort to answer these questions, a written questionnaire was distributed to 300 criminal investigators in the U.S. Customs Service. In an effort to collect additional information, focus group meetings and interviews were conducted. The results of the study indicate that there is a widely held perception that computer assisted investigations do increase investigator productivity levels. However, the specific investigative techniques selected for inclusion in this study were not good predictors of productivity. Additional research regarding the relationship between computer assisted investigations and productivity is necessary before final conclusions can be made. However, with what is currently known today, practical recommendations can be made regarding the future use of computer assisted investigations.

To all of the law enforcement officers who have given their lives in the line of duty.

ACKNOWLEDGMENTS

Although only one person will likely receive recognition for this dissertation, it was the result of the efforts of many. I gratefully acknowledge the many years of support and encouragement from Dr. David Carter and the other members of my dissertation committee. In addition, the faculty, staff, and fellow students from the School of Criminal Justice, Michigan State University contributed in no small measure to the success of this endeavor.

I acknowledge the support of the United States Customs Service, for without which, this project could never have been completed. Managers from the Assistant Commissioner level on down supported this study. I thank all of the investigators who took the time and effort to complete and return the research questionnaires. The high response rate is a tribute to their dedication to duty.

Lastly, and most importantly, I thank my wife Mary for patiently supporting me throughout my academic career. In many ways, she placed her needs secondary to mine in an effort to allow me to pursue my goals. I thank you all.

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Chapter 1

INTRODUCTION

Statement of Problem

The problem statement of this research study is: Do computer assisted investigations affect the productivity of investigators? If there is a causal relationship between these two variables, this study will attempt to measure the statistical significance of the relationship.

Hypotheses

The general research hypotheses of this study is: As the use of computer assisted investigations increases, so too does the productivity level of investigators. Although the substance of this general hypotheses may, on the surface, appear to be axiomatic to some researchers, years of experience reveal that there exists a sizeable portion of investigators who eschew the reliance on computer assisted investigations.

Purpose of the Study

The purpose of this study was to examine the relationship between computer use and the productivity levels of investigators. It was anticipated that this study would discover a positive correlation between computer use and investigator productivity. If a correlation was identified, this study would attempt to measure the strength of the relationship and to identify the specific policies, procedures, and practices associated with

the relationship. This information will likely prove useful to managers of the U.S. Customs Service, and similar investigative agencies, who are striving to improve agency performance with reduced funding.

Operational Definitions

Case management. The practices and procedures used to organize and track investigations. Electronic case management systems rely upon computers to store and organize this type of information.

Computer assisted investigations. Include investigations in which the investigator utilizes computer technology (e.g., databases, imagery, forensic analysis) in an effort to solve crimes or allegations of wrongdoing.

Computer forensics. Refers to the use of computers to analyze electronic data, including potential evidence, which is stored in a computerized format.

Digital imagery. Refers to visual information (e.g., photographs, fingerprints, or documents) which is converted into a format which permits electronic storage in computers.

Evidence tracking. The system used to monitor the physical and legal status of evidence which has been collected during the course of law enforcement operations.

FLETC. The Federal Law Enforcement Training Center in Brunswick, Georgia, provides both basic and advanced law enforcement training for most federal law enforcement agencies.

Focus group. A collection of individuals who are assembled to discuss and evaluate specific issues such as organizational practices, policies, and problems.

Investigators. Include criminal investigators (e.g., special agents, supervisory

special agents, and air interdiction officers) assigned to the U.S. Customs Service.

Investigative techniques. Include the methods by which investigators use to solve crimes. Computer related investigative techniques include the use of telephone toll sorting programs, computer presentation graphics software, and automated fingerprint identification systems.

Productivity level. Refers to the quantifiable number of enforcement statistics (e.g., arrests, seizures, or convictions) which can be attributed to an investigator.

Basic Assumptions

1. This research was conducted assuming the following factors to be true:

2. The research sample was randomly selected and therefore will accurately represent the population at large.

3. The survey respondents provided accurate answers to the questionnaire.

4. The period of time included for examination in this study was representative of typical investigative activity within the U.S. Customs Service.

Delimitations

The following factors limit the utility of this study:

External validity. Threats to external validity will not permit the unrestricted generalization of the findings of this study to all criminal investigation agencies. Although there are similarities between many investigative agencies, there are differences; and those differences limit the ability to attribute the findings of this study to all investigative agencies. In an effort to limit this threat to validity, participants were randomly selected (rather than relying on volunteers) and participants were selected from more than one sub-group (domestic, foreign, and air branch offices) in an effort to

increase the ability to generalize the findings of the study.

Statistical conclusion validity. There exists a threat (low statistical power) to the statistical conclusion validity of this study because of the small sample size. Of the 300 participants selected for the study, 222 returned completed surveys. Since managers and supervisors misunderstood some of the instructions, their responses could not always be included in the analysis. As a result, for most of the statistical analyses, the sample size was 142. With the alpha level set at .05 and with a relatively small sample size, the chances of a Type II error (incorrectly concluding the research variables are not correlated) are increased.

Internal validity. There also exists a possibility that a third (unknown) intervening variable accounted for the observed covariation, or lack of covariation, between the independent and dependent variables. This threat to internal validity was reduced through the concept of randomization; participants were randomly selected to receive the questionnaire.

Construct validity. This study had several threats to construct validity. However, specific measures were employed in an effort to reduce these threats. Mono-operation bias was reduced by utilizing the stratified random sampling technique (i.e., collecting responses from investigators assigned to different functional areas) in an effort to triangulate on the interaction between the research variables. Mono-method bias was reduced in this study through the use of multiple collection techniques: written questionnaires, oral interviews of participants, and open discussions in a focus group setting. Evaluation apprehension was reduced through the use of an anonymous written survey instrument. Respondents were reassured that their comments would not be able to

be specifically identified with them.

Chapter 2

LITERATURE REVIEW

During the twentieth century, American society has experienced a technological revolution. We have witnessed an explosion in the number of new products and technologies. The television, the atomic bomb, and the space shuttle have all left an indelible mark on our culture.

During the last 30 years, some of the greatest advances in technology have been in the field of information technology (Schmalleger, 1990). The development and proliferation of the computer in our society has had a lasting impact. We use computers to learn, to conduct research, to pay bills, to entertain, to communicate with family and friends, to commit crimes, and to improve organizational effectiveness.

Law enforcement agencies, like society at large, have attempted to exploit emerging computer technologies. Computers have been utilized to improve the efficiency of fingerprint analysis (Shonberger, 1990; Mallory, 1992; Zauner, 1991), computer forensics (Noblett, 1992, 1993; Anderson, 1991; Pilant, 1992; Sauls, 1993), database management (Craen, 1991; Lansinger, 1992; Loewe, 1992; Newcomer, 1991; Sessions, 1993; Simms, 1991; Thurman, 1991; Titus, 1991), digital imagery (Feit, 1991; Houde, 1993; Schmitt, 1992), case management (Garcia, 1991; Pilant, 1993; Seay, 1991; Sykes, 1986), evidence tracking (Hamilton, 1991), information dissemination (Jacobs,

1991; Van Duyn, 1991; Wright, 1992), and tele-commuting (Millmore, 1992).

Over the past 30 years, many studies have examined the effectiveness of police investigators. One of the watershed studies, The Criminal Investigation Process: Volume III Observations and Analysis, was published in 1975 (Greenwood, et al., 1975). It is often more commonly referred to within the field of criminal justice as merely "The Rand Study".

The Rand Study utilized three sources of information: written questionnaires completed by municipal police department personnel, participant observation visits to police agencies, and lastly, data obtained from the Kansas City, Missouri Police Department (Greenwood, et al., 1975). Some of the major conclusions of the Rand Study include:

- "On the use of investigators' time: Substantially more than half of all serious reported crimes receive no more than superficial attention from investigators.
- On how cases are solved: The single most important determinant of whether or not a case will be solved is the information the victim supplies to the immediately responding patrol officer. If information that uniquely identifies the perpetrator is not presented at the time the crime is reported, the perpetrator, by and large, will not be subsequently identified.
- On investigative effectiveness: Differences in investigative training, staffing, workload, and procedures appear to have no appreciable effect on crime, arrest, or clearance rates.
- The method by which police investigators are organized (i.e., team policing, specialist versus generalists, patrolmen-investigators) cannot be related to

variations in crime, arrest, and clearance rates." (Greenwood, et al., 1975)

The essence of the Rand Study was that police investigators do not solve most crimes as a result of intelligence and hard work. Instead, it was concluded that most crimes which are solved, are solved through no significant contribution by investigators. Greenwood, et al., observed that the crimes which were "solved" by detectives were often as a result of happenstance and good luck, rather than being the product of what Wilson referred to as "...shrewd deduction, scientific inquiry, and artful surmise." (Wilson, 1978).

The Rand Study findings have been hotly debated in the field of criminal justice since its' publication. James Q. Wilson, in his study of the F.B.I. and the D.E.A. entitled: The Investigators: Managing F.B.I. and Narcotics Investigators tended to support the finding of the Rand Study (Wilson, 1978). Likewise, Richard Ericson in his study of Canadian detectives entitled Making Crime: A Study of Detective Work, cited similar findings as those in the Rand Study (e.g., early identification of suspect increases likelihood of arrest; detectives do not work as sleuths; over-stated importance of informants by detectives; and most crimes cannot be solved) (Ericson, 1981).

Other researchers tended to disagree with the finding of the Rand Study. For example, Peter Bloch and James Bell in their study of Rochester, New York police detectives titled Managing Investigations: The Rochester System observed that through the use of "Coordinated Team Patrols" (CPTs), investigative effectiveness was increased (Bloch and Bell, 1976). In the Rochester System, follow-up investigations conducted by CPTs were determined to result in increased investigative effectiveness as compared to those parts of the city which were serviced by traditional patrols and investigator

responses. Bloch and Bell concluded that detectives can (and do) have a positive affect on crime clearance rates.

John Eck, in his study of municipal police detectives entitled Solving Crimes: The Investigation of Burglary and Robbery, observed findings contrary to those of the Rand Study (Eck, 1983). In essence, Eck concluded that although investigators do not solve all crimes, their contribution to the successful solving of many crimes cannot be ignored. In addition, he cited the equal importance of patrol officers and investigators in solving crimes.

Although there exists a substantial body of research regarding the general effectiveness of investigators, relatively less research has focused on the relationship between computers and investigator productivity. Within the law enforcement community, computers have had a dramatic effect on the field of criminal investigations (Butts, 1991; Danziger and Kraemer, 1985; Hollis-Sutter, 1991; Manning, 1992; Pilant, 1993; Sauls, 1993; Seay, 1991; Simms, 1991). Vast quantities of previously unavailable information are now only a few computer keystrokes away. Agencies are building and sharing access to large crime-related databases (Sessions, 1993; Simms, 1991; Sparrow, 1991; Thurman, 1991). The Internet possesses seemingly unlimited potential to provide criminal investigators with new sources of information in an effort to solve crimes.

The use of computers during the course of criminal investigations is now commonplace (Schmalleger, 1990; Danziger and Kraemer, 1985). They have become an essential tool of the modern criminal investigator. Today, computers rival the investigators' gun, badge, and police car in importance. One only need listen to the wailing and gnashing of teeth in the squad room when the police computer system is

down to realize the impact on the police investigator. Although there are still a few dinosaurs around, many of today's investigators grew up with computers and would likely be lost without them.

A review of available literature revealed a general consensus that computers do assist investigators (Binkley, 1991; Butts, 1991; Danziger and Kraemer, 1985; Hollis-Sutter, 1991; Pilant, 1993; Simms, 1991; Schmalleger, 1990). However, most of these studies utilized descriptive statistical techniques rather than attempting to explore a causal relationship between the use of computers and increased performance.

One of the studies which utilized sophisticated statistical techniques examined the productivity levels of police detectives and their use of computers (Danziger and Kraemer, 1985). The central focus of the study was to determine how computer technology affected the productivity levels of individual detectives. They randomly distributed written questionnaires to detectives in 40 American municipal police departments, which were stratified by size. The sample included 374 returned questionnaires. The questionnaires included four questions: "(1) To what extent do detectives use computers in their work?; (2) Do the detectives attribute productivity shifts in their own work to the utilization of computers?; (3) Are there systematic associations between detectives' level of computer use and measures of the 'output' from the detective's work?; and (4) Can we account for individual differences in the impact of computing on detectives' productivity by features of their organizational environment, of the computer package available to them, or of their personal traits?" (Danziger and Kraemer, 1985).

Danziger and Kraemer utilized the Pearson's correlation coefficient and multiple

regression techniques to analyze their data. They observed that over 80% of the detectives in their sample reported information gathering benefits through computer use. These benefits included: new information, more up-to-date information, speed in obtaining information, and ease of access to information (Danziger and Kraemer, 1985). More than a third of the detectives reported that some cases would have been unworkable if it were not for the use of computers. More than one half of the detectives reported using computers to link persons in custody to previously uncleared crimes. Approximately two-thirds of all detectives reported that computers assisted them in some of their arrests and case clearances. Although some detectives in the Danziger and Kraemer study reported only minimal affects of computers on investigator productivity, the authors concluded that in general, "...detectives have experienced major and positive productivity shifts that are attributed to computer technology." (Danziger and Kraemer, 1985). They further concluded that "Productivity benefits from computing are higher where the detective is more professional, more experienced and competent with computing, and where the data processing staff is more responsive to the detective's needs." (Danziger and Kraemer, 1985). They concluded their study by observing that: "...for governments that seek to increase productivity among their professionals, the message is clear: buying a batch of micros is simply not enough -- both well-crafted data-based systems and responsive staff technicians are needed to provide the context of use within which professionals will enjoy higher levels of payoffs from computerized systems-in-use." (Danziger and Kraemer, 1985).

The need to evaluate the effects of computers on criminal investigations is based upon the realization that funding resources are finite (Schmalleger, 1990). Current

automation funding levels in many agencies are in the millions of dollars. Over the past three years, more than $14,000,000 has been spent on computers for investigators in the U.S. Customs Service.

As a result of the National Performance Review (NPR) and other similar initiatives, many government agencies are being encouraged to "do more with less." The number of assigned personnel and equipment budgets are typically shrinking. Agencies, including law enforcement agencies, are being encouraged to increase efficiency and improve effectiveness. The Government Performance Results Act (GPRA) mandates the use of performance measures in an effort to assess agency performance (GAO/GGD-96-118, 1996).

The reduction in funding levels and the mandate for improved performance have challenged agency executives to question whether their computer related expenditures are an efficient use of their available resources. Although there exists a general perception that computers increase efficiency, the more important question is do they increase effectiveness.

Chapter 3

METHODOLOGY

It was anticipated that this study would discover a positive correlation between computer use and investigator productivity. If a correlation was identified, this study would attempt to measure the strength of the relationship and to identify the specific policies, procedures, and practices associated with the relationship.

Another goal of this study was to examine the possible relationship between computers and productivity on more than one level. It has been unclear whether or not journeyman investigators, first line supervisors, or upper-level managers differ in their views toward the use of computer assisted investigations. Members of each of these three groups were included as participants in this study. The use of this stratified random sampling technique was employed in an effort to determine if the experience level or rank of the investigator affected their expectations for computer assisted investigations.

Unlike some social sciences such as psychology and educational research, there is a relative lack of accepted measurement instruments in criminal justice research. As a result, criminal justice researchers frequently develop measurement instruments which are designed specifically for their own research projects. For this study, a survey questionnaire (Appendix A) was developed which was administered to criminal investigators in the U.S. Customs Service.

Data were collected on approximately 25 independent variables. These independent variables are some of the policies, procedures, and practices which exist in the 187 U.S. Customs Service investigative offices world-wide. For example, independent variables include the use of computers for the analysis of evidence, the organization of documents and reports, targeting analysis, data exchanges, the transmission of data, the preparation of reports, and the production of presentation graphics for court purposes.

The level of measurement in the questionnaire utilized in this study resulted in the collection of ordinal level data. The questionnaire was distributed and returned via mail. Respondents were anonymous and no attempt was made to identify them. The survey was sent to journeyman investigators, first line supervisors, and managers.

The length of the questionnaire in final form was 32 questions. The majority of the questions utilized a four point "Likert Scale" format (Hagan, 1982). Responses were divided into the following categories: strongly agree, agree, disagree, and strongly disagree. The survey collected information which reflected the expressed attitudes of the research subjects.

In an effort to measure the dependent variable in this study (productivity level), respondents were questioned regarding their recent investigative accomplishments. Supervisors and managers were questioned regarding the investigative accomplishments of the investigators working for them. For example, dependent variables include the number of : arrests, indictments, convictions, dismissals, seizures, and forfeitures during the preceding one year time period.

This study utilizes both quantitative and qualitative data. Quantitative data was

obtained from the responses to written survey questions which focused on investigative accomplishments (performance measures). Qualitative data was obtained from responses to written survey questions which focused on the degree to which computer assisted investigative techniques are employed.

In addition, qualitative data was collected through the use of interviews of criminal investigators throughout the U.S. Customs Service. These interviews were utilized in an effort to corroborate data collected from the questionnaires and in an effort to provide an additional method for data collection. The interviews allowed the researcher to use probing and open-ended questions in an effort to better understand the relationship between computers and investigator productivity.

The population to which the research findings are to be generalized include all criminal investigators assigned to the U.S. Customs Service. Concerns regarding the external validity (Cook & Campbell, 1979) of this study will not permit the unrestricted generalizing of this study's results to other agencies. However, since many investigative agencies share several common characteristics and common problems, some of the experiences and strategies developed by the U.S. Customs Service may prove to be insightful for administrators in other agencies who are interested in improving the productivity of their investigators.

The sample of this study consisted of 300 subjects overall. Of the 300 subjects selected, 50 (17%) were first line supervisors and another 50 (17%) were managers above the first line supervisor level. The remaining 200 (66%) subjects were journeyman investigators.

The population from which the sample was randomly selected consisted of 2,842

criminal investigators. At the time the survey was distributed, these personnel worked in 187 investigative offices world wide, including 23 offices in foreign countries.

Sample participants were selected randomly from a list of all investigators assigned to the U.S. Customs Service. Since the sample was approximately 11% of the total population, participants were chosen by selecting every 9th person on the list of investigators in the total population. The population list was ordered by employee identification number, listing the lowest number first. Although the use of this number is no guarantee of geographic representation, it nonetheless may help control for geography by including personnel from all parts of the U.S. However, no attempt to compromise the anonymity of the survey was made through the use of these unique identifiers. The identifiers were not included in any way on the questionnaires when they were returned for analysis.

The survey data was coded and then manually entered into an SPSS for Windows (version 6.1) computer database. SPSS is one of the most widely utilized statistical analysis programs in social science today. In addition to analyzing the data, SPSS will produce graphs, plots, and tables which can help to illustrate the relationships between variables.

Chapter 4

DATA ANALYSIS

Of the 300 subjects who were mailed the questionnaire, 222 (74%) completed and returned the survey. Of the 200 journeyman level investigators who were sent the survey, 71% (142 out of 200) completed and returned the survey. Of the 50 first line supervisors who were sent the survey, 47 (94%) returned surveys. Of the managers who had the survey mailed to them, 33 (66%) completed and returned them.

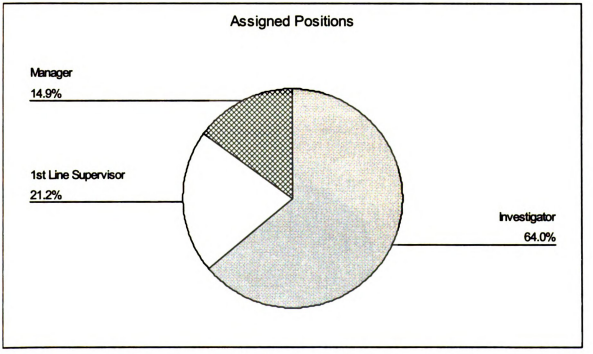

Figure 4.1 Assigned Positions of Survey Respondents

When focusing only on the returned questionnaires, investigators comprised 64%, first line supervisors 21.2%, and managers 14.9%. Journeyman level investigators had the lowest return rate and first line supervisors had the highest return rate.

The U.S. Customs Service has investigators assigned in offices throughout the U.S. and in many foreign countries. Domestic assignments include posts in headquarters, air branches, and local field offices. Of the 222 respondents, 196 (88.3%) were assigned to domestic field offices such as special agent in charge (SAC), Resident Agent in Charge (RAC), and Resident Agent (RA) offices; 11 (5%) respondents were assigned to foreign posts of duty; 14 (6.3%) were assigned to air branches, and 1 (.5%) respondent was assigned to Customs headquarters when the survey was completed.

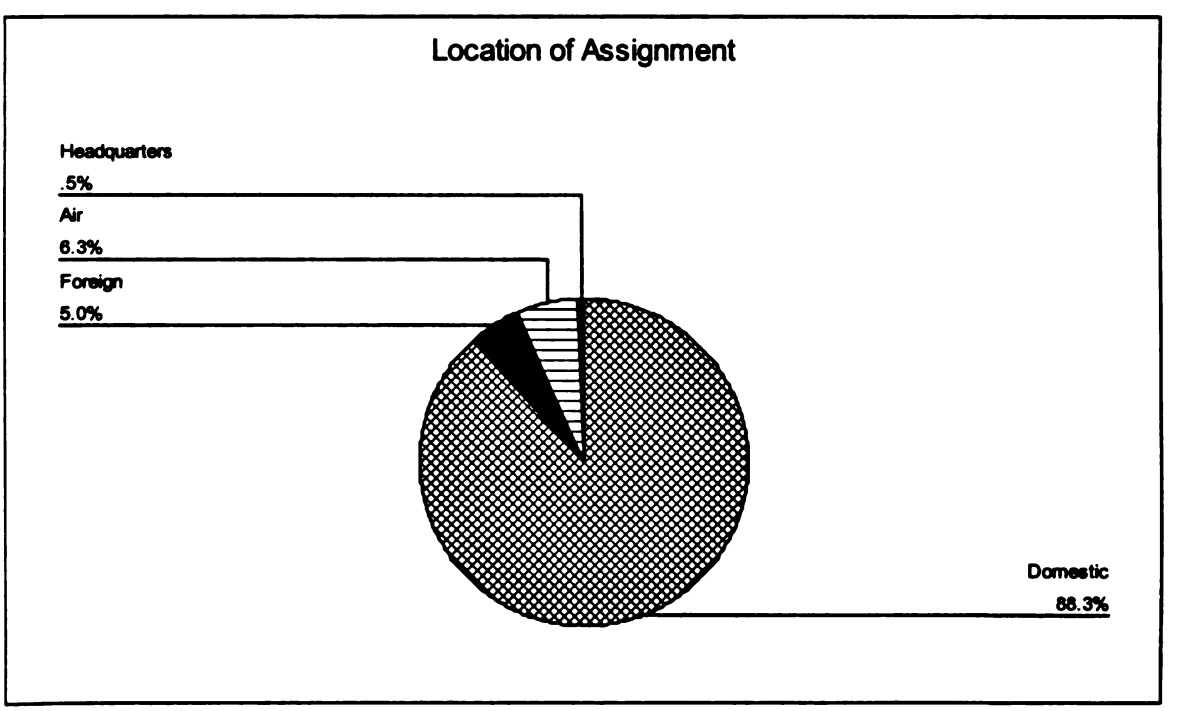

Figure 4.2 Location of Assignment of Survey Respondents

When the sample subjects were initially selected, all headquarters personnel were intentionally excluded since they are unable to easily attribute their performance to traditional performance measures such as arrests. However, one respondent, who was previously assigned to a field office, had since been assigned to headquarters when the survey was completed.

The respondents were grouped by their criminal investigation experience levels. Of the 222 respondents, 20 (9%) had 0-5 years experience, 52 (23.4%) had 5-10 years experience, 83 (37.4%) had 10-20 years experience, and 67 (30.2%) had over 20 years experience. The question relating to the level of investigative experience revealed that U.S. Customs, not unlike many other federal agencies, has an aging workforce.

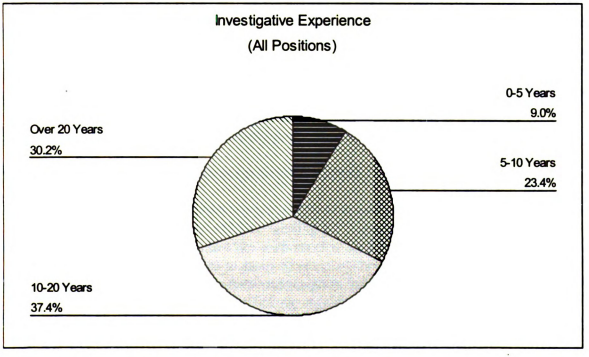

Figure 4.3 Investigative Experience of Survey Respondents

By collecting data on experience levels, office assignments, and current positions, it was hoped that the research variables could be examined while controlling for these factors. It was speculated that different groups would likely hold different views regarding computer assisted investigations. For example, there is a frequently held view that investigators with fewer years of experience are more likely to embrace computer technology than are investigators who have been on the job for many years.

With very few exceptions, respondents did a good job of completely filling out the questionnaires. There were no recurring omissions regarding specific questions. The final question in the survey provided space for the respondents to include narrative comments regarding specific survey questions or to provide comments on the overall issue of computer assisted investigations. Many of the respondents took this opportunity to provide written comments very seriously. A journeyman investigator in a domestic field office with 10-20 years experience remarked:

> ...as an investigator with over 15 years of experience, the most significant cases not only for myself but also for my office, have been successfully prosecuted because I utilized computer programs to organize and present the case evidence. I strongly agree that computer assistance is extremely important in order to successfully prosecute cases.

A journeyman investigator in a foreign field office with 10-20 years experience observed:

> In white collar crime cases (Customs Fraud) graphics displays go a long way with U.S. Attorney's Office "getting it!" I started using computer generated presentations in 1985 with another agency and have continued using various applications to assist developing the invest. Use of telephone toll analysis in a database program in 1989 identified the major player in an Afghan heroin trafficking organization. Fingerprints lifted from meth lab glassware seized from a storage shed matched with prints on file in California automated fingerprint system and identified individual behind a large cocaine base seizure. Automation of all basic info allows us to do more in less time and timing is usually the critical factor in nabbing the bad guy!

A journeyman investigator in a domestic field office with between 5-10 years experience observed:

> The U.S. Customs Service Office of Investigations should no longer recruit "cops" they should recruit computer nerds. The direction that the Office of Investigation has chosen to go over the past several years has effectively eliminated the street agent. If an agent is able to produce a stack of reports and run a variety of programs on the computer the need to do "real police work" is eliminated. This attitude of "non-enforcement" and "customer service" seems to be the wave of the future in the Customs Service therefore the non law enforcement paper pushers should succeed. As the increase of narcotics increase on our streets I hope and pray that someday our management will realize that a stack of pretty reports has never, to my knowledge put "dope on the table". The need to return to ENFORCEMENT is vital to our survival.

Many of the responses included well written, detailed narrative comments (Appendix C). Of the 222 responses received, 127 (57%) respondents provided narrative comments, whereas 95 (43%) respondents elected to provide no narrative comments. There was very little difference between the three position levels (investigator 56%, supervisor 60%, manager 58%) regarding their likelihood to include narrative comments.

Once the data was entered into SPSS, various charts (pie, bar, line, etc.) were produced in an effort to get a feel for the data. The first striking observation was that some respondents appeared to be extraordinarily productive. For example, some respondents reported making 1,500 arrests per year. Based on experience with the agency, it was realized that this was anomalous data. Upon researching the raw data, it was determined that the anomalous data was generally being provided by first line supervisors and higher level managers. The anomalous data problem was so wide-spread, a judgement call was made to exclude the responses of the supervisors and managers from any correlational analysis. This was necessary because of the dramatic impact these

outlying data responses had when calculating statistical tests which relied on the calculation of degrees of freedom (e.g., chi-square test). When appropriate, the responses of the supervisors and managers will be included in descriptive statistical analysis (e.g., listing budget priorities).

Correlation Coefficient Matrix

After becoming familiar with the data set, a correlation coefficient matrix was produced. Each of the 25 questions which focused on the independent variables and the 5 questions which focused on the dependent variables were compared to each other using a two-tailed correlation test. A correlation coefficient of +1.00 meant that there was a perfect positive correlation between the two variables in question. Conversely, a correlation coefficient of -1.00 meant that there was a perfect negative correlation. Lastly, a correlation coefficient of 0.00 meant that there was no apparent correlation between the two variables.

The matrix revealed that there were no highly significant correlations between the independent and dependent variables (e.g., a correlation approaching either +1.00 or -1.00). However, some independent-dependent variable combinations did appear to be relatively significant.

One of the more significant variables (question #4) involved the survey question: "Computer assisted investigations increase the productivity level of criminal investigators.". This question was important not only because it displayed the highest levels of correlation between the independent and dependent variables, it was also important because it captured the essence of the research question. This question speaks directly to the issue of whether computer assisted investigations are viewed as impacting

upon investigator productivity.

Surprisingly, the results for question #4 revealed a negative correlation between investigator productivity and the use of computer assisted investigations. When compared to the dependent variables in the study, there existed a negative correlation between the perceived benefits of computer assisted investigations and arrests (-.2105; p=.015), convictions (-.2333; p=.007), and forfeitures (-.0887; p=.319). There was a less substantial positive correlation between this question and fines (.0482; p=.589) and seizures (.0103; p=.907). Some of the narrative comments which supported these findings included those provided by a journeyman investigator in a domestic field office with between 5-10 years experience:

> As far as computers improving productivity, I would have to say that they probably slow the investigation down. The productive agents in our office and in our district that I work with are successful because they are talented investigators who know how to use informants properly and have a working relationship with other federal, state, and local agencies.

A first-line supervisor in a domestic field office with between 10-20 years experience remarked:

> Only the computer nerds spend enough time on the equipment to self teach and remember the procedures. They spend so much time on the computer that they do not produce much at all for Customs.

A first-line supervisor in a foreign office with between 10-20 years experience remarked:

> In my opinion we are walking a fine line between being masters of our computers and having them control us. Computers do not make cases. Agents and good field work do. This is beginning to be lost, with the value of the agent being graded on his ability to operate a computer. Too much time is being spent by agents in front of a screen.

The correlation coefficient matrix revealed that most of the independent to dependent variable comparisons did not achieve a significant probability level, which would allow one to conclude that the correlation was as a result of something more than mere chance. The conventional significant probability levels in social science are either .10 or .05. These probability levels refer to the fact that the observed results have a probability of occurring either 10 or 5 times out of one hundred cases by mere chance alone. The lower the probability level (e.g., .01), the greater the level of confidence the researcher should have that the results are not as a result of mere chance alone.

Therefore, in the above examples, although there was an observed positive correlation between computer assisted investigations and fines (.0482; p=.589) and seizures (.0103; p=.907), because the probability levels were much higher than the conventional .05 level, the researcher could not be very confident that the observed results were due to something other than mere chance.

In most of the independent-dependent variable correlations where the probability levels were significant (less than .10), the nature of the relationship was negative. As the use of specific computer related techniques increased, the productivity levels of the investigators decreased. In addition to the general question regarding the effect of computer assisted investigations on the productivity levels of investigators (question #4), questions regarding more specific computer related investigative techniques also exhibited a negative correlation with investigator productivity. For example, question #10 ("I have used drawing programs (e.g., Corel Draw, Visio, etc.) to improve my investigative productivity.") also revealed significant negative correlations with the dependent research variables (arrests -.2109 p=.017; convictions -.1595 p=.074; fines

-.1810 p=.046; forfeitures -.2122 p=.018; and seizures -.1577 p=.078). This relationship indicates that as the use of computer drawing programs increases, investigator productivity levels decrease.

Similar negative correlations existed between investigator productivity levels and the use of large computer systems such as the Treasury Enforcement Communication System (TECS), the National Criminal Information Computer (NCIC), National Law Enforcement Telecommunications System (NLETS), and the National And Dangerous Drugs Intelligence System (NADDIS) (arrests -.2108 p=.015; and convictions -.2370 p=.006). Again, as the level of use increased, the level of productivity decreased. Likewise, as the use of commercial databases such as Metronet, InfoAmerica, Prentice Hall, TRW Redi, and Dun and Bradstreet increased, the level of investigator productivity decreased (arrests -.2108 p=.015; convictions -.2153 p=.013; fines -.1543 p=.083; and forfeitures -.2035 p=.022).

Chi-Square

Once the correlation coefficient matrix was thoroughly analyzed, the chi-square statistic was utilized in an effort to further examine significant relationships between research variables. The chi-square test was used to measure the independence of the relationship between the independent (practices) and the dependent (productivity) variables. Chi-square examines whether there is no association between variables due to chance, or whether there is a relationship and if there is, is it due to chance probability alone. The chi-square statistic compares observed cell frequencies with expected cell frequencies and then uses the chi-square formula to determine the chance of obtaining such a value by chance using a table of expected chi-square values.

Initially, using the chi-square test resulted in problems. Because the degrees of freedom for some variables were so high, the statistic results were unreliable. For example, the values for the arrest variable ranged from 0 to 107. When the chi-square test was calculated, SPSS provided a warning message that the results may be unreliable since the expected cell values were less than 5 in some cells. In an effort to reduce this problem, the data for the arrest variable were collapsed into four similarly sized groups (zero, 1-4, 5-10, and 11-107 arrests). This facilitated the reliable use of the chi-square statistic, while at the same time, resulting in no significant impact on the quality of the data or the relationship being measured. Once the data were collapsed into groups, more reliable chi-square tests were produced.

Chi-square statistics were calculated for all possible independent (investigative practices) and dependent (performance measures) variable combinations. Of the 110 possible combinations, only six of the combinations resulted in chi-square values with significance levels of .05 or less. An additional four combinations were marginal with significance levels greater than .05, but less than .10. The remaining 100 combinations all had significance levels greater than .10.

The relationship between question #4 ("Computer assisted investigations increase the productivity level of criminal investigators") and the performance measure "forfeitures" resulted in a Pearson chi square value of 33.60 at the .0001 significance level. A review of the cross tabulation for these variables revealed that 95.3% of the respondents either agreed or strongly agreed that computer assisted investigations increase the productivity level of criminal investigators. When compared to the number of forfeitures obtained by these investigators, as their level of forfeitures decreased, the

likelihood that they agreed with this statement increased. The least productive investigators were most likely to agree with the statement that computer assisted investigations increase productivity.

The relationship between question #6 ("I have used database programs to improve my investigative productivity") and the performance measure "fines" resulted in a Pearson chi square value of 19.28 at the .02 significance level. Approximately 45% either disagreed or strongly disagreed with this statement, whereas approximately 55% either agreed or strongly agreed with the statement. Since the responses were nearly equal between agree and disagree, no obvious inferences can be made regarding the independence of these two variables.

The relationship between question #8 ("I have used presentation graphics programs to improve my investigative productivity") and the performance measure "fines" resulted in a Pearson chi square value of 22.45 at the .00757 significance level. More than 58% of the respondents either disagreed or strongly disagreed with this statement, while 41.8% of the respondents either agreed or strongly agreed with the statement. The most productive investigators were more likely to disagree that presentation graphics programs improve productivity and the least productive investigators were more likely to agree with the statement.

The relationship between question #12 ("I have improved my investigative productivity through the seizure or analysis of computers or computer related evidence") and the performance measure "fines" resulted in a Pearson chi square value of 26.83 at the .00149 significance level. More than 38% of the respondents either disagreed or strongly disagreed with this statement, whereas 61.6% either agreed or strongly agreed

with the statement. The most productive investigators were more likely to disagree with this statement, while the least productive investigators were more likely to agree that investigative productivity increased through the seizure or analysis of computer evidence.

The relationship between question #14 ("I have improved my investigative productivity by accessing large commercial databases such as Metronet, Info America, Prentice Hall, TRW Redi, and Dun & Bradstreet") and the performance measure "fines" resulted in a Pearson chi square value of 19.92 at the .01841 significance level. Among the least productive investigators, more were likely to agree or strongly agree with the statement that investigative productivity is increased by accessing large commercial databases.

The relationship between question #16 ("I have improved my investigative productivity by accessing regional law enforcement databases such as CLETS, WSIN, etc.") and the performance measure "fines" resulted in a Pearson chi square value of 26.30 at the .00183 significance level. More than 66% of the respondents either agreed or strongly agreed with this statement, while 33.6% either disagreed or strongly disagreed with this statement. The most productive investigators were more likely to disagree with this statement, while the least productive investigators were more likely to agree that access to regional databases improved productivity.

A review of the four "marginal"relationships (significance levels between .05 - .10) revealed no obvious differences in their distributions between agree/disagree and productive/non-productive. As a result, based solely on the chi-square test, the interactions between these marginal results do not appear to be meaningful.

Since the chi-square statistic is merely a test of independence, it is difficult to rely

on this test alone to determine the strength or direction of variable relationships. In order to examine the strength and direction of relationships between variables, additional measures may be employed. Two such measures were calculated for this sample. The first measure calculated, asymmetric lambda, is appropriate for nominal level data. The second measure calculated, gamma, is appropriate for ordinal level data. The questionnaire collected either ordinal or interval level data. As a result, both lambda and gamma are to be considered appropriate tests for this data. The Somers' D statistic was also used to explore the data. However, the results using Somers' D produced lower test values than using gamma and, therefore, the results will not be included.

Both lambda and gamma are based on the concept of "proportional reduction in error" (PRE), which was introduced by Goodman and Kruskal (1954). PRE measures allow for a clearer understanding of the meaning of association between variables. "These measures are essentially ratios of a measure of error in predicting the values of one variable based on knowledge of that variable alone and the same measure of error applied to predictions based on knowledge of an additional variable" (Norusis, 1993).

Asymmetric Lambda

Goodman and Kruskal developed the lambda measure for ordinal level data. This measure ranges in value between 0 and 1. If a lambda value of 0 is obtained, it means that the independent variable (e.g., investigative practices) is of no value in predicting the dependent variable (e.g., performance measures). A lambda value of 1 indicates that the independent variable perfectly predicts the dependent variable. Two types of lambdas can be calculated. The symmetric lambda is used when it is difficult or impossible to determine which variable is the dependent variable and which variable is the independent

variable. The asymmetric lambda is used when it is known which variable is the predictor variable and which variable is the outcome variable.

Relationships between ordinal data can be calculated using nominal measures. However, since additional information regarding the rank order of the variables can be utilized, ordinal measures may be more effectively employed. Ordinal measures permit inferences to be made regarding the direction of the relationship and to the concept of correlation. A positive correlation is characterized by either a low or high value for both the independent and the dependent variable. A negative correlation occurs when the value of one variable either goes up or down in opposition to another variable.

Gamma

Goodman and Kruskal also developed the gamma statistical test. Gamma is used to analyze ordinal level data. Gamma calculates the likelihood that a random pair of observations is concordant, minus the probability that the pair is discordant, assuming the absence of ties (Norusis, 1993). A gamma of +1 indicates a strong relationship between variables and that scores will be focused in the upper left to the lower right diagonal of the table. A gamma of 0 generally indicates that the research variables are independent. A gamma of -1 indicates a strong negative relationship between variables and that scores will be focused from in the upper right to the lower left diagonal of the table. Gamma does not make a distinction between the independent and dependent variables during calculation. Both the independent and dependent variables are treated symmetrically when calculating gamma. Like the lambda statistic, gamma is also a proportional reduction in error (PRE) test.

In the instant research sample, analysis using asymmetric lambda and gamma

tests revealed the absence of a strong relationship between the various independent and dependent variables. The highest lambda values were just over 0.1 and the highest gamma values ranged from +0.2 to -0.2. Any number of factors could account for the low lambda and gamma values. Potential explanations include the existence of unknown intervening variables, small sample size (142 investigators), or it could merely mean that the wrong predictor or outcome variables were selected for research. Based on the lambda and gamma test results, the investigative practices selected for research are poor predictors of the productivity of specific investigators.

The most significant asymmetric lambda test result revealed the strongest relationship (.11111) between the predictor variable question #6 ("I have used database programs to improve my investigative productivity") and the outcome variable arrests. Although the relationship is weak, this result reveals that those investigators who utilize database programs are more likely to be productive, as gauged by their number of arrests. Some of the narrative comments which supported this finding include those provided by a journeyman investigator in a domestic field office with 5-10 years experience:

> For the last 18 mos., I have been involved in a major fraud investigation that will result in pre-penalty notice of approx. $150 million & several indictments (corporate & individual). A major tool used in this investigation is special database/lotus software. Also, we use imagery to upload evidentiary documents (over 20,000 pieces) which are then written onto CD-Rom's for future presentation, discovery to defense counsel, etc. Without the use of computer technology, this case would still be in the preliminary stages (2 yrs. later). Computer technology has allowed us to sort, organize and search over 20,000 documents and an additional 2,500 customs entries. As a result - millions of dollars in penalties are likely.

A journeyman investigator in a domestic field office with over 20 years experience stated:

> Several years ago I was involved in a difficult complex money laundering investigation involving 16 defendants. Having a deadline of one month to indict these individuals was imposed on me by the particular AUSA. Due to my knowledge of word perfect at the time, I was able to bang out complete, concise reports for the AUSA. Link and Toll analysis charts played a vital part of my criminal case report. I was able, due to various databases, pull in all of the co-conspirators into my sealed indictments. Final results...16 warrants...16 indictments...16 convictions...6 outstanding arrest warrants (fugitives). Needless to say computer assisted investigations should be the standard for complex investigations.

The most significant gamma test results revealed the strongest relationship between: the use of regional law enforcement databases and arrests (.23299); the use of word processing programs and convictions (-.21597); the use of telephone toll analysis programs and fines (-.23883); the use of database programs and fines (-.28459), the use of large law enforcement computer systems and fines (.24115); the world-wide ability to access investigative computer system reports and forfeitures (.20298); best investigators possess a high degree of computer proficiency and forfeitures (.23092); the use of laptop/notebook computers and seizures (-.20371); the use of flatbed digital cameras and seizures (-.21393); and the utilization of optical character reader technology and seizures (-.22092). Some of the narrative comments which support these findings include the comments provided by a journeyman investigator in a domestic field office with 5-10 years experience:

> I believe TECS (Treasury Enforcement Communication System) is the best computer system in Federal law enforcement, however, I would like to see more people become familiar with the systems capabilities.

A journeyman investigator in a domestic field office with less than five years experience observed:

> The use of computers in an investigation, especially TECS have had a

> great impact on my ability to perform as a Special Agent. During the course of numerous narcotics investigations that I have conducted, it has become obvious how informative TECS and NADDIS are when properly utilized. The information contained in these systems can often break a case wide open for a Criminal Investigator. I would like to commend TECS's capabilities for allowing an agent who is investigating a target in one part of the U.S. to be able to determine that an agent in another part of the U.S. is investigating the same target. Both agents can then work together to achieve the same goals in the investigation. DEA's NADDIS system does not have the same abilities to retrieve case related information. The DEA agent has to request the case file, we just have to browse the reports of Investigation which saves a lot of time.

A journeyman investigator in a domestic field office with 5-10 years experience commented:

> Because of the TECS system I was able to link several large scale narcotics smuggling organizations to the target of my investigation. TECS is beyond a shadow of a doubt more efficient than any other Federal Law Enforcement Agencies.

A journeyman investigator in a domestic field office with 5-10 years experience stated:

> The Treasury Enforcement Communications System is probably the finest law enforcement data base in the government. Other agencies are amazed at what we are able to do with it and how easy it is to use. It has been a valuable asset used by investigators throughout the Customs Service.

A review of these gamma tests reveals that negative test values result when investigators use computer technology devices such as notebook computers, digital scanners, optical character readers, word processors, and database programs on personal computers. Conversely, positive gamma test values were obtained when investigators relied upon large mainframe and regional computer systems and databases. In the tests which resulted in positive values, as the use of a specific computer technique increased, so did productivity. In the tests which resulted in negative values, as the use of a specific

computer technique increased, productivity decreased.

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Generally, the observed results were the opposite of what was anticipated prior to the collection of the survey responses. As previously mentioned, the vast majority of the applicable literature supports the notion that computers assist investigators to become more productive. The results of this study tend to support the opposite conclusion: that computer assisted investigations do not increase the productivity level of investigators.

Some of the written comments contained in completed questionnaires endorsed the notion that a reliance on computers does not increase investigator productivity. A journeyman investigator in a domestic field office with over 20 years of experience observed:

> Agents have quickly learned that well organized files filled with high-tech computerized activity impresses those who are charged with case evaluation or more importantly those who conduct desk-audits! There is a niche for this support function, but it's important for us all to remember, that there is no substitute for basic criminal investigations. The emphasis on computers is out of balance.

A first-line supervisor in a domestic field office with over 20 years of experience stated:

> Many of our best agents are unskilled with computers, but they know the application and delegate the work to our Intel staff - the computer literate group. I have not seen any computer that can replace a good informant when it comes to gathering evidence, but most of my targets were Neanderthals anyway!

However, it would be imprudent to conclude, solely on the basis of this study, that computer assisted investigations do not increase investigator productivity. Additional research into the exact relationship between computers and investigative productivity will be necessary before final conclusions can be made.

Although this study discovered only a weak statistical relationship between computers and investigator productivity (relying on the lambda and gamma tests), the descriptive statistics clearly demonstrate the perception on the part of 95% of the respondents that computers do indeed improve investigative productivity.

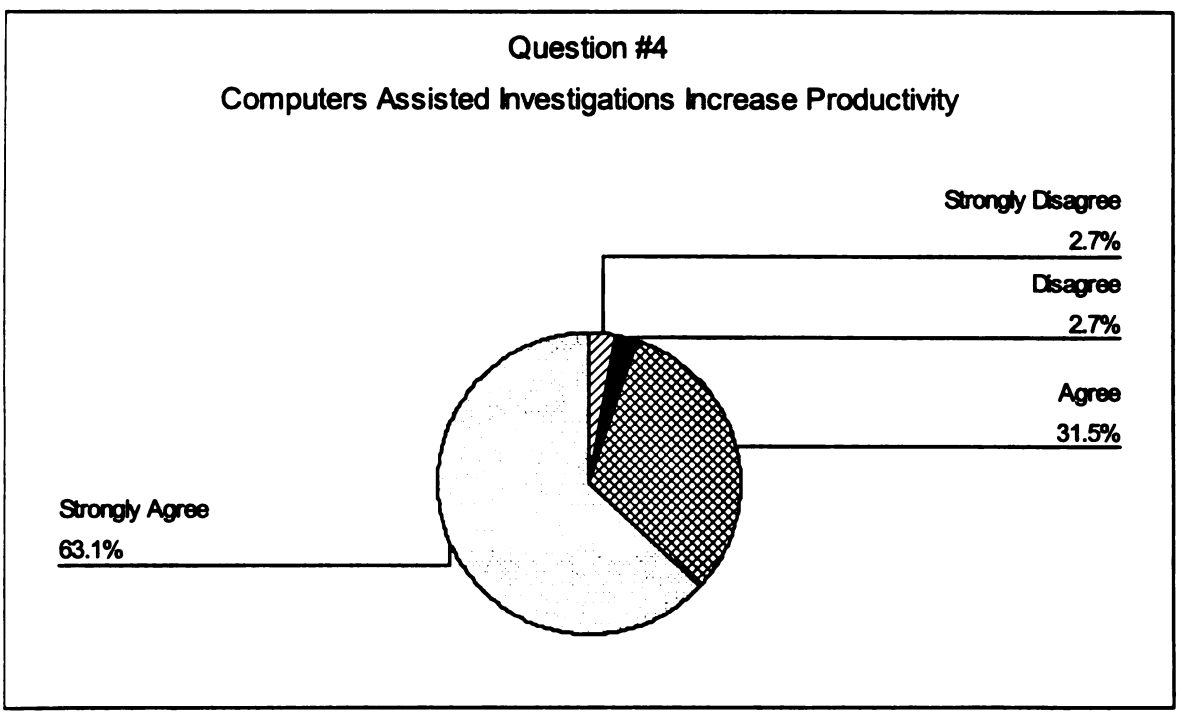

Figure 5.1 Computer Assisted Investigations Increase Productivity

Either wide-spread perceptions are out of touch with reality, or there is something else affecting the relationship between computers and productivity.

In an effort to collect additional information on the true nature of the relationship between computers and productivity, a single issue conference was held during the week of February 19, 1996. Rather than relying on the survey questionnaire as the sole means of collecting information on the relationship between the research variables, it was anticipated that the use of discussions and interviews would assist in discovering the effect of computers on investigator productivity.

Approximately 12 participants met at the U.S. Customs Data Center in Newington, Virginia to discuss the issue of computer automation in the U.S. Customs Service, Office of Investigations. The participants were selected based on their recognized expertise within the organization in the area of computer assisted investigations. Participant experience levels ranged from journeyman investigator and intelligence analyst, to first-line supervisor, to that of Special Agent in Charge. Detailed and structured discussions were held with all focus group personnel.

The overwhelming consensus of the focus group was that computer assisted investigations do increase investigator productivity. However, it was observed that the severe lack of computer training was adversely impacting the ability of investigators to fully exploit computer technology. Managers expressed frustration regarding the large amount of time investigators spent learning through "trial and error", how to use the new computer technology which has been made available to them over the past few years. Both the investigators and managers alike expressed a sense of being overwhelmed by the recent flood of new computer hardware and software.

The concern relating to the lack of computer training was validated in the survey questionnaire used in this study. The lack of adequate computer training was the most

common complaint in the survey responses. A journeyman investigator in a domestic field office with over 20 years experience observed:

> I believe that more benefit could be obtained from the current computers if additional training was provided. Each S/A generally has a new computer containing a massive amount of software/programs. No one has ever provided training on how to utilize these programs. Some individuals who have the desire, have spent time trying to learn on their own, but primarily these new computer programs go unused.

A first-line supervisor in a domestic field office with between 10-20 years experience remarked:

> Computers have had a very positive impact on investigations. We just need to provide more training. Many of the Agents have had to learn by trial and error. That is not how to be productive.

A first-line supervisor in a domestic field office with over 20 years experience commented:

> Training is the most important issue. Our office has recently received all new computers, but no training. We are only using 10% of what these computers can do for us. We have had an imagery system for six months and no one can make it work. Training, Training, Training.

A journeyman investigator in an air operations office with 10-20 years experience stated:

> While we have many commercial programs available, there is no training to teach us how to apply them to casework.

A journeyman investigator in a domestic field office with less than five years experience commented:

> Desperate need for computer training. Being a recent graduate of FLETC, I can attest to the inadequacies of the computer related training.

A journeyman investigator in a domestic field office with 10-20 years experience stated:

> I assume that Customs will continue to have S/A's (special agents) type their own ROI's (reports of investigation), so I would suggest that typing

> be a required course of study at FLETC (Federal Law Enforcement Training Center), or as has been suggested before, put a typing tutor in Phoenix (in-house computer based training system) or make it available to S/A's so they can learn to type. It just galls me to see so much time wasted by hard working S/A's who have to hunt & peck on a keyboard.

A journeyman investigator in a domestic field office with 5-10 years experience commented:

> I can't tell you how many hours were lost when we converted to Windows with no formal training. It might be helpful if we were trained on new programs before they are installed instead of assuming that we are a bunch of computer geeks.

A journeyman investigator with 10-20 years experience at a domestic field office observed:

> I think training is very important. Why purchase all this new equipment when half the office can't even use it.

A journeyman investigator in a foreign field office with 10-20 years experience remarked:

> It is my opinion that computers have greatly enhanced the potential of investigators. However, if proper training is not made available, valuable time is wasted on "self learning" new software. I believe that future computer enhancements/technology will be useful and necessary as long as proper training is made available.

A journeyman investigator in a domestic field office with 10-20 years experience commented:

> While Customs appears to have "state-of-art" computer equipment, the average agent has no training in the operation of that equipment beyond basic training at FLETC. It would be of great assistance and assure the proper utilization of expensive computer assets if training were provided to the field.

A journeyman investigator in a domestic field office with less than five years experience observed:

> With this office's limited personnel, I know that requests for computer training will be denied. I am eager to learn, to enhance my investigative skills, as I realize that computer technology is the wave of the future.

A journeyman investigator in a domestic field office with 5-10 years experience stated:

> Training is essential! USCS (United States Customs Service) has none!!! I trained myself in these areas and it was VERY labor intensive and required the investment of personal time. Learning is much easier if you have support and teachers. I received almost NO support in this area.

A first-line supervisor in a domestic field office with 10-20 years experience commented:

> Very few agents have a working knowledge of what the computer systems offer. The training from the beginning was extremely poor and appeared to do more harm than good. Now there is continuous catchup. There is so much information out there that one is easily overwhelmed.

In an effort to collect input on computer related spending priorities, all respondents were asked to rank order their spending priorities. Over the past few years, it has been uncertain what the spending priorities of field office personnel are in relation to computer technology. Their input was solicited in the survey in an effort to determine what they think the correct mix of computer related spending might be (Appendix B).

The most frequent choice (34%) for the first spending priority was computer training. It was also the most frequently selected choice for the second spending priority (23%). Written remarks included in the returned questionnaires also echoed the concern over the lack of computer related training. Respondents commented that they had not mastered their existing computer tools when new hardware and software was being delivered to their offices. They exhibited a frustration that they could not keep up with the new computer technology without a significant investment in computer related training. Comments pointed out that Customs investigators were merely scratching the surface regarding the full potential of existing computer technology. Without a serious

commitment to computer related training, some respondents were skeptical regarding the value of investments in new computer technology.

Many of the written comments included in the survey responses indicated that some investigators believed that a specific computer technique might improve productivity, but they were unable to attribute an increase in productivity to the specific technique since they did not have access to the computer hardware or software. For example, if respondents did not have access to a digital scanning device, they commented that it did not increase their productivity; but, they went on to observe that if they did have access to the equipment, it might make a difference. This was also a frequent comment regarding access to new computer software programs. Since the investigators did not have the access to the technique, they could not attribute productivity increases or decreases to the technique.

Examples of responses regarding limited access to computer hardware and software included the comment of a journeyman investigator in a domestic field office with less than five years experience:

> The main reason for all the 'D' (disagree) responses is due to the fact that they are unavailable at this RAC (Resident Agent in Charge) office. It doesn't mean that I wouldn't utilize those tools, just that I have not seen them. Our laptop broke and we have been denied authority to have it repaired.

In one office, a journeyman investigator observed that access to the latest advances in computer technology were being restricted because as new equipment and software arrived in the office, priority for distribution was given to administrative support personnel and supervisory investigators. Frustration was expressed over the fact that equipment and software intended for working investigators was being diverted to non-

investigative personnel:

> Hardware such as scanners and image scanners are in the SAC (Special Agent in Charge) office, however the latest and best of this equipment is assigned to the MPO (Management Program Officer) who is not an investigator. This equipment should be put out for investigators use. Furthermore color printers are assigned to only MPO and specific agents. When it comes to preparing court visual aids, this equipment could greatly enhance court presentations.

Although this is not a universal practice in all offices, it appears that it is unfortunately more common than it should be.

Although there was no lack of complaints from the investigators regarding computers, there were many compliments as well. After reviewing all of the narrative comments, one can easily conclude that investigators assigned to Customs are generally willing to embrace computer technology, as long as they are provided with adequate training. A journeyman investigator in a domestic field office with 10-20 years experience observed:

> The ability to identify targets in other offices affiliated with an investigation in my office has been extremely profitable from an investigative position. The use of Word Perfect has greatly enhanced my communication skills, thereby aiding the overall investigation.

A manager in domestic field office with over 20 years experience commented:

> In our offices computers are a great help. They account for our successes.

A manager in a domestic field office with over 20 years of experience reported:

> The computer assisted investigations conducted by my office have greatly enhanced our productivity.

A journeyman investigator in a domestic field office with 10-20 years experience commented:

> I think Customs has the best computer system in all of Federal Law Enforcement. I hope we keep moving forward in the area of our computer capabilities.

A journeyman investigator in a domestic field office with more than 20 years experience stated:

> Computers enhance our performance. They permit us to do things immediately; they give us instant access to information that used to take months. They keep us accountable. They also, and maybe most importantly, give us the time to go out into the field and uncover additional crimes.

A journeyman investigator in a domestic field office with 10-20 years experience remarked:

> Customs has the best computer system in Gov's. Keep up the good work. Customs has great people and computers are a wonderful tool in the right hands (ie., field level) with proper training (more needed).

A journeyman investigator in a domestic field office with 10-20 years experience stated:

> I think that Customs has the most advanced computer system in law enforcement. It puts DEA to shame. The computer has helped me link several of my subjects to other major investigations.

A journeyman investigator in a domestic field office with 5-10 years experience noted:

> Almost all of my investigations are dependant on computer technology to some degree and I feel that I owe 70% of my productivity in cases brought to fruition to computers and/or computer related products.

A first-line supervisor in a domestic field office with over 20 years experience commented:

> The USCS TECS and related computer systems, ie. case management are outstanding. The USCS is light years ahead of our contemporaries. At my management level it is difficult to envision enhancements because of my lack of computer knowledge. A recurring computer training program brought out to the field offices would be helpful for computer skill disadvantaged agents.

A journeyman investigator in a domestic field office with less than five years experience remarked:

> Customs has the most modern, efficient and useful law enforcement oriented computer system in the world, to my experience. We not only continue this system but enhance it. USCS (U.S. Customs Service) SA's (special agents) handle more case load than other federal SA's due to our automated accesses, in my experience and opinion.

Additional research is warranted in an effort to further explore the relationship between computer assisted investigations and investigator productivity. Based upon the results of this survey, the interviews of agency subject matter experts, and a review of the available literature, there is clearly a perception that computer assisted investigations do increase investigator productivity. What needs to be determined is if perception is based in reality as it relates to this issue. Although a causal relationship between the research variables was not conclusively identified as a result of this study, several recommendations are nonetheless obvious.

It is recommended that a comprehensive computer training assessment be conducted for the investigators in the U.S. Customs Service. Although there have been some previous efforts to conduct a training assessment, these efforts were undertaken by agency personnel who may have had a vested interest in the outcome of the assessment. As a result, their conclusions may not have been as objective or up-to-date as if the assessment was conducted by external personnel such as private management consultants. Private sector management consultants appear to be the best choice since they do not have a vested interest in the outcome of the assessment; they are familiar with current and emerging technologies; and, they know what has worked best in other organizations. Customs has enjoyed good results in the past when employing private sector management

consultants to examine computer security and the undercover operations program.

In an effort to exchange information relating to computer assisted investigations, it is recommended that a permanent working group be established in Washington, DC at the federal level. Major federal investigative agencies such as the Internal Revenue Service, the U.S. Secret Service, the Drug Enforcement Administration, the U.S. Customs Service and the Federal Bureau of Investigation should be required to send at least one investigator representative to periodic meetings.

The establishment of this type of working group will provide a forum for the exchange of information regarding what works (and what does not work) in the area of computer assisted investigations. Most federal investigative agencies share many common interests in the field of computer assisted investigations. Rather than learning through trial-and-error in each agency, we ought to capitalize on the experiences of other federal agencies.

In addition to facilitating technology transfer between agencies, this working group will assist agencies in the bench marking process. Bench marking will allow varied agencies to determine where they stand in relation to other agencies, in the area of computer assisted investigations.

In the past, more often than not, decisions regarding the future direction of computer use in the U.S. Customs Service were made by information management personnel. Although this generally seems to make sense, these decisions were sometimes made in a vacuum, without the involvement of major stakeholders, including Customs investigators. As a result, investigators were forced to live with decisions regarding computer training, new software, new hardware, and communications configurations. In

an effort to ensure that future decisions regarding computer technology are sensitive to the needs of investigators, they should be fully integrated into the decision-making process as it relates to training, software, hardware, and communications configurations (Schmalleger, 1990).

Based upon input received from the returned questionnaires and during in-depth interviews during the single issue conference on computer assisted investigations, additional recommendations include:

- Increase computer training during initial investigator training
- Provide good quality in-service computer training for investigators and supervisors
- Issue a notebook computer to each new investigator at basic training
- Continue and improve use of TECS mainframe as centralized data warehouse

All of the above recommendations will require the Office of Investigations to increase its commitment to computer technology. Additional investigative personnel will be required to be assigned to this program area at Customs headquarters and in field offices. The existing investigative personnel assigned to this area are already overwhelmed by other computer related initiatives. The computer assisted investigations program area is the type of area where the investment of a few more people will pay high dividends.

In the past, the acquisition of computer hardware and software has not been ideally planned or coordinated. Often times, computer related funding is held back until the end of the fiscal year and then released at the last moment. This results in a mad rush to determine what each field office needs in the way of hardware and software.

Unfortunately, this sometimes results in some offices being short-changed and other offices ending up with more equipment than they need.

Typically, what happens is that no long-range computer funding for the Office of Investigations is included in the final agency budget plan. Only limited funding is available to the agency, so some initiatives must go unfunded. It is likely that a part of the reason why computer related funding is not included in the final Office of Investigations budget plan is that there is an expectation that any unspent funds from other budget categories (e.g., travel, salaries, etc.) will be re-programmed at the end of the fiscal year to allow them to be spent for computer equipment and software.

Another unintended consequence of the policy, to hold back funding until the very last moment and then insist that it be spent quickly, is that it forces managers to obligate and spend the funds before the end of the fiscal year. This typically means that tangible assets such as hardware and software are quickly procured with available funds. Computer-related training therefore has typically been unfunded, since the training funds could not be quickly obligated and spent.

The result of this funding policy has been that computer equipment and software have been delivered to offices with little or no related computer training. This has resulted in needless frustration for investigators, and it has made them less than eager to warmly embrace computer technology in the workplace. It is very likely that the lack of computer training has significantly contributed to the negative correlation between computer assisted investigations and investigator productivity. Instead of providing a benefit to investigators, computers have been viewed as a frustrating impediment to helping them do their jobs more productively.

Rather than funding computer related expenditures at the last moment of the fiscal year, a well-conceived budget plan should be developed and funded. Like cars for investigators, computers wear out and get outdated. A long range (five year) computer budget plan should be developed and updated each year, based upon current and future needs, and then funding should be prioritized to ensure that this plan is fully implemented. Until this is done, the full potential of computer assisted investigations will not be realized.

Even though this study did not discover a positive correlation between computer assisted investigations and investigator productivity, it would be inaccurate to assume that no such relationship exists. It is possible that these variables are positively correlated, but that some other intervening variable was not taken into account.

For example, it is reasonable to speculate that if the U.S. Customs Service had done a better job of training its personnel and making them aware of the benefits of computer assisted investigations, they would be more likely to use these techniques to improve individual and agency performance. Other agencies, who do a more effective job of fielding new computer technology and providing related computer training, may experience increases in investigator productivity.

Additional research should be conducted in an effort to confirm the findings of this study. This research should include other investigative agencies as well as attempts to replicate the findings of this study within the U.S. Customs Service.

APPENDICES

APPENDIX A

APPENDIX A

QUESTIONNAIRE

The purpose of this survey is to attempt to measure the affect of computer assisted investigations on the productivity levels of investigators. One of the goals of this project is to attempt to identify specific practices, procedures, or policies which are associated with high levels of productivity.

You are requested to complete this questionnaire as soon as possible and return it in the attached pre-addressed envelope. It is estimated that it will take approximately 10 minutes to complete this questionnaire. This survey has been designed to be anonymous; do not write your name on the survey. No attempt will be made to violate this pledge of anonymity. Please make every effort to answer each question thoughtfully and honestly. A "don't know" or "not applicable" answer option was intentionally omitted from this survey. Select the answer option which best describes your position.

Questions or comments regarding the completion of this survey may be directed to SSA David Palmatier at (202) 927-0453.
Thank-you for your cooperation.

Answer the following questions by placing an X next to the answer which is most applicable:

1. What is your position?

   _ Criminal Investigator (S/A, SSA, AIO, etc.)
   _ First Line Supervisor (G/S, AGS, RAC, etc.)
   _ Manager above First Line Supervisor (ASAC, SAC, etc.)

2. How many years have you been a criminal investigator?

   _ 0-5 years
   _ 5-10 years
   _ 10-20 years
   _ Over 20 years

3. Where are you currently assigned?

__ Domestic Field Office
__ Foreign Field Office
__ Air Field Office
__ Customs Headquarters

Answer the following questions using one of the following choices:

SA = Strongly Agree
A = Agree
D = Disagree
SD = Strongly Disagree

When reading these questions, supervisors and managers should replace the phrase "I have" with the phrase "someone under my supervision has."

4. __ Computer assisted investigations increase the productivity level of criminal investigators.

5. __ I have used telephone toll analysis programs (e.g., TELAN, SUISS, Penlink, etc.) to improve my investigative productivity.

6. __ I have used database programs (e.g., dBase, Access, Foxpro, etc.) to improve my investigative productivity.

7. __ I have used spreadsheet programs (e.g., Excel, Lotus 1-2-3, Quatro Pro, etc.) to improve my investigative productivity.

8. __ I have used presentation graphics programs (e.g., Freelance, Harvard Graphics, Power Point, etc.) to improve my investigative productivity.

9. __ I have used word processing programs (e.g., WordPerfect, Word, Ami Pro, etc.) to improve my investigative productivity.

10. __ I have used drawing programs (e.g., Corel Draw, Visio, etc.) to improve my investigative productivity.

11. __ I have used digital imagery technology (e.g., TECS imagery) to improve my investigative productivity.

12. __ I have improved my investigative productivity through the seizure and/or analysis of computers or computer related evidence.

13. _ I have improved my investigative productivity by accessing large law enforcement computer systems such as TECS, NCIC, NLETS, NADDIS, etc.

14. _ I have improved my investigative productivity by accessing large commercial databases such as Metronet, Info America, Prentice Hall, TRW Redi, and Dunn & Bradstreet.

15. _ I have improved my investigative productivity by accessing large financial databases (e.g., CTR, CMIR, FBAR, CSN, etc.).

16. _ I have improved my investigative productivity by accessing regional law enforcement databases such as CLETS, WSIN, etc.

17. _ I am regularly able to locate and track suspects/fugitives by placing look-out records in national computer systems such as NCIC, TECS, and NADDIS.

18. _ I have improved my investigative productivity by accessing computer bulletin boards or the Internet.

19. _ I have improved my investigative productivity by utilizing automated fingerprint identification systems.

20. _ I have improved my investigative productivity by utilizing a laptop/notebook computer.

21. _ I have improved my investigative productivity by utilizing a flatbed digital scanner.

22. _ I have improved my investigative productivity by utilizing optical character reader technology.

23. _ World-wide computerized access to U.S. Customs investigative case records and related investigative reports via TECS has greatly improved the investigative effectiveness of the agency.

24. _ Computerized access to suspect records and investigative reports which were entered by other Customs officers has greatly assisted me in my investigations by identifying additional suspects.

25. _ Generally, the best investigators in an agency also tend to possess a high degree of computer proficiency.

The following questions pertain to your investigative accomplishments for the last 12 month time period. Precise answers are preferable. However, this survey is not intended

to send you running to a file cabinet to get answers. If you don't know or remember the exact amounts, estimate as best you can. If you are a supervisor, estimate the average score for all of the personnel you supervised in the last 12 months.

26. __ How many arrests were made (by anyone) in the course of **your** investigations during the last 12 months?

27. __ How many convictions were obtained in the course of **your** investigations during the last 12 months?

28. __ How many fines or penalties were issued in the course of **your** investigations during the last 12 months?

29. __ How many seizures were made in the course of **your** investigations during the last 12 months?

30. __ How many forfeitures were obtained in the course of **your** investigations during the last 12 months?

31. Rank the following computer related budget initiatives in the order which you would prioritize future spending:

__ Modern computerized office work stations for each investigator
__ Computer related training
__ Mainframe computer enhancements (e.g, TECS/ACS/AES)
__ Commercially available computer software
__ Access to commercial databases (TRW, D&B, LEXIS, etc.)
__ Laptop/notebook computers for each investigator
__ Digital photographic imagery equipment
__ Automated fingerprint identification systems
__ Forensic computer equipment and related software

32. Please use the space below to include any remarks relating to the above questions, or to provide your narrative comments regarding the issue of computer assisted investigations.

Please seal your questionnaire in the attached pre-addressed envelope. In order for your responses to be included in the final analysis, your questionnaire must be received no later than December 15, 1995. Thank-you for taking the time out of your day to answer these questions.

APPENDIX B

APPENDIX B

SPENDING PRIORITIES

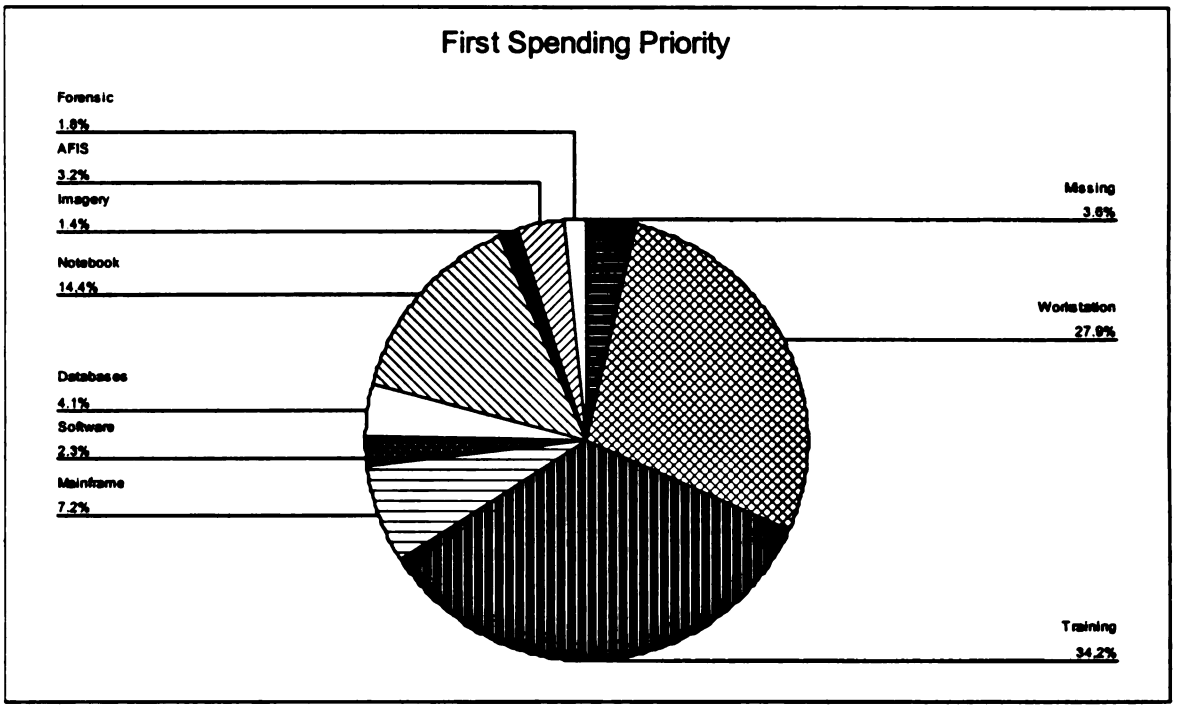

Figure B.1 First Spending Priority

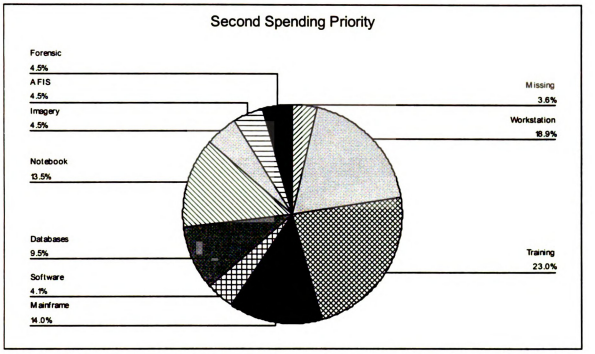

Figure B.2 Second Spending Priority

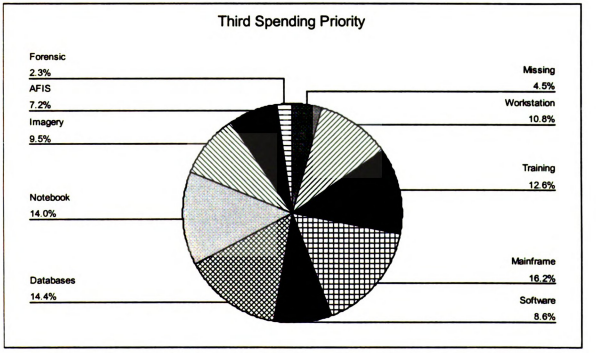

Figure B.3 Third Spending Priority

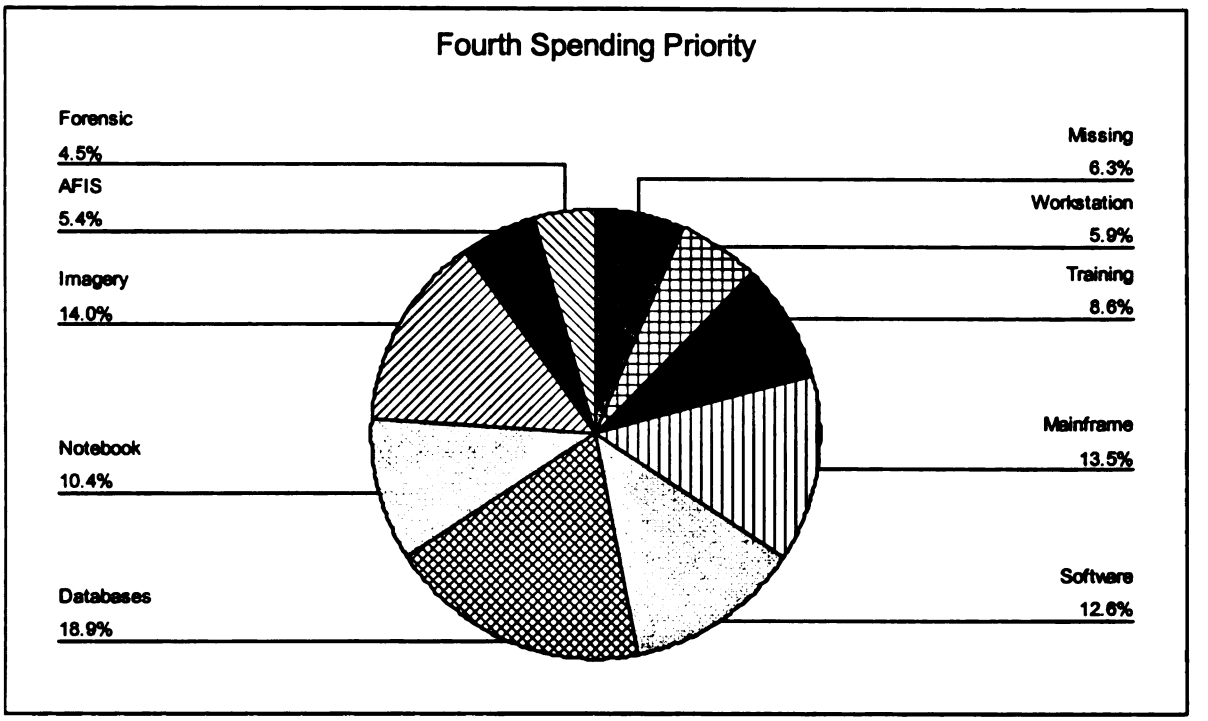

Figure B.4 Fourth Spending Priority

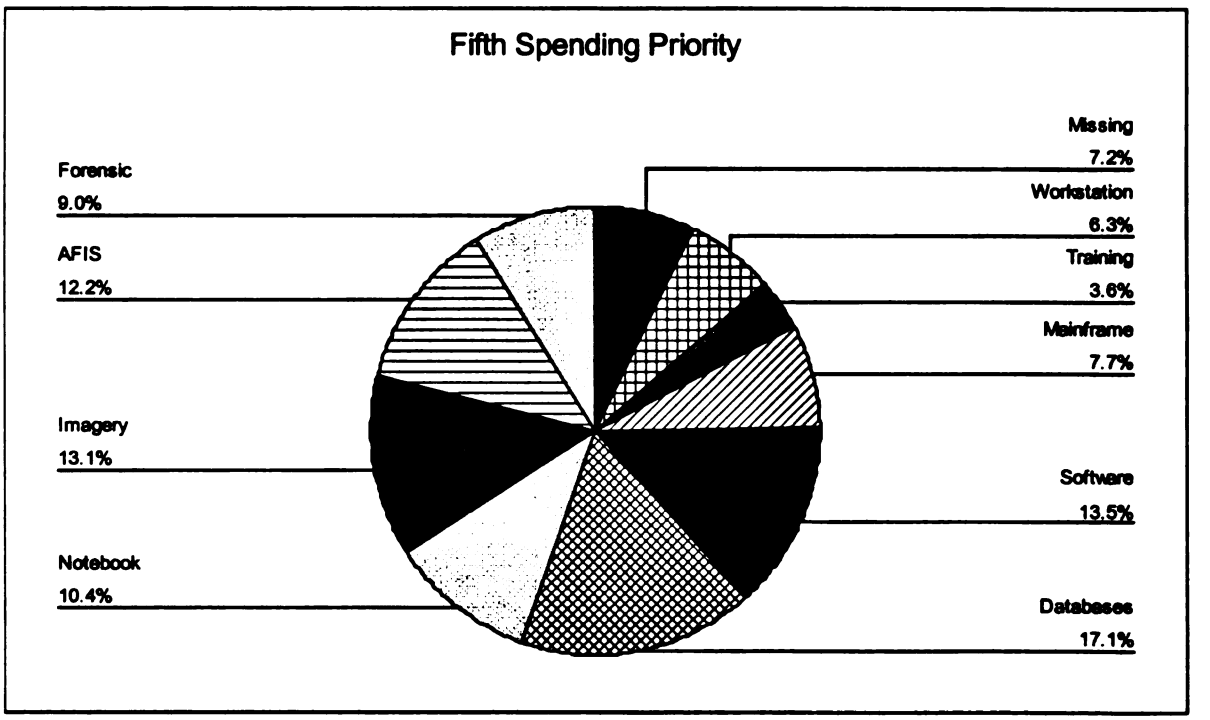

Figure B.5 Fifth Spending Priority

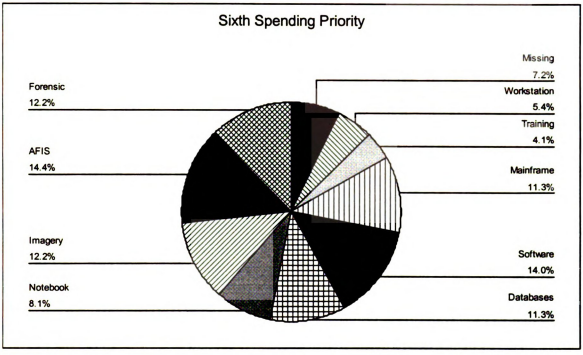

Figure B.6 Sixth Spending Priority

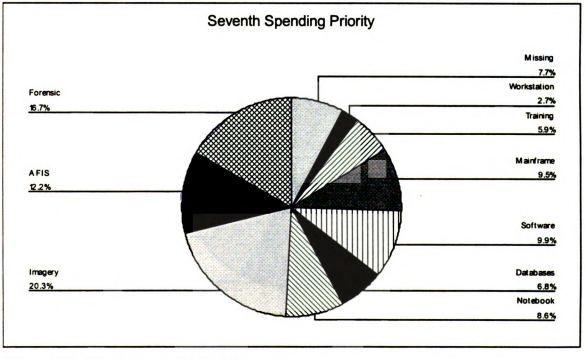

Figure B.7 Seventh Spending Priority

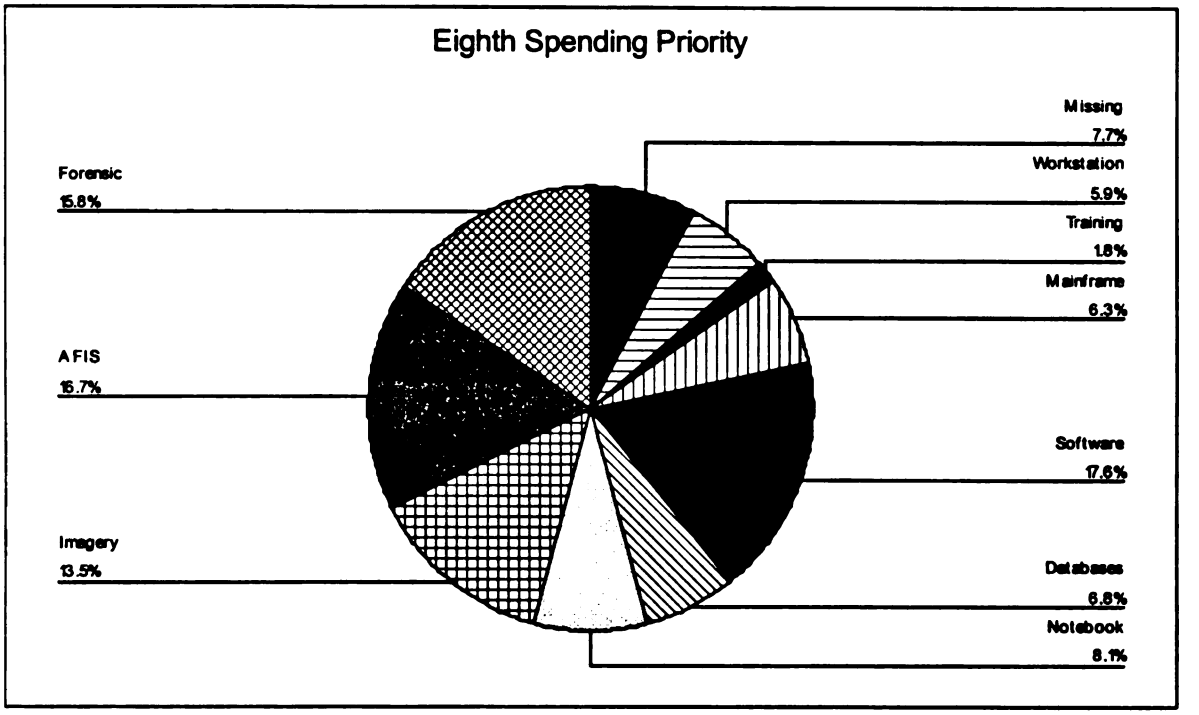

Figure B.8 Eighth Spending Priority

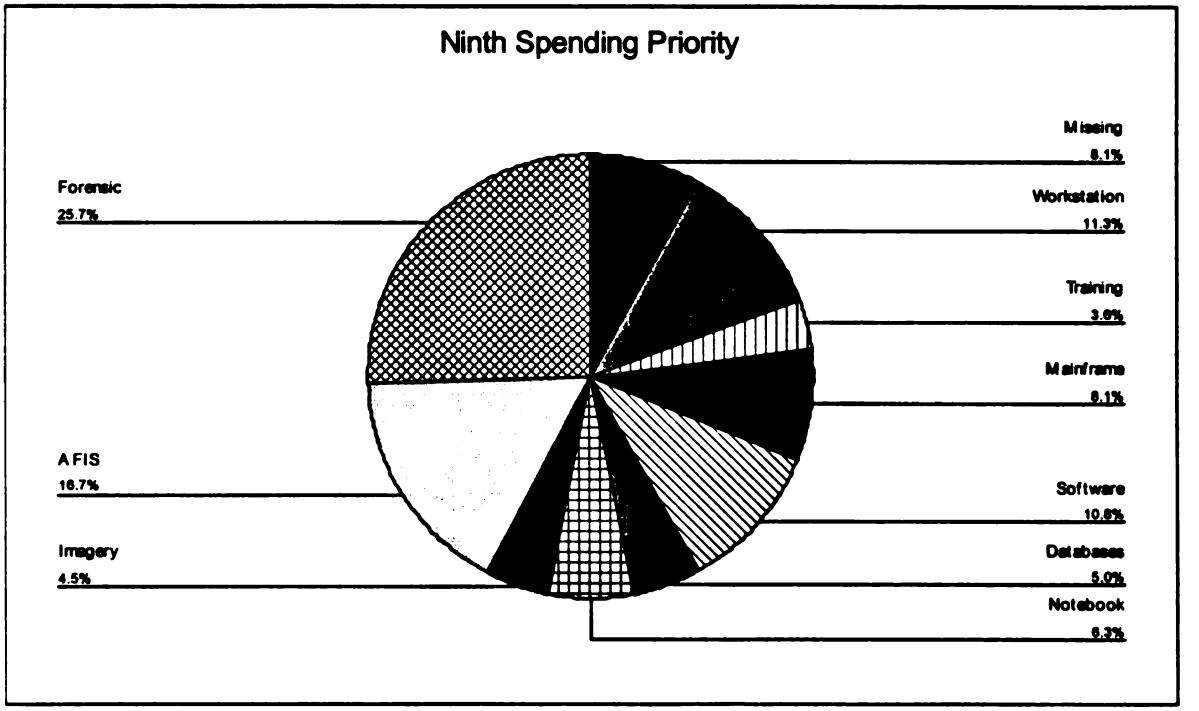

Figure B.9 Ninth Spending Priority

APPENDIX C

APPENDIX C

NARRATIVE RESPONSES

Resp	Pos	Exp	Loc	Comments
1.	3	3	1	
2.	3	3	1	
3.	1	1	1	TECS has been incredibly slow lately!!
4.	1	2	1	
5.	1	3	1	My computer is a hindrance, at the S?ND. I work in SAC/San Diego, is away from the main SAC office. and we do not have access to CLETS. Laptop computers would be the best that the service could provide the agents.
6.	1	3	1	
7.	1	3	1	Please be advised that until recently I have had almost no exposure to computer's which use "Windows". Since most of our everyday equipment was either "old" '386' or even '286' PC's, the use of "windows" with other software was most often slow or didn't exist. I could use Word Perfect 5.1 okay but we have recently gave over to WP 6.0 or WP 6.1 for Windows. I am struggling in these programs. There is training scheduled for this month in Windows and Word Perfect and I hope to learn to use much of the software in my "new" (hand-me-down) '486'PC. I realize that the new systems will eventually save me time and help me organize. However each new technological development means that this old dog must spend more and more time learning new tricks and less time on actual investigations.
8.	3	4	1	Training must keep pace with the technology programs like SIUSS need to be exploited more greater emphasis on Forensic positions.
9.	3	3	1	Our computer equipment is exceptional. We need better training in the utilization of all the equipment that we have and foremost we need the assignment of full time technicians to field offices who can maintain or improve the equipment as necessary.
10.	1	3	1	The ability to identify targets in other offices affiliated with an investigation in my office has been extremely profitable from an investigative position. The use of Word Perfect has greatly enhanced my communication skills, thereby

				aiding the overall investigation.
11.	3	4	1	
12.	1	4	1	
13.	1	4	1	
14.	1	2	1	I feel strongly that a basic knowledge of computers (ie.,.,,, TECS, NLETS, NCIC, WP and Phonedisk) can greatly assist an agent in conducting an investigation. However in recent years, I feel that Customs has expanded the use of computers beyond it's need. I realize the importance of keeping current with modern computer technology and with that in mind, I think Customs would be better served to select and train a few investigators per office rather than attempt to train the entire Office of Investigations. By way of explanation, I would rather have an office where every agent has a basic knowledge of computers and a few have a high degree of proficiency than one where most agents have a mid-level of proficiency. With this in mind, I would like to see the computer training offered by the agency divided by proficiency rather than a "who's turn is it to go now" policy. For example periodically, as the computer "experts" are trained to keep current, I would like to see a refresher course offered to any agent who feels the need to brush up on the basics. I feel this will create a more efficient Office of Investigations.
15.	1	2	1	
16.	3	4	1	In our offices computers are a great help. They account for our successes.
17.	1	2	1	Would like to see more widespread use of laptop computers. Combined with dial in access. I believe TECS is the best computer system in Federal Law Enforcement, however, I would like to see more people become familiar with the systems capabilities.
18.	3	4	1	Ques. 26-30 aren't really applicable to managers. You can get that info from case management module for the offices we manage.
19.	1	3	1	
20.	1	1	1	Access to TECS and other Federal, State and Local law enforcement agency data bases is very beneficial the automated fingerprint I.D. system and digital photographic imagery equipment would also be beneficial.
21.	1	3	1	
22.	2	4	1	Now that everything is in TECS II, we need to update and modify the SAS forms within the system. I&C and OI have different missions and different responsibilities. The current SAS does not meet the needs of both elements

				within Customs.23.
23.	1	2	1	
24.	1	2	1	Re#5. The intell personnel of the SAC/NY offer only excuses and blame others for TELAN and Penlink net working correctly. On two occasions I have been lucky enough to have interns (who happened to be excellent w/computers) from the U.S. Attorney's Office manage to get these systems working properly.
25.	2	4	1	The combination of Pen Link/TLAN and Harvard Graphics and Excel has greatly contributed to complex money Laundering Investigations.
26.	1	1	1	Many of the questions (4-25) ask if I have used some computer programs, I had to put disagree since they are not available to us. I would agree that as new software is made available that training and easy to understand manuals are a must. Much of what we do have available is not utilized because the majority of the agents don't know how to use it.
27.	3	4	2	1. More in house training, before or after work hours. 2. Collection software for diverse facts and info. 3. More documents scanners to save time. *4. Greater one stop data queries, enter the name once and all available data is retrieved!
28.	3	4	2	
29.	1	3	1	
30.	1	3	1	I am currently utilizing all aspects of the USCS-IO computer assisted investigations program to further programmatic responsibilities enacted by my office. I am specifically utilizing the word processing, database, imagery OCR and drawing programs to further this mission. *Word processing for report writing. *Databases for Link analysis. *Imagery for processing photographs and related information. *OCR to convert documents for use in ROI's & related projects. *Drawing programs to enhance data obtained from the other programs.
31.	3	3	1	
32.	2	3	1	Some of your questions would be better served by yes/no answers. Some questions presupposed the use of programs/systems that have not been available which don't allow an answer. You would do well to have an N.A. selection available. There are programs/systems/equipment that can be very productive to an office, but not necessarily to each agent. Computer use is a skill. Some people have the disposition, talent, and background to make effective use of it. Others don't. The systems require so much focus

				and time that agents cannot effectively gather intelligence/information etc. and still be able to input and process the information effectively. The output of the system is no better than its input. The focus of the system is no better than the focus of the investigation. Division of labor is necessary. Computers are not the answer; they are tools.
33.	3	4	1	
34.	1	3	1	Many aspects of TEC's should be more user friendly.
35.	3	4	1	The computer assisted investigations conducted by my office have greatly enhanced our productivity. We are always attempting to upgrade our software and equipment. HQ's. has come through for us in reference to our needs. SSA Palmatier in HQ's. and Ms. ?????? in New Orleans provide me with a first class team. I believe in computer forensics and will continue to support the program.
36.	1	2	1	I think that when new computer related programs or systems are available, the agents/supervisors/investigative assistants should be made aware of them & offered training. There have been things added to TECS that I never knew about until one day I just happened upon them. We strongly rely on the Intel analysts to do a lot of our computer queries. They have access to many systems, the training & knowledge of these systems & the time to do a much more thorough job of research than the agents normally have.
37.	1	2	1	Customs should procure toll analysis software such as Penlink for each office, which has the capability of down loading pre-register data for automated analysis. Customs should "how to" or "instructional" material for distribution to the field w/examples of how Customs purchased software such as Access, Excel, Powerpoint, can be used to enhance investigation. I do not believe training classes on use of the various software would be very beneficial. The individual must "see" how it can help and have a desire to utilize it. Use of computers has been very beneficial in organizing large volumes of data/information and being able to retrieve the data/information.
38.	1	4	1	Increase training is essential to effective utilization of the computer tools being provided. We are putting to much of a priority on hardware/equipment and not enough priority on education of the users.
39.	1	3	1	In order for an investigator to be efficient in the use of his time investigation cases. The investigator needs to be in the field and not in the office. The investigator needs a

				good support staff in the office so he/she can direct the support staff in following investigative leads (ie., type ROI's, do computer queries, send out collateral requests., etc.) The S/A's in the U.S. Customs Service spend entirely too much time in the office writing ROI's & following up on all the BUREAUCRATIC paperwork instead of working in the field making arrests & seizures. There is an old saying "Behind every good man is a good woman" and for investigative purposes the saying should read "Behind every good investigator is a good support staff!"
40.	1	3	3	
41.	1	4	1	
42.	1	3	1	Several of the answers I gave to the second section when I "agreed" to the statement I answered this way because I feel that if I had access to things such as a flatbed digital scanner it would be of great assistance. I think Customs has the best computer system in all of Federal Law Enforcement. I hope we keep moving forward in the area of our computer capabilities.
43.	1	4	1	I believe that more benefit could be obtained from the current computers if additional training was provided. Each S/A generally has a new computer containing a massive amount of software/programs. No one has ever provided training on how to utilize these programs. Some individuals who have the desire, have spent time trying to learn on their own, but primarily these new computer programs go unused. S/A use only TECS and Word Perfect because that is what is required to get the job done.
44.	2	3	4	
45.	2	4	1	
46.	1	2	1	A new system was installed - Windows - but training was not provided on how to access it and use it. I am still trying to learn it, but there aren't even manuals to go with the newly installed program. I am tired of asking someone else how to get to the program I need and what it does. I would like a manual.
47.	2	3	1	Computers have had a very positive impact on investigations. We just need to provide more training. Many of the Agents have had to learn by trial and error. That is not how to be productive.
48.	1	2	1	
49.	1	1	1	More managers both front line and upper managers need to be educated as to the importance of FLETC sponsored computer investigative training. Customs should have joint training with International Association of Computer

				Investigative Specialist. Also talk with SSA Jim Leeb of Customs at FLETC.
50.	1	1	1	
51.	1	3	1	Each Agent should be issued a Laptop upon leaving Customs Agents school. Training for managers who know nothing about computers is also a must.
52.	1	3	1	
53.	1	1	1	
54.	2	3	1	
55.	2	4	1	
56.	2	3	1	The questions not answered - neither myself or anyone under my supervision has had any exposure to those areas. Questions 26-31 are estimates.
57.	1	4	1	Computers enhance our performance. They permit us to do things immediately; they give us instant access to information that used to take months. They keep us accountable. They also, and maybe most importantly, give us the time to go out into the field and uncover additional crimes.
58.	1	3	1	
59.	1	1	1	The use of computers in an investigation, especially TECS have had a great impact on my ability to perform as a Special Agent. During the course of numerous narcotics investigations that I have conducted, it has become obvious how informative TECS and NADDIS are when properly utilized. The information contained in these systems can often break a case wide open for a Criminal Investigator. I would like to commend TECS's capabilities for allowing an agent who is investigating a target in one part of the U.S. to be able to determine that an agent in another part of the U.S. is investigating the same target. Both agents can that work together to achieve the same goals in the investigation. DEA's NADDIS system does not have the same abilities to retrieve case related information. The DEA agent has to request the case file, we just have to browse the reports of Investigation which saves a lot of time.
60.	1	2	1	Computer data bases (other than TECS) are relatively new to this office so it will take some time before they will be fully utilized.
61.	1	2	1	The biggest problem I have found is that the technology is changing faster than we can assimilate it, and the hardware is not keeping up with the pace either. Some machines are too weak for the programs. Some programs require and expertise that only a "computer person" can acquire. As a

				working agent I don't have the time or energy to sit and "play" with a program. I need a fast, simple to use program, that will allow me to concentrate on the substance of the investigation as apposed to the level of computer literacy which I may or may not process at the time. Good Luck!
62.	1	2	1	
63.	2	4	1	Training is the most important issue. Our office has recently received all new computer's but no training. We are only using 10% of what these computers can do for us. We have had an imagery system for six months and no one can make it work. Training, Training, Training.
64.	1	2	3	
65.	1	3	1	
66.	2	4	1	
67.	2	2	1	Many of the "D's" were related to software questions. Word Perfect (self taught) is all I know - haven't a clue how the rest works. Have a nice new color scanner and big color printer - stacked on the floor in their boxes. Don't know where I could find space for them, even if anyone knew how to use them. Of 4 laptops 3 are sitting on shelves (2, 286's/1, 386's). The fourth I have at home, hooked to a regular printer monitor and keyboard that I use for dial in TECS. Used to connect to SAC Houston's computer crime DB - but was told that could not use Customs computer for any modem use but TECS. Used to have some nice software (maps, including satellite, stuff from the state and local are and residents, etc) out of date now that some decided software is 31 (equipment)money. We don't get any of that. I've been trying to replace a shredder for 2 years. Have lots of 25 (office supply) money though.
68.	1	2	3	
69.	1	2	1	As the criminals become more involved with the use of computers enforcement will naturally have to keep pace, to date, I have not worked an investigation that required in depth knowledge of computers. However other with the ability to seize and secure computers have been essential in investigations. I have conducted, once the computers were seized and secure. Individuals with the proper training were able to down load the evidence into a workable form. In the future we will need to become efficient in this field much more so than previously. In five years my answer to question #25 will change indicating that the best agents have a strong background in the use of computers.

70.	3	4	1	
71.	3	4	1	
72.	1	2	1	The questions to which I answered, disagree to were mainly due to the lack of software. I have not been able to use those aids. I would also note that the arrests and seizures listed resulted from a TDY to the southern border. I am currently involved in fraud investigations. One very good tool is the ACS system. However, we have received no training in the use and usually have to obtain assistance from the district. Also, our office is not on the LAN system. I have utilized the district's system and it is GREAT. Working fraud, the tariff schedule, rulings, and CFR are at you finger tips. We all need to be on the LAN. And above all, we need to be trained to fully utilize the computer systems.
73.	2	4	1	The reporting requirements via computer take too much agent time. They are of questionable value to the field. They are primarily for use by HQ's and other management. HQ's should ask itself if a computer system helps the field agent do his/her job better instead of would it be a neat tool to make my job easier.
74.	2	4	1	
75.	1	3	1	
76.	1	3	1	
77.	1	3	1	The use of online computers has become the replacement for support staff and as such more training is the most important step that can be taken.
78.	1	2	1	I believe that an automated fingerprint system would improve my investigation, e.g. having readily accessible photos for lineups, and easy access to a data base of photos. Currently USCS does not have an automated or a data bank of arrest photos. It would be great to be able to access a computer system that would give you a copy of an arrest photo just by entering a reference number.
79.	2	4	1	Frequent computer related training is most important.
80.	1	1	1	
81.	1	2	1	The availability of laptop computers would greatly improve the agent's productivity, ie., assist in MOI, inventory of search warrants, ROI, etc. The data available on commercial databases would be of assistance and also save time. Computer training is needed, however, if the agent does not personally use the program/subject fields on a regular basis, the training is wasted.
82.	1	4	1	Computer activity tends to become an exercise in "busy work". Case files are filled with superfluous charts,

				schedules and data that is extraneous to successful prosecution. Agents have quickly learned that well organized files filled with high-tech computerized activity impresses those who are charged with case evaluation or more importantly those who conduct desk-audits! There is a niche for this support function, but it's important for us all to remember, that there is no substitute for basic criminal investigations. The emphasis on computers is out of balance.
83.	1	2	1	Windows sucks. Too much crap I don't need and don't want. Great if you want to play video games. There is nothing about the new 486/windows set up that makes what I use computers for easier. I use TECS, WP, Pen Link, REDI and a few other commercial data systems such as Info America and auto track. I don't see how any of the above uses are now made easier on the contrary, with the old 286/non-windows set up, I could switch between TECS and W.P. by hitting shift/Shift- I can't do that now or can't figure out how. We got zero training on the new systems, and frankly I think all that money would have been better spent on new cars.
84.	1	2	3	While we have many commercial programs available, there is no training to teach us how to apply them to casework.
85.	1	2	1	
86.	1	2	3	
87.	1	1	1	# Desperate need for computer training. Being a recent graduate of FLETC I can attest to the inadequacies of the computer related training. # Enhancements of upgrades for computer equipment, programs, data bases. #Imagery could greatly enhance effectiveness. Especially because of the changing - alternate names-spelling etc.
88.	1	3	1	Customs has the best computer system in Gov's. Keep up the good work. Customs has great people and computers are a wonderful tool in the right hands (ie., field level) with proper training (more needed).
89.	2	4	1	
90.	2	4	1	
91.	1	3	1	
92.	1	2	1	
93.	1	4	1	
94.	1	3	1	ACS in all ways(including "FRIL") is horrible - nearly impossible to reliably access information.
95.	2	4	1	1. 95% of my Computer work is preparing documents in word perfect. The other 5% is TECS mainframe access. Better access and enhancements to MICS standard reports

				would be helpful. 2. We have almost no support staff since agents are expected to keystroke their own reports. Few agents are good typists. Consequently, there are many agents doing less reporting even though a system is in place to facilitate the process. A two-finger, hunt and peck keystrokes may take 2 days to do a lengthy report. Maybe typing courses are the answer. 3. Many of our best agents are unskilled with computers, but they know the application and delegate the work to our Intel staff - the computer literate group. I have not seen any computer that can replace a good informant when it comes to gathering evidence, but most of my targets were Neanderthals anyway!
96.	1	2	1	Because of the TECS system I was able to link several large scale narcotics smuggling organizations to the target of my investigation. TECS is beyond a shadow of a doubt more efficient than any other Federal Law Enforcement Agencies. I would like access to commercial info data basis also. I have my own laptop and office workstation which greatly aids an investigator. However, to generate reports faster, a dictation system i.e., more support and intelligence personnel is needed to help the investigator to get back into the field rather than in the office laboring over reports. An intelligence analyst is needed for each field office to provide the information to the investigator in order to efficiently conduct multiple investigations.
97.	2	3	1	#14 - why do investigators not have access to databases which could be of such great assistance. #16 - Need access to regional and local databases - access to INS database would be of great assistance. #18 - Again, no access. Only bulletin boards within TECS. #19 - Again no access. #20 - Our only laptop is inoperable. We still need additional upgraded equipment.
98.	1	2	1	
99.	3	4	1	State of the art computer equipment, software and training are vital for success in OI missions. Acquisition of software (now occ:31 Funds not enforcement/supply money) is difficult, if not impossible, to come by. So is training. Priority emphasis should be placed on these two areas, assuming we already have laptops/notebooks(3 now). At a minimum free the software enhancement $$ up or go back and make it occ:25 again.
100.	1	3	2	In white collar crime cases (Customs Fraud) graphics displays go a long way with U.S. Attorney's Office "getting it!" I started using computer generated presentations in

				1985 with another agency and have continued using various applications to assist developing the invest. Use of telephone toll analysis in a database program in 1989 identified the major player in an Afghan heroin trafficking organization. Fingerprints lifted from meth lab glassware seized from a storage shed matched with prints on file in California automated fingerprint system and identified individual behind a large cocaine base seizure. Automation of all basic info allows us to do more in less time and timing is usually the critical factor in nabbing the bad guy!
101.	1	2	3	
102.	1	3	3	I do agree that the computer can be a valuable tool, but I find there is prejudicial access and the lack of training will always handicap a criminal investigator. Although Customs collectively calls all SA & CI 1811's; The two terms alone can determine whether or not you are allowed access to the computer programs you have inquired about. So I guess if you are asking for a consensus of the idea of a computer as a invaluable tool; I'd have to agree that it is. On the other hand, if this is a way to get more for the SAC or RAC offices then I'm wasting my time. All offices can use more up to date equipment; A. for the generalization that the best investigators tend to possess a high degree of computer proficiency. Well that just means it comes easier to the person as they spend a lot of time beating the key board. Some time wasted sometime productive. I know a lot of investigators that are very capable, but due to the lack of training and/ or access to user friendly equipment (computers) they are slightly handicapped. So, if you want my vote; educated everybody on a regular basis on the use of the equipment and you will make the computer invaluable.
103.	2	3	1	Computers have greatly enhanced our investigation , on the other hand, computers have also enhanced the abilities of the people customs investigates. While our forensic computer specialist are good in examining personal computers, efforts need to be made to provide the field with computer specialist from HQ's qualified in examining large mainframe computers. To call headquarters and to be put in the middle of a political battle between OI and the computer tech.'s in Newington does not further an investigation but hinders it.
104.	1	2	3	
105.	3	4	2	Computers greatly reduce time and aid investigators. When coupled with operational field activities. The time measure

				of how good an agent is, is how he uses his tools, including computers to obtain indictments.
106.	3	4	1	
107.	1	2	3	
108.	2	3	1	Small border offices are neglected when it comes to training on computers and related activities. Without Intel analysis and proper computer training and equipment, access to Internet etc., we are handicapped. Larger offices got all the equipment etc. Border offices have the workload that over extends the Agents, computer assistance would really help. Some offices still have to dial in to TECS, which means you cannot upload or download. That's a problem.
109.	1	3	1	I cannot see how a GS-12, spending a majority of his/her time in front of a computer, entering data or word processing, enhances efficiency. I assume that Customs will continue to have S/A's type their own ROI's, so I would suggest that typing be a required cure of study at FLETC, or as has been suggested before, put a typing tutor in Phoenix or make it available to S/A's so they can learn to type. Every S/A should have a laptop computer, with dial in access. Although I have taught myself to type, I do so at a rate much slower than a decent GS-5 clerk. Given that disability, I am still fairly computer literate. It just galls me to see so much time wasted by hard working S/A's who have to hunt & peck on a keyboard.
110.	2	3	1	With the computerized time limits on case opened without ROI's's, no ROI's written etc, it forces ROI's to be written in order to prevent the automatic notices. Some cases do not develop as fast as others and hence no information or not enough for an ROI. Additionally, other cases that are assigned can take precedence over other cases and not allow time for investigation to develop information for an ROI.
111.	1	4	1	
112.	1	3	2	The Agree/Disagree answer is not appropriate to all of the questions. Just because I answer disagree to using a scanner, doesn't mean I wouldn't use one if I had one available. System down-time for overseas offices is a critical problem. Too much access to the system by non-Customs and non-Treasury entities. I think we're on the way to loosing control of TECS.
113.	1	2	1	The Treasury Enforcement Communications System is probably the finest law enforcement data base in the government. Other agencies are amazed at what we are

				able to do with it and how easy it is to use. It has been a valuable asset used by investigators throughout the Customs Service. These agents are often hindered because they are required to use a computer for various things in which they are not properly trained for. I can't tell you how many hours were lost when we converted to Windows with no formal training. It might be helpful if we were trained on new programs before they are installed instead of assuming that we are a bunch of computer geeks.
114.	3	4	2	I will attend the next computer course (at FLETC) for managers. It is surprising how many current managers have not attended such training. We could save time and initiative by simplifying TEC's case reporting. The current system is still to labor intensive-especially for the vast untrained majority. Likewise, programming enhancements should be considered to improved computerized linking and querying capabilities. These should be less (agent) work intensive. We have to question the input of some of the figures available to managers. Some programming enhancements could improve this type of reporting as well. These should be much more responsive to the actual needs of supervisors/managers than the current system. Thank you for this opportunity to comment on these important issues.
115.	1	2	1	Hardware such as scanners and image scanners are in the SAC office, however the latest and best of this equipment is assigned to the MPO who is not an investigator. This equipment should be put out for investigators use. Furthermore color printers are assigned to only MPO and specific agents. When it comes to preparing court visual aids, this equipment could greatly enhance court presentations.
116.	1	3	1	Regarding questions 26 to 31. Since I have been assigned a project for the last 2 years, I have not worked cases, therefore my responses to those questions are "O". However, as an investigator with over 15 years of experience, the most significant cases not only for myself but also for my office, have been successfully prosecuted because I utilized computer programs to organize and present the case evidence. I strongly agree that computer assistance is extremely important in order to successfully prosecute cases.
117.	3	3	2	
118.	1	3	1	I think that Customs has the most advanced computer system in law enforcement. It puts DEA to shame. Several

				of the items you asked about such as D-base, Excel, etc., I would probably use more except I don't have the time to teach myself how to use them. (To a lesser degree this is also true of Word Perfect). The computer has helped me link several of my subjects to other major investigations. 1. Please do something about the financial query. If you try to limit the search to even just one day, the computer sometimes tells you to limit it further. 2. If we take the time to fill in why we query each person, we will never get anything done.
119.	1	3	1	
120.	1	3	1	Training should be given as well as additional commercial software. More access to private comm. databases. Internet access will greatly improve access to a great amount of information useful in investigations.
121.	1	1	1	Though Agents may have helpful programs available to them (ie. tell analysis programs, database, spreadsheet programs etc.) many of us have not been instructed on the use of these programs; if we aren't taught how to use the programs, they are of no use to us.
122.	1	2	1	Computer training is lacking. Whole offices should be trained at the office sight. TECS is a good tool.
123.	1	2	1	For the most part, I'm happy with the computers in the office. Commercially available software is good, so when do you draw the line. I think training is very important. Why purchase all this new equipment when half the office can't even use it.
124.	1	2	1	Almost all of my investigations are dependant on computer technology to some degree and I feel that I owe 70% of my productivity in cases brought to fruition to computers and/or computer related products.
125.	3	4	1	The use of a computer and the data which we can access is obviously only a "tool" which we can use to complete a successful investigation. Just as with other skills, a good investigator should become very proficient in its use. We should have a little concern that investigators might neglect those other areas however, I want to commend you and your staff for what I believe is the finest communications system in Law Enforcement today.
126.	1	4	1	
127.	1	1	1	
128.	3	3	2	
129.	1	2	1	
130.	1	2	1	
131.	2	4	1	

132.	1	3	1	Computer systems in the field are quickly outdated. The use of computers are now not just a luxury as they were in the past. Now they are a necessity. Any hardware/software upgrades are deeply appreciated in the field. I am not a computer expert but it is apparent that those who are not computer literate will be left behind. We need better equipment to keep up with the private sector. I have used computer spread sheets (Lotus 1-2-3) to successfully investigate a large fraud case. I learned by trial and error. Anyone can do it if they take the time and make the effort. Given the equipment most employees will learn the systems.
133.	1	3	1	Questions 8, 10 and 19, 22 not answered, non-use of this equip/prog. Automated finger print would be a great asset at all ports of entry. Would help eliminate false identification cases and fugitives. Access to comm. data bases allow quicker background checks when developing a case. Need more in service computer use training esp. for field offices that are remote from currant training areas or need the travel funding for computer courses at the CMC's.
134.	1	2	1	Field training on computers (word perfect and windows) for those agents who've been on the job when ROI's were typed.
135.	2	4	1	
136.	3	4	1	Answers 26/27 are largely due to supervising narcotics investigations groups. Answers 28/30 are non-existent for the very same reason.
137.	1	3	1	
138.	3	3	1	
139.	1	4	1	Situation controlled delivery from seaport area-narcotics. Case agent directs other agents, Dir Branch, Inspection and DEA personnel. Extensive surveillance in two-county area. Suspects make several stops and telephone calls. The phones are marked accordingly. A laptop would be invaluable for preparing on-going affidavit. The AUSA is patiently waiting for the case agent to determine the search site. The magistrate is waiting. The ability to fax the affidavit from on-site to the AUSA greatly speeds the process and evidences a positive search result. No more waiting in a Hostile location for the case agent to drive to the city and do it all by hand while ten agents secure the location at gun point and hope for the best.
140.	3	4	1	Two important areas are investigations utilizing forensic computer techniques and the district asset removal team. Both areas heavily utilize computer techniques in related

				investigations. Additionally, our IRS personnel continue to become more and more sophisticated in using computer capabilities to enhance investigations.
141.	2	3	1	Not enough emphasis was place on photography. A picture is and always will be worth a thousand words. With imagery equipment all suspects should be photographed and most subject records should have related photographs. I don't see many in TECS. In addition case related photos could be uploaded into TECS in some way.
142.	1	1	1	
143.	1	2	3	I have recently transferred to OI RAC from Houston Air Branch. Hence, I've not had the opportunity to use computer in complex investigation. *Sorry for delay you caught me in middle of move & packet was forwarded.
144.	2	3	1	Need funding for Laptop computers and authorization for dial up access. If we are going to require timely ROI's, SARS, etc. let's give the S/A's the equipment and means to do their job.
145.	1	1	1	Our office has access to TECS only. No training has ever been done in our office. In order to have access to other computer systems, we request assist from the nearest area Intel office.
146.	2	4	1	Any areas I disagreed was because our office did not have access to the equipment.
147.	2	4	3	
148.	2	3	1	
149.	2	3	1	Computers are the future for the modern world, including law enforcement agents. Newer computer and training will greatly advance the Customs service. I feel here, in El Paso, TX, we are behind from the rest of Customs in technology.
150.	1	2	1	
151.	2	4	1	The USCS TECS and related computer systems, ie. case management are outstanding. The USCS is light years ahead of our contemporaries. At my management level it is difficult to envision enhancements because of my lack of computer knowledge. A recurring computer training program brought out to the field offices would be helpful for computer skill disadvantaged agents.
152.	2	3	1	Training is needed to fully utilize the computer equipment we already have. Only the computer nerds spend enough time on the equipment to self teach and remember the procedures. They spend so much time on the computer that they do not produce much at all for Customs. I'm not sure what the solution might be. Training certainly, handbook

				that shows how to use the most useful programs that the Agents can reference. The computer is used 90%+ for word perfect and accessing data bases. Other uses are utilized by very few Agents. We have no Internet access per Customs policy. We can't use other commercial data bases due to SAC office restrictions on costs. These commercial data bases, TRLV-LEXIS, etc., could be useful but because of the restrictions on use the agents don't know how useful they may be.
153.	1	3	3	
154.	2	4	1	
155.	2	3	1	
156.	1	3	1	
157.	3	3	1	Each SAC office needs to have a single person dedicated to the maintenance/service/programming of our on-line computers. This should not be a co-lateral duty. We crash about 2 computers a week, detect viruses and in general use a lot of time keeping them up and running. We don't have a LAN yet, but it's scheduled which means we will need a LAN administrator. The CMC cannot support us as they are too busy. We need Laptops/notebooks and docking stations. We need to come up with a better solution than the current 151 for agents.
158.	2	4	1	We (USCS) are still too slow in keeping pace with new technologies. Good/useful training is not-existent. Automation has resulted in many managers expecting perfection in reports. Over all computers will cause us to be more productive.
159.	2	4	1	We need training, training, training on how to use the hardware and software we have.
160.	1	2	1	The U.S. Customs Service Office of Investigations should no longer recruit "cops" they should recruit computer nerds. The direction that the Office of Investigation has chosen to go over the past several years has effectively eliminated the street agent. If an agent is able to produce a stack of reports and run a variety of programs on the computer the need to do "real police work" is eliminated. This attitude of "non-enforcement" and "customer service" seems to be the wave of the future in the Customs Service therefore the non law enforcement paper pushers should succeed. As the increase of narcotics increase on our streets I hope and pray that someday our management will realize that a stack of pretty reports has never, to my knowledge put "dope on the table". The need to return to ENFORCEMENT is vital to our survival.

161.	1	2	1	
162.	1	3	2	It is my opinion that computers have greatly enhanced the potential of Investigators. However, if proper training is not made available, valuable time is wasted on "self learning" new software. I believe that future computer enhancements/technology will be useful and necessary as long as proper training is made available.
163.	1	2	1	
164.	1	4	1	
165.	1	4	1	I believe that basic computer usage such as TECS and word perfect have tremendously assisted agents in criminal investigations. As long as the system is user friendly computers are an asset. I do have a concern that we are evolving into an area where we are more concerned with attempting to learn the "Cadillac" of computers instead of spending time on criminal investigations. I have seen agents who spend more time learning and exploring all of the additions to our computer system then what we are suppose to be doing.
166.	1	3	1	
167.	1	3	1	While Customs appears to have "state-of-Art" computer equipment, the average agent has no training in the operation of that equipment beyond basic training at FLETC. It would be of great assistance and assure the proper utilization of expensive computer assets if training were provided to the field.
168.	1	1	1	
169.	1	2	1	Questions 26-31: For the last 18 mos., I have been involved in a major fraud investigation that will result in pre-penalty notice of approx. $150 million & several indictments (corporate & individual) a major tool used in this investigation is special database/lotus software. Also, we use imagery to upload evidentiary documents (over 20,000 pieces) which are then written onto CD-Rom's for future presentation, discovery to defense counsel, etc. Without the use of computer technology, this case would still be in the preliminary stages (2 yrs. later). Computer technology has allowed us to sort, organize and search over 20,000 documents and an additional 2,500 customs entries. As a result - millions of dollars in penalties are likely. Another very important tool I use is the info-base system when conducting fraud investigations (especially rulings, valve hand books, laws, CFR's, directives). Recommend uploading FAA & possibly Coast Guard Registration histories into info-base. CD-Rom on especially Coast

				Guard Registration since marine smuggling investigators find it very difficult to obtain USCG documentation after hours.
170.	1	1	1	
171.	2	3	1	I have a Dell Laptop with a modem. This capability gives me access to TECS virtually anywhere.
172.	2	4	1	
173.	2	4	1	
174.	1	4	1	
175.	1	1	1	#6 - I have not used databases, yet. No training as of yet. #7 - I have not used spreadsheets, yet. No training as of yet. #18 - I have no accessed the Internet, yet. Don't know how, don't have access. #19 - I have not used an automated fingerprint identification system. My fingerprints are sent to the FBI identification group for record search.
176.	1	2	1	
177.	1	1	1	Customs has the most modern, efficient and useful law enforcement oriented computer system in the world, to my experience. We not only continue this system but enhance it. USCS SA's handle more case load than other federal SA's due to our automated accesses, in my experience and opinion.
178.	1	3	1	
179.	1	2	1	1. Each investigator with Customs should be able to access private databases like "Info-America" and Prentice Hall". 2. We need to be able to quickly perform govt. data base research as well... why can't we share with NADDIS...Why can't we get into other agency investigative databases... and they into ours? 3. We need to be able to package our product better as well...we are in the business of selling our cases to U.S. Attorneys. A well done presentation a la "corporate America" with good color graphics and good spread sheets can really sell a case...after all, AUSA's are looking to jury appeal and understanding. If you confuse an AUSA with boxes of disjointed reports and scattered evidence - NO SALE! 4. How 'bout color printers or the ability to export more than just text to ROI's...charts, graphs, toll analysis...let's get caught up!
180.	1	3	1	Questions 26-30 are relative due to acting as group supervisor during majority of period in question. Having fought computers for numerous years (Agent/clerk-typist), I must acknowledge that my productivity has increased by a considerable measure. With each agent having their own PC on TECS and other databases his shortened turnaround on ROI's and other internal documents. TECS imagery has

				been a great asset to this office. The usefulness of other programs are coming apparent as we learn of the systems and their ability to be incorporated in investigations. We have lots of computer tools we knew nothing about, use or existence.
181.	3	4	1	
182.	1	3	1	
183.	3	4	1	1. Questions 8 and 10 relate to software applications used by intelligence research specialists. I answered from the perspective of special agent usage, which is rare in my office. 2. Although questions 18 was answered with a "D", there is no doubt that investigative leads in the future will be generated by BBS, and the Internet.
184.	1	4	1	Several years ago I was involved in a difficult complex money laundering investigation involving 16 defendants. Having a dead line of one month to indict these individuals was imposed on me by the particular AUSA. Due to my knowledge of word perfect at the time, I was able to bang out complete, concise reports for the AUSA. Link and Toll analysis charts played a vital part of my criminal case report. I was able, due to various databases, pull in all of the co-conspirators into my sealed indictments. Final results...16 part warrants...16 indictments...16 convictions...6 outstanding arrest warrants (fugitives). Needless to say computer assisted investigations should be the standard for complex investigations.
185.	3	4	1	I'm returning this questionnaire only partially completed as it became apparent that I have had no experience utilizing computers in relation to investigations. Accordingly please disregard answers provided. Basically, I'm returning this questionnaire only to help bring up the # of responses you received.
186.	1	3	1	Computers are excellent tools which can be used during the course of any investigation, provided that they are viewed as tools and not as replacements for traditional investigative techniques.
187.	1	3	1	
188.	1	2	1	
189.	3	4	1	
190.	2	3	1	
191.	3	3	1	
192.	1	3	1	E-mail notification of subjects queried in which I am the owner has greatly increased the tracking of subjects and helped link related investigations together. Most of what I do on the computer is self taught. I need more training in

				Excel, Lotus, Power Point, etc.
193.	2	4	1	
194.	3	4	1	
195.	1	3	1	Much of the equipment referred to in the survey ie. fingerprint, photographic and scanner is not readily available to SA's at the SAC NY office.
196.	1	1	1	The main reason for all the "D" responses is due to the fact that they are unavailable at this RAC office. It doesn't mean that I wouldn't utilize those tools, just I have not seen them. Our laptop broke and we have been denied authority to have it repaired. Generally speaking, I am computer-illiterate, however my caseload speaks for itself. With this office's limited personnel, I know that requests for computer training will be denied. I am eager to learn, to enhance my investigative skills, as I realize that computer technology is the wave of the future.
197.	2	4	1	
198.	1	1	1	The use of computer software has become a necessary investigator tool for today's law enforcement agencies to combat criminal enterprise. I feel that the quick access through TECS, NCIC, NCCT, Word Perfect, Lotus, aids the investigator to effectively develop and present his/her investigation.
199.	1	3	1	In all areas I rated strongly disagree or disagreed. I have not had access to or received training in these areas. Hopefully, now that Dallas is on a LAN & we have new software programs, we will receive additional training in these areas.
200.	1	2	3	30 day TDY assignment out of Conus precluded this from getting to you on time. Simple basic mono screen laptops with modem would be essential to improve field investigations with mainframe access.
201.	1	4	1	Why do you ask questions like #25? We all know computers will be an important part of any career law enforcement not with standing. I was forced to use the computer by a lack of clerical support. I learned to use what I could to help me perform. This has generally been to program simple databases for cross reference because there are no simple databases. By being self taught I find myself being asked by others for assistance. There are others in the office more qualified with computers, but there are not always accessible. Give us the equipment, we will learn to use it. Provide support (training, clerical) and we will become better investigators. Ask questions like #25 and lose all credibility.

202.	2	4	2	
203.	1	3	1	
204.	2	4	1	Getting to know what the system can do for me as a manager has been time consuming but beneficial in the long run especially in the area of office Stats and case management.
205.	1	2	1	Training is essential! USCS has none!!! I trained myself in these areas and it was VERY labor intensive and required the investment of personal time. Learning is much easier if you have support and teachers. I received almost NO support in this area.
206.	2	4	1	
207.	2	3	2	Questions 26-30 are difficult to answer since we are overseas and technically cannot "arrest or make seizures." In my opinion we are walking a fine line between being masters of our computers and having them control us. Computers do not make cases. Agents and good field work do. This is beginning to be lost, with the value of the Agent being graded on his ability to operate a computer. Too much time is being spent by agents in front of a screen.
208.	1	2	3	Agents need the hardware, software and training to effectively utilize this technology for criminal investigations. Hardware, laptops are needed so SA's can take these tools into the field. Software, access to databases info (D+B TRW) is vital to making the case. Training agents need to be trained on how to efficiently use these tools.
209.	1	1	1	Database programs have greatly assisted me in conducting investigations.
210.	3	4	1	#25 I agreed with the statement. however, there is no substitute for experience and intuition the "older" agents need more training in computers.
211.	1	3	3	
212.	1	4	1	I believe that heavy emphasis should be put on computer training, however it needs to be tailored to the computer "illiterate" like I am. Most instructors know the computer and become ver irritated if one cannot progress at the same rate as they instruct. I believe the future is in computers. We either need a larger system or mainframe for TECS or it needs to be upgraded. There are times and usually at the most inopportune time that TECS goes down or it is so slow that one cannot get the information needed.
213.	1	3	1	TECS is a research tool and typewriter for me. If I need esoteric spreadsheets or graphics I get an auditor or analyst to prepare them. It's a waste of my time to learn to do their

				job poorly.
214.	1	2	1	The use of computers has greatly improved my ability to conduct investigations in a timely manner. I enjoy using the computer systems, however, training is needed on the various programs and how to utilize them. I feel our computer system is a tremendous asset and emphasis should be placed on its continuing expansion.
215.	1	3	1	
216.	3	4	1	Computers are a very necessary tool. More laptops need to be provided, Laptops could be substituted for desk tops in LAN configurations. Training is a very important second. We cannot get along without computers.
217.	1	2	1	
218.	1	3	1	
219.	1	3	1	
220.	1	3	1	
221.	2	3	1	Very few agents have a working knowledge of what the computer systems offer. The training from the beginning was extremely poor and appeared to do more harm than good. Now there is continuous catchup. There is so much information out there that one is easily overwhelmed. A lack of good hardware is a real frustration. Its easy to get lost for hours in the systems just filtering through the information. While the computer has opened up great avenues to the investigators most sift through even more information. It would be interesting to try to estimate if investigators are spending more time on investigations because of the computer information systems.
222.	1	2	1	

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