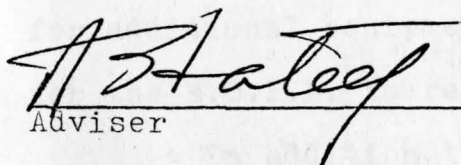


AN EVALUATION OF CRIMINALISTIC SERVICES PROVIDED BY
THE EASTERN OHIO FORENSIC LABORATORY

by

Edward C. Heal

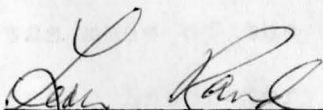
Submitted in Partial Fulfillment of the Requirements
for the Degree of
Master of Science
in the
Criminal Justice
Program



Adviser

Sept 20, 1976

Date



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October 14, 1976

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YOUNGSTOWN STATE UNIVERSITY

September, 1976

ABSTRACT

AN EVALUATION OF CRIMINALISTIC SERVICES PROVIDED BY
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Edward C. Heal

Master of Science

Youngstown State University, 1976

Three purposes were served by making an evaluation of the Eastern Ohio Forensic Laboratory. The primary purpose was to qualitatively and quantitatively analyze the criminalistic services themselves. It was found that the equipment used in the E.O.F.L. is the best equipment available, and that the personnel employed by the E.O.F.L. are well-trained and experienced. There is, however, a need for additional equipment and additional personnel in order for the E.O.F.L. to render fully efficient service.

In addition to this initial analysis, a study was made of the relationship between the Eastern Ohio Forensic Laboratory and the law-enforcement agencies in the surrounding area, which includes Mahoning County, Trumbull County, Ashtabula County and Columbiana County. This aspect of the evaluation was implemented by sending questionnaires to the fifty-two law enforcement agencies in the four-county area. The questionnaires served the dual purpose of obtaining a general response of the agencies' awareness of the E.O.F.L. and its services and isolating individual offices -- e.g., coroner, prosecutor -- to obtain

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their respective opinions on the E.O.F.L. and its services. Unfortunately, a general lack of understanding of the E.O.F.L. and its services was uncovered, even though it has been in existence for over a year. Agencies are still using other facilities, citing reasons ranging from a lack of knowledge of E.O.F.L. services to the fact of being used to other facilities' services.

During the evaluation specific problems were pinpointed in regards to both the criminalistic services themselves and the relationship between the E.O.F.L. and the surrounding law enforcement agencies and various solutions to these problems were offered. Recommendations for improvement ranged from the development of a code of ethics between the E.O.F.L. and cooperating agencies to the allotment of resources to insure future research. If these recommendations are carried out and the E.O.F.L. becomes a fully efficient operation the result can and should be an improvement in the quality of justice for the citizens of the four-county area.

ACKNOWLEDGEMENTS

A warm thank-you to friends and family, with special thanks to my adviser, Dr. Bari Lateef, and to Dr. James Kiriazis, Mr. John Klosterman, and Mr. Terry Shidel.

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CHAPTER I

Introduction

The forensic science laboratory has obtained a position of growing importance within the criminal justice system. Within the last decade the awareness of crime, the ensuing public outcry, and the call for reorganization from commission reports have heralded the arrival of a new age. The combined effects of all three factors have influenced the emergence of technology in law enforcement. "The importance of forensic science in Europe and the United States can closely relate with the increasing urbanization, the growing knowledge of crime, and the creation of full time police forces."¹ Forensic science, as we know it today, emerged from the convergence of the scientific profession and the law enforcement profession.

Since the turn of the century, the use of science in police work has increased in frequency to the point where the scientist has become an integral part of the law enforcement system. The literary talents of Conan Doyle in developing his character, Sherlock Holmes, brought reality to the idea that science could and would

¹C.R. Kingston and J.L. Peterson, "Forensic Science and the Reduction of Crime," Journal of Forensic Science, (April 1974), 417.

play a part in law enforcement problems. The development of legal and social science aided in structuring disciplines that were concerned with the philosophy of social disorder and with measures to be taken in a preventative sense.

Hans Gross (1846-1915), professor of law in the University of Graz, had his book, Criminal Investigation, published in 1893. In his book he stressed the need for science and encouraged the use of technology in law enforcement. Although Gross' idea advocated a convergence of science and police work, his points stressed the legal aspects rather than the scientific aspects. He did, however, state various ways in which science could facilitate the investigation of social disorder.

Not until the emergence of Edmond Locard, of the University of Lyons, was the development of scientific methods and their application to law enforcement fully realized. Locard's one-room police laboratory grew to a university department -- the Institute of Criminalistics -- which produced many of the scientific methods that evolved into modern-day laboratory procedures. In the early 1920's Locard postulated the principles of trace evidence, i.e., whenever a contact takes place between two surfaces there will be an exchange or transfer of material. With this understanding the concept of forensic science as we know it today was established.

R.A. Reiss, a German, developed the Lausanne Institute of Police Science -- a laboratory which may have

been the first of its kind. Similar laboratories were set up throughout Europe during the World War I period. A police science laboratory was started in Dresden in 1915, failed because of war-time economics, and was reestablished in 1919 as a national police laboratory with branches established in the larger cities of Germany. In Britain the existence of the respected amateur provided the necessary channeling of resources into official laboratories by 1930. To those acutely aware of the law enforcement situation, the need for forensic science services in Britain was recognized as an issue requiring immediate attention.

In the United States, the development of forensic science was behind the advancements of European technology (exc. Britain) and somewhat ahead of Britain's emergence. In 1923 the Los Angeles Forensic Science Laboratory was established by August Vollmer, but it was not until 1932, when the Federal Bureau of Investigation initiated its facilities, that forensic science received its true awakening in the United States. From that point on, laboratories were established in rapid fashion. No model existed, so consequently development depended upon local whims and resources.

This chronological view of the development and application of forensic science contributes to our understanding of the contemporary position of forensic laboratories. These observations promote the idea that the field itself is still in its infancy. The advancement of

science and technology to this point offers us the insight into the complexities that are involved. It has been only within the last decade, by combining the effect of planning and research with the existing laboratory capabilities, that police authorities have been able to strive for unity and concrete ideals that will advance the forensic laboratory into its true position in the criminal justice system.

The value of the forensic laboratory is that it provides a prime means of increasing the level of professionalism within the criminal justice system. The obvious needs of society are filled by using the laboratory to facilitate the criminal investigation and adjudication processes in identifying and convicting offenders. "While the importance of physical evidence is stature in the courts, the demands for the forensic scientist also increases when encountering a new area of study, often the scientist has to engage in extensive research before it is feasible to arrive at a competent solution to the problem."² The overall value of incorporating forensic science methods will not only insure a higher degree of professionalism, but will also insure a tangent readily understood by the populace -- i.e., a higher quality of justice. The use of science in courts of law is essential for the efficient operation of justice, since the credibility of the wit-

²Frank Liguist, "Methods of Forensic Science," Interscience, (Vol.I, 1962), 417.

ness is no longer tested by trial by ordeal, but by instruments. "However, all such instruments are still in the hands of mortals, whose use and interpretation of the results depend on the caliber and training of the user, as well as the information made available to him."³

The period involving the past twenty-five years has been the most prolific period in technological advancement that society has ever known. The brute and brawn that made the nation what it is today is being replaced by an expansion of man's mind, an increasing mental awareness. Man of a quarter-of-a-century ago could not conceive of or fully comprehend the advancements that have enlightened our society. Today we still have apprehensions and fears concerning the unknown that hinder our approach towards technology. The United States has used the method of checks and balances to maintain its ideal of democracy. A similar method of scientific checks and balances may be necessary to insure that man keeps his technological advancements in the proper perspective. The fear that the world will be ruled by machines created by man can be a philosophical fantasy open for free interpretation and discussion, perhaps leading to a better understanding of what technology can achieve for man in a symbolic relationship.

The criminal justice system should be given re-

³A.S. Curry, "Methods of Forensic Science," Interscience, (Vol.IV, 1965), vii.

cognition for its openness and success in interpreting the potential of technological advancements in relation to the aspect of behavior. This success in correlating man's technological advancements with man's behavioral relation to his environment has been advanced by those directly or indirectly convinced of the capabilities of forensic science in achieving the "justice for all" that stands as a foundation for our society.

The 1960's, a decade of rapid reorganization, of increased levels of awareness, and of added ability to incorporate change, affected the procedural standpoint of law enforcement as has no other time period since its conception. Through interpretations of Supreme Court decisions and their application to forensic science, it has been envisioned that an increased participation of scientific investigation supported by forensic laboratory conclusions will be ever-present in the application of justice for society. "Recent Supreme Court decisions, which seriously limit the police process of interrogation, have created a void in police investigations that science and technology must fill, more and more the police must conduct scientific investigations."⁴ The reiteration of the position for forensic laboratory services was expressed

⁴Leo C. Loughrey and Hubert C. Friese, Jr., "Curriculum Development for a Police Science Program," Journal of Criminal Law, 53 No. 2 (June, 1969), 266.

by the Presidential Crime Commission's prediction of increased utilization of the analytical procedures to fill that void left by courtroom decisions. The 1960's set the precedents for the 1970's -- these newly-founded principles will lead law enforcement procedures to more reliance on scientific evidence in criminal cases; will lead to reliance on accurate factual physical evidence to aid in the prosecution of the guilty as well as in the exoneration of the innocent; will aid in assuring precise application of justice; and will prove that the technological advances in forensic science are for the benefit of society.

The increased awareness in the use of forensic science facilities has produced a greater reliance on physical evidence and scientific investigation, and, therefore, freed the system from reliance on confessions and means which have been shown to be an infringement upon the rights of the accused. In 1961, *Mapp vs. Ohio*, the Supreme Court forbade the introduction of evidence seized in violation of the Fourth Amendment -- protection against unreasonable search and seizure. Nineteen sixty-four saw judicial decisions securing the right to be represented by counsel and the right to have counsel appointed when indigent. The cases of *Escobedo vs. Illinois* and *Gideon vs. Wainright* determined that if enough evidence was presented that the police had passed from the investigatory stage to the accusatory stage, and that they had proposed

to interrogate the accused with the intent to obtain incriminating admissions, without first warning him of his constitutional right to remain silent, no interrogation could proceed; and if the accused had requested the assistance of counsel before or during interrogation and the police had refused to honor that request, any admission obtained could not be used in court. Then, in the case of *Miranda vs. Arizona*, the Court presented the opinion that before any person in custody could be interrogated, the police would have to warn him that

- 1) He had the right to remain silent;
- 2) anything he said could be used against him;
- 3) he was entitled to consult with counsel before and during interrogation; and
- 4) if he was without funds to hire such counsel, a lawyer would be appointed to consult with him before and during interrogation.

At this point we can see the Court's decision takes away the power of police authority and places more faith in the constitutional guarantees of the individual. A landmark decision in perpetuating the belief that through laboratory analysis proper interpretation of facts would lead to upholding the law was rendered in *Schmerber vs. California* in 1966. In this judicial decision the Supreme Court reestablished the power of the Constitution by stating that the requirement of a blood sample from a drunk-driving suspect was not an unreasonable search and seizure if performed under medically approved conditions. Moreover, it neither violated the fifth amendment of protection against self-incrimination nor the sixth amendment of

the right to counsel, and, finally, no warning of constitutional rights was necessary. In this case, the scientific test was entered into evidence. The decision maintained that the individual had the right to remain silent, but was compelled to give blood in light of the authorities' obtaining real evidence -- a situation which constitutional amendments five and six allow to occur. Both the fourth amendment and the fifth amendment are restrictions of the power of the government to obtain evidence from an unwilling defendant. The recognizable difference is that the fourth amendment protects against compulsory production of evidence without probable cause, whereas the fifth amendment protects against the compulsory production of testimonial knowledge under any circumstances.

The decade of the sixties brought more awareness concerning the constitutional rights of individuals, which, in turn, produced an analytical overflow concerning the power of police authority. The demand for individual rights was contradictory to the pattern of techniques used by law enforcement agencies. The Court decisions made apparent the inadequacies of the law enforcement agencies in upholding the Constitution as a document of principles which they were originally intended to protect. The agencies of the Constitution were now made to recognize that they were responsible for upholding the rights guaranteed to individuals.

The Supreme Court decisions can be viewed as

an attempt at correlating the development of science with the development of society. The judicial decisions have heralded a new era by combining science with technology. The technology of law enforcement has grown silently, waiting for an arena in which to display its new-found talent. The growth of criminalistics and the growth of forensic science, in conjunction with the constitutional guarantees, produced the need for forensic science to legitimize the physical aspects of crime while abiding by the guidelines of the law. Judicially, we find less reliance on evidence obtained by confession and admission in the constitutional cases described. With the increased acceptance of the importance of forensic science to fill the void with opinions and more accurate facts, we are led to a stronger decision-making process in the courts.

The role of the forensic laboratory has become important in relation to the quality and integrity of the criminal justice system. The advancements of technology in criminal justice in the past decade-and-a-half show a movement toward an ideal situation in which the quality of justice can be extended to the society that demands justice. In an attempt to reach a plateau in which justice can be interpreted into a viable, tangible doctrine for application within the society, efforts in the mid-1960's were intended to rectify the neglect that the criminal justice system has known from its conception. Federal funding was primarily directed to "systems improvement" rather than

the initiation of new programs.

It must be understood that it is a colossal undertaking to initiate change within a system as complex as criminal justice. The bureaucracy involved in decision-making is so large-scale because every aspect must be analyzed in relation to its social, psychological, and economic impact. No other institutional system has had to function in conjunction with so many situational realms as has the criminal justice system. The complexities involved in maintaining a high quality of justice are compounded by the very environment in which they are surrounded. In no other system is the regulation of services defined by constituencies other than the actual decision-makers. The premises for the criminal justice system were drafted in order to preserve a form of government considered important for continuation of our society. For three-quarters of a century the criminal justice system appeared to serve only as a lackey of written law. Out of this attitude a neglect for direction grew, and the system failed to respond to change, both from without and from within. The quality of justice suffered, the system appeared to be failing in its projected task, and the very domain that it sought to serve had been alienated.

Attitudes of legislators, representing the attitudes of the people, must generate policies and programs designed to eliminate the inconsistencies present

in the criminal justice system. Internal scrutiny has brought about self-evaluation in the criminal justice system. This scrutiny is based on a cost/benefit analysis. It is unfortunate that these standards undermine the purpose of the system. Realistically, when in a complex institutional system, cost and benefit are not as superficial as rhetoric would make them seem. Economics offer the criminal justice system motivation to attempt to adapt to the new sociological theories at work in the society.

With the adoption of a single bureaucracy -- the Law Enforcement Assistance Administration -- to handle the integration of the criminal justice system with the needs of society, an attempt is being made to combine the ideas with economics. Lucrative amounts of financial support available show the awareness of society of the need to eliminate the crime problem. Even with large amounts of funding available and the awareness of crime, the criminal justice system is not making efforts to combine the two in a constructive manner beneficial to the majority. Because of this factor, the evaluative nature of behavioral sciences comes into play.

In 1971 a Presidential commission was formed to develop standards and goals in an effort to reduce crime, and to generally uplift the criminal justice system to its proper position and perspective by injecting the system with a greater degree of professionalism.

In order to insure that each crime laboratory was performing at its maximum potential, the commission felt that it was necessary to establish certain standards. Standard 12.2.1 states that every police agency should immediately insure that it has access to at least one laboratory facility capable of timely and efficient processing of physical evidence and should consider use of each of the following:

a. A local laboratory that provides analysis for high volume, routine cases involving substances such as narcotics, alcohol and urine; routine analysis and processing of most evidence within twenty-four hours of its delivery.

b. A regional laboratory (serving an area in excess of 500,000 population where at least 5,000 Part I offenses are reported annually) that provides more sophisticated services than the local laboratory, is situated within 50 miles of any agency it routinely serves, can process or analyze evidence within 24 hours of delivery, and is staffed with trained teams of evidence technicians to assist in complex investigations beyond the scope of local agencies.

Standard 12.2.3 states that in maintaining a staff of formally qualified personnel who can provide efficient and reliable assistance in criminal investigations, every crime laboratory should provide that:

a. Every employee responsible for scientific analysis hold an earned baccalureate degree, and have a thorough working knowledge of laboratory procedures.

c. The laboratory director be familiar with management techniques necessary to satisfactorily perform his administrative functions.

d. All laboratory personnel are adequately trained and experienced.

f. Working staff efficient to meet the demands of the laboratory.

g. Salaries be commensurate with duties assigned.

Standard 12.2.7 states that every crime laboratory director should design and implement a reporting system that provides data relative to its involvement in:

- a. Reported crimes
- b. Investigated crimes
- c. Suspects identified or located
- d. Suspects cleared
- e. Suspects charged
- f. Acquittals
- g. Convictions

Standard 12.2.8 states that every crime laboratory should immediately establish close liason with:

- a. All other elements of the criminal justice system to ensure that laboratory funding is consistent with law enforcement needs and is being effectively used as an investigative tool.
- b. The scientific and academic establishments to insure use of the latest techniques and devices available to the criminalist and the investigator.

These standards concerning the crime laboratory were presented and reviewed by approximately 1,500 persons attending the National Conference on Criminal Justice held in Washington, D.C. in January of 1973. The task reports containing these standards and recommendations were to be considered as starting points for thorough research and evaluation and were intended to afford the ability to disseminate information.

With the increased awareness created by the task reports, the funding for regional forensic laboratories became available. Federally funded grants were established

to aid in the creation of regional laboratories in an effort to benefit the local law enforcement agencies by providing the ability to apply scientific knowledge to the reduction of crime. As a result, in 1974, the Eastern Ohio Forensic Laboratory was established through LEAA funds from the Administration of Justice Division (AJD) of the Ohio Department of Economic and Community Development. The grant was prepared by Youngstown State University personnel and obtained through the cooperation of the Eastgate Development and Transportation Agency.

The Eastern Ohio Forensic Laboratory is structured to serve approximately fifty law enforcement agencies located in four counties and multiple government jurisdictions. Therefore, it is necessary to coordinate the scientific process with the evidence needs, ideas, and resources of these areas in order to provide the best possible service to all involved.

In the formation of a regional forensic laboratory, certain basic steps are required, regardless of the location of the laboratory. These steps include the acquisition of supplies and the planning of how to utilize the physical space.

The facility was established in 1974 but actually became operational during the first six months of 1975. The laboratory was designed to provide scientific evidence services for law enforcement agencies and to provide training in the proper utilization of physical evidence. The

Eastern Ohio Forensic Laboratory is located in the new Technical and Community College building on the Youngstown State University campus. The laboratory is directly affiliated with the area's law enforcement agencies, and indirectly affiliated with Youngstown State University. In no way should the laboratory be considered a facility used primarily by the university. The prime reason that the laboratory was established was for the use of the four-county law enforcement agencies. Upon reaching its full potential, the Eastern Ohio Forensic Laboratory will provide invaluable assistance in the academic enrichment of the university environment. The steadily growing field of criminal justice and its demand for qualified personnel is reflected in the Criminal Justice department at Youngstown State University, in their approach of presenting an academic understanding of the criminal justice system within its social environment. Therefore, the success of the Eastern Ohio Forensic Laboratory will directly affect the quality of justice for the local citizens, and will directly promote educational movement aimed at maintaining and surpassing the values established for upholding the constitutional guarantees.

The geographical area covered by the Eastern Ohio Forensic Laboratory includes four counties: Mahoning, Ashtabula, Columbiana, and Trumbull. There are no specific limitations to serving agencies outside the four-

county area, although priorities have been established to serve the four counties within the area first. With the aid of technological advancements, any reasonable requests by any agency will be filled if the request falls within the capabilities of the forensic laboratory staff.

Although the conception of the Eastern Ohio Forensic Laboratory is still considered to be a new influence in the preservation of justice, it represents an end-product of an evolutionary progression toward the fulfillment of the ideal of justice in our society. The mutual awakening of society and the system has brought forth a beneficial advancement. There is no longer any reason for the behavioral sciences to rely upon themselves for the enlightenment necessary in order to cope with the advancements of society. These very technological advancements have moved the individual to a higher plateau -- there is no reason why a combined cooperation between the behaviorist and the scientist can not take place. Changes in our society are constant. The ability to adapt to these changes depends upon our resources and our ability to assimilate smoothly a series of symbiotic relationships necessary for the continuation of the ideals of the individual in society.

Problem Statement

An internal criminal justice system problem did exist in that a full-service laboratory was not readily available to law enforcement agencies in the surrounding county jurisdictions. The closest laboratory was a state-operated facility located over fifty miles away. As a result, scientific services were not fully utilized because of the distance and the time and expense involved in evidence submission. Utilization was on a special-occasion basis rather than on a routine basis. This is evidenced by the fact that while law enforcement agencies in the multi-jurisdictional area submitted approximately 500 cases per year to the state facility, crime rate and population figures predict a laboratory case load of approximately 3,500 cases annually.

As previously stated, the only full-service facility is located inconveniently for a majority of the cooperating departments and must serve a population of over four million while staffed and equipped to handle a lower volume of cases. The area police departments can handle certain aspects of a criminal laboratory but are neither staffed nor equipped to serve efficiently. The projected needs of the four-county area are beyond the resources of any individual agency in these areas. The

impact of establishing the Eastern Ohio Forensic Laboratory (E.O.F.L.) in northeastern Ohio will afford the criminalistic services to approximately fifty law enforcement agencies that indirectly serve a total population for the four-county area of over 750,000 people.

The nature of the proposed objectives was to improve the quality of investigative services in the area through greater utilization of laboratory facilities, thereby enhancing the purpose of local enforcement agencies. The first is easily quantified, and will be done through the evaluation, but the latter is difficult to ascertain. It is a misleading misconception that the positional role of a forensic laboratory is so closely identified with the policing aspect of the system. The laboratory should be identified with the criminal justice system as a whole, both aspects cooperating symbiotically with each other. The capabilities that are afforded the system with the establishment of a laboratory such as the E.O.F.L. will operate as an entity whose function is to use scientific knowledge with technological advancements, at the laboratory's command, in order to determine facts. Only when the truth is readily disseminated for all branches of the criminal justice system can justice be done.

There are not, as yet, any established criteria for determining the qualitative impact of a given forensic laboratory. Rhetoric importance of such a facility is

easily identified and associated with the need for a higher quality of service. At this point it is not a question of importance, but one of quantity and quality of the Eastern Ohio Forensic Laboratory services for the designated areas. In an attempt to realize the quantity and quality of the E.O.F.L. services, it became increasingly clear that its effectiveness was contingent upon several variables. These variables are identified as influences other than the physical capabilities of the laboratory -- e.g., available technical instruments, personnel and credibility of established performance. Through discussions with E.O.F.L. personnel the realization occurred that in order to quantitatively evaluate the facilities, guidelines were to be established that would encompass outside variables, thereby reflecting a true representation of effectiveness.

The measures that would be required to evaluate the effectiveness of the laboratory services would therefore be dependent upon the "scope and generality" of the evaluation problem. To realize the scope one need only to present effectiveness in its null form and to question where the inadequacies are located. Through the interpretation of the constructive criticism afforded by doing so, it was possible to localize areas for exploitation that would facilitate efforts in a direction of relevance for the E.O.F.L. and its cooperating agencies. Undertaking this task, it was viewed on the basis that the E.O.F.L.

was an ongoing, technologically progressive, newly established laboratory with potential of encompassing, through expected expansion, necessary areas to competently offer a full range of services. In structure the E.O.F.L. represents a model of an effective criminalistic operation. In focusing on the effectiveness problem, one becomes aware that simply having the instrumentation necessary for efficient reliable service does not negate inhibiting variables that comprise the foundation of that structure. Therefore, it was realized that efforts would have to be made to compliment the physical capabilities of the laboratory in establishing the necessary rapport to keep the laboratory operable.

Measures of evaluation for the E.O.F.L. services were developed out of the realization of what was necessary to areas in which they were implemented. A need became evident, i.e., the effectiveness of the laboratory depended upon increased awareness of services and increased utilization. This may be viewed as a generalized conclusion that could apply to any realm of institutional services, but it is an outgrowth of the realization that the services are available and have yet to reach an acceptable level of utilization.

Study of the Advantages of a
Forensic Laboratory

The evaluation of the Eastern Ohio Forensic Laboratory directly relates to the aspects of the laboratory's capabilities of extending the services to its designated area. An in-depth study will be conducted to quantify and qualify these services in relation to specific aspects of the laboratory. This area of the study closely identifies with the procedural methods stated by Paul Rosenthal and David Plummer in their "Evaluation of Forensic Laboratory Practices".

The Eastern Ohio Forensic Laboratory has been categorized into four areas for exploration:

- 1) Resources (organization, personnel, physical facilities)
- 2) Type of activities (evidence examined and procedures)
- 3) Output (results of resources combined with activity)
- 4) Cost/benefit (rationale for continued operation)

The first category represents an overview of the practicality of having established such a laboratory as the E.O.F.L. This view will focus on reasons why the resources will be incorporated by cooperating agencies. Quantitatively, a comparison of the crime index with re-

sources available through the E.O.F.L. and other laboratory facilities, personnel capabilities and physical plant facilities will be made.

The second category involves the types of activities that have been established by the laboratory. Measures of effectiveness will delve into the number of cases analyzed, the number of crimes reported containing physical evidence, types of evidence examined and methods, including identification and quantification.

Category three characterizes the output of the laboratory. This will quantify the ability of the laboratory's resources to incorporate their activities in such a manner as to show results. Broken down into divisions it will show aid to investigation, identification of suspect or material in question and aid to court procedures.

The fourth category of study -- cost/benefit -- will include the cost of maintaining forensic laboratory facilities and providing services, as well as considering the benefits derived by the principal users of the laboratory and their beneficiaries, among whom would be the defendant, the public taxpayer and the cooperating agencies.

Methodology

In applying for its original project grant the Eastern Ohio Forensic Laboratory drafted a percentage of the budget for the purpose of conducting an evaluation.

The beginning point for the evaluation was a thorough search and examination of all pertinent material in the related literature. Several personal correspondences were submitted to individuals and agencies for any insight that could be integrated into this evaluation. Upon completion of the initial review of literature a better understanding was incorporated that permitted the dissemination of relevant material to serve as a foundation for an appropriate research design and methodology approach.

The Eastern Ohio Forensic Laboratory evaluation is supplemented by information provided by Mr. John Klosterman, director of the E.O.F.L., and Mr. Fred T. Posey, criminalist. In coordination with relevant material obtained through the review of literature, data was gathered from applied questionnaires and interviews conducted with the cooperation of law enforcement agencies in the four-county area.

The questionnaires were two-part in construction. The first series of questions was distributed to every agency listed in the mailing list found in the appendix. The questions sought to establish a level of general aware-

ness response. Along with the initial questionnaire a letter of introduction was presented to the individual agencies to establish the context of the questionnaire with the on-going evaluation. A second questionnaire format, focusing on utilization, was drafted with the consideration being given to the respective agency in which the questionnaires were to be applied. For example, an appropriate questionnaire was developed for chiefs of police and sheriff departments, county prosecutors, and county coroners. In doing so it was hoped to isolate the individual agency with its perceptions of the Eastern Ohio Forensic Laboratory in an attempt to correlate pertinent findings with regards to individual utilization of the laboratory. Each interview followed a common format in applying the structured questions.

Statistical analyzation will be established through questionnaire interpretation. Correlations will be established in relation to the findings of the questionnaires, with similar findings established as pertinent data from the review of literature.

The evaluation has focused on these issues:

- 1) General awareness of the Eastern Ohio Forensic Laboratory and its services;
- 2) Type of services requested or provided;
- 3) Perception of individuals and agencies as to the utilization of services established by the Eastern Ohio Forensic Laboratory.

LAW ENFORCEMENT PERSONNEL QUESTIONNAIRE

PLEASE COMPLETE AND RETURN AS SOON AS POSSIBLE IN THE ENCLOSED ENVELOPE.

Name: _____ Title: _____

Department: _____

1. WE have used the Eastern Ohio Forensic Laboratory:

_____ Yes _____ No

2) How do you rate the service:

Speed: _____ Fast _____ Medium _____ Slow

Quality: _____ Good _____ Average _____ Poor

3) Accessibility of the laboratory:

_____ Good _____ Fair _____ Poor

This could be improved by _____

4) We have not used the Eastern Ohio Forensic Laboratory.

This is because of: _____ distance _____ lack of

need _____ services we need are not available

_____ do not know what services are available.

Other: _____

Please complete other side.

5) Rate each of the following on a scale of 1 to 10 with 1 being the most useful. You may use the same number more than once.

A) In what type of cases can physical evidence be best utilized?

_____ Arson	_____ Breaking & entering
_____ Assault	_____ Homicide
_____ Auto theft	_____ Rape

B) The following services are not provided by the laboratory. Rank them as to your idea of usefulness.

_____ Blood stains	_____ Tool marks
_____ Paint comparisons	_____ Arson
_____ Hairs & fibers	_____ Drug analysis
_____ Seminal stains	_____ Alcohols (blood or liquor)
_____ Glass or other trace evidence comparisons	
_____ Training bulletin	

6) The following services are not now available. In what order (1-7) would you like to see them started?

_____ Documents
_____ Firearms
_____ Gunshot residues on hands
_____ Latent prints
_____ Photographic processing
_____ Polygraph
_____ Analysis of blood & urine for drugs and carbon monoxide

7) Other comments on the laboratory.

POLICE CHIEF QUESTIONNAIRE

Date of Interview _____

Name of Agency _____

Person Interviewed _____

- 1) Number of full time sworn officers.
- 2) Population of community served.
- 3) Are you aware of the type of services that the Eastern Ohio Forensic Laboratory offers your department?
Yes No
 A) If so, how did you learn of these services?
- 4) Have you had the opportunity to utilize any of these services? Yes No
 A) If yes, which ones?
 B) If no, why not?
 C) Does B.C.I. handle work for you?
 D) Do you send items to other labs?
- 5) Were there any difficulties in obtaining these services?
- 6) Does the Eastern Ohio Forensic Laboratory meet the needs of your department?
- 7) Do you feel that there is a role for the Eastern Ohio Forensic Laboratory in helping your department?
- 8) Has the department an established policy as to who has been delegated the authority to send evidence to a laboratory?
- 9) Who collects the evidence?
- 10) What is the feasibility of assigning one or more of your personnel primarily to crime scene work after having specialized training?

- 11) What are your feelings toward the Laboratory establishing a team to do crime scene search?
- 12) What is your opinion as to the use of physical evidence in aiding your department?
- 13) Can you think of any cases in which the use of physical evidence has been especially helpful?

CORONERS' QUESTIONNAIRE

Please complete and return as soon as possible in the enclosed envelope.

Name: _____ Title: _____

Department: _____

1) We have used the Eastern Ohio Forensic Laboratory:

_____ Yes _____ No

2) How do you rate the service?

Speed: _____ Fast _____ Medium _____ Slow

Quality: _____ Good _____ Average _____ Poor

3) Accessibility of the laboratory:

_____ Good _____ Fair _____ Poor

This could be improved by _____

4) We have not used the Eastern Ohio Forensic Laboratory. This is because of:

_____ Distance _____ Lack of need _____ Services

we need are not available _____ Do not know what

services are available.

Other: _____

CHAPTER II

DISCUSSION AND RESULTS

Introduction

With the growing awareness of the general state of the nation, and in particular the relationship of the criminal justice process with this state, legislative action of 1968 produced the Omnibus Crime Control and Safe Streets Act. One founding premise of this act was to motivate research and development aiming at producing a methodological process in which improvement of law enforcement would be feasible. Improvement was hypothetically contingent upon the reduction of crime and the detection and apprehension of those defined as criminal in relation to written law. An initial attitude of rejuvenation of resources prevailed and a sense of direction was incorporated into an area long neglected by the very constituencies it sought to serve. At this point the facet of criminalistics received considerable attention as a promising avenue for improvement.

The 1960's brought acknowledgement of the criminal justice system and rapid funding procedures were directed at improving existing functions. Slowly, indirectly, forensic laboratories were established. The Law Enforcement Administration Agency (L.E.A.A.) adopted

a model approach which would dispense available resources through a series of funding procedures. The L.E.A.A. proposal related to the rationale premise stated in the Omnibus Crime Act of 1968 -- that reduction of crime will occur by diminishing factors while controlling the incidences that do occur.

With the adoption of a single agency -- the L.E.A.A. -- to handle the integration of lucrative amounts of funding, and with the needs inherent in the crime situation, research was conducted to develop standards and goals in an effort to comply with the stated premises. A 1971 Presidential Commission was established to respond to the needs of society with the available economics. The Eastern Ohio Forensic Laboratory was an indirect outgrowth of the awareness created by the commission's standards. The commission's report was presented at the National Conference of Criminal Justice in January of 1973. The Eastern Ohio Forensic Laboratory was established in 1974.

The commission's report established that every state should establish a consolidated criminal laboratory composed of local, regional, or state facilities capable of providing the most advanced forensic services available to law enforcement agencies. This evaluation intends to establish a correlation between these stated standards and the conception of the Eastern Ohio Forensic Laboratory.

A regional internal criminal justice problem did exist in that a full-service forensic laboratory was

not readily available to law enforcement agencies. The projected needs of the four-county target area's law enforcement agencies were beyond the resources available to any one law enforcement agency. The result of this was that scientific services were not fully utilized because of distance, time and expense incurred in evidence submission. Utilization was on a special occasion basis rather than on a routine basis. Wilkaan Fong states that "the genesis of a forensic operation has been the outgrowth of a need laid bare by a major crime of violence. The notoriety which attends such cases, and the ensuing public outcry against the apparent deficiencies of the investigative effort, focused attention on avenues of improvement."⁵ This is evidenced by the statistics concerning evidence submission for the four-county multi-jurisdictional area -- law enforcement agencies submitted over 500 cases per year to the state laboratory facility, while crime rate and population figures project a case load of approximately 3,500 to 4,000 cases per year. In an early study, Parker reviewed forensic operations in an effort to evaluate the input of evidence submission to crime laboratories, it was hypothesized that "less than two percent of criminal violations received lab-

⁵Wilkaan Fong, "Criminalistics and the Prosecutor," The Prosecutor's Sourcebook, George and Ira Cohen, eds., (Practicing Law Institute, 1969), p. 329.

oratory examination."⁶ This is further supported by the 1970 Midwest Research Institute study of the correlation of the crime laboratory with its impact upon the index of crime. They stated, "The involvement of the crime laboratory in the total body of crime has been so miniscule as to preclude judgement as to the impact of criminalistics on the criminal justice system."⁷

The Eastern Ohio Forensic Laboratory serves a total of over 700,000 individuals in the four-county area. There are approximately fifty-three law enforcement agencies responsible for servicing this population. At the time of this evaluation, the law enforcement agencies had a total of 1,068 full-time officers and 226 salaried part-time staff members. These figures do not include auxiliary police. For the four-county area in 1974 there were approximately 22,300 Part I crimes -- Mahoning with 9,700, Trumbull with 7,700, Columbiana with 1,700, and Ashtabula with 3,200. A projected evidence submission rate per officer for cases submitted to a laboratory

⁶Brian Parker, "The Status of Forensic Science in the Administration of Justice," Revista Juridica, XXXII (No.2, 1963), 405.

⁷Walter R. Benson, John Stacey, Jr., and Michael L. Worley, Systems Analysis of Criminalistics Operation (Kansas City, Mo.: Midwest Research Institute, 1970), p.7.

in Ohio is such that the state average is three cases per officer per year. For a new facility (such as the E.O.F.L.) the rate is two cases per officer per year, with the highest ratio being five cases per officer per year.

Prior to the establishment of the E.O.F.L. the evidence submission rate for the cooperating counties was 1.06 cases per officer with 403 cases being submitted to the state facility for the last half of 1973. The current rate with the E.O.F.L. in operation for the last half of 1975 was 194 cases submitted to the E.O.F.L. and 342 cases submitted to the state laboratory, totaling 536 cases. This represents close to a fifty percent increase of evidence submission, a rate of 1.41 cases per officer for the four-county area. It is the opinion that this increase is not significantly related to the increasing crime rate. This statistic was arrived at by using a personnel figure of 760 officers. This figure was derived by subtracting 308 officers of the Youngstown Police Department from the four-county total of 1,068 officers. At the time of the evaluation evidence submission for Y.P.D. was minimal. It is possible to assume that with the availability of the E.O.F.L. the utilization rate would rise. As an effect of this realization, the four-county area after six months of availability quantitatively showed an increased utilization of criminalistic services.

The objectives of the laboratory were initially

to improve the quality of criminalistic service in the four-county area. The direct results should be identifiable in more complete investigations by the law enforcement agencies, resulting, indirectly, in a marked improvement of justice for the individual communities concerned. The proposed means of accomplishing these objectives is dependent upon the provision of criminalistic services. The E.O.F.L. provides a laboratory in the area in order to bring criminalistic services close to the area of need, since no other individual agency within the area has the resources to provide the necessary services. As the laboratory increases in its awareness and utilization, additional sophisticated equipment will be required. The sophistication of the equipment is meaningless unless proper use can be incorporated by personnel. The personnel responsible for this undertaking at the E.O.F.L. represent a composite of educational experience with years of practical experience in the forensic field.

The effectiveness of the E.O.F.L. is contingent upon the quality of input material from the cooperating agencies. The improvement in the quality of law enforcement in the area depends upon greater utilization of laboratory services and an increase in awareness concerning evidence submission. It is not feasible to reliably quantitate effectiveness for a new facility. What can be done is an evaluation of services rendered to ascertain a direction for future involvement.

Evaluation of Evidence Submission

The E.O.F.L. was established as a regional laboratory with the understanding that its existence would improve the quality of investigative services in the target area through greater utilization of criminalistic services offered by the laboratory.

In correlating the statistics from the Bureau of Criminal Identification and Investigation with state-wide averages compiled by A.J.D. for evidence submission rates, it is found that the E.O.F.L. target area is below expected rates for the state of Ohio. The four-county area agencies submitted approximately 1.06 cases per officer per year to the B.C.I. facility, while the state average is three cases per officer per year. With the inception of the E.O.F.L. for the year of 1975, utilization was still 50% below the expected annual rate. When isolating the laboratory and computing an anticipated case load, certain variables were taken into consideration. Acknowledging the fact that the Youngstown Police Department uses its own facility and submits miniscule amounts of evidence to the E.O.F.L. facility, its total personnel of 308 has been subtracted from the four-county area personnel figure of 1,068. Another factor to consider is that the E.O.F.L. is not as yet at full-service capacity

to offer all the services necessary to be a full-service forensic laboratory. Concluding that the laboratory is presently operating at a 60% workload, the remaining 40% comprising services for future involvement, e.g., polygraph, gunshot residues, and firearm identification, an adjusted personnel factor of 456 has been determined. Using the adjusted factor multiplied by the state submission average for a new forensic laboratory, a case load of 912 cases for the year is anticipated. The E.O.F.L. in 1975 received 276 total evidence cases or .61 cases submitted per officer, approximately 1.4 cases below the state new-laboratory average.

Evidence submission for the first quarter of 1976 showed an increase in case work. One hundred and sixteen cases were submitted. This number was projected to reach an annual figure of 4.64 cases per officer per year. This figure is still below the state average for a laboratory facility, but represents an evidence submission increase of approximately 42% for the four-county agencies.

Based on the state average the potential work load of the E.O.F.L. should be approximately 5,340 evidence cases per year. This incorporates the state figure for the highest ratio of evidence submission to a forensic laboratory. Realistically, this figure should be considered when the E.O.F.L. is at full-service capacity while encompassing the physical evidence case work for the Youngstown Police Department. With the capabilities of the

laboratory and its personnel, this projected case load is feasible. The criminalistic operation can only be as effective as the input material received from its cooperating agencies. This potential is contingent upon increased utilization which is an outgrowth of awareness of the criminalistic laboratory.

The collection of physical evidence at the crime scene will be of little benefit unless the data can be deciphered into relevant information pertaining to the crime. It is the generalized opinion that the laboratory be responsible for guaranteeing the proper handling of evidence from the scene to the laboratory. Many respected authorities stress the importance of having a trained criminalist at the scene to direct proper retrieval of evidence. This may be feasible for a local enforcement agency working out of their laboratory, but in the operation of a regional laboratory serving a multi-jurisdictional area with a population exceeding 700,000 and supporting a Part I crime index of over 20,000 crimes, there is an insufficient number of trained personnel to carry this out effectively. Therefore, the collection of evidence is left up to an individual who may not realize the importance of scientific inferences concerning specific evidence items.

With this understanding, the director of the E.O.F.L., aided by his colleagues, is presently offering individualized training seminars. These seminars are an

attempt at fostering positive ideas concerning physical evidence. This particular service which is offered by the E.O.F.L. may ultimately improve the quality of the criminal justice system more than all the sophisticated technological advancements that are presently available. The deficiencies that have inherently plagued the professional aspect of criminal justice can not be eliminated by investing in physical instruments without securing competent personnel to insure a positive growth.

Analysis of the Response to the Questionnaire from Law Enforcement Personnel in the Four Counties

The analysis of information is based upon the review of the two formats of questionnaires. The first format sought to establish a level of general awareness response. The second questionnaire format focused on the utilization of offered services by the E.O.F.L.

The awareness questionnaire was distributed throughout the four-county area's law enforcement personnel. Ninety-two percent of those questioned stated that they had the opportunity to utilize specific services. This 92% rated the facility as good quality with fast service. The accessibility of the laboratory was good but there was a need for localized parking facilities. Those not using the E.O.F.L. stated a variety of reasons, including lack of need, lack of knowledge of the services, and the fact of being accustomed to another facility for processing physical evidence.

The second part of the questionnaire was developed to identify the relevance of physical evidence plus the importance of services offered and those services presently not offered. When questioned concerning the type of cases in which physical evidence can best be utilized, a general consensus evolved that crimes directly involving a victim -- e.g., homicide, rape, and breaking and entering required physical evidence examination. Arson, auto-

mobile theft, and assault received high ranking but were not considered as significant as the initial listing. It is possible to assume that with the availability of the E.O.F.L. the utilization rate would rise. With this realization, the four-county area quantitatively showed an increased utilization of criminalistic services after six months of availability.

The objectives of the laboratory were initially meant to improve the quality of service in the four-county area. The direct results should be identifiable in more complete investigations by the law enforcement agencies, resulting indirectly in a marked improvement of justice for the individual communities concerned. The E.O.F.L. provides a laboratory in the area in order to bring criminalistic services close to the area of need. No other individual agency within the area has the resources to provide the necessary services. The laboratory equipment accommodates the basic requests of these agencies. As more people become aware of the existence of the laboratory and utilize its services additional equipment will be required. The sophistication of the equipment is meaningless unless there are personnel sufficiently trained to handle it. The personnel at the E.O.F.L. have the training it takes to handle their facilities.

The effectiveness of the E.O.F.L. is contingent upon the quality of input material from the cooperating agencies. The improvement in the quality of law enforce-

ment in the area depends upon greater utilization of laboratory services and an increased awareness concerning evidence submission.

When asked to rank which of the existing E.O.F.L. services were most important, 95% of those questioned put drug analysis first or second on their list. The remaining services received a wide range of usefulness ratings. This may be attributed to the reasoning that specific departments have specific needs. What may be considered useful to the prosecutor may not be considered as important to the coroner. The E.O.F.L. may be unique in that its agencies combine rural, suburban and urban environs. Each community and its respective law enforcement branches adopt individualized philosophies concerning the preservation of law and order. With this in mind the remaining services will be ranked according to the importance attributed to them by the questionnaire recipients. Following drug analysis, glass and trace evidence comparisons -- including toolmark identification and paint comparisons -- ranked high. Analysis of alcohol percentage in the blood also received a high priority listing. Blood stains, hair and fibers, and seminal stains were submitted for analysis in a moderate amount. Services available for training bulletins and arson involvement ranked low in utilization.

The final area of interpretation of the awareness questionnaire sought to identify specific areas for

future involvement. The questionnaire proposed services that are not presently offered by the laboratory and asked cooperating personnel to rank which would be of value to them. Some of these proposed services are already available in certain counties, but they are not always available for multi-jurisdictional agencies to utilize. If these services were established at the E.O.F.L., the quality of investigative services in the area would be improved through greater utilization of the laboratory. The needs that could be filled by a full-service laboratory serving the four-county area are beyond the resources of any individual agency in the area. With this in mind, questionnaire results will be broken down into a four-county overview.

When questioned concerning services that they would like to see initiated, Mahoning County law enforcement personnel responded that if a polygraph interpretation service were provided they would benefit immensely. Other services that were ranked important were latent print analysis, firearm analysis and gunshot residues analysis. Analysis of blood and urine for drugs and carbon monoxide was moderately requested, as was photographic processing. A service providing document analysis was ranked low in importance.

Trumbull County is an area which does have a qualified laboratory facility to handle specific criminalistic services. These services are used by the mem-

bers of the Warren Police Department and their detective personnel. The service need that ranked highest in importance with the Trumbull County personnel was latent print analysis. Firearms and residue analysis were also rated as areas of high importance. Closely following were polygraph interpretation and analysis of blood and urine for drugs and carbon monoxide. Document examination was seen as an area of lesser importance while photographic processing was ranked the lowest in significance to those in the Trumbull County area.

Law enforcement personnel in Ashtabula County rated analysis of latent prints as a service which they would like to see initiated. Blood and urine analysis was established as another area of significance for the E.O.F.L. Polygraph service received a high level of significance, while documents, photographic processing and gunshot residues respectively scored lower as significant services for future E.O.F.L. involvement.

Columbiana County personnel responses concerning their needs varied in comparison to services requested by Mahoning, Ashtabula and Trumbull County personnel. Again, latent print analysis was established as a number-one priority. Firearms analysis, blood and urine analysis and gunshot residue analysis were given considerable consideration for future E.O.F.L. examination. Documents analysis remained low in significance, but, surprisingly, polygraph service ranked the lowest in projected needs for the county.

Analysis of Response to Questionnaires
from Police Chiefs, Prosecutors, and Coroners

The format for the second questionnaire focused on utilization, consideration being given to the respective agency in which the questionnaire was to be applied. An appropriate format was designed for Chiefs of Police, County Prosecutors, and County Coroners. In doing so it was hoped to isolate the individual agencies' perceptions of the E.O.F.L. In the review of results, each law enforcement branch will be examined individually.

From interviewing the four-county area's police chiefs, a generalized view was established concerning the relation of the E.O.F.L. facilities with the cooperating departments. The E.O.F.L. facilities are available to approximately 1,070 full-time law enforcement personnel who service a population of more than 70,000 individuals. In response to the questionnaire only one department stated that it was not aware of the type of services offered by the E.O.F.L. When questioned concerning the method by which each department learned of the services offered by the E.O.F.L., the unanimous response was through correspondence with the E.O.F.L. director. Sixty-five percent of the police chiefs questioned recorded that they had the opportunity to utilize the services, with drug examination being the most widely used service. Seventy percent of the police chiefs reported that the B.C.I. handled evidence work for their

departments, with a small percentage reporting evidence submission to other laboratories besides the E.O.F.L. and the B.C.I.

When questioned concerning the presence of any difficulties in obtaining services, all questioned answered that there were none. As for the E.O.F.L. meeting the needs of their departments, approximately ninety-five percent responded that the E.O.F.L. did. The four-county area's police chiefs all felt that there was a role for the E.O.F.L. in aiding their respective departments.

The remaining questions focused on physical evidence importance and utilization. The police chiefs all stated that their respective departments have an established policy as to who is delegated the authority of sending evidence to a laboratory. Approximately eighty-five percent of the chiefs reported that this task is delegated to the personnel arriving on the scene. Because of the diversity of department size and personnel deployment, a wide range of individuals responsible for evidence collection and submission was found.

When questioned whether it would be feasible to assign one or more of their department personnel primarily to crime scene work after having received specialized training, the chiefs responded favorably to the concept but cited limited manpower and economics, lack of need because of a limited amount of physical evidence and skepticism concerning training. A few departments already

had established crime scene technicians. All the police chiefs agreed that there is a need for a team to do crime scene search. Some stated feelings of apprehension as to the laboratory's ability to handle a large case volume and to obtain enough qualified personnel. The police chiefs agreed to the relevance of utilizing physical evidence to aid their departments, citing Supreme Court decisions, valid courtroom testimonies, and changing social ideas concerning the role of law enforcement.

All of the county coroners were aware of the services available at the E.O.F.L. and had the opportunity to utilize the facility except one, who used the hospital for his drug screening. The majority relied upon other laboratories for service, ranging from the State Highway Patrol laboratory for alcohol analysis to the B.C.I. and Lakeland for document analysis. Seventy-five percent of the coroners felt that the E.O.F.L. met the needs of their respective offices. The dissenting opinion was due to the fact that certain services are not presently available. When questioned concerning inadequacies in the handling of evidence presented to their offices, it was found that in general evidence submission was acceptable. There were, however, incidences in which cases were poorly presented and efforts of the coroners' offices were impeded. When questioned whether they had advised cooperating agencies to utilize E.O.F.L. facilities, some of the coroners answered that they had, while one stated that

he hadn't because of lack of need. All were in agreement that the quality of the cases presented was correlated to the use of physical evidence. Strong feelings were exhibited when questioned whether better policies could be established with cooperating agencies in regards to crime scene search. All agreed that this was possible through coordinated efforts and the establishment of educational policies for better investigative techniques.

The counties' prosecuting attorneys felt that the E.O.F.L. would play a future role in facilitating their offices in law enforcement. Utilization of services was minimal, with heavy reliance on other laboratories. The prosecutors speculated that increased utilization would be warranted when the laboratory becomes a full-service facility. There was disagreement among the county prosecutors when questioned about the concepts of physical evidence and investigation in regards to changing legal ideas. Not all agreed that these concepts were keeping pace with the new legalities implied by recent court rulings. When questioned as to their opinions concerning the proper utilization of physical evidence by cooperating agencies and authorities in the county, there was again discord in their replies. It was agreed that physical evidence should be used increasingly in the courts, but there were no established policies regarding the prosecutor's office and enforcement agencies as to how physical evidence should be used. All were in agreement

that inadequacies did exist in the handling of physical evidence in cases presented to their offices. This improper handling of evidence had impeded efforts of their offices. The prosecutors stated that efforts were made to advise cooperating agencies to utilize laboratory facilities to aid in prosecution. They identified a need for trained investigative personnel to aid in crime scene search, and, through their influence towards crime scene search, thought that better policies and practices could be established with local law enforcement agencies.

The final question sought insight into the ability of physical evidence in obtaining a specific plea. The prosecuting attorneys all agreed that with the aid of physical evidence, in conjunction with competent investigative techniques, the guilty plea would be readily established.

CHAPTER III

OBSERVATIONS AND RECOMMENDATIONS

The E.O.F.L. is an appendage of a complex bureaucratic system responsible for maintaining the ideals of written law. Because of the very complexity of the system, the administration of funds has often been misdirected. Criminalistic operations were not afforded priority classification, and, therefore, took a back seat in funding. Out of this funding, however, a single agency, the L.E.A.A., was conceived to direct monies. Initially these monies were intended to support research and development. Out of this grew necessary standards. It appears, though, that these standards were outgrowths of existing operations that were simply revamped to show marked improvements. Similarly, the same situation occurs concerning additional monies being provided for systems improvements. It appears that these monies are directed towards efficiently overhauling existing services. It is questionable whether or not these services should receive additional monies for expansion, or should simply be allotted a percentage for upkeep and general maintenance. What has happened is that financial assistance is being used to analyze existing services instead of expanding the structural framework. Positive growth continues to be a slow process. This can be explained by the fact that

very little initiative has been taken to incorporate new ideas. Financial funding up to this point has been restricted to a cost/benefit analysis. Therefore, funding agencies are hesitant about allotting resources for operations that cannot show immediate results. This makes criminalistic operations, such as the E.O.F.L., hard put to prove the social benefit of their services. The very standard and resource allotments that regulate funding procedures are hypothetical outgrowths of premises that have as yet been untested. This complicates the issue of evaluation since there is no basis to compare and quantitate the significance of the laboratory facility. Measures of cost/benefit analysis must be realistically designed to incorporate potential output as well as to consider past accomplishments.

The E.O.F.L. laboratory's evidence submission rate is below the state-computed average. In answer to the awareness questionnaire, the police chiefs stated that ninety-two percent of their departments had the opportunity to utilize services, but by reviewing the case-load input this figure is somewhat distorted. Every agency has been contacted as to the services available, yet some replied that non-use was due to not being aware of services. Many of the departments still rely on facilities other than the E.O.F.L., facilities which are closer to them in proximity. While E.O.F.L. services are presently free for cooperating county agencies, monies

are continually spent for laboratory analysis elsewhere. There may be a variety of reasons for this, ranging from lack of motivation and ignorance of services to uncooperating multi-jurisdictional politics. Whatever the reason for this misuse of funds, the fact that money is being wasted can be easily demonstrated by making a table comparing evidence submission to both the B.C.I. and the E.O.F.L.

TABLE I
A COMPARISON BETWEEN EVIDENCE SUBMISSION
TO THE B.C.I. AND THE E.O.F.L.

Crime-type	B.C.I. July-Dec. 1973 # of cases	B.C.I. July-Dec. 1975 # of cases	E.O.F.L. July-Dec. 1975 # of cases
Drugs	266	167	282
Rape	4	7	4
Burglary	29	46	3
Aggravated assault	8	7	2

At the E.O.F.L., drug work comprises over eighty percent of its criminalistic analysis. A 1970 study in California indicated "that specific laboratories reported more than 1000-percent increase in drug cases for period under study."⁸ One cannot help but wonder why there is such high involvement in drug cases and such low crime

⁸Ronald Rogers, Survey of Criminalistics Facilities in California (Council on Criminal Justice, California State College, California, 1970), p. 51.

laboratory involvement in Part I crimes. A study by Stanford Institute stated "that criminalistics is disproportionately utilized in cases of suspected possession and/or use of drug compounds. While laboratory casework in drugs has increased significantly in the past ten years, casework in the major crime categories has been almost constant, and in fact, decreased in some categories."⁹ The four-county area supports a Part I crime incidence of over 22,300 cases. It is reasonable to assume that a large, disproportionate amount of time is spent on drug recovery and analysis, taking away from other areas of possible involvement. One specific area to examine is that of burglary. The number of four-county area burglary cases totaled approximately 6,730 in 1974. Public expectations coupled with an alarming rate of occurrence should lead to support of forensic involvement in burglary cases. The 1974 Uniform Crime Report estimated that for

totals for burglary at 33% of the total crime index, clearance by arrest was only 18%, economically costing society \$1.2 billion, an increase of \$322 million from 1973. A five year trend, 1969-1974, saw burglary increase 53%. For persons released in 1972 and rearrested within a three-year span, burglary produced a 76% repeat for the same offense. An average of twenty-five years old composed 85% of all arrested for burglary. On the average, a burglary was committed every ten seconds.

⁹Brian Parker and Vonnie Gurgin, The Role of Criminalistics in the World of the Future (National Science Grant GI-30011, Stanford Research Institute, Menlo Park, Cal., 1972), p. 6.

¹⁰Clarence Kelley, Uniform Crime Report for the United States, 1974 (Washington: Government Printing Office, 1974), p. 28.

Physical evidence utilization is negligible in burglary. Consequently, we can predict the low percentage of burglaries that are cleared by arrest. It has been shown that attention is generally given to the burglary report that initially lists a suspect. A study conducted in 1970 by Joseph Peterson and Brian Parker supports the generalization that evidence utilization for burglary is minimal. Their study suggested that

physical evidence is, in fact, present at crime scenes yet goes uncollected, 88% of the crime scenes studied possessed physical evidence meriting laboratory examination but only four of the more than 3,300 Part I offenses committed during the research period resulted in actual crime laboratory analysis. This indicates that significant quantities of potentially meaningful evidence goes unrecognized, underdeveloped, and uncollected. The median number of physical evidence objects for burglaries was three items present at the scene.¹¹

Further, a study conducted by Paul Rosenthal and David Plummer for the Cornell Aeronautical Laboratories found that "only 1.6% of all burglaries reported to law enforcement agencies had evidence collected and submitted to a forensic laboratory."¹²

To quantitatively show an increase in utilization of laboratory facilities with the high occurrence of burglary, which composes 25% of total Part I crimes in the

¹¹Brian Parker and Joseph Peterson, Physical Evidence Utilization in the Administration of Criminal Justice (Washington: U.S. Department of Justice, 1972), pp. 13-15.

¹²Paul Rosenthal and David K. Plummer, Evaluation of Forensic Laboratory Services (Buffalo, N.Y.: Cornell Aeronautical Laboratory, Inc., 1967), p. 50.

four-county area, a general understanding will have to be reached to facilitate future involvement. The laboratory will understandably have to undertake the initiative towards increasing awareness and services offered in order to promote a higher incidence of utilization. Following the laboratory's cue, cooperating agencies will have to do just that -- cooperate. Many of the problems facing a laboratory can be attributed to a lack of understanding, a lack of motivation and a lack of education.

To accept new ideologies is to incorporate change. Change is slowly annexed to each segment of the bureaucratic system. Criminal justice is on the verge of accepting the concept of technology, realizing the importance of science and how closely it relates with written law. Science ideology has not made similar progressions corresponding with law enforcement, and has therefore created a lack of understanding. An adopted code of ethics should be drafted to insure the professionalism necessary for the convergence of science and law.

Here we realize the significance of the E.O.F.L. training program. This program offers a necessary avenue for easy access towards promoting agency utilization with criminalistic operations. The aspect of educating the personnel affords the operation a plausible way of incorporating evidence knowledge with evidence retrieval. When responding to questioning, the individual departments presented the dominating opinion that the person on the

crime scene was delegated the authority of collecting the evidence and maintaining the chain of evidence. It is imperative, then, to insure procedural application of evidence in order to facilitate laboratory utilization. The training program, coupled with a myriad of administrative duties, seeks to abolish the underlying variables that impede agency utilization of E.O.F.L. services. The criminalistic operation must take partial responsibility and confront the methods employed by law enforcement agencies. Utilization of a forensic facility must advance past the community public relations aspect. The resources available must be managed properly. Otherwise, manpower and finances will be uselessly squandered.

Upon establishment of a working order, efforts should immediately be expanded towards, inter-agency goal orientation. Drafting an outline of expected and preferential goals, there is a need to assign priorities to specific areas for concentration and to establish guidelines to insure uniformity. Many researchers promote the idea of collectively establishing a localized bank of information. A centralized computer would facilitate the storage, classification and retrieval of pertinent information. Input material would be in the form of data concerning physical evidence material, experiential data and a reliable updated reference source. Because of a lack of consistent reporting, a lack of uniformity in the use of terms, and a lack of knowledge of available services,

the utilization of forensic laboratories has been inadequate. Initiating a computer terminal for inter-agency interdependency would be a beneficial stride for the E.O.F.L. and its affiliates. It would function as a liason between political and jurisdictional constituencies often found lacking in motivational awareness of a specific operational embodiment. By bridging the awareness gap utilization would be increased.

It was first stated in the objectives of the E.O.F.L. that effectiveness was contingent upon increased awareness, and, therefore, increased utilization. Throughout this evaluation a trend appeared that this attempted awareness many times never left the administrative outpost for dissemination through the department. The field officer rarely received correspondence concerning the forensic operation. Awareness of personnel occurred mainly through personal motivation or educational exposure. This breakdown on the communication continuum is far-reaching in its social implications. Quantitatively, it is possible to formalize effectiveness as to statistics and the review of evidence submission rates. Taking these figures and juxtaposing them with the incidence of crime, it is obvious that the public is most directly affected by negligence or apathy. This negligence not only directly affects the forensic facility but reflects the interpretation of law and order by law enforcement agencies which, in turn, adversely affects society.

It is deemed necessary and logical to insure comprehensive awareness of forensic facilities for all personnel involved. Interdependent agencies must establish a chain of communication in which individual philosophies concerning the operation of the forensic facility can be voiced. Achievements by personnel within the laboratory should be positively reinforced, thereby insuring future achievements and removing factors that compete with objectivity and impartiality. If this were done, the field officer could devote time and energy towards a quality investigation.

A large majority of departments stated that the use of specific evidence technicians was impractical due to insufficient manpower and economics. Meanwhile, they have failed to realize that they have already hired the personnel and are presently paying for them. Departmental policies dictated that on-the-scene personnel were largely responsible for evidence retrieval. Field personnel, therefore, should be competently educated to carry through with this policy. It has been substantiated that field officers spend a large percentage of their on-call time on non-criminal matters. With managerial competency in planning corresponding with evidence examination training for field personnel, an effective overall operation would prevail.

The immediate value of implementing suggested courses of action would be manifested by securing the

preestablished goals. A perspective could be obtained that would permit relevant decision-making with adherence to stated objectives. Once the foundation of a forensic facility is established, it is conceivable to advance in a manner indicated by the affiliated agencies. Constructive criticism can then be disseminated to provide the improvement in quality that is long overdue.

The forensic laboratory must maintain the utmost in professional standards in order to secure the trust of its agencies and the faith of the public. The E.O.F.L. must come to terms with its multi-jurisdictional political strata to insure future funding. The regional laboratory was established through a federal grant which was designed to support the laboratory until a foothold was secured. According to a time table, future funding will be provided by jurisdictional affiliates. Ideally, monies will come from the communities being served. With the high degree of political involvement in criminal justice it appears necessary to separate the forensic laboratory from law enforcement agencies. Until now, the general trend of funding has been on a political basis. Whatever agency has had its interests best served by the forensic facility has provided the necessary funds to keep the facility in operation. This has led, in some institutions, to an operation stressing number of convictions, clearances, and courtroom appearances instead of impartiality and objectivity concerning the

handling of evidence. The premise of performance should not be solely based upon statistical records or money output versus money input. The forensic operation is a social institution with a scientific setting. It cannot be evaluated simply on a monetary scale. It must be viewed in the context of the social framework in which it serves. If the laboratory has to rely entirely on funding support from cooperating agencies, it could succumb to control which would not be representative of the professional attitude necessary for preserving constitutional guarantees. Paul Kirk and Lowell Bradford state that "an independent operation, not directly a part of any other law enforcement agency but available to all, would certainly find it easier to maintain a high degree of scientific objectivity that is essential to good operation."¹³ The forensic operation must be maintained as an institution serving everyone in society, not one serving solely as an adjudicatory process for law enforcement use.

¹³Paul L. Kirk and Lowell Bradford, The Crime Laboratory: Organization and Operation (Springfield, Ill.: Charles C. Thomas, 1965), p. 22.

CHAPTER IV

SUMMARY

The Eastern Ohio Forensic Laboratory was established through an effort to comply with established standards. The four-county area supports these standards overwhelmingly through population and Part I crime incidence. Objectives sought to improve the quality of available investigative services through greater awareness of forensic facilities. With a diligent professional staff, coupled with technological equipment, a sound methodological practice has been developed to insure these objectives. The influence of agency interdependency upon forensic procedural practices has strained the ideology of the stated objectives. As time elapses the administrative ordeals necessary for continued support will be re-oriented in order to afford the scientific objectivity necessary for preserving the ideals of the forensic facility.

Effectiveness is hypothetically contingent upon quantified results. These results are normally compared to empirical findings that have been established. In the case of this forensic laboratory evaluation, this method is ineffective. Instead, the character of the evaluation evolved out of the reflection of criminology on its social realm.

To account for effectiveness by analyzing the number of cases submitted, the number of cases analyzed and the types of examination would not be possible. The statistics would appear prejudiced towards one opinion or another. These findings would possibly be misconstrued, for the real value of the laboratory is in the availability of services and competent personnel.

When a new facility is initiated, it is possible to view the effects of agency input and the effect it has on the output of the forensic operation. It has been noted that

inputs are basically determined by conditions other than the professional aim of scientifically evaluating physical evidence. Criminalistics starts not as a natural science application for all crimes but to crimes for which the evaluation of physical evidence is a requirement by law for determining guilt or innocence, and to crimes for which public pressure upon law enforcement agencies is sufficiently great. For the most part, physical evidence is collected as a routine requirement of policing agencies, but that evidence does not in most cases reach the laboratory unless sociopolitical functionaires outside the laboratory deem it worthwhile or necessary. This establishes the limited extent to which crime laboratories now benefit us on the solution to crime.¹⁴

Through various methods the forensic facility adapts to the needs present within its regional system. The E.O.F.L. has responded remarkably well. It is possible, after a limited time of operation, to show that it has served as an aid to investigation, an aid in the identification of suspected materials and an aid in

¹⁴V.A. Gurgin, Brian Parker and S.J. Betsch, "Criminalistics: Today and Tomorrow," Journal of Forensic Science, Vo. 14, No. 3 (July, 1974), 525.

To account for effectiveness by analyzing the number of cases submitted, the number of cases analyzed and the types of examination would not be possible. The statistics would appear prejudiced towards one opinion or another. These findings would possibly be misconstrued, for the real value of the laboratory is in the availability of services and competent personnel.

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¹⁴V.A. Gurgin, Brian Parker and S.J. Betsch, "Criminalistics: Today and Tomorrow," Journal of Forensic Science, Vo. 14, No. 3 (July, 1974), 525.

courtroom procedures. With the increase in utilization a sense will grow through time to insure a methodology of a constructive operation beneficial to the county areas.

The preservation of this ideal is contingent upon numerous variables. The assimilation of these factors is manifested in the efforts of a forensic laboratory in maintaining quality as well as quantity. The injection of science into a behavioristic system complicates the rhetoric involved in explaining the laboratory's sociological value. There is no way in which to understand the potential of a forensic laboratory by simply pointing out its significance to written law. Forensic science does not include discretionary interpretations. Its realm in criminal justice is one in which it must constrain its function to fulfill the needs of law enforcement. If forensic science was not faced with the aspect of administering justice, its objectivity and impartiality would yield a successful union between law and science.

Recommendations and Alternatives

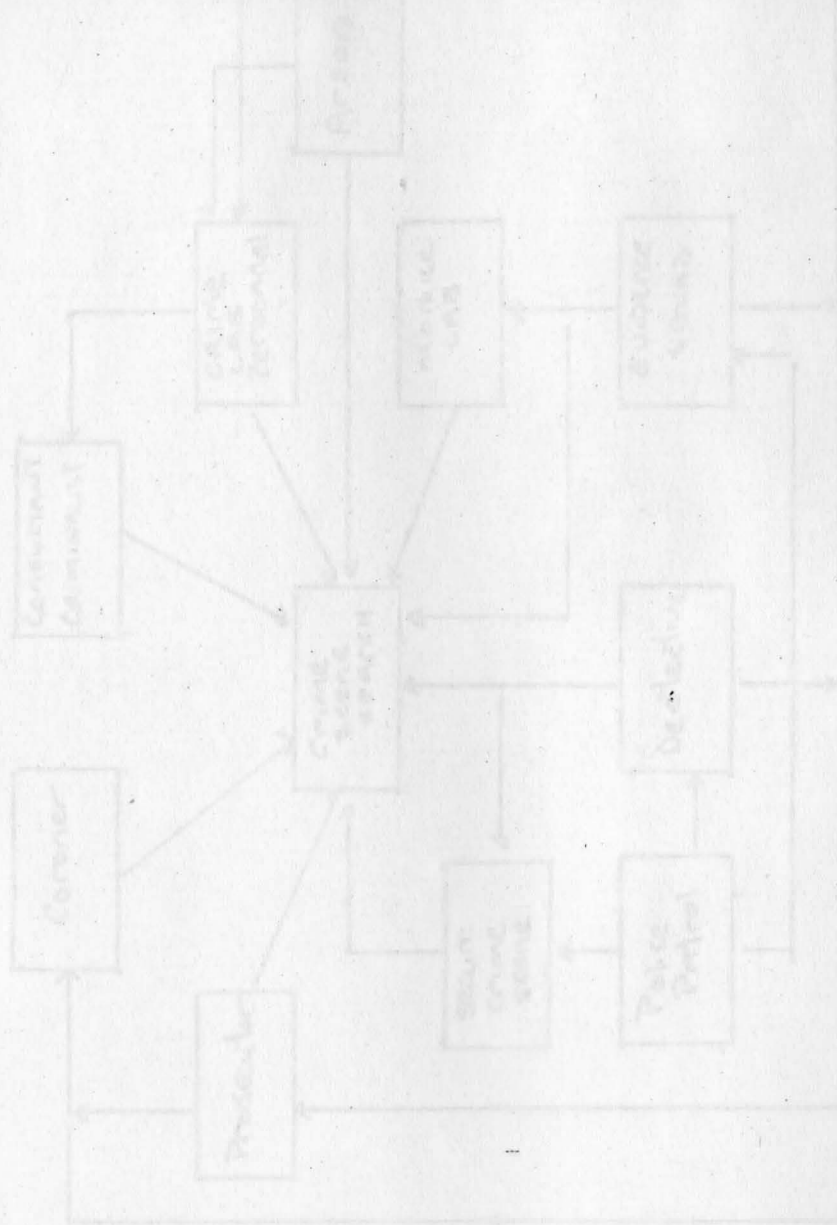
- 1) It is essential that the police and forensic facilities establish guidelines for the collection and examination of physical evidence.
- 2) Development of a code of ethics between laboratory and cooperating agencies. Consideration of scientific limitations as well as limitations in the gathering of evidence, yielding a realistic approach.
- 3) Structural resources -- provide laboratory facilities with a provision for convenience towards affiliated agencies.
- 4) Development of qualified evidence technicians who have exclusive responsibility for crime scene search.
- 5) Development of standard report forms to:
 - a. facilitate maintenance of a "chain of evidence",
 - b. afford availability of automated record-keeping.
- 6) Implementation of a system to provide for feedback, e.g., newsletter, commendations.
- 7) Continuation of training programs emphasizing concepts of physical evidence.
- 8) Initiation of a program to promote community awareness

to insure support both philosophically and financially.

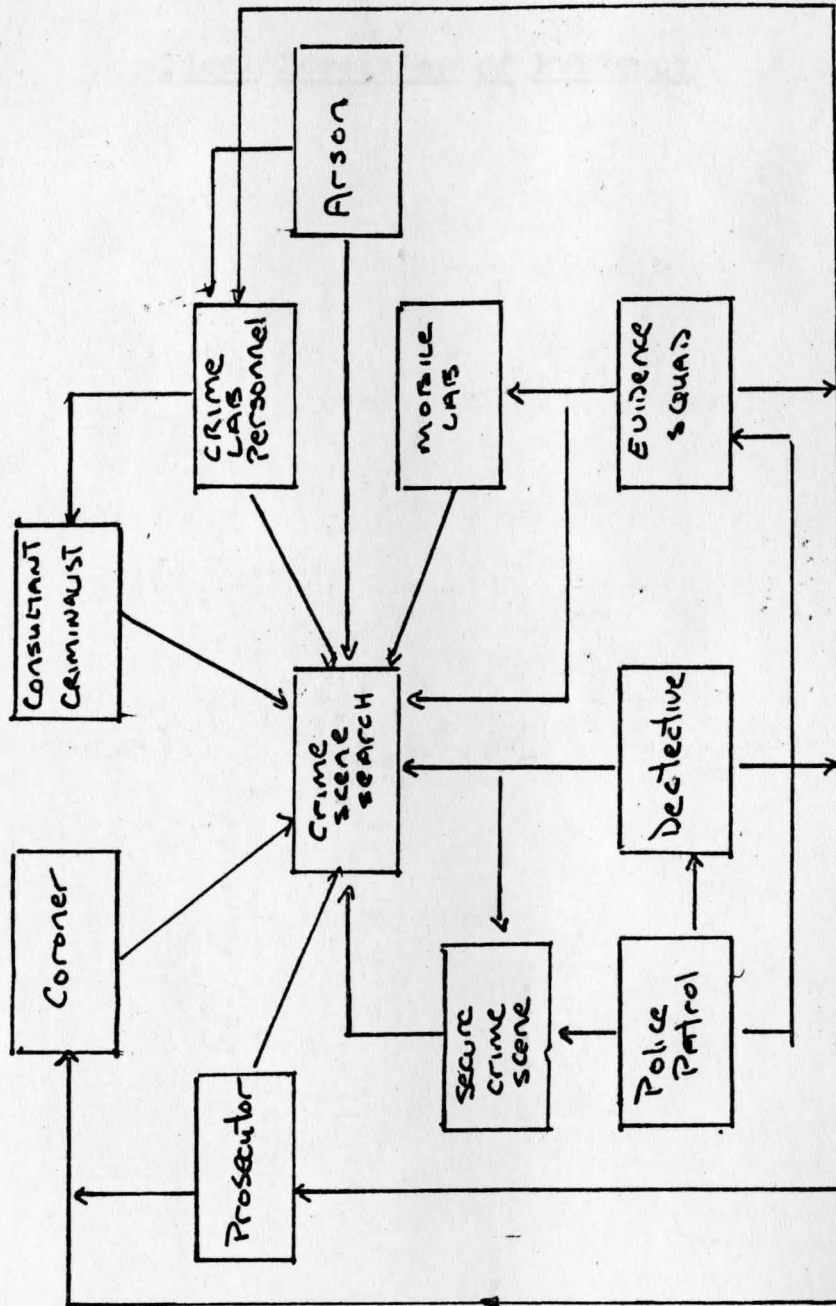
- 9) Immediate implementation of suggested criminalistic services to compliment law enforcement agencies with a full-service facility.
- 10) Maintain high standards of hiring -- hiring of personnel must advance the technological capabilities of the laboratory.
- 11) Allotment of resources to insure future research.
- 12) Establishment of criteria for technical assessment of services being offered on an on-going basis.
- 13) Quarterly evaluation reports quantifying work done for funding agencies.
- 14) Dissemination of information relating to forensic facilities to lawyers and other professionals.
- 15) Establish guidelines for incorporating unbiased evaluation process necessary for internal scrutiny.
- 16) Maintain efforts to keep the forensic facility from identifying with a single political jurisdiction.

APPENDIX A

Forensic Facilities Operational Variables



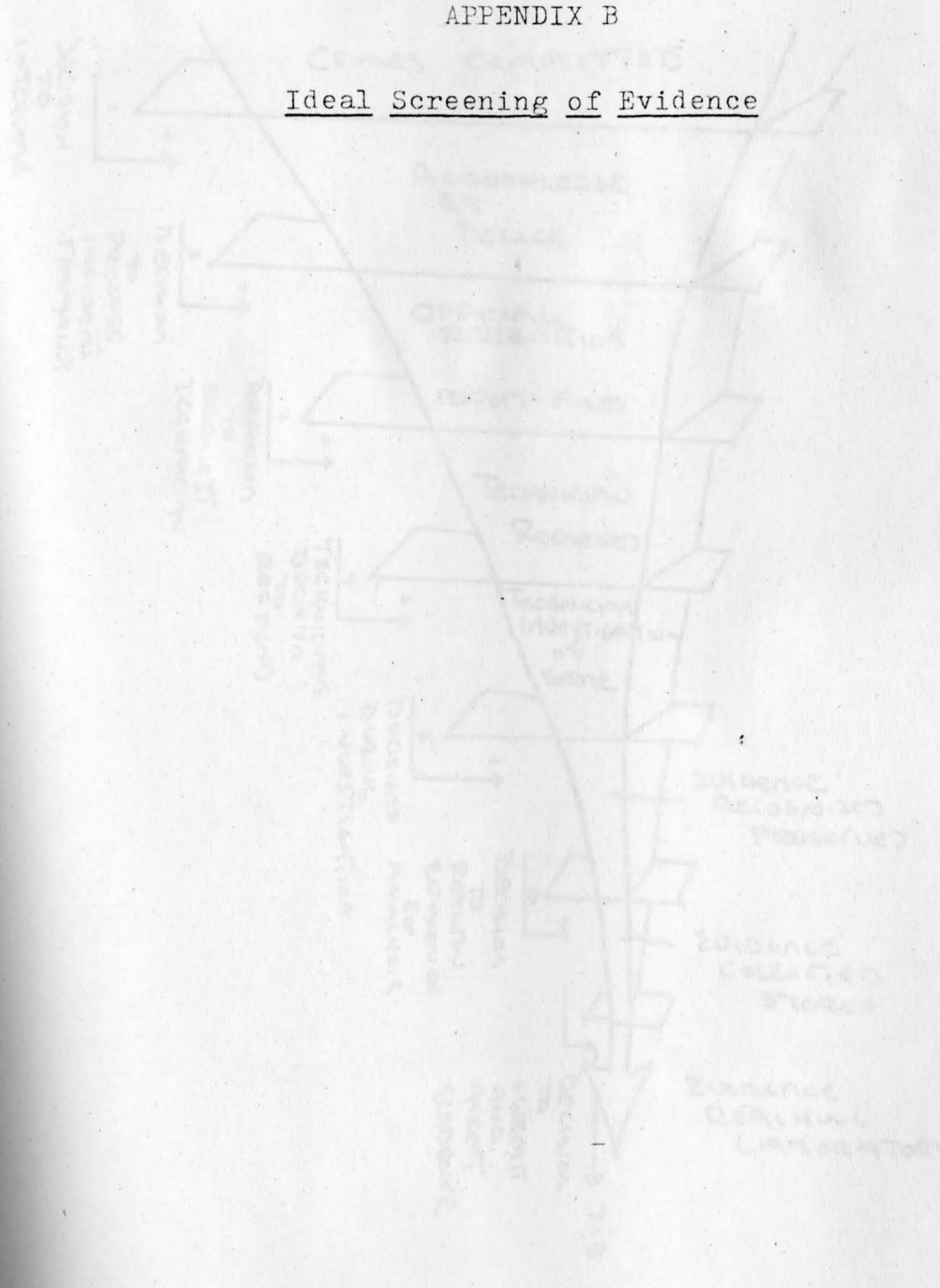
FORENSIC FACILITIES OPERATIONAL VARIABLES



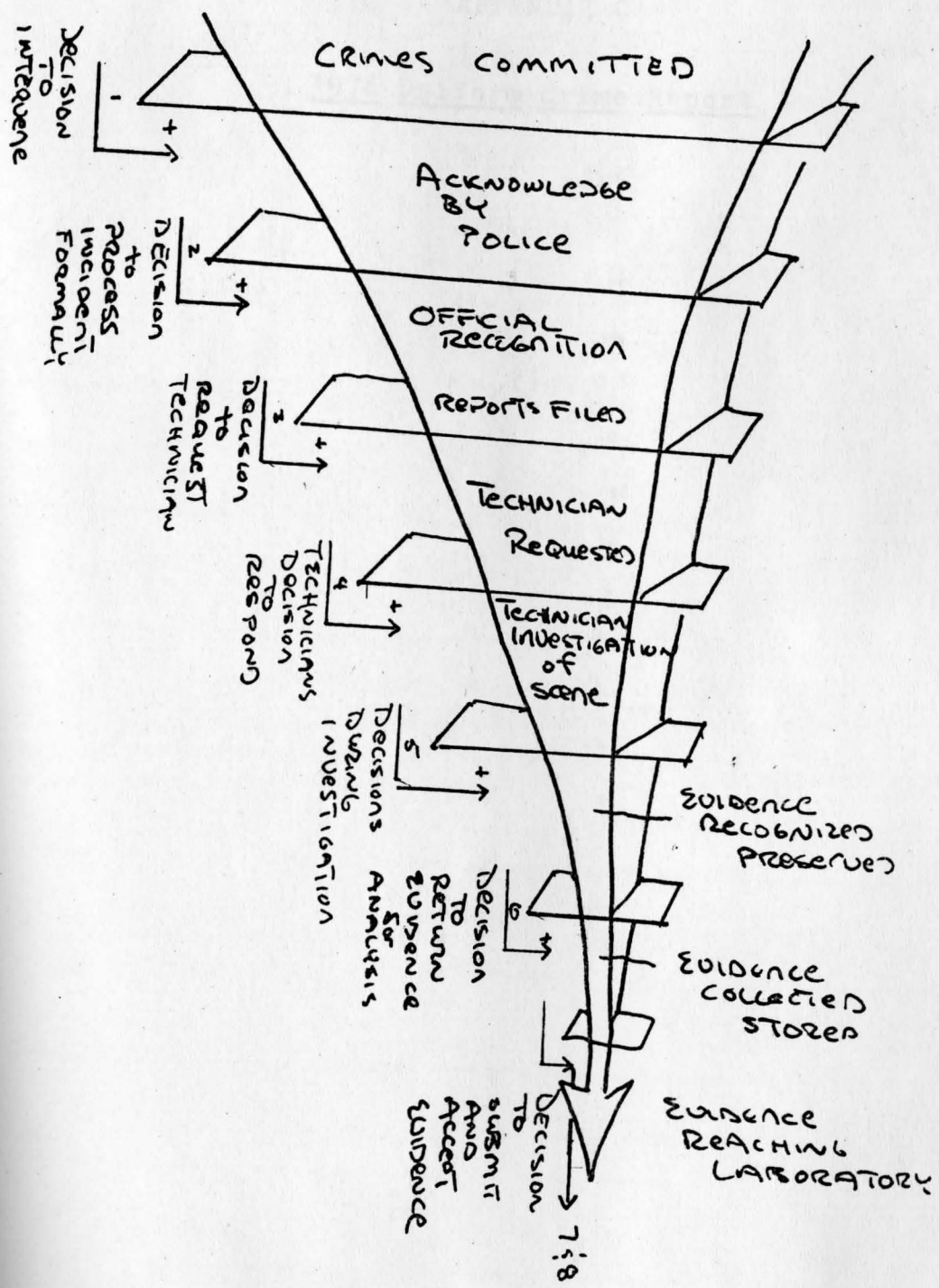
FORENSIC FACILITIES OPERATIONAL VARIABLES

APPENDIX B

Ideal Screening of Evidence



IDEAL SCREENING OF EVIDENCE
STANDARD OPERATING PROCEDURE



IDEAL SCREENING OF EVIDENCE
 +: INDICATES POSITIVE DECISIONS

OHIO	Population	Total Crime Index	Violent Crime	Property Crime	Number Non-Accident	Rape	Robbery	Aggravated Assault	Burglary	Larceny Theft	Auto Theft
STANDARD METRO STATISTICAL AREA	8616900	382690	35216	347474	881	2294	19385	12656	106348	701771	39579
AREA ACTUALLY REPORTING ESTIMATION TOTALS	93.6%	400160	36443	343767	899	2363	19773	13158	11786	212554	40653
OTHER CITIES	900364										
AREA ACTUALLY REPORTING ESTIMATED TOTALS	80.5%	26447	1549	24898	21	99	516	918	656	17398	1344
RURAL	1,214,763	32870	1925	30745	26	123	614	1185	7651	21624	1676
AREA ACTUALLY REPORTING ESTIMATED TOTALS	75.5%	15432	737	14695	20	60	81	570	5679	8437	679
STATE TOTAL	10,737,000	453471	39094	414377	952	2565	20524	15048	125821	245359	43262
RATE PER 100,000 INHABITANTS		4223.4	364.1	3857.3	8.9	239	191.2	140.2	1171.8	2285.1	402.4

Ashland County Area Law Enforcement
Sept. 1958

APPENDIX D

List of the Four-County Area's Law Enforcement Agencies

Ashland Police Dept.
4400 Main Ave.
Ashland, Ohio 44804
Phone: 937-7452

Ashland County Coroner's Office
Dr. Robert Malinowski
2578 Jefferson Rd.
Ashland, Ohio 44004
Phone: 937-7456

Ashland County Prosecutor's Office
Mr. Ronald V. Vettel
County Court House
Jefferson, Ohio 44047
Phone: 576-2040 Ext. 204

Ashland County Sheriff's Dept.
Sheriff Raymond Passia
7719 North Ridge East
Jefferson, Ohio 44047
Phone: 576-4901 or 937-5529

Conneaut Police Dept.
Chief John E. Sanford
City Hall Bldg. Main St.
Conneaut, Ohio 44030
Phone: 937-1292 or 937-1293

Geneva Police Dept.
Chief Floyd Sprague
City Hall, Main St.
Geneva, Ohio 44041
Phone: 455-1111

Geneva-on-the-Lake Police Dept.
Chief George Ellinger
South Spencor
Geneva-on-the-Lake, Ohio 44041
Phone: 457-4151

Ohio State Patrol
Lt. E. J. Miller
Ashland, Ohio 44804

Ashtabula County Area Law Enforcement Agencies

Sept. 1975

Andover Police Dept.
Chief Jay Barnes
153 Station St.
Andover, Ohio 44003
Phone: 293-7550

Jefferson Police Dept.
Chief Ken Johnson
27 East St.
Jefferson, Ohio 44047
Phone: 576-4806

Ashtabula Police Dept.
4400 Main Ave.
Ashtabula, Ohio 44004
Phone: 997-7688

North Kingsville Police Dept.
Chief Nick Walker
Municipal Bldg.
North Kingsville, Ohio 44068
Phone: 993-4700 or 224-0091

Ashtabula County Coroner's Office
Dr. Robert Malinowski
2578 Jefferson Rd.
Ashtabula, Ohio 44004
Phone: 997-7688

Orwell Village Police Dept.
Phone: 437-6459
(Inactive office)

Ashtabula County Prosecutor's Office
Mr. Ronald W. Vettel
County Court House
Jefferson, Ohio 44047
Phone: 576-2040 EX: 251

Ashtabula County Sheriff's Dept.
Sheriff Raymond Fasula
2719 North Ridge East
Jefferson, Ohio 44047
Phone: 576-4901 or 997-5585

Conneaut Police Dept.
Chief John W. Sanford
City Hall Bldg. Main St.
Conneaut, Ohio 44030
Phone: 593-1292 or 593-1293

Geneva Police Dept.
Chief Lloyd Sprague
City Hall Main St.
Geneva, Ohio 44041
Phone: 466-1111

Geneva-on-the-Lake Police Dept.
Chief George Tfister
South Spencer
Geneva-on-the-Lake, Ohio 44043
Phone: 487-4151

Ohio State Patrol
Lt. R.F. Miller
Ashtabula, Ohio 44004

Columbiana County Law Enforcement Agencies
 Sept. 1975

Columbiana Police Dept.
 Chief Daniel D. Sumroc
 28 W. Friend St.
 Columbiana, Ohio 44408
 Phone: 482-3611

Lisbon Police Dept.
 Chief Kenneth McKenzie
 Nelson Ave.
 Lisbon, Ohio 44432
 Phone: 424-7810

Columbiana Sheriff's Dept.
 Sheriff Russel van Fossan
 Court House
 Lisbon, Ohio 44432
 Phone: 424-7221

Salem Police Dept.
 Chief Richard Whinnery
 213 South Broadway
 Salem, Ohio 44460
 Phone: 332-4641

Columbiana Coroner's Office
 Dr. William A. Kolozi
 1995 E. State St.
 Salem, Ohio 44460
 Phone: 332-1551

Salineville Police Dept.
 Chief Ronnie Everett
 190 E. Main St.
 Salineville, Ohio 43545
 Phone: 679-2322

Columbiana Prosecutor's Office
 Mr. Joseph J. Baronzzi
 Court House
 Lisbon, Ohio 44432
 Phone: 424-7221

Salem Township Police Dept.
 Chief Jim Webb
 Leetonia, Ohio 44431
 Phone: 427-6731

East Liverpool Police Dept.
 Chief Kenneth Mooney
 126 W. 6th St.
 East Liverpool, Ohio 43920
 Phone: 385-1234

St. Clair Township Police Dept.
 Chief Dean Wayne
 RD #2
 East Liverpool, Ohio 43920
 Phone: 386-6496

East Palestine Police Dept.
 Chief Wallace Dilworth
 75 E. Main St.
 East Palestine, Ohio 44413
 Phone: 426-9311

New Waterford Police Dept.
 Chief Nelson J. Lower
 State Route #46
 New Waterford, Ohio 44445
 Phone: 457-2444

Hanoverton Police Dept.
 Chief Allen
 RD #1
 Hanoverton, Ohio 44423

Washingtonville Police Dept.
 Chief Edward Ehrenberg
 800 High St.
 Washingtonville, Ohio 44408
 Phone: 532-1522

Leetonia Police Dept.
 Chief Allen Gibson
 Main St.
 Leetonia, Ohio 44431
 Phone: 427-6731

Wellsville Police Dept.
 Chief Kenneth Thorn
 1200 Main Street
 Wellsville, Ohio 43968

Columbiana County Law Enforcement Agencies (Cont'd.)
Sept. 1975

East Liverpool Township Police Dept.
Chief Dave Clark
LaCroft Ave.
East Liverpool, Ohio 43920
Phone: 385-5610

Rogers Police Dept.
Chief Sid Cowin
Rogers, Ohio 44455
Phone: 227-3443 or 227-3293

Warren, Ohio 44481
Phone: 639-1300

Warren Police Dept.
Chief Arthur Ross
303 West Main Street
Warren, Ohio 44420
Phone: 547-1533

Howland Township Police Dept.
Chief David Hartman
160 Wiley-Cortland Rd.
Warren, Ohio 44424

Liberty Police Dept.
Chief James W. Cerenelli
4716 Belmont Ave.
Lounsbury, Ohio 44133
Phone: 774-1511

Newton Falls Police Dept.
Chief Elliot Thompson
79 W. Canal St.
Newton Falls, Ohio 44444
Phone: 872-6130

Wilcox Police Dept.
Chief John Ross
Franklin Alley
Wilcox, Ohio 44486
Phone: 642-9944

Warren Police Dept.
Chief Jack Gardner
141 South St.
Warren, Ohio 44420
Phone: 393-2661

Walpole Lake Police Dept.
Chief Paul Jarvis, Jr.
Frankfield, Ohio 44003
Phone: 478-8824

Trumbull County Area Law Enforcement Agencies
Sept. 1975

Brookfield Police Dept.
 Chief John Collins
 Brookfield Center
 Brookfield, Ohio 44403
 Phone: 448-6960

Cortland Police Dept.
 Chief David H. Murphy
 194 Lattin St.
 Cortland, Ohio 44410
 Phone: 637-1900

Girard Police Dept.
 Chief Anthony Ross
 100 West Main Street
 Girard, Ohio 44420
 Phone: 545-1533

Howland Township Police Dept.
 Chief David Hartsock
 169 Niles-Cortland Rd.
 Warren, Ohio 44484

Liberty Police Dept.
 Chief James M. Cerenelli
 4316 Belmont Ave.
 Youngstown, Ohio 44503
 Phone: 759-1511

Newton Falls Police Dept.
 Chief Ellice Thompson
 19 N. Canal St.
 Newton Falls, Ohio 44444
 Phone: 872-0130

Niles Police Dept.
 Chief John Ross
 Franklin Alley
 Niles, Ohio 44446
 Phone: 642-9944

Warren Police Dept.
 Chief Jack Gardner
 141 South St.
 Warren, Ohio 44481
 Phone: 399-3681

Yankee Lake Police Dept.
 Chief Paul Jurko, Jr.
 Brookfield, Ohio 44403
 Phone: 448-8866

Trumbull County Sheriff's Dept.
 Sheriff Robert Barnett
 160 High St.
 Warren, Ohio 44481
 Phone: 545-5624

Trumbull Co. Coroner's Office
 Dr. Joseph Sudimack, Jr.
 1212 Center St. West
 Warren, Ohio 44483
 Phone: 847-9006

Trumbull Co. Prosecutor's Office
 Mr. Walter Dragelevich
 160 High St. N.W.
 Trumbull County Court House
 Warren, Ohio 44481
 Phone: 399-8811

West Farmington Police Dept.
 Chief Norman Kubilis
 121 High St.
 West Farmington, Ohio 44491
 Phone: 889-5105

Lt. George Schuster
 Ohio State Highway Patrol
 Post Office Box #270
 Warren, Ohio 44481

Mahoning County Area Law Enforcement Agencies
Sept. 1975

Austintown Police Dept.
 Chief James H. Hazlett
 5340 Mahoning Ave.
 Austintown, Ohio 44505
 Phone: 799-3257

Beaver Police Dept.
 Chief Thomas Weber
 Box 62-11749 South Ave.
 North Lima, Ohio 44552
 Phone: 549-3812

Boardman Police Dept.
 Chief Grant Hess
 5105 Market St.
 Youngstown, Ohio 44512
 Phone: 788-4037

Campbell Police Dept.
 Chief William Halase
 City Hall, Tenny St.
 Campbell, Ohio 44405
 Phone: 755-4223

Canfield Police Dept.
 Chief Robert C. Byers
 104 Lisbon St.
 Canfield, Ohio 44406
 Phone: 533-4519

Craig Beach Police Dept.
 Marshall Cecil Elderman
 Mayor Harry Burford
 Lake Milton, Ohio 44429
 Phone: 654-5681

Lowellville Police Dept.
 Chief Donatelli
 City Hall, Liberty St.
 Lowellville, Ohio
 Phone: 536-6326

McDonald Police Dept.
 Chief Paul J. Schriener
 Municipal Bldg.
 McDonald, Ohio 44437
 Phone: 545-5471

Mill Creek Park Police Dept.
 Chief Robert J. Yekel
 816 Glenwood Ave.
 Youngstown, Ohio 44502
 Phone: 744-3848

Sebring Police Dept.
 Chief Alan L. French
 125 E. Ohio Ave.
 Sebring, Ohio 44672

New Springfield Police Dept.
 Chief John Hertzog
 3475 South Range Rd.
 New Springfield, Ohio 44443
 Phone: 542-2344

Struthers Police Dept.
 Chief Nicholas T. Polito
 6 Elm St.
 Struthers, Ohio 44471
 Phone: 755-9849

Poland Police Dept.
 Chief William Kalase
 368 South Main
 Poland, Ohio 44446
 Phone: 757-2717 or 757-2112

Youngstown Police Dept.
 116 W. Boardman St.
 Youngstown, Ohio 44503
 Phone: 747-5631

Mahoning County Sheriff's Dept.
 Sheriff Ray T. Davis
 21 W. Boardman St.
 Youngstown, Ohio 44503
 Phone: 744-0201

Mahoning County Coroner's Office
 Dr. Nathan Belinky
 1077 Wilson Ave.
 Youngstown, Ohio 44406
 Phone: 746-7000

New Middletown Police Dept.
 Chief Dominic V. D'Egidio
 10218 Main Street
 New Middle+own, Ohio 44442
 Phone: 542- 2234

Canfield
 Lt. Dennis Bueano
 Ohio State Highway Patrol
 Post Office Box #56
 Canfield, Ohio 44406

Mahoning County Area Law Enforcement Agencies (Cont'd.)
Sept. 1975

AIC James Anderson
Federal Bureau of Investigation
5537 Mahoning Ave.
Youngstown, Ohio 44515

Joseph R. Schaefer
United States Postal Inspector
United States Post Office Bldg.
Youngstown, Ohio 44501

Mr. Tom Quinn
Alcohol-Tax-Firearms Unit
U. S. Post Office Bldg.
Youngstown, Ohio 44501

Mahoning County Sheriff's Dept.
21 West Boardman St.
Youngstown, Ohio 44503

APPENDIX E

Four-County Area Personnel Figures

Albany T.D.
Jefferson T.D.
Ashtabula T.D.
St. Kingville T.D.
Canton T.D.
Ashtabula Sheriff's
Department
Geneva-on-the-Lake
TOTAL

Ashtabula County Law Enforcement Agencies

<u>Department</u>	<u>Full-Time</u>	<u>Part-Time</u>
Geneva P.D.	7	5
Andover P.D.	4	0
Jefferson P.D.	5	4
Ashtabula P.D.	38	0
N. Kingsville P.D.	4	0
Conneaut P.D.	18	0
Ashtabula Sheriff's Department	80	0
Geneva-on-the-Lake	<u>1</u>	<u>8</u>
TOTAL	157	17

Columbiana County Law Enforcement Agencies

<u>Department</u>	<u>Full-Time</u>	<u>Part-Time</u>
Leetonia P.D.	3	3
Columbiana P.D.	7	0
E. Palestine P.D.	7	0
Lisbon P.D.	4	3
E. Liverpool P.D.	32	4
Salem P.D.	24	4
Hanoverton P.D.	0	2
Columbiana Sheriff's Dept.	23	5
Salem Township P.D.	3	1
Salineville P.D.	2	0
St. Clair Township	4	2
New Waterford P.D.	0	6
Washingtonville P.D.	3	3
Wellsville P.D.	9	2
Liverpool Township P.D.	0	19
Rogers P.D.	<u>1</u>	<u>0</u>
TOTAL	122	54

Mahoning County Law Enforcement Agencies

<u>Department</u>	<u>Full-Time</u>	<u>Part-Time</u>
New Middletown P.D.	0	4
Campbell P.D.	17	6
Poland P.D.	5	2
Austintown P.D.	17	6
Struthers P.D.	20	3
Mahoning County Sheriff's Department	62	1
Youngstown P.D.	309	0
Mill Creek Park P.D.	10	8
New Springfield P.D.	1	3
Lowellville P.D.	4	5
Canfield P.D.	12	1
Sebring P.D.	8	11
Hubbard P.D.	15	5
Beaver Township P.D.	4	5
Boardman P.D.	34	0
Craig Beach P.D.	<u>0</u>	<u>2</u>
TOTAL	519	62

Trumbull County Law Enforcement Agencies

<u>Department</u>	<u>Full-Time</u>	<u>Part-Time</u>
Girard P.D.	21	17
Niles P.D.	32	0
Newton Falls P.D.	8	12
Liberty Twp. P.D.	17	16
Trumbull County Sheriff's Department	50	35
McDonald P.D.	7	3
Brookfield P.D.	11	5
Cortland P.D.	4	2
Howland Twp. P.D.	14	2
Warren P.D.	104	0
West Farmington P.D.	1	0
Yankee Lake P.D.	1	0
Hartford P.D.	<u>0</u>	<u>1</u>
TOTAL	270	93

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