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AN ANALYSIS OF THEORIES, PRACTICES, PROCEDURES,
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ADMINISTRATION WITH IMPLICATIONS FOR THE AREA
OF CRIMINAL FILES AND PARTICULAR EMPHASIS ON
MODUS OPERANDI RECORDS.

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THE UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE

AN ANALYSIS OF THEORIES, PRACTICES, PROCEDURES, AND PROBLEMS IN
LAW ENFORCEMENT RECORDS ADMINISTRATION WITH IMPLICATIONS
FOR THE AREA OF CRIMINAL FILES AND PARTICULAR
EMPHASIS ON MODUS OPERANDI RECORDS

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
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degree of
DOCTOR OF PHILOSOPHY

BY
MARCIA LOUISE GRIMES
Norman, Oklahoma

1973

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APPROVED BY

Lois E. Pickett
Paul R. Williams
Raymond R. White
Beaul Kidd

DISSERTATION COMMITTEE

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
LIST OF FIGURES	vii
 Chapter	
I. THE PROBLEM	1
Introduction	1
Statement of Problem	10
Scope of Problem	11
Delimitations	14
Procedures for Part I	15
Procedures for Part II	16
II. REVIEW OF RELATED RESEARCH AND LITERATURE	18
Research of the Literature	18
Doctoral Studies	18
Review of Police Department Studies	28
Federal Level.	33
State Efforts.	35
County Efforts	43
Other State/County Systems	45
County/Metropolitan.	45
Metropolitan	46
Summary.	61
III. HISTORY OF RECORD KEEPING, AUTOMATION, AND LAW ENFORCEMENT.	62
Introduction	62
The Art of Records Management.	63
History of Record Keeping.	66
Automation and Filing.	73
History of Automation.	74
History of Law Enforcement	85
Development of United States Law Enforcement	92
History of Methods of Identification	94
Summary.	96

TABLE OF CONTENTS--Continued

Chapter	Page
IV. POLICE RECORDS MANAGEMENT.	97
Introduction	97
Factors Affecting Police Records Management.	97
Need for Police Records.	103
Types and Sources of Police Records.	108
Types of Police Records.	108
Sources of Police Records.	109
Classification of Police Records	109
Criminal Identification Records.	110
Criminal History Record File	111
Miscellaneous Criminal Files	112
<u>Modus Operandi</u> Criminal Records.	113
Filing Cycle	114
Records Creation	115
Information Flow	117
Record Storage	122
Filing Equipment and Record Storage.	123
Records Retention.	127
Record Control	128
Record Retrieval	130
Record Protection.	131
Records Automation	134
Summary.	139
V. METHODS AND PROCEDURES	140
Introduction	140
Research Methods and Procedures.	141
Research Methods	141
Summary.	148
VI. ANALYSIS AND PRESENTATION OF FINDINGS OF RECORDS MANAGE- MENT SYSTEMS IN SELECTED LAW ENFORCEMENT AGENCIES.	150
Introduction	150
Detailed Evaluation of Field Study	152
Crime Index and Law Enforcement Personnel.	152
Law Enforcement Administrative Procedures.	153
Criminal Records	154
File Retention	154
Records Security	155
Equipment Utilization.	156
<u>Modus Operandi</u> Records	157
Fingerprint Records.	158
Interaction with NCIC.	160
Computer Utilization	160

TABLE OF CONTENTS--Continued

Chapter	Page
Microfilm Utilization.	160
Administration, Creation, Retention, and Retrieval of Data.	164
File Arrangement	164
Type of Equipment.	166
File Material.	168
File Operation	170
Average Time for Records Processing.	172
Average Time for Records Retrieval	173
Average Number of Daily References	175
Average Number of Records Added Yearly	176
Approximate Number of File Documents	178
Percentage of File Capacity Presently Utilized	180
Record Creation.	182
Record Utilization	186
File Retention	190
Summary.	193
 VII. PROPOSAL FOR A MODEL SYSTEM.	 194
Introduction	194
Overview of ALERTS	194
Equipment Utilization.	198
Lines and Terminals.	199
ALERTS Data Base	200
Anticipated Benefits of a Model System	202
 VIII. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS.	 205
Introduction	205
Summary.	206
Conclusions.	207
Recommendations.	209
 BIBLIOGRAPHY	 211
 APPENDICES	 219

LIST OF FIGURES

Figure	Page
1. Development and Use of System Simulation Model	30
2. The Complaint Processing System	32
3. Information Flow Summary	119
4. Report Control Plans Observed	121

AN ANALYSIS OF THEORIES, PRACTICES, PROCEDURES, AND PROBLEMS IN
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CHAPTER I

THE PROBLEM

Introduction

Numerous technological advances during the present century have focused particular attention upon the growing problem of records control and retrieval in modern business enterprises. A second "Industrial Revolution" which has been termed the "Information Revolution," the "Paper Revolution," and the "Records Revolution" has begun.¹

Record keeping, its necessary paperwork, documentation, and information has mushroomed. Simply making the appropriate entries in a file is not adequate; the records must be properly controlled so that the recall time is kept at a minimum.²

Inaccurate record information, misfiled records, inaccessible data, unretrievable information, or time consuming retrieval procedures are of

¹Melvin Kranzberg, "Computers: New Values for Society," The New York Times, January 9, 1967, p. 135.

²Mary Claire Griffin, Records Management: A Modern Tool for Business (Boston: Allyn and Bacon, Inc., 1964), pp. 2-3.

little benefit.¹ Records are only beneficial if the right information can be located quickly. All business organizations need accurate records with easy accessibility, and the business of law enforcement is certainly no exception.²

Every top-level manager recognizes the need for directing and controlling office operations by means of records that depict the entire course of each transaction. In many business offices, record keeping constitutes approximately ninety percent of all activities.³ Law enforcement records serve many functions as follows:

Police records provide an account of all police activity and aid supervising officers in their management of personnel. Adequate records measure relative capacities for work and indicate special abilities and aptitudes of police officers . . . Police records help supervisory officers in their day-to-day work by showing the progress of investigations and revealing deficient or improper handling of cases.

The apprehension and successful prosecution of the criminal are dependent on facts noted by the investigating officers. Statements of witnesses and observations of investigating officers must be recorded while they are still fresh. The possible conviction of a criminal may depend upon the vividness, completeness, and accuracy of the record.⁴

"In 1955, the results of a seven-year study on record storage and retrieval costs showed that one average mistake in filing cost a startling \$61.23."⁵ "In 1956, it was estimated that the cost of maintaining one office file drawer for a year ate up the profits on \$727

¹Mina M. Johnson and Norman F. Kallaus, Records Management (Cincinnati, Ohio: Southwestern Publishing Co., 1967), pp. 1-4.

²Griffin, op. cit., p. 4.

³Johnson and Kallaus, op. cit., p. 1.

⁴O. W. Wilson, Police Records: Their Installation and Use (Chicago: Public Administration Service, 1942), p. 5.

⁵"The Misfiling Nightmare," Today's Secretary (June, 1955), 51.

worth of business."¹ The increasing number of records that is created, processed, and stored in organizations has developed interests in seeking solutions to the problems of handling the records efficiently and economically.

Few people realize that, of all the service activities of an organization, the creation and storage of business records are the greatest consumers of space, salaries, and equipment.²

An adequate records-management program coordinates and protects the company's records, sharpens the effectiveness of records as a management memory, controls the time, equipment, and space allocated to records, and helps to simplify intra-organizational communication problems.³

An appreciation of the total concept of records management, including the life cycle of a record, is necessary for both the employer and the employee to do his best job in the area of records administration.⁴

Once installed, a records program cannot run itself. It must be led by a competent administrator and be staffed with people who understand the full importance of a good program. It cannot operate successfully in a vacuum. It works through trained personnel who must know about it and accept it.⁵

The history of data processing reflects man's search for more efficient ways of gathering, recording, and handling data in order to keep pace with the increasing volume and complexity of governmental and commercial activity.⁶

¹Arthur Barcan, "New Frontiers in Records Management," Journal of Accountancy (November, 1956), 51.

²Johnson and Kallaus, op. cit.

³Irene Place and Estelle L. Popham, Filing and Records Management (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966), p. 6.

⁴Ibid., pp. 6-10.

⁵Ibid., p. 10.

⁶Henry R. Lieberman and Dr. Louis Robinson, "The Electronic Digital Computer: How It Started, How It Works, and What It Does," The New York Times (January 9, 1967), p. 136.

An automated record-keeping system is one way that modern businesses can keep pace with the "Information Revolution." Fortunately, at the same time that record-keeping requirements have increased, computer scientists have devised new ways of recording, processing, and retrieving data at high speeds with great efficiency. In this complex world, the development and use of computers is both necessary and inevitable.¹

Changes are taking place almost daily in nearly every type of business, but this is especially true of the area of law enforcement. According to one source,

. . . it is my contention that unless something changes radically, police science and technology will always advance one step behind the military and industrial communities.²

A police records system is not concerned with the mere recording of events as a historical record so much as with the result of those operations, and with the study of the problems that confront the police. No single facet of police administration has more day-to-day significance than the maintenance and utilization of accurate, current, readily available records.³ "Today with crime, civil riots, and traffic accidents steadily increasing, the police are more than ever exploring every means of enhancing the usefulness of their records systems and in cooperating for the national good."⁴

¹Elias M. Awad, Automatic Data Processing: Principles and Procedures (2nd ed.; Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1970), p. 20.

²William Shaw, "The Role of the Computer in the Coming Decade," Law and Order, XVIII, No. 2 (February, 1970), 58.

³William H. Hewitt, Police Records Administration (Rochester: Aqueduct Books, 1968), p. xiii.

⁴Ibid.

The Police Records Division, which is concerned with nature, size, and distribution of the police problems of crime, delinquency, vice, and traffic, deals with information as a tool for administrative police management. The extent to which police records are properly maintained, processed, and retrieved is directly related to administrative performance and is a principal factor in determining the quality of police service delivered to the metropolitan area.¹

Failure to recognize the strategic role of records management in the field of police organization and administration is a serious handicap to police performance. This factor is illustrated by Professor John F. Kenney who states:

Records and reports are necessary for the effective operation of a police department. The extent to which they serve the operation is directly proportional to the needs of the department and to the quality of the records themselves. A record which is never needed, or which cannot be understood is obviously of little use to the department . . .

. . . The effectiveness of a police department is directly related to the quality and the usability of its records. They are a primary means of communication among the members of the department and have as their purpose the integration of the various departmental units into an integrated unit for accomplishing the police task. They are essential for effective handling of police cases. They are also important for the control of the total operation of the department by the chief of police.²

Dr. George D. Eastman, Senior Police Consultant, Public Administration Service, Chicago, Illinois, and one of the world's leading authorities on police information management, discusses police records in this manner:

¹Ibid., p. 3.

²John P. Kenney, Police Management Planning (Springfield: Charles C. Thomas, 1959), p. 102.

Records may be considered the 'corporate memory' of any organization whether it be one in industry, business, or public safety. Within a records system there should be found the history of the organization and its personnel, and to some degree that of its clients, and an accounting of the important actions taken by members of the organization during a certain period in time. Thus records are more than merely an accumulation of files, for they contain, in retrievable and usable form, the recorded cumulative experience and knowledge of every contributor.¹

Intelligent planning and execution of police operations must of necessity be based upon critical evaluations of the situation, involving expert interpretation of records data. Police management must make use of procedures founded on its own information and records as one of the basic devices of administration.²

Law enforcement records are used for a number of purposes:

1. To measure police efficiency.
2. To present the community's crime picture.
3. To assist in assigning and promoting personnel.
4. To identify individuals.
5. To provide property accountability.
6. To control investigation.
7. To aid in lowering the crime rate.
8. To make information available to the public.
9. To increase the efficiency of traffic control.
10. To assist the courts.
11. To furnish data for distributing the forces' personnel.
12. To assist in evaluating control services.
13. For the benefit of other departments and agencies.
14. To coordinate custodial activities.
15. To integrate the departments.
16. To furnish data for the budget.
17. To establish responsibility.
18. To combat unreasonable demands.
19. To reveal unusual problems.
20. To aid in the apprehension of criminals.³

¹George D. Eastman, The Savannah Police Department Survey: Part III, Records and Communications (Chicago: Public Administration Service, 1965), p. 1.

²V. A. Leonard, "Police Records Administration," Police Organization and Management (Brooklyn, New York: The Foundation Press, Inc., 1951), pp. 159-163.

³Kenney, op. cit., pp. 102-103.

These purposes may be summarized by stating that records aid in day-to-day operations and supervision, provide a basis for planning, are a means for measurement of accomplishments, aid in public reporting, and provide a method for control of fiscal matters.

In discussing the "need for police records" O. W. Wilson, Superintendent, Chicago Police Departments, states:

. . . There is a direct relationship between the efficiency of the police department and the quality of its records and records procedures. Complete information is essential to effective police work; reports of crimes and other matters of concern to the police must be classified, indexed, and filed so that information is readily available to the officers working in the field. Analyses of these reports are also useful to the commanding officers . . .

. . . Much of the information necessary to arrive at sound decisions may be gleaned from administrative records or reports which give a picture of present conditions and problems faced by the department, of the work of individual employees, and of the activities of whole units in dealing with these problems.¹

Preliminary studies have been made which indicate a considerable need, particularly in records management, for improvement within the law enforcement information system.² In 1961, the International Business Machines Corporation completed a conceptual analysis for the State of Massachusetts on Communication Data Processing in Law Enforcement. The Report stated:

In identification of criminals we find various possible methods available: photographs, fingerprints, physical description, method of operation (modus operandi), names (including aliases and nicknames). Law enforcement agencies must, therefore, remember not only everything that happened in each crime accounted for, but must remember the description, characteristics, and traits of each of the people that came in contact with the police.³

¹Wilson, op. cit., p. 1.

²Lt. Col. B. J. Sollito, "Impact of Automation on Law Enforcement," Military Police Journal (December, 1964), 19.

³Ibid.

The need for more complete and accurate records of crime and criminal activity and the use of data processing equipment demands standardization of format and uniformity of information stored.¹ In such areas as mug files, fingerprints, records, criminal intelligence, and traffic control, computers are being used with increasing effectiveness by the law enforcement profession. "Computers and police work are no strangers to each other."² If some significant aspect of the modus operandi could be immediately identified as limited to certain criminals, "law enforcement would have come into possession of a singular advantage, counterbalancing the criminal's advantage of high-speed mobility."³ Police officials across the country acknowledge that the recent Supreme Court ruling under the Miranda Decision concerning the use of confessions in evidence has made all tools of scientific detection, including computers, more important.⁴

Police problems involving crime, delinquency, vice, and traffic occur and re-occur in time and place with such a high degree of regularity, that administrative predictions are possible.⁵ The important requirements to facilitate these predictions are accuracy and availability of information. "It's a good bet that computers will be used much more frequently

¹Ibid.

²Nathan Kelne, "A New Computer Program to Predict and Deter Crime," Law and Order, XV, No. 1 (January, 1967), 8.

³Sollito, op. cit.

⁴Kelne, op. cit.

⁵Ibid.

in the future in the still relatively unexplored area of crime prediction and prevention."¹ This is already true in some police departments. For instance, in Chicago, police and computers are having some success in predicting the times and places where criminals are likely to strike. For this reason, at least twice a year, manpower allocations are adjusted to crime load.²

The Auerback Corporation, a leader among a small number of information systems firms across the country, has formulated a mathematical model which "allows a police force to predict crime according to a pattern of past crimes and the known conditions under which the crimes were committed."³ All such factors are carefully studied, analyzed, and plotted by a team consisting of computer scientists, a criminologist, and working police officers. The focus is on information that can be updated regularly to reflect current crime trends.⁴

"One of the most important administrative units of a modern police department is an efficient police records system, where a systematic record is made on all cases reported to the police for investigation."⁵

¹Ibid., p. 9.

²Ibid., p. 8.

³Ibid., p. 9.

⁴Ibid.

⁵V. A. Leonard, The Police of the Twentieth Century (Brooklyn: The Foundation Press, Inc., 1964), p. 63.

Statement of Problem

By use of the descriptive method, this researcher ascertained, analyzed, and synthesized the theories, problems, procedures, and practices of records administration in the broad spectrum of law enforcement. Particular emphasis was placed upon the Criminal Files and the Modus Operandi Operational Files. Captain Robert V. Wilder, Department of Research and Planning, Oklahoma City Police Department, Oklahoma City, Oklahoma, pointed out in a personal interview the need for study in these two particular areas.¹ Supporting Captain Wilder's viewpoint concerning this need for in-depth study of these records were two well-known police authors, V. A. Leonard² and O. W. Wilson.³

Through the historical method the researcher studied the development of records administration for police departments. This information helped in understanding the role that records programs fulfill in the effective operation of metropolitan police departments.

Specific results of this study were the development of records administration concepts and a suggested plan for a law enforcement's records program. This involved the development of a recommended records program for criminal and modus operandi records housed in metropolitan police agencies of 250,000 to 500,000.

¹Personal interview with Captain Robert V. Wilder, Director of Research and Planning, Oklahoma City Police Department, Oklahoma City, Oklahoma, July 23, 1971.

²Leonard, op. cit.

³Wilson, op. cit.

Scope of Problem

I. The scope of this study was a survey of records management programs for police departments in metropolitan areas with populations of 250,000 to 500,000.

A. The total area of law enforcement's records administration program was systematically studied with special emphasis on the following kinds of records:

1. Traffic Files (including traffic citations, accident records, warrant arrest files, and miscellaneous traffic files).
2. Criminal Files (including criminal history files, modus operandi operational records, fingerprint files, and miscellaneous criminal files).

B. Through the use of the questionnaire technique, a profile was developed for the records management programs currently in operation for the following selected law enforcement agencies:

1. Four cities with populations in excess of 500,000 were selected:

<u>Cities over 500,000 in Population</u>	<u>Total Crime Index</u>
Phoenix, Arizona	25,980
San Antonio, Texas	26,989
Chicago, Illinois	128,426
Los Angeles, California	169,742

2. Sixteen cities with populations between 250,000 and 500,000 and Total Crime Indexes between 9,000 and 14,000 were selected:¹

Akron, Ohio	12,750
Albuquerque, New Mexico	13,248
Birmingham, Alabama	11,843
Charlotte, North Carolina	11,256
Cincinnati, Ohio	13,154
Dayton, Ohio	12,368
Fort Worth, Texas	13,949
Norfolk, Virginia	12,418
Oklahoma City, Oklahoma	10,540
Omaha, Nebraska	11,096
Rochester, New York	9,850
Sacramento, California	11,195
San Jose, California	12,697
Tampa, Florida	12,297
Toledo, Ohio	10,178
Tulsa, Oklahoma	11,431

- C. The theories that provide a rationale for the various record administration programs in the police departments of the selected cities were carefully analyzed.
- D. The problems encountered and the practices utilized in law enforcement situations were surveyed.

¹John Edgar Hoover, Director FBI, Uniform Crime Reports: Crime in the United States (Washington, D.C.: United States Government Printing Office, August 13, 1970), pp. 169-170.

- E. The present utilization of manual, mechanical, and automated procedures in records administration programs in the general scope of the law enforcement enterprise were investigated.
 - F. The facts and concepts relevant to law enforcement's records administration programs were studied.
- II. This study involved an analysis of:
- A. The historical theories, problems, procedures, and practices in law enforcement records administration programs.
 - B. The current theories, problems, procedures, and practices in law enforcement records administration programs.
 - C. The possible future (1-5 years) theories, problems, procedures, and practices in law enforcement records administration programs.
- III. This study provided a synthesis of:
- A. The research data on problems, practices, procedures, and retrieval policies in law enforcement records administration programs.
 - B. The collected source material on records administration theories specifically in criminal, modus operandi operational files, and miscellaneous criminal files.
- IV. This study proposed the conceptualization, planning, and implementation of a records administration program for law enforcement agencies in cities with populations of 250,000 to 500,000. A particular emphasis was placed on the areas of criminal history records and modus operandi files.

Delimitations

There are two principal divisions in the police records department: traffic and criminal. Little emphasis has been placed on traffic records. The researcher's areas of study in Police Records programs have involved Criminal Activity Files and Modus Operandi Operational Records.

The information and the data collected in this study are obtained from police agencies located in cities between 250,000 and 500,000 in population by means of a questionnaire. Law enforcement centers have been selected from those cities in the United States that have over 250,000 in population and a Total Crime Index between 9,000 and 14,000. Based upon the 1969 Uniform Crime Reports: Crime in the United States, there were sixteen cities in this category. No attempt has been made by the researcher to include cities having fewer than 250,000 in population. It is anticipated, however, that the study may have relevance for smaller municipalities.

The study has been limited to the records management program's techniques, personnel, administration, equipment, input and output data, theories, problems, procedures, and practices ascertained from questionnaires that were completed and returned. The study excludes information dealing with law enforcement, such as economics, personnel, theories, problems, procedures, and practices, if they are not directly related to the specific area of records management.

Not all criminal acts are tabulated for the Total Crime Index of a particular city. This measure of crime consists of seven important offenses which are counted as they become known to the law enforcement agencies. Crime classifications used in the Index are as follows:

murder and non-negligent manslaughter, forcible rape, robbery, aggravated assault, burglary--breaking or entering, larceny of \$50 and over, and auto theft.¹

Procedures for Part I

Part I of this project utilized the methods employed in a library study. The first step in this study was an exhaustive survey of the research literature dealing with law enforcement theories, problems, procedures, and practices in the following areas: records management with special emphasis on criminal records and modus operandi records; mechanical, manual, and electronic processing of selected law enforcement records; automation and data processing as used in records management programs in law enforcement; and the system or process for automating law enforcement records. The writer investigated the following sources of research data:

1. Dissertation on subjects which are related and from which analogies may be made to the research study of automated records administration with applications for law enforcement records particularly in the areas of criminal and modus operandi files.
2. Independent Studies which were conducted by or for Law Enforcement Agencies and which contain facts and concepts involving manual, mechanical, and electronic processing of records.
3. Selected articles in recognized periodicals or newspapers which specifically involve the topics of records management, criminal records, and modus operandi files in relation to law enforcement records.

¹Hoover, op. cit., p. 55.

4. Special reports and books which specifically cover the topic of records programs.

Step two in Part I was to formulate the report which included the findings of the library study. This material was presented in Chapters II, III, and IV.

Procedures for Part II

On the basis of the extensive review of this literature, the next step was to formulate a questionnaire to be sent to selected police departments for cities of 250-500,000 in population. The police department and record division in Oklahoma City, Oklahoma was the site for a pilot study. After the pilot survey was completed, the questionnaire was modified as necessary to communicate effectively.

The next step involved sending the questionnaire to the law enforcement agencies in the sixteen cities selected for the study. The questionnaire was also sent to four selected cities having a population in excess of 500,000.

As the data were secured, the seventh step consisted of classifying, tabulating, and analyzing the data. An analysis and a synthesis of the information was made to identify the fundamental elements needed to devise a records administration program for general law enforcement records and specifically criminal records and modus operandi files.

The eighth step consisted of the formulation of statements regarding the operational status of administrative records management in law enforcement in general and specifically criminal and modus operandi files. Projections and proposals for a criminal records administration program were then made.

The findings from the descriptive research in Part II were formulated and presented in Chapters V, VI, and VII. The final step was the preparation and presentation of the complete report.

Chapter I includes a statement of the problem and the procedure.

Chapter II is the initial chapter of Part I and includes a review of related research and literature.

Chapter III is a presentation of the history of record keeping, automation, and law enforcement.

Chapter IV is the last chapter of Part I and presents a description of police records management.

Chapter V, the first chapter of Part II of the study, presents the descriptive methods and procedures utilized by the researcher.

Chapter VI contains a summary of the analysis and findings of records management systems in selected law enforcement agencies as reported on completed returned questionnaires.

Chapter VII is the last chapter of Part II and is a presentation of a model for a record keeping program for metropolitan law enforcement agencies.

Chapter VIII is a restatement of the problem and a summary.

CHAPTER II

REVIEW OF RELATED RESEARCH AND LITERATURE

Research of the Literature

Several significant studies have been made recently to consider the factors which contribute to the need for more complex regulations governing systems of law enforcement. Conclusions reached in these studies offer concrete suggestions for improving existing programs to meet the increased needs in urban communities.

The available information is contained in doctoral studies in the area of personnel usage and economic factors of law enforcement, and in independent research studies prepared by or for specific law enforcement agencies. Primarily, the research conducted was descriptive in nature, but in some cases library or exploratory methods were used.

Doctoral Studies

In surveying the scope of the library research for this project, this writer found a noticeable scarcity of dissertations written on police records management or records management programs in any area. There are, however, several related doctoral studies on personnel usage and police economics. A summary for each of these projects is given below:

Richard Allan Kaimann wrote the "Design and Examination of a Structured Information File" at the University of Iowa in 1967.¹ The specific, two-fold problem investigated in this descriptive study is as follows:

. . . one segment is descriptive, the other is analytical. The descriptive phase postulates that it is possible to design an information file for use on random access devices. Structure pertains to the differentiation between classes or types of data within the file and posits that logical linkages can be created and maintained . . . The analytical phase pertained to the entry procedure utilized to locate a desired record.

. . . The criterion selected was the average number of accesses required to reach any nominated record . . . A sample of 48,950 Iowa pupils, bearing unique nine digit numbers was analyzed using ten trial randomizers of five classes: (1) division, (2) division by a prime number, (3) truncating, (4) extracting, and (5) squaring . . . In the design of the structured file, five elements were isolated and were considered as common to each record class. They were: (1) a check character identifying the class of record, (2) a number identifying the particular record, (3) a category link logically relating each record to another in its class, (4) a data overflow address to accommodate additional information about the record, and (5) a synonym link that points to another home address to examine to find a nominated record . . .

The structured information file concept describes a data management philosophy for use in operational control environments. Since data for this level of management must be specific and timely, a unique information processing capability must be available to fulfill the needs. Structured files, as described in this study, offer the potential to satisfy those needs.²

At New York University in 1969, Jack Robert Ellner conducted a project in descriptive research involving human behavior and recorded his findings in a dissertation entitled, "A System Analysis Approach to the Comprehension of Human Behavior Based On An Analog-Synelog Informational

¹Richard Allan Kaimann, "The Design and Examination of a Structured Information File" (unpublished Ph.D. Dissertation, University of Iowa, 1967).

²Ibid.

Theory: An Exploratory Study."¹ The dissertation is primarily concerned with the information systems that the human organism employs to structure what is considered to be the nature of "reality."

It is hypothesized that two such systems are operative in human consciousness--an underlying substratum that is the accumulative product of earlier evolutionary states of phylogentic growth (the analog system), and a more recent acquisition that permits the structuring of experience in symbolic form (the synelog system) . . . In the process of analysis the author examines the effects of rhythms and the expansion of physical and mental boundaries on the 'reality systems' employed by the organism to structure the ambience in which it exists.

The dissertation concludes with an examination of the nature of consciousness, and analysis of the analog and synelog informational systems and their interactions which lead to conflict, and finally, with a listing of systems principles which the author believes has universal application to all material systems.²

Carl Cagan wrote a descriptive study in the area of Information Services, Information Storage and Retrieval Systems entitled, "An Automatic Probabilistic Document Retrieval System."³ He summarized the content of the study as follows:

This paper describes a computerized document retrieval system implemented with a subset of the medical literature. With the exception of the development of a dictionary used to delete common words from text, all systems operations are completely automatic. Objectives are the ability to effect retrieval for low-frequency as well as high-frequency query terms and the attainment of high system performance from a diffusely connected network. Methods are introduced for computations of term-term association factors, indexing, assignment of term-document relevance values, classification

¹Jack Robert Ellner, "A Systems Analysis Approach to the Comprehension of Human Behavior Based on an Analog-Synelog Informational Theory: an Exploratory Study" (unpublished Ph.D. Dissertation, New York University, 1969).

²Ibid.

³Carl Cagan, "An Automatic Probabilistic Document Retrieval System" (unpublished Ph.D. Dissertation, Washington State University, 1970).

of retrieved documents, and computations for recall and relevance percentages. The recall and relevance percentages are based on quantitative internal system computations and results are compared with user evaluations.

The connectivity maintained in the files obviates both the need for a thesarus and the need for query expansion by elaboration. A user may associate with each query term the degree of association desired between the term and retrieved documents. A powerful and selective retrieval capability results.¹

A dissertation in the area of Information Services and Data Processing, "Performance Optimization of Multiprogramming Systems," by Angel Ladron DeCegama, was written in 1970.² The following information is a summary of this research paper:

The main factors that affect the performance of a Third Generation Computer System are defined and related to the equipment configuration. The implications for hardware and software design as well as the principles to adapt the system configuration to the changing needs of its environment are established.

This dissertation shows how this is accomplished by the combined application of detailed mathematical and simulation models of different system configurations.³

Barbara Gay Marks wrote a dissertation in 1969 entitled "HERS, an Historical Education Retrieval System: a Prototype for an Educational Management Information System."⁴

In its day to day operation, the current educational system generates student data including grades, test scores, and other

¹Ibid.

²Angel Ladron DeCegama, "Performance Optimization of Multiprogramming Systems" (unpublished Ph.D. Dissertation, Carnegie-Mellon University, 1970).

³Ibid.

⁴Barbara Gay Marks, "HERS, an Historical Education Retrieval System: a Prototype for an Educational Management Information System" (unpublished Ed.D. Dissertation, University of California, Los Angeles, 1969).

descriptive material. The grades and test scores are usually accurate, since they are reviewed by teachers, students, administrators, counselors and parents. These data are stored in cumulative record folders in rows of filing cabinets in the school administrative offices. Thus stored, this information is awkward and time consuming to retrieve and use . . . HERS, an Historical Educational Retrieval System, is a multipurpose computer system for storing and flexibly retrieving cumulative record information . . .

In this Historical Educational Retrieval System, the user (e.g., administrator, counselor, teacher, or researcher) can communicate with his data base in two different ways. In the off-line method, the user expresses his retrieval and analysis requirements on standardized forms with the aid of a dictionary describing the data in his system. The forms are keypunched, fed to the computer and later the user receives his easy-to-read reports. In the on-line or interactive method, the user sits at a typewriter terminal linked to a computer. The computer and user carry on a conversation in which the computer tells the user what data elements are in the data base and what statistics or lists he can obtain. The user specifies what he wants by answering questions and the computer immediately produces his reports and statistics. Neither the off-line nor interactive method requires a programmer to help the user specify the students he wants included in his reports, the data elements he wants used, or the choice of statistics that are to be computed . . .

In summary, although HERS is only a prototype of possible operational systems, its existence demonstrates both the feasibility and some of the many uses of a multipurpose historical educational management information system.¹

Eugene Bartell Smith also completed a dissertation, "The Design of a Specialized Information Center for the Marine Resources Program," in 1970.² This research study presents:

. . . the design of a specialized information center which will respond to and complement a broad, social or multidisciplinary program. The model has been developed within the framework of the marine resources program of Texas A & M University. The primary goal of the center which has been developed is to provide a focus for information activities within the Sea Grant Program.

¹Ibid.

²Eugene Bartell Smith, "The Design of a Specialized Information Center for the Marine Resources Program" (unpublished Ph.D. Dissertation, Texas A & M University, 1970).

The major effort of the center is directed to three areas: (1) resources information, (2) the information distribution system, and (3) auxiliary services. Computer and microfilm technologies are utilized where practical. Major files associated with the resource information systems include: (1) a microfiche file of technical information, (2) an expertise file, (3) an activities file, and (4) a facilities file.

Projections for future research which would improve the availability of marine resources information are also discussed in this dissertation.¹

Gary Grove Koch completed his dissertation in 1968 at the University of North Carolina at Chapel Hill. His exploratory research study is entitled "The Design of Combinatorial Information Retrieval Systems for Files with Multivalued Attributes."² In this dissertation he states:

The recent advent of large-scale, high-speed computers has produced an 'information revolution.' One of the consequences of this has been the need for the development of filing systems which are capable of handling large volumes of data and permitting efficient information retrieval. In this research, first a review is given for a number of different types of filing schemes which have been recently discussed in the literature, with a number of appropriate generalizations being included.

Then attention is turned to a general model and filing systems based on certain types of combinatorial configurations. A method of forming one type of configuration is provided through the development of a sequence of theorems indicating how to select a certain subset of m -flats from a finite projective geometry which cover all $(t-1)$ -flats, where $m \geq (t-1)$.

The construction of another type of configuration is achieved through the development of suitable methods of extending some of the properties of certain small orthogonal arrays and partially balanced arrays to larger schemes. The two types of constructions may be combined to yield multi-state filing systems which permit efficient retrieval for an appropriate set of queries.³

¹Ibid.

²Gary Grove Koch, "The Design of Combinatorial Information Retrieval System for Files with Multi-valued Attributes" (unpublished Ph.D. Dissertation, University of North Carolina at Chapel Hill, 1968).

³Ibid.

Samuel Price wrote a dissertation entitled "The Development of a Thesaurus of Descriptors for an Information Retrieval System in Special Education."¹ This library study describes a "methodology for the design and development of an improved thesaurus for use as the terminology control mechanism in an information retrieval system."² The author summarized the content and procedure in the study as follows:

The method, which is hopefully a general one, utilized the field of special education as its subject matter base. The identification of the words and language of special education was accomplished by conducting a five-year retrospective search of the professional literature of the field. The words and language thus identified were classified according to their meaning for the field of education. This was done by assigning each term to its appropriate position on a specialized graphic paradigm of special education which was designed specifically for this purpose. The paradigm was patterned after a taxonomy of special education so that all known taxonomic parameters of the field were included. The advantage of this system of term classification for the field of information retrieval is that it groups the terminology of a given subject-matter field into taxonomically related sub-sets called taxons . . .

The research attempts to answer the question of whether or not the limitations which are imposed on word meanings in the experiment are representative of the meanings which the files in general associates with these terms. A multiple-choice type validation instrument was designed to analyze this question. The validation responses were analyzed using a variation of the item analysis technique. The results of this analysis reveal that the differences between the meanings associated with the experimentally derived taxons and the meanings associated with the taxons by experts in the field of special education are not significant. The probabilities associated with these differences are less than one in ten thousand that the experimental results obtained would be the result of chance alone. Therefore, it is very likely that the thesaurus is highly representative, insofar as word meaning is concerned, of the field of special education.³

¹Samuel Timothy Price, "The Development of a Thesaurus of Descriptors for an Information Retrieval System in Special Education" (unpublished Ed.D. Dissertation, University of Pittsburgh, 1969).

²Ibid.

³Ibid.

David Kai-Mei Hsiao completed a doctoral study entitled "A File System for a Problem Solving Facility," at the University of Pennsylvania in 1968.¹ This research report could have application for law enforcement records management especially from the viewpoint of protection, privacy, and security of files and records. Information from this research study is as follows:

In sharing information there arises the problem of privacy and the safeguarding of proprietary information. Early facilities with the capability of information-sharing may be termed of the involuntary type. That is, a piece of information once accumulated in the facility, belongs to the public domain and is available to every user of the system. However, this may not be suitable in a more general environment where users are of different disciplines and information to be stored has many different levels of sensitivity. Making information-sharing involuntary amounts to an invasion of privacy. Hence it may discourage users from accumulating information in the facility and consequently reduce the possibility of information-sharing.

In order to create a genuine sense of information-sharing, the facility must be able to protect the privacy of a user's files and make information-sharing voluntary. Once a user learns that his files would be free from the invasion of privacy, he may gain confidence in using the facility.

In using the file system of the facility for problem solving, a user, in addition to using programs in public files, may develop and file for future use his own 'special' purpose programs for processing the information in his files. Furthermore, in addition to sharing data, users must be able to share programs as well. However, allowing users to store and execute their own programs freely in the facility runs the risk of privacy invasion . . .

The objective of this dissertation is to design a pilot model for demonstrating the feasibility of a file system that (1) has the capability of managing files and providing system components to a user's program and the potential to grow in terms of data, programs and file management functions; (2) can protect the privacy of a user's information and (3) enables a file owner [to gradually and voluntarily share] his information with others.

¹David Kai-Mei Hsiao, "A File System for a Problem Solving Facility" (unpublished Ph.D. Dissertation, University of Pennsylvania, 1968).

The solution to (1) leads to the development of a centralized file organization and a centralized file system with the capability of automatic file creation, generation and maintenance . . .

The solution to (2) leads to the incorporation of a protection mechanism in the file system. The mechanism employs the following procedure to protect information from unauthorized users: (i) identification of the users by the system; (ii) verification that this user's access to file was authorized by its owner; (iii) authentication of the user by the file owner's built-in log-in program.

An additional protection mechanism is used to prevent unauthorized access by a user's program. The mechanism (i) prevents the user's programs from directly using certain system's components; (ii) makes the system's components available to the user's program through the General Service Routine for further checking and authentication; and (iii) prevents the user's program from using certain system's entry points.

The solution to (3) results in the concept of file ownership and its authority.

Access to a file is made possible only by the authorization of the file owner. The basic characteristic of this concept is that a file may remain private as long as its owner desires. Should he share his files with others, provisions are made for him to specify various portions of his files for information sharing and protection, to further authenticate the users of his files and to withdraw from others permission to access his files.¹

J. Fred Giertz wrote a dissertation entitled "An Economic Approach to the Allocation of Police Resources," at Northwestern University in 1970.² The following information is taken from his report:

The allocation of resources for police protection and crime prevention has become an important topic of discussion in recent years both by the public and, increasingly so, by economists. Crime prevention like most other goods provided by government lies somewhere between the polar cases of a pure public and a completely private good. Police protection is distributed freely to the public, yet the quantity consumed by an individual varies depending upon the place of his residence. There is a distribution problem for police protection

¹Ibid.

²J. Fred Giertz, "An Economic Approach to the Allocation of Police Resources" (unpublished Ph.D. Dissertation, Northwestern University, Evanston, Illinois, 1970).

which does not exist for a pure public good. Police protection can also be augmented by private protection expenditures by individual citizens. These aspects of the good must be taken into account in any analysis of the allocation of resources for police protection.

The purpose of this study is to develop a framework which can be used to analyze some of the important questions associated with these allocation problems. The question of the optimal allocation of resources will be dealt with first. A decision model will be constructed to derive the optimal values for the various police instruments at the disposal of the government. An optimal decision is defined as one which minimizes the cost to society of crime plus the cost of society's crime prevention activity. This is done initially for a simplified criminal justice system where only the general level of police protection is of importance. The model will then be modified to take into account the question of the distribution of police manpower among the districts of the city. Using this same framework, the implications of various other distribution schemes will be investigated. With the use of data from the city of Los Angeles, an attempt will be made to implement some of the decision rules developed in the model . . .

This study attempts to explain the expenditure decisions of the cities over 100,000 population involving police protection through an analysis of the factors which influence the preferences of individual citizens concerning this question. In summary, this study will first derive the optimal conditions for the allocation and distribution of resources for police protection, and then apply these rules to a specific problem. An attempt will then be made to explain the existing expenditure patterns for police protection in large cities.¹

Another doctoral study on the subject of law enforcement was written by Richard J. Kieffer and is entitled, "An Economic Analysis of Municipal Police Service."² An abstract of this research study is as follows:

This economic analysis of municipal police services employs a demand and supply approach to explain per capita police costs in the Missouri group (sixteen Missouri non-metropolitan municipalities with 10,000 to 50,000 population), and to examine the operation and performance of these police departments.

¹Ibid.

²Richard J. Kieffer, "An Economic Analysis of Municipal Police Services" (unpublished Ph.D. Dissertation, University of Missouri, 1970).

The demand for and the supply of police services depend upon a political institutional-organizational structure that includes city councils and police departments. An economic model of this structure that meets certain allocative and productive efficiency criteria is developed. This model is used to explain why it is efficient [to collectively consume and publicly produce] Apprehension, Deterrence, and Assistance (the major outputs of police departments). In addition, a theory is constructed to explain how the institutional-organizational structure functions as it determines demand for and the supply of these services. This theory provides insights into the decisions and production processes of police departments in transforming resources into police services . . .

In short, this study explains and evaluates the economic activity involved in providing police services for municipal residents: it accomplishes that goal by employing an approach recommended by Musgrave --a demand and supply approach.¹

Review of Police Department Studies

A major part of the answer to many of the problems involved in law enforcement can be found in innovative programs in Information Systems in the field of law enforcement. In one of these studies Richard M. Davis, a research economist from Battelle Memorial Institute in Columbus, Ohio, points out the following:

Climbing crime rates, the increasing diversity of police responsibilities, and the growing number of laws and regulations are making law enforcement too complex to be managed in the traditional ways. As the demand for police service increases, budget restrictions prevent a proportional increase in men and equipment. This is particularly true in the medium-size community where the law enforcement officer must be a 'generalist,' able to handle all kinds of situations at any time, from domestic beef to narcotics and homicides. The efficient and effective use of existing scarce resources is just as important to the police administrator of these communities as it is to managers in larger departments.²

Davis further points out in his research that the purpose of systems analysis is to understand a complex system sufficiently to predict

¹Ibid.

²Richard M. Davis, "Police Management Techniques for the Medium-Size Community," The Police Chief (July, 1970), 44.

the consequences of its continued operation, both as it is presently operating and as it might be restructured or operated differently. Davis uses the method of systems analysis to describe the components and interactions within the system sufficiently to construct an abstract working model or simulation. The Figure 1 on page 30 illustrates the development and use of a system simulation model. Davis states in this study that:

a simulation model (an abstract representation) was developed to identify the system components (functions and activities) and the interactions (relationships) of the 'real world' complaint-processing system in a case-study police department.¹

The design and use of the Police Complaint Processing System Model developed by Davis follows the basic structure of systems analysis, which usually involves these steps:

- (1) Study, define, and describe the system (municipal police complaint processing), including its objectives, functions and other components that influence its performance.
- (2) Analyze qualitatively and quantitatively, where possible the characteristics of the system, with particular attention to the characteristics of the resources and the demands (inputs) and services (outputs) of the system.
- (3) Develop a diagram of the system and its components.
- (4) Develop an operational model to represent the system.
- (5) Test the validity of the model using 'real world' data to determine its accuracy.
- (5) Operate the model experimentally to determine the performance and behavior of the system under different conditions, to evaluate alternative resource allocations.²

Davis also points out that once criteria of performance and costs are specified, the model can be used to answer the following three basic classes of cost/effectiveness questions:

¹Ibid., 45.

²Ibid., 45-46.

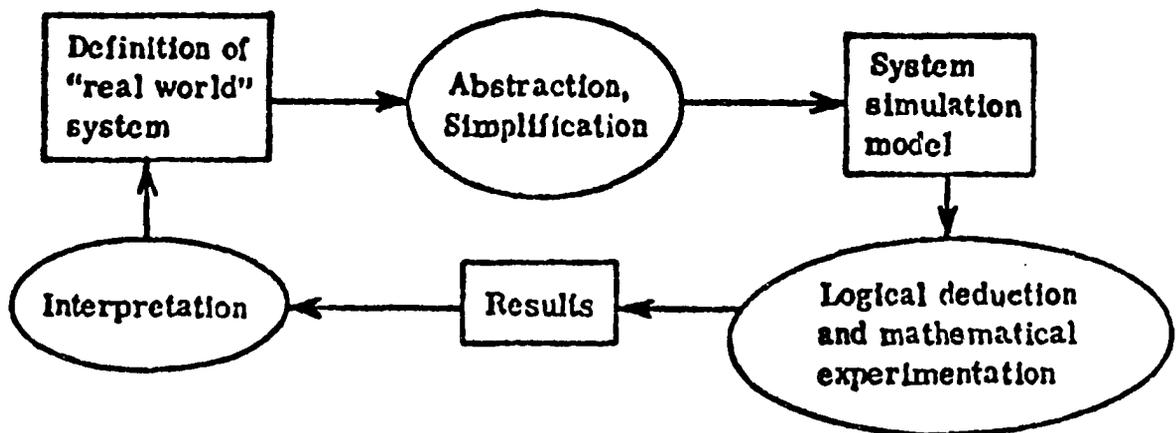


Fig. 1.--Development and Use of System Simulation Model

- (1) Class I--Which system design will produce a stated level of performance at least cost (i.e., variable performance-fixed costs)?
- (2) Class II--What level of performance can be obtained from a fixed expenditure (i.e., variable performance-fixed costs)?
- (3) Class III--What is the optimal combination of performance levels and expenditures (i.e., variable performance-variable cost)?¹

Davis further explains some of the "Model Uses;" he notes that the model was developed as a tool for departmental manpower planning and management. As such, the model identifies relationships among the various parts of the complaint processing system and the performance of the system. Davis notes, for example, that typical measures of system performance are as follows:

- (1) The amounts of time required by the system to respond to calls for service.
- (2) The amounts of time required for calls of different types and priorities to be processed through specific parts of the system, such as the dispatch function.
- (3) The capacity of the system to prevent work pile-ups.
- (4) The availability of manpower and other resources to perform required tasks.²

On page 32, Figure 2 depicts the Information Flow for a Law Enforcement Complaint Processing System.

Computer installations for processing law enforcement's flow of information are now operational at the federal, state, and local levels of government. In Introduction to Law Enforcement and Criminal Justice by Germann, et. al., the following comments are included:

Objections to criminal justice data banks have been voiced, but well-answered. Some have wondered if such information systems would threaten

¹Ibid., 46.

²Ibid., 47.

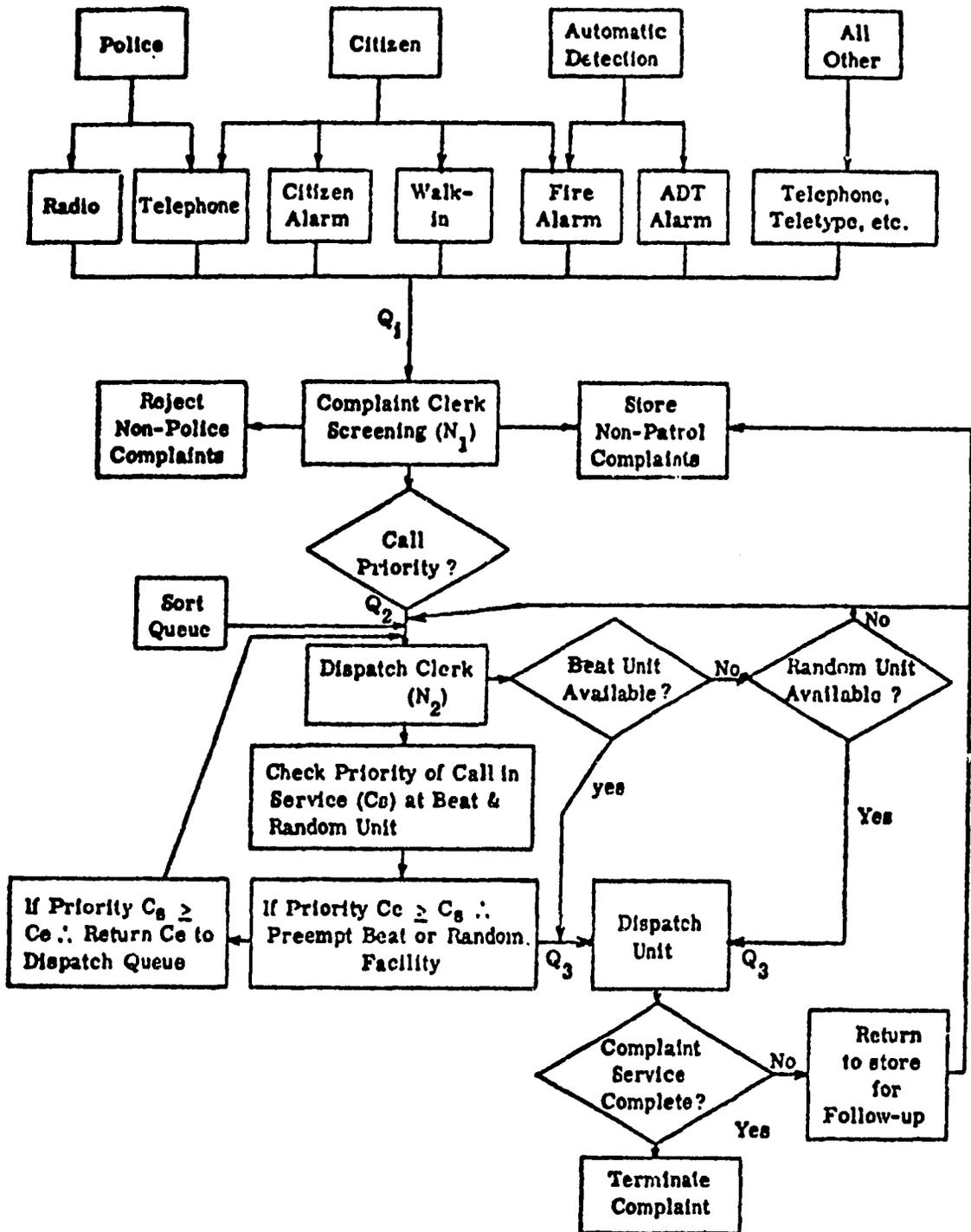


Fig. 2.--The Complaint Processing System

local agencies and weaken the American ideal of local autonomy and/or local control. But all evidence to date tends to indicate that information-sharing systems that are computer-based lessen inefficiencies and wasteful procedures without damage to jurisdictional boundaries. The data bank has become an available service that has relieved many costly pressures in records processing and storage, and the elimination of duplicated data files has provided savings in personnel, facilities, equipment, time and dollars for many users.¹

Federal Level

In announcing the development of a nationwide information system, May 1, 1966, Mr. J. Edgar Hoover, Director of the Federal Bureau of Investigation, stated that "computer and communication technology has eliminated two major problems--burdensome volume and time lag--which make a manually operated national system impractical."² The philosophy underlying such a system was expressed in these words:

The logical development of electronic information systems proceeds from local metropolitan systems to statewide systems and then to a national system. In effect, each succeeding system would afford greater geographical coverage. The information stored at each level will depend on actual need, with local metropolitan systems naturally having a data base much broader than that of either the statewide or national system. By the same token, state systems will store information of statewide interest which will not be stored within a national system. It is most important to avoid any concept that a national system eliminates the need for systems of lesser geographical scope--metropolitan and statewide systems must develop to serve local needs which could not possibly be met by any national system. The ultimate nationwide network will not be achieved until such systems develop in each state and the larger metropolitan population centers.³

¹A. C. Germann, Frank D. Day, and Robert R. S. Gallati, Introduction to Law Enforcement and Criminal Justice (Springfield, Illinois: Charles C. Thomas, 1971), p. 278.

²"Message From the Director," FBI Law Enforcement Bulletin (May, 1966).

³"A National Crime Information Center," FBI Law Enforcement Bulletin (May, 1966).

Initial planning for the National Crime Information Center (NCIC) involved data relative to stolen automobiles unrecovered after a specified time, to stolen property in certain categories, and to some wanted persons. The center began operation in January, 1967, with fifteen on-line state or metropolitan area terminals. Stored in NCIC computers from participating agencies were "40,000 records of stolen vehicles, 20,000 records of stolen automobile license plates, 20,000 records of stolen or missing guns, and 10,000 records of wanted or missing persons. Also stored were records of 5,000 fugitives wanted on federal charges."¹

In discussing the National Crime Information Center, Joseph A. Videtti, Jr., a Consultant in Law Enforcement Systems for the Computer Usage Company says:

The NCIC operation revolves around a large IBM System/360 computer, with several files containing information on stolen vehicles and license plates, wanted persons, stolen firearms, identifiable stolen property, criminal profile and history files, and a stolen securities file. At the present time this computer system with its file information is linked through several different types of teletype or high-speed communications equipment to forty-five states, the District of Columbia, and Canada.²

When a law enforcement agency needs immediate information on a stolen vehicle or wanted person, a coded message is sent to the FBI computer, and within seconds an answer is received indicating the status of the inquiry. Videtti further emphasizes the effectiveness of this process:

At the present time there are over 700,000 facts in the files on wanted men, stolen cars, stolen firearms, and the other stolen property. The NCIC processes more than 23,500 requests for information daily, and the number of requests continues to grow as new subscribers are added. On one peak day recently, 29,889 transactions were processed.³

¹Germann, et. al., op. cit., p. 279.

²Joseph A. Videtti, Jr., "Application of Computers in Law Enforcement," Reprinted from Police, XIII, No. 6, 1.

³Ibid.

The NCIC Criminal Justices Data Bank is intended to tie in directly to a terminal agency in each state, and twenty-five or so of the larger metropolitan areas. These terminal agencies are supposed, in turn, to service other agencies within a state or metropolitan area so that, ultimately, nationwide participation in the system will be complete.

Videtti notes that information stored in the NCIC system is "documented police data and access is restricted to authorized agencies. The system is duplexed to insure uninterrupted operation twenty-four hours a day."¹ The NCIC is currently oriented toward law enforcement operations, and Director Hoover described the nature of its role by stating that the center "is not a total information depot or repository. Rather, it is a nationwide index of data on crime and criminals which, by high-speed random access search techniques, will provide within seconds pertinent information to a police officer on the scene. This service will bring more and more criminals to justice and prevent fast-moving violators from evading local authorities and 'outrunning' the law."²

State Efforts

Videtti notes that several states already have computer systems operational. Some seven states' agencies have computer installations being used in a batch-processing operation which limits them to statistical management information and report type processing.³ Eight other states

¹Germann, et. al., op. cit., p. 279.

²"Message from the Director," FBI Law Enforcement Bulletin (January, 1967).

³Videtti, op. cit., 1.

have implemented "real-time"¹ direct inquiry systems. Some of the more notable are the Ohio System (LEADS) and the Michigan System (LEIN); in addition to these, the New York State Identification and Intelligence System (NYSIIS), and the California Criminal Justice Information System (CJIS), are unique in their approaches. Videtti includes the following informational summaries on these notable systems:

Ohio

The Ohio LEADS (Law Enforcement Automated Data System) is a cooperative computer system which has been in operation for more than a year. Under LEADS, law enforcement agencies work together throughout the state of Ohio with a computer communications network which allows the State Highway Patrol, local sheriff and police departments to have access to needed information within seconds after an inquiry is made.

The LEADS computer provides information on a "real-time" basis for stolen vehicles and parts, vehicle registration, operator's licenses, stolen property, wanted persons and guns. In addition, if no record is found concerning the Ohio originated inquiry, the computer has the capability of making an inquiry to the NCIC computer in Washington. If the NCIC computer has a positive response, it is relayed back to the Ohio computer, which in turn replies to the originator--all within seconds.²

Michigan

The Michigan State Police Law Enforcement Information Network (LEIN) is similar to the Ohio system in many respects. It has been able, since its inception, to provide an outstanding contribution to Michigan's law enforcement problems which are greatly intensified by its borderline situation. By a single call to any terminal point, the network allows any police agency throughout the state almost immediate access to the statewide open warrant and stolen auto file.

The initial system is continually being improved and expanded. Despite the fact the computer is of a different manufacturer (Burroughs) than the computer at NCIC, it still has the ability to communicate directly as does the Ohio system, providing nationwide information coverage to the state in seconds.³

¹"Real-time" refers to a computer system into which an inquiry can be made from any number of methods or sources and an answer received within a time span which will affect the conditions that initiated the inquiry.

²Videtti, op. cit., 2.

³Ibid.

New York

NYSIIS, which began in May, 1963, is the most sweeping system yet proposed by any state. This system will eventually provide real-time inquiry files on criminal history, fingerprints, fraudulent checks, personal appearance, names, warrants and wanted notifications, organized crime intelligence, stolen motor vehicles, social history, modus operandi, missing persons, permits and jobs, stolen property, property marks, and handwriting and voiceprints. Scanners and sensing devices are being developed to read license plates and fingerprints. It is further expected that the system will be capable of scientific and criminological research through pattern analysis. To date more than ten million dollars has been spent in the development of this system, and NYSIIS continues to make a concerted effort to implement what it has researched.¹

California

California, unlike New York, is not undertaking areas in the experimental stages. Its system is being built upon other systems already operational within the Bureau of Criminal Identification and Investigation, the California Highway Patrol System (AUTOSTATIS), the California Department of Motor Vehicles, the Youth and Adult Corrections agencies, the Alameda County Police (PIN), the Los Angeles City Police, the Los Angeles Superior Court, the Los Angeles County Sheriff, and the San Diego Police Department. When complete, the CJIS system will include inquiry files on firearms registration, stolen property, modus operandi, fingerprint warrants, criminal history, and various identification records. It will also include records for court probation, correction, parole, and narcotics, with an index to files in a statewide federated information system.²

Other states, including New Jersey, Arkansas, and Florida, have made significant contributions in this area.

New Jersey

In October, 1969, New Jersey Attorney General Arthur J. Sills announced the most comprehensive statewide computer-based crime fighting system. This system is called SEINE (Statewide Enforcement and Intelligence Network) and is the culmination of more than two years of planning and coordination between Attorney General Sills' office, local law enforcement agencies and Computer Usage Company of Greenwich, Connecticut. Sills states:

¹Ibid.

²Ibid.

Project SEINE encompasses a computer-based message switching and 'Hot Line' inquiry system to replace the aging and overburdened State Teletype System. The system will place in the hands of all local and state officers on patrol in New Jersey, within one minute, information on wanted persons, stolen vehicles and other identifiable property. It will encounter in time for him to take preventative action, and it will provide current information to overcome the advantage of mobility which criminals enjoy today.

The heart of the system is a computer complex which connects municipal, county, and state law enforcement agencies directly to a statewide pool of information jointly contributed to other computer data banks such as the National Crime Information Center in Washington, D.C. Most current systems do not begin to satisfy the present needs of the State much less the demands expected in the next few years. The new system will provide seven-day-a-week, twenty-four-hour-a-day service and is designed to support communications in periods of emergency such as natural disaster or civil disorder.

The Uniform Crime Reporting System, another project developed by Attorney General Sills, the State Police, and the New Jersey Chiefs of Police Association, indicates that one out of three persons arrested for violent offenses in New Jersey in 1968 was not a resident of the community in which the crime occurred. The SEINE system will place a net of information around the fugitive, reducing the probability of his escape.¹

One of the most important functions the SEINE System provides is that of facilitating the elimination of organized crime in New Jersey.

Sills goes on to point out:

. . . through the use of a sophisticated computer-based information storage and retrieval system, the multivarious activities of these individuals can be identified, analyzed, and exposed. The system will support the activities of all agencies concerned with the investigation of organized and professional crime. By establishing a central security controlled pool of information, the mask of anonymity can be removed from the face of organized crime. The system will store investigative data and allow the inquirer to establish multiple relationships between seemingly unique incidents. The SEINE system will allow data to be sifted, correlated, compared and analyzed so that the investigator can develop a case and accumulate evidence for an arrest and conviction.²

¹Joel Weber, "New Jersey's SEINE," Computer Usage News Bulletin (October, 1969), 2.

²Ibid., 3.

Another area in which the SEINE system will aid in the war on crime is in the establishment of a computer-based criminal identification and status recording system. Criminal identification records such as fingerprint and name files are currently maintained by both municipal police and state police. These files vary in usefulness and none contain the records of all others. While fingerprint cards are presently sent to the State Bureau of Identification, the average response time from receipt of a card to the mailing of a rap sheet is usually three days.¹

Using the SEINE system, an officer investigating a crime, such as rape, might narrow down his list of suspects by identifying a similar instance of crime or modus operandi.² Computerization of criminal reports from all sections of the state would allow for daily or even more frequent analysis and report. Each municipality would then be prepared more quickly to combat crime or cooperate instantly with neighbors.³ At present [1969], there is no central clearing house, no coordinating. "Computerization would give you vital information almost instantly," Sills said, "It would tell you where to place more controls, where to place less."⁴

Franklin Gregory writes in the Sunday Star-Ledger:

Local police would then be in the same crime-fighting posture which State Police now enjoy, thanks to a State Police tie-in with a computerized nationwide crime information index in Washington.⁵

In summary, the SEINE system, commissioned by Attorney General Sills, is unique in the dimension of its scope and purpose: "to provide twentieth century computer technology to the work of controlling crime and adding to the public's safety in the state of New Jersey."⁶

¹Ibid., p. 4.

²Ibid.

³Franklin Gregory, "Sills Says State Must Tap Its Till To Fight Mafia," Sunday Star-Ledger, LXVI, No. 118 (June 15, 1969), p. 2.

⁴Ibid.

⁵Ibid.

⁶Weber, op. cit., p. 5.

Arkansas

The Arkansas State Police has become one of the first law enforcement agencies in the nation to use the new IBM Model Two communications terminal.¹ The communication network will be known as the Arkansas Central Telecommunications System (ACTS).

Each of the nine terminals will be connected to a computer in the State Revenue Department in Little Rock, which has the responsibility of maintaining files on Motor Vehicle Registration and driver licensing. The computer interprets the inquiry, retrieves the desired information, and returns the reply in a matter of seconds.²

Lt. Col. Miller discusses this source of "instant information":

A trooper observing a suspicious vehicle can supply the license number to the district radio dispatcher. The inquiry can be entered on the district terminal and in two to eight seconds all data on the vehicle will be available. Troopers can now confirm their suspicions and be prepared for any eventuality that might develop. They will know, before stopping a vehicle, who the registered owner is and the make, model, serial number and color of the vehicle upon which the license should be displayed.³

Lt. Col. Miller also discusses Arkansas's "Pre-Computer Era":

Prior to the computer era in Arkansas, the obtaining of motor vehicle registration and driver's license information might require fifteen minutes, thirty minutes, or even hours.

Troopers in outlying areas would radio a request for information to the district headquarters. The operator there would relay the inquiry to the Little Rock headquarters. The Little Rock operator would phone the Revenue Department to secure the information needed, then the entire process would be repeated in reverse to the trooper.⁴

Miller goes on to say:

Many times this caused a time delay to the motorist and would occupy a major portion of the trooper's time. The old method left room for human error due to the number of transmissions required.

¹Lt. Col. Bill Miller, "Arkansas State Police Goes Electronic," Law and Order (February, 1969), 40.

²Ibid.

³Ibid.

⁴Ibid., 41.

In some instances wrong information would be supplied to the trooper. This resulted in an inconvenience to the driver of the vehicle in question and embarrassment to the trooper.¹

In summary, Miller feels that this new tool for the State Police is the greatest innovation for the department's communications network since the installation of the two-way radio. The ability of the computer to perform is restricted only by man's ability to store information.²

Florida

The following information concerning the Law Enforcement System for the State of Florida is taken from a document published by and for the Florida Crime Information Center, Information Exchange:

Shortly after its establishment, the Florida Bureau of Law Enforcement (FBLE) contracted with the International Association of Chiefs of Police (IACP) to survey law enforcement needs in the State of Florida and to define the role of the new agency. The IACP, in turn, engaged Systems Science Corporation (SSC) to survey and analyze the existing communication networks and information systems serving law enforcement in Florida and to define those information needs of the FBLE which could be computer supported. These tasks were accomplished in collaboration with the Management Systems Division of the Office of the Legislative Auditor. The survey effort was to include visits to all cities and counties with a population of 25,000 or more and the distribution of questionnaires to the police departments of the remaining incorporated municipalities and counties with populations of less than 25,000. The product of the survey effort was to be a conceptual system design for a statewide law enforcement system which would support all levels of Florida Law Enforcement.³

The report of the Florida Crime Information Center goes on to say that in the execution of contractual obligation,

SSC visited the offices of approximately forty county sheriffs and seventy municipal police departments. Because the system is intended to serve the entire law enforcement community, SSC visited departments ranging in size from one man to several hundred men. Whether or not a personal visit was made, each department was contacted and

¹Ibid.

²Ibid.

³FCIC: Florida Crime Information Center (State of Florida: unpublished Document, Florida Bureau of Law Enforcement, 1969), p. 1.

surveyed through the use of a questionnaire. Interviews were held with numerous state agencies involved in law enforcement, data processing, planning, and budgeting. Internal operations of the FBLE were examined in order to identify its present and projected information requirements.¹

This study presents the concept of a system which interacts with the officer on the beat by providing him with current statewide law enforcement information.

The projected system is comprised of a group of computers connected via telephone lines to teletype-like devices located in the dispatching rooms of local law enforcement agencies. Using this technique, information from the computer is made available to local police dispatchers within seconds after the computer has received their requests.²

The Florida Crime Information Center (FCIC) is a computer-based law enforcement information system which will include approximately 300 terminals³ located in city, county, and state law enforcement agencies. Acquisition and operation of the computer system will cost approximately \$2,500,000 a year⁴ for the next five years and will complement and be compatible with current systems.

According to this study, when the FCIC system is operational, a police officer will be able, from any point in Florida serviced by radio or telephone, to obtain information within seconds on:

- (1) Wanted persons
- (2) Missing persons
- (3) Persons wanted for questioning
- (4) Stolen vehicles
- (5) Vehicles wanted in connection with crimes
- (6) Criminal identification
- (7) Criminal history
- (8) Revoked or suspended driver's licenses
- (9) Stolen property⁵

¹Ibid.

³Ibid., p. 2.

⁵Ibid.

²Ibid.

⁴Ibid.

In addition, the following off-line (batch processed) information systems will be computerized:

- (1) Uniform Crime Reports
- (2) Manpower Activity Reports
- (3) Fleet Maintenance
- (4) Inventory Accounting
- (5) Budget Accounting
- (6) Crime Law Support
- (7) Case Reporting
- (8) Intelligence¹

The FCIC Report points out:

Computers in law enforcement data processing are capable of performing many tasks more economically and efficiently than could be accomplished manually. Equally important, however, are the tasks which cannot be done without the computer. A statewide law enforcement information system was not feasible before the advent of the computer.

Crime does not observe political boundaries; as crime does not stop at the city limit, state or county line, neither can law enforcement information. Certain categories of law enforcement information are already widely available through the FBI's National Crime Information Center (NCIC).²

County Efforts

At the county level there are, according to Videtti, several operational systems.

Alameda County, California

In California, Alameda County is the data processing center for the Bay City Area Police Information Network (PIN). Thirteen communities in the Alameda County Area share this information system. Seven of the nine counties in the area also participate, and the system is under expansion. Currently wanted persons and warrant data are disseminated on a real-time basis with plans to incorporate message switching, modus operandi, and traffic control applications. In addition to the police applications, the Welfare, Health Institutions, and Probations Department of Alameda County have systems in operation.³

¹Ibid.

²Ibid., 3.

³Videtti, op. cit., 3.

Los Angeles County, California

Gregg Perry discusses "Law Enforcement Record-Keeping by Television: ORACLE: The Los Angeles County Sheriff's Department Videofile Information System" in the July, 1969, issue of Law and Order:

Modern methods from voice prints to helicopter patrol have streamlined nearly every phase of law enforcement, but the handling of fingerprints and other information vital to quick suspect identification has changed little since the nineteenth century.

A system to move law enforcement record-keeping into the computer age will be installed in 1970 by the Los Angeles County Sheriff's Department. The new program is ORACLE (Optimum Record Automation for Court and Law Enforcement), a county-wide television information system to speed and automate the handling of more than 18 million law enforcement documents.

The key element in ORACLE will be a \$5.6 million videofile information system developed by the Ampex Corporation, 401 Broadway, Redwood City, California, 94063. The system will store law enforcement records including fingerprints and photographs as television recordings on video tape and make them immediately viewable as television images at the fifteen outlying sheriff's facilities (Fourteen sheriff's stations and the central jail). Hall of Justice personnel throughout the building also may view documents on television monitors.

The ORACLE system will be the first application of the Videofile concept to law enforcement. The system combines videotape recording and computer technologies to store visual records. It provides a unique combination of file compression, rapid access and flexibility for updating.

Developed after an extensive investigation into the needs of law enforcement, ORACLE will give Los Angeles County the most advanced and efficient law enforcement records system in the world. It will save the Sheriff's Department \$1.5 million per year in record-keeping costs and will reduce file floor space to less than one-tenth of the forty thousand square feet now required for paper files.¹

Dade County, Florida

In Florida, Dade County is utilizing a computer system for motor vehicles and license plates, wanted persons and summons control applications. The same system also will provide a Social Data Bank as well as tax information. The system is referred to as INFO (Information Network and File Organization).²

¹Gregg Perry, "Law Enforcement Record-Keeping by Television: ORACLE: The Los Angeles County Sheriff's Department Videofile Information System," Law and Order (July, 1969), 77.

²Videtti, op. cit., 3.

Other State/County Systems

Videtti notes that there are also existing real-time UNIVAC systems being utilized by the State Police Departments of Louisiana and New York, and the IBM system in Arizona, Arkansas, and Texas. He points out:

In the near implementation, design, or planning state are some sixteen other state systems such as the near implementation stage in the state of Georgia . . . Also notable is the regional effort being made in New England called NESPAC (New England State Police Administrator's Conference). This is a compact of six states operating under the New England Council for the purpose of creating a multi-state criminal information file to which all six member states would have access. The six states are: Connecticut, Massachusetts, Maine, Rhode Island, New Hampshire, and Vermont. NESPAC has received a grant under the now defunct OLEA (Office of Law Enforcement Assistance) for one hundred and eighty-six thousand dollars to continue its efforts. This effort, when successful, may very well be the first of a series of such regional efforts throughout the country.¹

County/Metropolitan

WALES (Washington Area Law Enforcement System) while not a county effort, has five adjoining county police agencies in participation. The WALES project is the result of efforts

of the Metropolitan Washington, D.C., Council of Governments. In 1965, they received from the Urban Renewal Administration Housing and Home Finance Agency a thirty thousand dollar grant to conduct a feasibility study. The study, conducted by the Systems Science Corporation resulted in the conclusion that data processing technology was applicable to five functional areas in the enforcement efforts of the Metropolitan Washington, D.C., area. Consequently, another grant was received from the Office of Law Enforcement Assistance to do a system design and prototype implementation.

As the system evolved, regional participation was stimulated and now includes the Washington Metropolitan Police as well as the Montgomery and Prince Georges Counties of Maryland and Alexandria, Arlington and Fairfax Counties in Virginia. The prototype system is provided real-time, on-line retrieval capabilities of vehicle and personnel information and is designed to interface directly into NCIC.²

¹Ibid.

²Ibid.

Metropolitan

According to Videtti, some of the most notable metropolitan systems are those located in Los Angeles, California; St. Louis, Missouri; San Diego, California; and Chicago, Illinois.¹ Of course, other cities are presently utilizing computer systems, and some of them have real-time direct inquiry capabilities.

Los Angeles, California

For over two years, the City of Los Angeles has been designing a comprehensive, phased computer program. The overall system will, in addition to serving the needs of the Los Angeles Police Department, tie into the California Department of Motor Vehicles, NCIC, and the State Highway Patrol's AUTOSTATIS. The system will also be similar to the Bay City Area's PIN (Police Information Network) and will be called SPIN (Southern Police Information Network). Applications will include crime reporting, wanted person and warrant information, field interview information, command and control for force deployment, fingerprint identification, property reports and pawn broker files. Los Angeles has also done a great deal of experimental work in a natural language modus operandi system. With this system, a complete crime report would be input to the computer which would then do a programmed analysis of key words and phrases.²

Tulsa, Oklahoma

Although exhaustive research has not revealed any research dissertations concerning the subject of records management or Police Records Management, there have been many independent studies. One such study documents consulting services performed by the Autonetics Division of North American Rockwell Corporation from October 7, 1968, through December 20, 1968, for the City of Tulsa Police and Fire Departments. All work was performed pursuant to the consulting services agreement with the city, made on

¹Ibid.

²Ibid., 4.

October 4, 1968. The study concerned the analysis and evaluation of present and future communications systems and future system planning for both departments.¹

Mitchell Tucker, manager, systems engineering of the Tulsa Police Department, notes that after a one-year study was concluded by North American Rockwell, which resulted in a 200-page report with recommendations,

. . . the people in the Records Bureau were record keepers; they did not disseminate information. The distinction is important to the investigating officers. Just getting to the information they wanted was a chore and sometimes they didn't bother. That made us wonder, 'Are we not solving crimes because we're not disseminating information?'²

Not only do people in the Tulsa Records Bureau just keep records, but in many departments the officers assigned feel that they have been taken out of the action field and put out to pasture. Their feelings of uselessness are often transferred to the utility of the Police Department's Records. In too many cases, Police Management gets in a "rut." Tucker found that this "rut" is sometimes shared by computer systems people.

A modern information system is a complex organization and must be looked at from an overview of the entire organization's needs. This hopefully objective approach must examine each alternative solution in light of its probable performance versus its cost. We must avoid what I call single-media-mindedness, which is the tendency on the part of some systems designers to depend on one device or information handling philosophy to take care of all problems. Too often they find themselves in a single device or media "rut." Many computer systems people are in that rut today.³

¹Lt. Harry W. Stege, Primary Contributor of the Tulsa Police Department, "Command Control Communications Study for City of Tulsa Police and Fire Departments," An Independent Research Study for Tulsa, Oklahoma, performed by the Autonetics Division of North American Rockwell Corporation (3370 Miraloma Avenue, Anaheim, California: North American Rockwell Corporation, December 20, 1968), p. ii.

²Ibid., p. 55.

³Ibid., p. 54.

One of the Primary goals of Tulsa's Information System was that the Police Department wanted to put enough "intelligence information" in their system so that the extraordinary criminal--the one involved in narcotics and crimes of that nature--could be found. Tucker noted:

It became important to try to relate the criminal to his friends--the pusher to the supplier, for example. Very often, an officer in the field sees things which simply don't look important to him at the time and don't get into his report. And when they do get into the reports, they're sometimes lost among the maze of detail. As one detective told us, 'if the detective knew all that the field officer knows, we would solve virtually all crimes.'¹

The "Tulsa Multi-Media System" is one example of a forward-looking police department.

Boston, Massachusetts

Another independent research study concerning a vital question to law enforcement administration, as posed by the Boston Police Department, is "How can this police department best meet our information needs?" For Boston, the answer is of prime importance:

Each year the police department makes 100,000 arrests, including 19,000 Type I (major) crimes. The annual volume of incidents resulting in some police record exceeds 200,000. New documents, including photographs and fingerprint records, are added to the department's central files at the rate of 100,000 a year. These files now contain over 2 million documents. The public makes half a million calls to the department each year, producing traffic over police circuits three ² times greater than the incoming calls, or about 1-1/2 million messages.

All this demands, and depends upon, a sizeable investment in manpower and man-hours. The task of analyzing information needs is thus not a casual or simple undertaking. This study is only a first phase of the

¹ Ibid., p. 56.

² An Independent Research Study for the Boston, Massachusetts, Police Department, Office of Law Enforcement Assistance, United States Department of Justice (May, 1968), p. ii.

Boston Police Department's comprehensive, long-range "analysis and action" program.¹ This project was supported by a \$30,200 Law Enforcement Assistance Act study grant and completed in 1967.

In 1968, the Boston Police Department began its second phase, which included implementation of primary recommendations and an in-depth analysis of more difficult areas. The department received a \$134,450 LEAA grant for the second phase effort. Savings have already been realized from this project, in manpower and in the use of patrol cars, and greater benefits in the immediate months and years ahead are anticipated.

According to this research study, a technically feasible command and control system for police field record operations can be made, which will

. . . allow the dispatcher to see at a glance the status of car operations in any District; allow District supervisory personnel to know what its cars are doing; provide data on daily operations in a machine-usable form for the preparation of daily operational records statistics; provide the basis for a District records control log to be prepared at Headquarters for transmission to the Districts; and provide the machine-usable data base for a name and location index record system.²

The heart of the feasible system is a computer. "The Department is committed to installing an IBM 360/30 computer system to be used for routine processing of data and for responding readily to field inquiries about stolen cars, missing persons, warrants, and perhaps other information stored on disc files."³

Through this study, the Boston Police Department discovered that:

Two kinds of files would be required--magnetic tapes and discs. These fulfill two different kinds of filing needs. Information on tape is only accessible in the order in which it was recorded; information on a disc can be obtained without regard to the order in which it was stored. This results in a much shorter average retrieval time than

¹Ibid.

²Ibid.

³Ibid.

with tape. Discs would, therefore, be used for storing command and control data and other information to which rapid access would be required.¹

St. Louis, Missouri

Scanning the law enforcement spectrum, from the FBI at the national level to a municipal system such as that in St. Louis, Missouri, computers are working as one of the most significant helpmates to law enforcement officers since the innovation of the prowl car and the two-way radio. Computers can provide a means of storing voluminous information with multiple cross-referencing and almost immediate access and retrieval. They can also provide a means of achieving time-consuming analysis at high speed.

Computers can release to much needed patrol duty, police officers who were previously tied up in clerical functions. Computers can also significantly increase the number of wanted persons apprehended, as well as accelerate the prompt retrieval of stolen property.

The City of St. Louis (Missouri) Police Department has pioneered in the field of computer technology. Development work for this highly sophisticated system began as early as 1963. This system has implemented an extensive number of applications, such as message switching for the St. Louis Department and eighteen other departments in the St. Louis metropolitan area . . .²

An analysis of the St. Louis Police Records Division reveals that the Department keeps records on more than nine million arrests or incidents dating back to 1928.³ Sergeant Michael Roth, Commander of the St. Louis Metropolitan Police Department's Records Division, emphasizes the advantage of speed, efficiency, and accessibility provided by mechanized equipment. "On an average day in this division we get as many as 650 calls

¹Ibid., p. 60.

²Videtti, op. cit., 5.

³Remington Rand Office Systems, St. Louis Police Department Arrests Record Keeping Problems with Mechanized Files (No Date), p. 1.

requesting information from these records, and of this number it will be necessary to pull 240 original files to make copies," points out Roth. "It is important that all records be readily accessible."¹

The city of St. Louis's accomplishment in developing a computer assisted resource allocation program may have significance for the entire field of metropolitan law enforcement.

This system allows the department to make peak utilization of every man and patrol car by being able to accurately predict manpower needs. Personnel can then be scheduled and beat structures designed to fit the particular need for a given period of time. In addition, the analytical ability of the system permits rescheduling in minimal amounts of time based on changing conditions. Further, the computer system helps reflect changes, crime density, or patterns. This allows commanders to be sensitive to probabilities of crime occurring in certain areas. Arrests have already increased in areas where computerized allocation has been used.²

Kansas City, Missouri

Kansas City, Missouri, like other large cities, has been faced with rapid increase in population and a rising crime index. The Part I Crime Index reflects the fact that crime has increased by 26.3% in 1969 as compared to 1968. Citizens of Kansas City are victims of

. . . crime in a ratio of 2.9 out of every 100 citizens as compared to 2 citizens in 100 for the national average. Vehicles with an annual value of six million dollars are being stolen at the rate of one vehicle every hour; one woman criminally assaulted, 7 robberies, 44 burglaries and 7 aggravated assault cases committed every day. Utilizing the Automated Crime Reporting System, the Police Computer predicts that Part I Crimes will probably increase by an average of 256% by the year 1980. The Kansas City Missouri Police Department, the 22nd largest police force in the United States, is comprised of nearly 950 uniformed personnel. The force represents a ratio of 1.5 officers per 1000 population as compared with 2.2 per 1000 population for the national average . . . This force of police officers has been hard pressed to process the rising yearly workload of 148,000

¹Ibid.

²Videtti, op. cit., 5.

arrests, investigate 57,000 reported offenses, respond to and record 27,000 vehicle accidents and answer 300,000 'call for services.'¹

According to a descriptive research project performed by the Data Systems Division (the independent agent responsible for automation in the Kansas City, Missouri, Police Department), the following specific instances are cited as examples where automation is improving the efficiency of law enforcement operations:

- (1) The consolidation of all active area criminal warrants/wants in one regional criminal activity data bank.
- (2) Cross Indexing the Criminal Activity Data Bank so it may be accessed by (1) Subject's name, (2) Alias, (3) Moniker or Nick-name, (4) Vehicle license number, (5) Vehicle Identification number, (6) Street name and residence number, and (7) Complaint or Case or Warrant number.
- (3) Reduce from between 10-30 minutes to less than 30 seconds the time in which the officer in the field must wait for the response to his questions to 'want' status on subject being checked.
- (4) Provide nearly instantaneous information to district officer and intelligence officer on movements of organized crime. (Kansas City is believed to be the first police department to computer-store information on members of the Cosa Nostra.)²
- (5) Provide follow-up information to the local Parole Officers on persons interviewed by the district officers and identified by the computer to be in parole status.
- (6) Produce statistical data predicting 'Police Call for Services' within specified areas by time of day. (As implied, the Kansas City Police Department uses the zone concept rather than the station concept. The city is divided into three patrol zones.)³
- (7) Provide statistical data so that Commanders may realign patrol forces to increase enforcement in high vehicle accident areas.

¹ALERT: Automated Law Enforcement Response Team for Kansas City, Missouri's Police Department, and Independent Study Prepared by Data Systems Division (September 15, 1970), p. 1.

²Harry Philips, "KCPD Patrolmen Increase 'Hits' With Computer," Law and Order (March, 1969), 53.

³Ibid., 54.

- (8) Preparation of a list of wanted persons by residence address within beat which in turn is furnished to the District Officer.
- (9) Provide abstract criminal record for District Officer's informational and investigative purposes.
- (10) Provide summary of investigator's work by case, by category of work within case.
- (11) Develop and provide current budgetary information and projected cost of specific projects to the Police Administrator.
- (12) Provide capability to search computerized files by 'method of operation' or 'method of commission of a crime incident' in an effort to identify¹ likely suspects based on previously established criminal patterns.

The police computer system was purchased at a cost of \$1,162,235 out of Municipal Police Bonds. The hardware cost factor pro-rated over a five-year period and the annual operating budget results in an average cost factor of \$84.11 an hour to operate the computer complex.² Kansas City Law Enforcement Officials believe that the police force has increased its efficiency and productivity by ten percent which is equivalent to an additional ninety-five police officers.³

Clarence M. Kelley, Chief of Police, Kansas City, Missouri, declared: "If we can predict crime, we can help prevent crime. If we can put preventive patrols into areas where crime is expected, to some degree thieves will be discouraged by the increased chances of being stopped in the act." Chief Kelley further points out, "there also is the intangible value to the department of this quick, precise new information system. It gives the department a feeling of progress and accomplishment and it stimulates us to investigate other new and effective approaches."⁵ He goes on to say:

¹ALERT, op. cit., p. 4.

²Ibid., p. 5.

³Ibid.

⁴Philips, op. cit., p. 59.

⁵Ibid.

Sociologically, detection of crime is not the goal. Prevention is. The Kansas City Police Department can't cure the social ills that help cause crime. But, if we can make crime a poor risk and unattractive to the criminal, then we can reduce the incidence of crime directly and substantially.

Further, as a corollary, crime analyses produced by our records system as a by-product of these daily operations should be of great help to the social architects--the sociologists and urbanologists. This data should give them the information to use in their long range¹ work and planning which may ultimately help cure the causes of crime.

New York City, New York

New York City's Police Department is currently doing developmental research on a computer system referred to as SPRINT (Special Police Radio Inquiry Network). This is a

Command and control system that will provide immediate information on the exact location of any of the force's one thousand patrol cars. It should also significantly reduce the average dispatch time to an estimated twenty seconds. This is especially critical in New York where getting help to the scene of a call is frequently a matter of life and death.²

Chicago, Illinois

"The Chicago Police Department since March 2, 1960, has become noted for its modern systems approach to a variety of administrative problems and is constantly re-evaluating these systems for improvement."³ In 1961, an exhaustive, descriptive research study was completed and a system was installed to centralize record-keeping, standardize methods of crime reporting, establish guidelines for preliminary investigation by the patrol officer, collect accurate Uniform Crime Reporting data and provide for fast dissemination of preliminary reports to investigative units.⁴

¹Ibid.

²Videtti, op. cit., 5.

³San Houston, "New Reporting System for Chicago Police," Law and Order (December, 1967), 24.

⁴Ibid.

Joseph Vierra of Computer Usage Company discusses a research report concerning Chicago's Police Department:

From beat to beat all policemen have access to daily crime statistics including the plate numbers on all stolen cars. All files and records are immediately accessible from an IBM 1410 computer.

The computer also serves as a 'home' for records on 90,000 persons and vehicles. Policemen in Chicago reportedly phone or radio questions to their private data bank at a rate of 1400 per day. The reply they receive (average 2 minutes) can mean a lot to a policeman--maybe his life. From such information patrolmen can categorize their suspect in a range that runs from 'shop-lifter' to 'potential murderer.'

Citizens also benefit. Patrol cars reach emergency areas in three to four minutes and since the system was established a few years ago there has been a decisive drop in Chicago's serious-crime rate.¹

Videtti points out, in summary, that the Chicago Police Department has an on-line computer system that supports its manually controlled command and control systems. He goes on to say:

Files are maintained on stolen vehicles and plates, drivers licenses and wanted persons, and a crime history file is planned. These files can be immediately accessed through cathode ray tube terminals located at each district command panel in the communications section.²

Redondo Beach, California

A research report³ summarizes the activities and accomplishments of Phase I of the Redondo Beach Human Factors Analysis of Small-City Police Department Data Requirements Project during the period from June 1, 1967, through May 31, 1968. This descriptive research project was implemented

¹Joseph Vierra, "Computers and the Law," Computer Usage (Spring Issue, 1967), 1.

²Videtti, op. cit., 5.

³"Human Factors Analysis of Small City Police Department Data Requirements," An Independent Research Study for Redondo Beach, California, performed by The Autonetics Division of North American Rockwell Corporation (Anaheim, California: North American Rockwell Corporation, May 31, 1968), p. iii.

by the North American Rockwell Corporation, Autonetics Division, under contract to the City of Redondo Beach, California. Funding assistance was provided by the Office of Law Assistance, U. S. Department of Justice through Grant Number 182.¹ "The purpose of the project is to advance significantly the data and information system practices of the Police Departments of moderate size that do not have access to computers."² Therefore, the system design has been predicated on the need to establish a concept which may be manual, mechanical, or in the future adaptable to high-speed electronic computers.

Phase I--Progress and Accomplishment--was designed to include three basic tasks:

- (1) Ascertain the state-of-the art of selected Police Department Data Systems and select candidate evaluation sites.³

The activities and accomplishments related to this task are as follows:

The requirement for determining current records and data system practices among small to moderate sized police agencies was accomplished through a survey which was national in scope. A representative sample of 46 cities employing between 40 and 100 people in their police departments was selected. These cities represented three basic geographical groups, i.e., those cities immediately adjacent to Redondo Beach, California, other cities in Southern California, and cities outside of California . . . A further criteria for the selection of these Police Departments was a requirement that they not be using computers to support their records and information system. The contractor visited these 46 cities for the purpose of reviewing their data system practices during the months of September and October, 1967.⁴

Task 2 and Task 3 of Phase I are as follows:

- (2) Analyze the Redondo Beach Police Department data requirements and existing data system.
- (3) Design and develop an advanced data system for the Redondo Beach Police Department.⁵

¹Ibid.

²Ibid.

³Ibid., p. 1.

⁴Ibid.

⁵Ibid.

The nation's police departments have been experiencing a phenomenal challenge in fulfilling their basic chartered objective to maintain law and order. Every year brings an increase in crime incidence, as well as an increased hostility to law officers on the part of militant segments of the population. These activities have resulted in a corollary problem to policemen--the proliferation of paperwork.¹

Working under a grant project sponsored by the Law Enforcement Assistance Administration [for the City of Redondo Beach, California], North American Rockwell Information Systems Company (NARISCO) performed a survey of the paperwork processes in selected cities throughout the United States. NARISCO, being a part of a giant corporation, itself a victim of paperwork proliferation, was a natural choice for this survey project. Experience gained in the Apollo space program and other major aerospace efforts resulted in paperwork handling techniques, which when advanced scientific solutions were found, culminated in the development of information systems.²

This research study concerning a law enforcement document survey was performed for four basic reasons:

- (1) To identify current procedures employed by the selected law enforcement agencies.
- (2) To identify advanced techniques applicable to a single selected beneficiary law enforcement agency.
- (3) To test these advanced techniques through implementation in the selected beneficiary agency.
- (4) To develop procedures for adoption of these techniques for other law enforcement agencies.³

According to Rieder, the police departments surveyed are very similar in organization and operation. The documents

used to support these operations are seldom responsive to internal management needs. It is apparent, that lack of management information seriously constrains the development, implementation, and evaluation of significant operational improvements.

¹Robert J. Rieder, "Police Paperwork Problems: A Limited Survey of Law Enforcement Document Handling," Law and Order (October, 1970), 96.

²Ibid.

³Ibid.

A typical departmental organization consists of uniform, investigative, and services divisions reporting to a chief. Horizontal flow of information is almost nonexistent, particularly between the uniform and investigative divisions. It is often the case on a watch-to-watch basis within the uniform division. The chief, generally, is the only person in a position to maintain a departmental overview and to encourage communications between functions . . . Written policies and procedures are not usually made available to all members of the police departments in a systematic manner.¹

Rieder notes that the typical law enforcement document system is designed to accomplish two major functions:

The first is to retrieve documents or information related to a single specific incident, person, or property item. This response is usually related to an inquiry from an officer, an inquiry from another law enforcement agency, a citizen, or an insurance company. The second primary function of the system is to produce summary statistical reports prescribed in a format by federal and state agencies. A similar report is often prepared for internal city use. A common problem with these reports is a lack of locally-oriented data produced for local analytical purposes, although they reflect raw crime counts on a monthly and annual basis.²

Rieder points out that:

. . . the status accorded records and reporting work within police organizations is out of balance with the importance of good police information. Police officers feel they may not get promoted if they spend too much time in records bureaus. The job is looked upon as a necessary assignment to be tolerated until rotation occurs. The operational efficiency of the records system often reflects this lack of interest.³

In conclusion, Rieder states:

There is a startling consistency of current practice in police records and information management; this consistency of approach is nationwide. The deficiencies of this approach warrant amplification in terms of the awareness of these problems as viewed by professional law enforcement officers.

Police officers at all levels recognize that as their position in the criminal justice system has become more complex, the community in general has become more demanding of them, and that their informational base does not support this more demanding role. Some police administrators have accepted this problem as insoluble. Others have

¹Ibid., 99 and 101.

²Ibid., 101.

³Ibid., 103.

decided the development of regional, state and national criminal information networks will provide the solution. Many have recognized the need for information system improvements at the local level which will complement, not duplicate, broader based regional, state and national systems.¹

Phoenix, Arizona

The LEADS (Law Enforcement Assistance Development Study) project was supported by Law Enforcement Assistance Grant Number 050. This descriptive research project was prepared and conducted on an independent basis for the city of Phoenix by Griffenhagen-Kroeger, Inc., Consultants, San Francisco, in February, 1968.² The following information is taken from this research study.

This project is to be concerned with the modernization of police records and data systems, using the latest concepts--including new means and oral and physical communication--to reduce the complexity and time required of the field officer in creating records; to provide the field officer with more comprehensive and more timely information; to provide a more complete and accurate record to improve local administration, coordination of police activity among the jurisdictions in the metropolitan area, and submission of required reports to State and Federal authorities.

. . . The practical requirements of the war on crime require the centralization and correlation of information and its complete and rapid dissemination back to all of the law enforcement agencies in the area. The criminal element plans and conducts its activities without regard to political boundary lines; the police need the intelligence and data systems to enable them to match this far-ranging activity.

Phoenix and its nearby neighbors seek to create a records system which will improve capacity for meeting all present operating, analytical, and reporting requirements and, in addition, which will enable the authorities to relate the specific steps they take to results produced. It is sometimes said that police and other departmental records tend mainly to show how busy the organization has been. We seek instead to be able to determine how successful it has been in its mission.

¹Ibid., 104.

²"LEADS PROJECT: Police Records and Data System Study," An Independent Research Study for Phoenix, Arizona, prepared by the City of Phoenix in Collaboration with Griffenhagen-Kroeger, Inc., Consultants (February, 1968), p. 1.

A primary goal is to improve the value of the records system to the officer in the field. A police record system ought to be a source of information to be used in planning the strategy and tactics for crime prevention and law enforcement. Preserving a record of what has happened and providing such data in a form to satisfy State and Federal reporting requirements should be a by-product rather than the main purpose of the records system.

Whenever a person or place or object has come to the attention of the police for any reason, the necessary identifying information and relevant circumstances should become a part of the record under a system which makes it quick and easy to put the data into the system, provides a speedy and flexible cross-check against all other relevant information in correlation with earlier records, requires immediate attention, and otherwise has the data available for any future cross-checks with other data which may come in relating to the same person, place, or object.

There is always latent in any police record system a great deal of uncorrelated intelligence. If, upon a given occurrence, the records could be immediately scanned and correlated, more cases would be solved, more effective arrests made, fewer wanted persons temporarily in the hands of the police on minor charges would be inadvertently released, and there would probably be more lives saved.

Electronic systems, properly designed, will enable the Police Department to correlate each new bit of data with all else in the files and thereby assist in the solution of crimes, in anticipating potential crimes through recognizing emerging patterns of behavior by individuals, and in warning a police officer in the field that a vehicle he is about to approach is stolen, or that a person he is interrogating is wanted or is known to be dangerous.

The police officer in the field can benefit from the proposed plan, if it fulfills its expectation, because he will have to devote less time to creating records or checking them when he needs information; he will get instant response and more complete information when he needs it; he will be better warned in dangerous situations; and he will benefit generally from the fact that the war on crime will be better planned and better waged.¹

¹Ibid., 2-4.

Summary

An exhaustive review of the doctoral studies and related research projects has revealed that although significant programs for collecting, storing, and disseminating crime information have been implemented at the national, state, and local levels, there is a definite lack of conclusive data on police records or records management programs in any area. Through the application of available information concerning personnel usage and police economics, this study is designed to optimize management techniques, particularly in the field of operational methods for records systems.

The careful examination of information provided by projects described in this chapter reveals further that although some used exploratory methods to study the problem, most of them used the methods of descriptive research.

In keeping with this plan, the salient aspects of the history of record keeping, automation, and law enforcement will be considered in the following chapter. Chapter III will also provide a departure for data to be developed in the current study, dealing with the efficient retrieval of information and the pertinent functions of records management.

CHAPTER III

HISTORY OF RECORD KEEPING, AUTOMATION, AND LAW ENFORCEMENT

Introduction

Throughout the history of man, methods of records management have been devised as needed to meet the demands of practice. Thus, the history of record keeping, automation, law enforcement, and method of identification provides a basis for modern methods and procedures in records management. Some of the more pertinent topics for consideration in the light of this historical development are records management as an administrative service, the past and current needs for integrated information processing programs, and the effect of automation and electronic developments on filing practices.

In this chapter, the writer has made every effort to assist the reader to develop a prospective concerning the environmental and technological changes affecting record keeping. This prospective should include the role that record keeping has had in the development of law enforcement. Specifically, the topics covered are arranged as follows: art of records management, history of records management, recording media, early filing procedures, automation and filing, history of automation, and history of law enforcement.

The Art of Records Management

The term "paperwork management"¹ was created by the government to broaden the existing concept of records management. A special task force on paperwork management interpreted "records management" to mean the movement of records to storage and to eventual disposal; and "paperwork" to signify the broader areas of paper handling. Misinterpretation of terminology contributed to the restricted results of the Federal Records Act of 1950.²

Police management in information retrieval has sought solutions to the problems of handling the increasing number of records that are created, processed, and stored effectively and economically in their departments. Records result from the work of personnel who create and process billions of pieces of paper, tabulating cards, tapes, and discs. Solutions to record handling problems can be found through a scientific approach to the establishment of an integrated records management program which will, in most police departments, include some form of automation. Although management is concerned with the expanding volume of accumulated records and the increasing number of clerical workers needed to handle them, management is more concerned with the efficient retrieval of information.³

"Executives plan, organize, and control through the use of the spoken word, but the recorded word is the ultimate means of control.

¹Commission on Organization of the Executive Branch of the Government, Task Force on Paperwork Management, Report on Paperwork Management, Part I--in the United States Government (Washington, D.C., U.S. Government Printing Office, January, 1955), p. 11.

²Mary Claire Griffin, Records Management: A Modern Tool for Business (Boston: Allyn and Bacon, Inc., 1964), p. 4.

³Ibid., p. 3.

Control is the nerve center of an organization."¹ In records, data from which decisions are made and plans are formulated, information is stored which serves as a supplement for human memory in a department. Records that are important to police policy-making should be organized and retained systematically to permit their use by busy law enforcement executives. The selective preservation of records is an integral part of sound records management.²

. . . One of the problems of our society is the tremendous mass of records and documents that must be used (and filed) to keep the wheels turning . . . Since the 1950's business has given special attention to the improvement and control of its files . . . Undoubtedly, automation is bringing revolutionary changes in information retrieval. Hand filing is increasingly becoming 'horse-and-₃ buggy.' All filing, however, will not become automated tomorrow.

Some functions of records management are to devise the systems and procedures for retaining the records that are useful to the administrator, to organize the records and the channels through which the records are made available, and to aid management in determining what information is available that might relate to a certain problem. Records provide the evidence of the motives that lay behind a long-range decision.⁴

Swift, direct, and accurate streams of communication are essential in attaining the objectives of management. Efficient control of records eliminates the paper-handling blocks in the promotion and development of a healthy, well-adjusted organization. Management needs to eliminate paperwork whenever possible because "written communication is the slowest

¹Ibid., p. 2.

²Ibid.

³Irene Place and Estelle L. Popham, Filing and Records Management (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966), pp. v-vi.

⁴Ibid.

medium of information transfer."¹ Paper is the conventional medium for information transfer; however, information can be recorded, stored, and transmitted in many forms.²

Emphasizing record keeping has resulted in a lack of understanding of the importance of record making activities; emphasizing storage and disposal of records has also resulted in a misinterpretation of the purpose of a records management program. Records management is defined as "the systematic control over the creation, use, maintenance, retention, protection, and preservation of all types of records for the purpose of reducing cost, increasing efficiency, and servicing management through record handling operations."³

"Special emphasis should be placed on the quick and accurate retrieval of information. Records management, as an administrative service, is not considered by many organizations to be a major branch of management services."⁴ Accelerated scientific applications of systems analysis and electronic data processing equipment have developed further the need for integrated information processing programs.

Other technological advances, such as devices that transmit data over the telephone to computer centers, common computer languages, and automatic retrieval devices which produce records in understandable form, will also increase the need and the possibility for completely integrated information transmission systems.⁵

Records management should encompass the latest techniques for controlling forms, reports, and correspondence; for developing and maintaining retention and storage programs; for establishing company archives; and for maintaining a quality level in all paperwork operations.⁶

¹Ibid.

²Ibid.

³Ibid.

⁴Ibid.

⁵Ibid.

⁶Ibid.

Some new filing problems have arisen with the introduction of automatic and electronic data-processing equipment. Records are kept on punched and magnetic cards, reels of punched and magnetic tapes, and electronic storage devices (drums, discs, and cores) and are taking the place of paper records. But even though much information in government and business is being converted from traditional files to punched and magnetic cards or tape and is being stored in electronic memory devices, we will not ipso facto abandon manual systems and files of paper documents as we have traditionally known them, because although they are diminishing, they are not likely to disappear. Not all information is being put into computers--only that which involves large quantities of fairly uniform data.¹

For some time men have envisioned automating the handling of business information, thus freeing countless office employees from routine paper-handling tasks and at the same time making information processing faster and more accurate. It should be noted that filing is only one phase of information processing--the maintenance phase. Other phases include the actual sorting, interpreting, and using of information. Filing practices are, however, affected by all new electronic and automatic developments.²

"The purpose of records management is fewer and better records--an objective toward which every paperworker, file clerk, office supervisor, and manager must combine their efforts."³

History of Record Keeping

Countless myths and folk stories have been passed down through time by the spoken word, but information is a perishable commodity. Without records, the history of civilization could not have been documented, and much of our heritage could not have survived. So, records and the filing of records have existed in various forms since man developed symbolic, pictorial, and written forms of communication.

¹Place and Popham, op. cit., pp. 130-131.

²Ibid.

³Emmett J. Leahy and Christopher A. Cameron, Modern Records Management (New York: McGraw-Hill Book Company, 1965), p. 27.

The National Stationery and Office Equipment Association states:

We don't quite know just how Cleo, the Egyptian file clerk, kept track of her stone tablets, but we do know that ever since there was a written record, filing has been an important business function.¹

The term file comes from the Latin term Filum which means thread. One of the first methods of keeping records in order was the stringing of records on a thread. Compared to the place records hold in present-day law and life, written records played a small part in the life of primitive man. Probably little orderly arrangement existed for the purpose of later reference. Gradually there developed the realization of the convenience of keeping together the papers received from one individual or organization, those bearing upon one subject (such as Criminal History Records), those received on a certain date (such as Accident Records or Burglary Records), or those pertaining to certain localities (such as Geographical Street File or Geographical Crime Search Files).

Although the spoken language may have preceded the written language by thousands or even millions of years,² early man made some effort to record a part of his life. Primitive artists drew pictures on the natural rock of cave walls. These drawings appear to be an effort to "store" or "preserve" important experiences or ideas. Finally, whatever its origin, language became a principal means of communication.

The time of the first appearance of writing is not known. The oldest linguistic records available are those of Sumerian, a language spoken in the Mesopotamian Valley between 4000 B.C. and 300 B.C.³

¹How to Sell Filing Supplies (Washington, D.C.: National Stationery and Office Equipment Association, 1957), p. 3.

²Mario Pei, The Story of Language (Philadelphia: J. B. Lippincott Company, 1965), p. 10.

³Ibid., p. 24.

From this time span many other separate languages or dialects appear throughout the world. Development of shorthand writing closely paralleled that of longhand. Shorthand systems of writing have been used to facilitate communication originating from spoken words for more than 2,000 years. Much of our human heritage has been preserved by brief, rapid, and, at times, secret writing of symbols instead of longhand words.¹

Massive stonelike tablets have preserved Egyptian records that date back thousands of years. As early as 2600 B.C., Babylonian merchants recorded transactions of sales, leasing, hiring, lending, and partnerships on clay tablets.²

Preservation of the philosophy, the religion, the law, and the history of the early Roman period has been attributed to the use of the Tironian notae.³ The popularity of shorthand as a means of preserving recorded information in those days was attested to by the edict of Emperor Diocletian fixing tuition fees that teachers of shorthand should charge their students.⁴

Physical facilities for maintaining ordered stores of data have existed as crude libraries for several thousands of years.⁵ One of the

¹Gerald A. Porter, "An Assessment of Shorthand" (unpublished paper, University of Oklahoma, 1966), p. 1.

²Peggy Keck, "Analysis of the Areas of Money Management Dealt within the Holy Bible" (unpublished Ed.D. Dissertation, University of Oklahoma, 1969), p. 86.

³John Robert Gregg, Story of Shorthand (New York: The Gregg Publishing Company, 1941), p. 9.

⁴Carl David Pearson, "A Translation of a Part of Olof Werling Melin's History of Stenography from the Swedish into English" (unpublished Master's Thesis, Oklahoma Agricultural and Mechanical College, 1941), p. 26.

⁵Helen Ditson Lloyd, "Perceived Changes in School Library Programs Following an NDEA Institute" (unpublished Ph.D. Dissertation, University of Oklahoma, 1968).

One of the largest collections of the Biblical time-period was the Nineveh Palace of Ashurbanipal, the ancient center of the Assyrian empire, that contained a library of approximately twenty thousand clay tablets. This library was catalogued and apparently arranged according to some form of subject classification.¹ Some of the records stored in this library dealt with tribunal court actions such as murder, theft, and adultery.²

Filing Recording Media

Tablets were clumsy and difficult to handle and required elaborate filing methods. Man continuously searched for a more satisfactory medium upon which to record his ideas and achievements. The hides of animals, silk fabric, and papyrus were tried by early man and generally found unsatisfactory. The discovery of paper finally produced a lightweight and easily stored medium.

Information concerning the origin of paper is in doubt, but legend, generally accepted as factual, indicates the invention of this writing medium was in China about 105 A.D. The beaten fibers of the bark of the mulberry tree formed a white sheet which later was called paper.³ The eighth century saw papermaking spread to other countries, using other fibers and improved techniques.⁴

¹Ibid.

²A. C. Germann, Frank D. Day, and Robert R. J. Gallati, Introduction to Law Enforcement (Springfield, Illinois: Charles C. Thomas, 1971), p. 45.

³"Paper," World Book Encyclopedia (Chicago: Field Enterprises, 1970), pp. 114-117.

⁴Ibid.

Retention of taxation records existed many centuries ago, with the tax originally based upon persons. One of the earliest records, then, was the census; later, cattle and land became taxable, requiring more records. Along with the tax records, family names, royal titles, birth records, and generalogy records were kept.¹

About 2100 B.C., the codification of the local customs in the Laws of Hammurabi, King of Babylon, occurred. These codes "dealt with the responsibilities of the individual to the group and private dealings between individuals, and contained penalties of the retributive type. Messengers are mentioned as carrying out the commands of the law."² As law enforcement became more formal, record keeping became an important aspect of the social order.³ For example, Acts XXII: 4 indicates that "Paul bore letters from the high priests and elders granting him the right to arrest, bind, and commit to prison both men and women."⁴ Criminal records began to develop in complexity in Anglo-Saxon England from 700 to 900 A.D. as the fine, restitution of money, and involuntary servitude had their legal beginning during this period.

Early Filing Procedures

Early American law enforcement officers could and did carry much of the information they needed on criminal cases in their heads. In fact, as the following article states:

¹Keck, op. cit., p. 87.

²Germann, et. al., op. cit., p. 45.

³Ibid., pp. 45-47.

⁴Acts 22:4, The New Analytical Bible, King James Version (Chicago: John A. Dickson Publishing Co., 1966), p. 1274.

A detective's make-up contains certain built-in human characteristics which develop to amazing degrees with practical experience. On-the-job training begins the moment he joins the force and is assigned a beat to patrol. As he moves along each day, a picture of the routine is etched in his memory and the second he observes the slightest deviation from the normal, a warning bell goes off telling him to investigate.

Memory is a storehouse of impressions that can be recalled whenever needed. It is like a computer which produces information at the press of a button . . . A good memory is a fine social asset--but it is also a vital weapon in the arsenal of crime fighting equipment. The ability to remember is the mark of a good law enforcement officer.

Frequently an officer makes Headlines in the newspapers because of his 'fabulous' memory. There are some men who appear to specialize in spotting stolen cars. Both the description of the car and its license plate seem to be fixed in these officers' minds and the moment the car makes an appearance on the scene, everything clicks into place--and the officer is credited with another good arrest.

Other officers can visit the scene of a B&E and by certain bits of observation can recognize the MO. A mental check can almost pinpoint the thieves and a 'pick up for questioning' order can be issued.

Traits and idiosyncracies of criminals are stored in the mind of the police officer. For example, several months ago in New York an official of the United Nations was mugged and robbed. In relating the circumstances to the investigating detective, the victim said he didn't recognize the language the two men spoke to each other. It had a pig-latinish sound. That was clue enough for one of the detectives. He was acquainted with a mugging MO that fit this case. He went after the two men and when confronted with the Ambassador and other bits of evidence, they confessed to the crime.¹

Other filing practices in early America involved keeping notes, records, and diaries of law enforcement officers in copy books. Tickets and other notations were stored on spike spindles which had appeared about the fifteenth century. Other types of papers and reports were in barrels,

¹Lee E. Lawder, "The Detective's Most Important Tool: Memory and Observation," Law and Order (December, 1970), 96.

boxes, or pigeonholes in a desk. Important police papers such as those concerning a controversial criminal case¹ were kept in a strong box.

The first progressive development in filing appeared about 1870 with the use of the flat file. Loose sheets of paper were filed flat in a drawer and later placed in boxes. Indexes were added, and the papers were usually filed alphabetically. Arches were placed in the flat drawer files to keep the papers in proper order. Cards were filed on edge before papers. The vertical method of filing papers on edge was introduced at the World's Fair in Chicago in 1892.² These types of record keeping procedures represent a bygone era; however, many police departments' Criminal Identification Records are currently filed vertically in open-shelf files.³

Man's written story of civilization has been preserved in shorthand characters, pictures, longhand, and other forms on various media and filed by different methods. For many reasons, including government regulation of social reforms and taxation, the complex law enforcement agencies move on a flood of paper records--which form a deluge of data that challenge modern filing and data-processing equipment, and the creative thinking of filing and information retrieval engineers.⁴

Just as the process of preserving recorded information was evolutionary, John Robert Gregg believed that Tironian notae was the outcome

¹Tom Heggy, Captain Oklahoma City Police Department and Professor of Police Administration at Oklahoma City University, Oklahoma City, Oklahoma, private interview, September 8, 1971.

²Mina M. Johnson and Norman F. Kallaus, Records Management: A Collegiate Course in Filing Systems and Procedures (Cincinnati: Southwestern Publishing Company, 1967), pp. 4-7.

³Criminal Identification Records are filed vertically in open-shelf files in the following cities which were included in the Pilot Survey (September 1-4, 1971); Ft. Worth, Texas; Houston, Texas; Oklahoma City, Oklahoma; and San Antonio, Texas.

⁴Gregg, op. cit.

of a process of evolution.¹ From the cave man to the Industrial Revolution, the evolutionary revolution concerning the history of man's record-keeping procedures is in a state of flux and is still evolving. The transition from manual to electronic methods of record keeping has been gradual but continuous.

Automation and Filing

Since the beginning of time, man has been challenged by situations that needed solutions. Problems that have fascinated him in the past were some of the following: the best route to lay railroad tracks through the Colorado Rockies, the man-hours of labor necessary to erect the Empire State Building, or the ability to retrieve efficiently the data on a crime or a criminal as the information is needed.

Automation in law enforcement is badly needed and is developing fast. At the present time the police forces of most advanced countries throughout the world are losing ground in the battle against crime. In most Western nations crime is increasing at a much faster rate than industry. At the present rate of growth in the U.S., crime is doubling every five years. The latest statistics published for the percentage of crimes solved indicate a drop each year since 1965.

It is probable that as our technological society becomes more complex, these appalling crime figures will become worse.

The most effective method of crime prevention is the threat of rapid apprehension of the criminal. This is where the computers can help. In the U.S. today, only about 25 percent of known crimes lead to arrest. Many petty crimes are not reported to the police

¹Bartow Hodge and Robert N. Hodgson, Management and the Computer in Information and Control Systems (New York: McGraw-Hill Book Company, 1969), p. 52.

at all, and only 20 percent of those for which an arrest is made lead to a jail sentence. Seventy-five percent of those arrested once are ultimately rearrested, suggesting on the one hand that rehabilitation methods have not been very successful and on the other that computer methods of keeping track of persons who have been arrested are likely to pay off.

No police force can recruit unlimited numbers of suitable personnel. To make the best use of those they have, automatic data-processing techniques have been and have to be used.¹

The collection, computation, storage, and retrieval of data for a project have often proved to be so time-consuming and troublesome that the project was forgotten entirely. As a result, men throughout the ages have attempted to devise and refine the tools and methods to make record keeping and computing easier.²

Whether carried out manually or by machine, the processing of information involves a sequence of operations upon data. The simplest automatic machines are incapable of self-control. More complicated machines have a greater capacity for executing long and complex chains of actions under their own control. The evolution of computers has taken this course in response to practical needs and has had a significant impact on changes in management concepts of handling law enforcement data.

History of Automation

The glamor of computers has tended to obscure the fact that today's office automation is part of an evolutionary process that has been going

¹James Martin and Adrian R. D. Norman, The Computerized Society (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970), pp. 97-101.

²S. J. Wanous, E. E. Wanous, and Gerald E. Wagner, Fundamentals of Data Processing (Cincinnati: South-western Publishing Co., 1971), p. 3.

on for thousands of years.¹ North of Salisbury, in Wiltshire, England, evidence is found that early man was able to record with great accuracy the seasons and possibly even the eclipses and significant risings and settings of the sun and the moon. Stonehenge was believed to have been constructed in various stages between 1800 and 1400 B.C.; it was apparently a place of religious worship and sacrifice. Correlation with the seasons was probably based upon the primitive seasons of worship. Consisting of a circular arrangement of pillars and stones circumscribed by an earth-work, the ruins of Stonehenge would indicate that man, during the late Neolithic and Early Bronze ages, was attempting to keep records and to make mathematical predictions based upon records.²

Nature gave man his first digital computers--his fingers.³ Since man has ten fingers, he naturally used a decimal base (10) when he began to count. Early Roman schools actually taught finger counting and devised a method of multiplying and dividing on the fingers.

Around 700 B.C. man learned to replace his fingers with a new device--the abacus, the origin of which is uncertain. Some say it is a product of the ancient Hindu civilization, while others believe it originated in Babylon, Egypt, Greece, or China. The abacus has two beads on each rod in the upper compartment and five in the lower compartment. Both the abacus and the Japanese soroban are rectangular frames enclosing

¹Carl Heyel, Computers, Office Machines, and the New Information Technology (London: The Macmillan Co., 1969), p. 13.

²Wanous, et. al., op. cit., p. 15.

³Merle W. Wood, The Teaching of Automated Data Processing in the High School (Number 116, South-western Monographs in Business and Economic Education, 1969), p. 9.

a series of transverse rods upon which the beads slide. Any digit, from zero to nine can be represented on a rod by the position of the beads. In skilled hands, the abacus is amazingly rapid and efficient in making computations, and for centuries it was the most advanced calculating device available to man.¹

Medieval Europe saw the development of devices called "counters" that were used for mathematical purposes.² Later the various kinds of calculators that were predecessors of our present-day equipment began to evolve. The rapid growth of trade and the development of complex business brought a search for faster ways of calculating information.

Leonardo da Vinci, in the late fifteenth century, invented a device for computing distances by dropping pebbles into a box for counting. This device, although never widely accepted, did utilize the same principle of analogous comparison that is used in an analog computer.³

John Napier's invention of logarithms in 1514 was another forerunner of the analog computer. These devices are called analogs because they assume definite fixed relationships between the measuring device and the objects being measured. Tables of logarithms were used to simplify computations requiring multiplication and division. Napier later invented a device consisting of rods or strips of bone on which numbers could be printed. The device became known as "Napier's bone,"⁴ on which computations could be performed including the extraction for square and cube roots.

¹Wanous, et. al., op. cit., p. 14.

²Mary L. Elliott, "A Case Study of Teacher Preparation in Business Data Processing in Oklahoma" (unpublished Ed.D. Dissertation, University of Oklahoma, 1970).

³Wanous, et. al., op. cit., p. 15.

⁴Robert R. Arnold, Harold C. Hill, and Aylmer V. Nichols, Introduction to Data Processing (New York: John Wiley & Sons, Inc., 1966), p. 21.

Modern slide rules are a direct descendant of Napier's work; they are a geometrical logarithmic table--a crude but efficient analog computer.¹ The slide rule is sometimes referred to as the first practical analog computer.

In 1643 Blaise Pascal invented the modern adding machine that could be used for the addition and subtraction of integers for use in his father's grocery store.² This "calculator" was the first digital calculator and was capable of carrying tens automatically.

Diaries sometimes housed data concerning inventions. The diary, notwithstanding its exact characterization of the man, has been acknowledged as the most accurately recorded record of seventeenth century English history.³ Possibly the most interesting diary ever published was that of Samuel Pepys which was written in Shelton's Shorthand. Pepys' mastery of the art of shorthand can be viewed today in a British museum which displays his famous diary.⁴

Gottfried von Leibnitz drew the plans in 1671 for a machine that could multiply and divide, as well as count, add, and subtract; it could also be used for the extraction of square roots.⁵ Leibnitz, a German

¹Ibid.

²Arnold, et. al., op. cit., p. 22.

³Pearson, op. cit.

⁴Billie Dempsey Holcomb, "The Cultural Impact of Shorthand" (unpublished Ed.D. Dissertation, University of Oklahoma, 1970).

⁵Edmund C. Berkeley, The Computer Revolution (Garden City, New York: Doubleday & Co., 1962), p. 31.

mathematician, used the basic design of Pascal's calculator for his machine. Both these machines made use of wheels and gears that were turned a specific number of times to accumulate totals. Each operation required human intervention: data had to be manually entered, the wheels of the machine turned by means of a lever, and the answer transcribed from the dials. Many inventors developed versions of calculating machines employing various principles of mechanics. Gradually, calculators became faster, smaller, more reliable, and at least partly automatic.

Joseph Marie Jacquard¹ invented a punched card textile loom. This 1801 machine was capable of intricate weaving. Jacquard's weaving machine was the forerunner of all punched card controlled devices. Operated on the same principles used in modern machines with instructions being punched on strips of paper that were slipped into the machine, the loom was capable of sensing each strip of paper.

Charles Babbage, a professor of mathematics at Cambridge University, began work in 1812 on an "Analytical Engine." Although he did not complete his calculating machine, his detailed drawings and descriptions indicated that it would incorporate a memory system and conditional transfer. His work was largely forgotten until the 1940's, when new efforts were made to build automatic computers.²

In the 1820's Charles Xavier Thomas invented a calculator that could add, subtract, multiply, and divide accurately. It was copied by other inventors and was considered to be the ancestor of the modern desk calculator.³

¹Heyel, op. cit.

²Elliott, op. cit.

³Wanous, et. al., op. cit., p. 18.

In the late 1800's, Frank S. Baldwin invented the first calculator in the United States, and Dorr Eugene Felt and William S. Burroughs invented the first practical adding machine. These inventions, along with the development of the typewriter and the shorthand machine, perhaps made possible the forthcoming "age of technology."¹

Dr. Herman Hollerith, a consultant to the U.S. Bureau of the Census, introduced a number of important ideas and machines to simplify data processing. In 1880, he conceptualized the idea of information storage on punched cards. These cards could be read by special machines, then processed, and sorted. His system, as later developed, included cards, a card punch, a sorting box, and a tabulator equipped with electromagnetic counters. The cards could be sorted at the rate of about 80 per minute. The data could be tabulated and counted at the rate of 50 to 75 cards per minute. The system and equipment designed by Dr. Hollerith was used to process the 1890 Census in one-fourth the previous time.²

In the early 1900's, the U.S. Bureau of the Census hired James Powers to design additional equipment and methods for processing the 1910 Census. Powers worked on the problems of machine processing and developed a punching machine, sorter and tabulator that utilized a different format for the card, for coding, and for certain principles of machine operation. Powers' punching machine used the die-set principle in which all the data were first keyed into the machine correctly. By depressing a single key, the operator could then punch all the holes in the card simultaneously. This method permitted the operator to correct an error before the card

¹Ibid., p. 19.

²R. Clay Sprowls, Computers: A Programming Problem Approach (New York: Harper & Row, Publishers, 1966), pp. 25-26.

was punched. The Powers' system was successfully used in the 1910 Census. Both Hollerith and Powers organized companies to manufacture and market their systems. Hollerith's company later became known as IBM, International Business Machines Corporation. Powers' machines were later acquired by the Remington Rand Corporation, which is now the Univac Division of the Sperry Rand Corporation.¹

Many improvements have been made on the original Hollerith model. Punched cards were developed in which eighty columns of information could be recorded. Machines for punching holes in the card were equipped with a number of improved automatic devices. Moreover, comptometers were introduced that could add, subtract, and multiply, giving them the ability to handle most of the record-keeping jobs in law enforcement. Eventually, a punched-card calculator was developed that could divide. In addition, a provision was made for processing alphabetical as well as numerical information and for printing the results.²

Oscar and David Sundstrand invented the 10-key adding-listing machine in 1914. "During the same period, Jay R. Monroe and Frank S. Baldwin invented a calculator that could multiply and divide automatically. A new era in the development of calculators was underway. The magic words of the era were 'speed' and 'automatic.'"³ Machinery used in office automation to handle information required used electronic computers of two types: analog and digital. Analog computers create conditions similar to mathematical problems and solve them by measuring in the same way that a speedometer or slide rule does. Digital computers solve problems by

¹Ibid.

²Ibid.

³Wanous, et. al., op. cit., p. 19.

counting like an adding machine or a clock expert at lightning speed. The first successful automatic analog computer was the "differential analyzer" built by Dr. Vannevar Bush in 1931, although some analog devices were known in the nineteenth century.¹

In 1944 at Harvard University, Professor Howard Aiken developed an automatic sequence-controlled calculator--the Mark I² which is universally thought of as the first successful general purpose digital computer. The Mark I, built with the aid of IBM, obtained data from punched cards, made decimal calculations with the aid of counter wheels, switches, and other mechanical devices, and punched the results into a new set of cards. Sequence of calculations was controlled automatically by instructions punched into paper tape attached to the computer. This new automatic calculator involved two significant improvements over the old calculator: the internal circuitry and the method of control. Sequencing of instructions was mainly by means of a paper tape input, employing electro-mechanical devices. Gears, wheels, and electric relays were used to make computations.³

Two former University of Pennsylvania professors, John W. Mauchly and Prosper Eckert,⁴ in 1946 developed and tested ENIAC (Electronic

¹Walter Buckingham, Automation (New York: Harper & Row, Publishers, 1961), p. 23.

²Beryl Robichaud, Understanding Modern Business Data Processing (New York: Gregg Division, McGraw-Hill Book Company, 1966), p. 113.

³Gene Dippel and William C. House, Information Systems: Data Processing and Evaluation (Palo Alto, California: Scott, Foresman and Company, 1969), p. 372.

⁴William H. Desmode, Computers and Their Uses (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964), p. 15.

Numerical Integrator and Computer)--the first truly electronic digital computer. ENIAC had very few moving parts other than those used in feeding data into the computer or recording results in the punched cards that were used at both ends of the processing cycle. Mark I's gears, wheels, and electric relays were replaced by a large number of vacuum tubes. Since electric current can move faster than mechanical parts, speed was gained. A control panel in which instructions were wired by hand was attached to the computer to regulate the processing operations.

J. von Neumann designed EDVAC¹ (Electronic Discrete Variable Automatic Computer) about the same time ENIAC evolved. Binary arithmetic was used by EDVAC to make internal calculations. Accepting the fact that there are other numbering systems is difficult since most people are accustomed to the decimal system which employs ten digits: zero (0) to nine (9). Addition, subtraction, multiplication, and division are possible. EDVAC's use of the stored program principle was its chief claim to fame. Data processing instructions were punched into cards and stored via the cards in the computer's memory in the form of electronic impulses. This method of controlling the computer's processing action is far faster and more flexible than using either control panels or punched paper tape. Nearly all modern electronic computers now use the stored program principle.

Sperry Rand's 1951 UNIVAC I² designed by Eckert and Mauchly was the first commercial general-purpose electronic computer developed specifically for business application. Once again the paperwork flood of the Bureau of the Census triggered the first significant application of

¹Ibid., p. 16.

²Robichaud, op. cit., p. 114.

computers to business problems and called for UNIVAC I's handling of large volumes of input and output in connection with the processing of data.

Data mechanization had arrived. Electronic impulses extended utilization of punched cards. A multitude of magnetic storage media, including binary-coded mechanical relays and magnetic tapes, drums, and cores, came into existence to process information in "high-speed computer language."

Improvements in electronic computers have come rapidly since Mark I. New media for bringing information to computers have evolved. Faster input devices--paper tape, magnetic tape, magnetic ink characters, magnetic metal disks, etc.--have emerged on the scene; however, punched cards are still widely used. Cathode-ray tubes, which depict statistical data in the same way that a tube in a television set shows pictures, may also be used to record processed data.

Special typewriters now transmit data over telephone or telegraph wires to a centrally located computer. After the computer processed the data, the results are typed on the sender's typewriter. Results can also be punched into cards or displayed on cathode-ray tube equipment located in the sender's office. By implementing this arrangement, computer services are available to almost every law enforcement agency. Internal storage units for data and instructions have been developed making needed information available in a fraction of a second.¹

A broad spectrum of programming languages has been developed. Some languages enable programmers to write their instructions in a near-human system instead of the one used by the computer.

¹Ibid., pp. 115-116.

Los Angeles (California) has also done a great deal of experimental work in a natural language modus operandi system. With this system, a complete crime report would be input to the computer which would then do a programmed analysis of key words and phrases.¹

Translating devices have been created to convert programs to the language of the computer, greatly simplifying the work of the programmer.

Electronic computers were used in business for the first time in 1954.² Because of the high premium placed on instantaneous information, obtainable exactly when and where it is needed, the computer is widely accepted as the most powerful tool yet devised for processing, storing, and retrieving information. In 1950, there were no more than fifteen computers in use in the United States. Today there are at least 48,000; and by 1975, the predictions are that there will be 85,000 computers at work in this country alone--many of these in law enforcement agencies. Reports say that more than three million people will be directly engaged in computer operation.³

American business has lived through the "computer revolution" during the past few years, but what has been seen so far is only the beginning.⁴ The threshold of an "information revolution," affecting the practice of management in ways at which our conventional notions of

¹Joseph A. Videtti, Jr., "Application of Computers in Law Enforcement," Reprinted from Police, XIII, No. 6, 4.

²Peter Abrams and Walter Corvine, Basic Data Processing (San Francisco: Rinehart Press, 1970), pp. 429-431.

³Ibid.

⁴F. Kendrick Bangs and Mildred C. Hillestad, Curricular Implications of Automated Data Processing for Educational Institutions (A research report performed pursuant to contract number OE-6-85-030 with the Office of Education, United States Department of Health, Education, and Welfare, September, 1968, Boulder, Colorado: University of Colorado, 1968).

management techniques of control only hint, is at hand. Since automation has mushroomed and has become such an integral part of everyone's life, there is a definite need for offering data processing courses on the high school and college levels.^{1, 2}

The greatest bottleneck in any data processing system or operation today is the transcription of data into a form capable of being processed by a computer. The future will undoubtedly see many changes in the form of these data. Perhaps the spoken word will be automatically coded into processable form, and the results of processing might also be reported in verbal form. Today, strides have already been made in the development of machines which can read the type-written word from a standard sheet and automatically code it into a processable form.

By means of computers, life should become smoother and less complex. In the mundane area of traffic control, computers are being used to route traffic to avoid 'jams,' and ease the problems faced by the motorist. The routes of new roads being built are determined by means of computers, and the alternative possibilities are presented to the planners.³

No phase of our life will remain untouched by the computer and automation; in fact, no phase will escape the touch of the "Information Revolution" and the "Paperwork Revolution;" this is especially true in the area of law enforcement.

History of Law Enforcement

The beginnings of formal law enforcement activities are clouded within a historical mist.

The development of law enforcement is a fascinating story of slow but continual progress. It begins at the time in early human history when small, roving family groups banded together for mutual

¹James B. Davis, Jr., "Factors Which Should Influence a Model Curriculum for Programmers of Business Applications" (unpublished Ed.D. Dissertation, Oklahoma State University, 1966).

²Elliott, op. cit.

³Abrams and Corvine, op. cit., pp. 431-432.

protection against marauding animals and people. It was quite natural for these early communities to select the strongest and most dependable men to stand guard while the other members of the tribe slept.¹

The ancient social order was of a patriarchal nature, with small family groups affiliating with tribes or clans. Informal codes of conduct in conformity with tribal customs developed, but laws, as such, did not follow until written records were commonplace.²

As these early roving bands organized themselves into tribes and settled down in small communities, they began to evolve rules and regulations governing personal and property rights. Along with the development of these rules and regulations went the problem of upholding and enforcing these personal and property rights.³

"In the early tribal and clan life, the people were the police, and the chief of the tribe or clan exercised executive, legislative, and judicial powers."⁴ Often the chief would appoint members of the tribe to special duties--enforcing edicts or acting as his bodyguard--"but they were primarily members of the community rather than a selected police body."⁵ "It is quite probable that the earliest law enforcement groups were a kind of military police, detailed, during peacetime, from the tanks of the warriors to uphold the early tribal laws."⁶

¹John L. Sullivan, Introduction to Police Science (New York: McGraw-Hill Book Company, 1971), p. 1.

²Germann, et. al., op. cit.

³Sullivan, op. cit.

⁴Germann, et. al., op. cit.

⁵Ibid.

⁶Sullivan, op. cit.

Even in Biblical times, there were patrols of watchmen who went about the cities. More precisely, the military origin of police systems can be traced to the Romans. Caesar August, who was the Roman Emperor when Christ was born, used his soldiers to police Rome. Other nations copied the Roman military police system.¹

Crimes against a member of the tribe or clan were handled by the person injured, if he was able, or by his family. Crimes against the group were handled by the group--by the entire tribe or clan. Thus developed the idea of 'kin police,' wherein the family, tribe, or clan assumed some responsibility for obtaining justice. The philosophy of early justice and punishment was primarily retaliatory, and often crude. Branding or mutilation of offenders was not uncommon, the first use of the 'criminal record' for identification.²

"About 1500 B.C., Egypt had a system of judges and courts, and even more sophisticated laws, as for bribery and corruption."³

As our civilization progressed, the laws of the people in different countries were reduced to writing, formalized, and codified. One of the earliest codes of written law was that known as the Code of Hammurabi . . . This code was a body of accepted customs dealing with the responsibilities of the people individually and collectively.

In the same vein, the Jews in the Near East had the first five books of the Old Testament, the Pentateuch, to obey and follow. Other civilizations were also governed by codes. The Assyrians had a code of law. The Chinese had a penal code. The rulers of India used the Code of Manu, and the Romans established a digest of Roman law first in A.D. 450 and again in A.D. 1215 were the English able to wring from King John the celebrated Magna Carta, 'The Great Charter.' The Magna Carta is also the foundation of the Constitution of the United States. No greater legal documents than these two were ever written, for together the Magna Carta and the Constitution of the guarantee to the people of England and the United States the fundamental rights and liberties of a free people. As long as they exist, these documents preserve our most precious heritages and ensure that no man will be deprived of life, liberty, and the pursuit of happiness without the due process of the law.⁴

¹Ibid.

²Germann, et. al., op. cit.

³Germann, et. al., op. cit.

⁴Sullivan, op. cit.

"In Persia, in the Sixth Century B.C., under Cyrus, there existed a road and postal system which points to the probability of institutional police; under Darius, the empire was divided into provinces for the purposes of administration with satraps given the authority to levy and collect taxes."¹

The early Greek city states witnessed some development from tribal or clan policing to community (city) policing. Pisistratus, who was ruler of Athens, established a guard system to protect the tower, highways, and his own person. Sparta developed a ruler-appointed police, and as the regime was authoritarian, this body is often referred to as the first 'secret police' system.

Solon, the ancient law-giver of Athens (638-559 B.C.) was asked to name the essential ingredient of the ideal community. His answer could be memorized by every law enforcement professional: 'When those who have not been injured become as indignant as those who have!'

It might be noted that Plato, the Greek philosopher, who lived between 427-347 B.C., involved himself in many discussions relative to the nature of society, the State, law, justice, and punishment. He indicated, as an example of his interest, that the proper end of punishment was not merely to render the guilty their due (retribution), but, at the same time, to make them better. Thus, he regarded punishment not only as retaliative or retributive, but also as a tool of reform or rehabilitation.

Early commentaries on ancient Rome indicate that order was primarily maintained by the military legions of the rulers . . . Seneca, a Roman statesman and first-citizen (4 B.C.--A.D. 65), observed that 'punishment is designed to protect society by removing the offender, to reform its subjects, and to render others more obedient.' Thus, he added to the ancient philosophy of retaliation, which was modified by Plato to include reformation, the concepts of² protecting the general welfare and deterrence of potential offenders.

"In France, the Capitularies of Charlemagne were issued in A.D. 785, and were a complicated set of laws dealing with weights and measures, tolls, sales, burial of the dead, emergency procedures for famine and pestilence, and crime."³

¹Germann, et. al., op. cit., pp. 45-46.

²Ibid., p. 46.

³Ibid., p. 47.

Although the Anglo-Saxons did not believe in capital punishment, they practiced a most cruel form of judicial punishment known as trial by ordeal. In this primitive method of ascertaining innocence or guilt a suspect might have to walk over hot coals in fire, or immerse his hands in boiling water, or be bound, weighted, and thrown into a river. If the suspect's feet were burned by the coals, if his hands were boiled by the hot water, or if he was drowned, he was considered guilty. If not, he was innocent. . . . by this procedure, the court calendar was never cluttered, and justice was dispatched speedily, if not humanely . . .

When observing the transitions in law enforcement, it is important to note the influence that these changes have had on our modern concepts of law enforcement. For instance, the watch and ward system was the brainchild of the Anglo-Saxons and the germ of our modern American police system . . . The watch was the night guard, and the ward was the day guard.¹

William the Conqueror invaded England in A.C. 1066 and established a national government that was almost the direct opposite of the Anglo-Saxon form. Whereas the Saxons emphasized local home rule, the Normans stressed national government and increased taxes and expenditures.² In order for the sheriff to collect the taxes systematically, "a list of all taxable property owned by each person was recorded. This record was named the Domesday Book."³

In 1116 the Laws of Henry classified arson, murder, false coinage, and robbery as felonies. These crimes were punishable by the King, and, since the Normans had established a national government, the King had the first right of civil suit and damages. This was a radical change from the Anglo-Saxon period during which the criminal was punished by his fellowmen. Now the authority to punish came into the hands of the King, and outmoded procedures such as the trial by ordeal were abolished.⁴

As England struggled along with hit-or-miss methods of law enforcement, a number of police systems were tried. Eventually, a diversified law enforcement program evolved through the use of merchant police, dock police, river police, market police, and the night watch.⁵

¹Sullivan, op. cit., p. 4.

²Ibid., p. 5.

³Ibid.

⁴Ibid.

⁵Ibid., p. 9.

Naturally, this uncoordinated type of law enforcement was hardly adequate to combat the steady increase in crime. Realizing the situation, Parliament appointed a committee to investigate existing police systems--the first such survey of its kind.

No real progress in English police organization was made, however, until Henry Fielding, better known as the author of Tom Jones, was appointed magistrate for the Middlesex and Westminster areas. He made the first real police survey and promoted the idea that police should be paid and trained, and permanent police forces should replace voluntary ones. He also advocated special detectives to investigate and police courts to adjudicate crime. Putting his ideas into effect, he organized a foot patrol for the streets, a mounted patrol for the highways, and, in 1749, he established the Bow Street Runners as special investigators. They were specially trained detectives who sped to the scene to investigate crimes. Along with the police courts that he also established, Fielding goes down in history as having made outstanding contributions to the development of police systems.¹

The Industrial Revolution's impact of science and inventions on the social and economic welfare of England is very important in the history and the development of law enforcement.

Mechanized factories brought unemployment, depression, hunger, and inevitably an even greater upward surge of crime. Unfortunately, there were no social or governmental organizations in the cities to cope with the prevalent problems of poverty, disease, juvenile gangs, and adult gangs of thieves and robbers. Crime ran rampant. Moreover, in the attempt to check crime, laws were strictly and cruelly enforced. Offenders were deported to Australia and America. Public executions, while common, were ineffective in preventing crime.²

England was fortunate in producing a man who was equal to the giant task of solving the crime problem--Sir Robert Peel. The present English "bobbies" derive their name from this enterprising leader.³ Although the development of England's law enforcement program progressed slowly toward an efficient police system, "the most lasting and effective advances were made possible by the reforms of Sir Robert Peel."⁴

¹Ibid., p. 10.

²Ibid., p. 11.

³Ibid.

⁴Ibid.

In 1829, as Home Secretary, Peel introduced into Parliament the Metropolitan Police Act. This move consolidated and reorganized the numerous forces existing in London into one efficient, paid body of officers. Like Fielding, Peel was convinced that police must be dedicated, trained, ethical, paid personnel of local government.¹

In 1829 Peel developed his Peel's Principles--the basis for an efficient, reliable law enforcement agency.² "These principles have weathered time and are followed by police management today throughout the free world. In fact, New York City adopted Peel's Principles as a foundation for organizing the New York Police Department in 1833."³ The following are Peel's Principles:

1. The police must be stable, efficient, and organized along military lines.
2. The police must be under government control.
3. The absence of crime will best prove the efficiency of police.
4. The distribution of crime news is essential.
5. The deployment of police strength, both by time and area, is essential.
6. No quality is more indispensable to a policeman than a perfect command of temper. A quiet, determined manner has more effect than violent action.
7. Good appearance commands respect.
8. The selection and training of proper persons are at the root of efficient law enforcement.
9. Public security demands that every police officer be given an identifying number.
10. Police headquarters should be centrally located and easily accessible to the people.
11. Policemen should be hired on a probationary basis before permanent assignment.
12. Police crime records are necessary to the best distribution of police strength.⁴

¹Ibid.

²Ibid.

³Ibid.

⁴Ibid., pp. 11-12.

Development of United States Law Enforcement

"In the United States, the Penal Code clearly defines the function of the peace officer and designates the law enforcement agencies qualified to have peace officers. Our courts have ruled time and again that the police of today are members of an organization empowered with the authority vested in them by the people to enforce the laws of the city, county, and state. The development of the Penal Code, like that of the police system, was a long, gradual process which takes its roots far back in man's history."¹

When England, France, and Spain established colonies on the eastern coast of America during the fifteenth and sixteenth centuries, each brought its own police system that made an imprint upon the American police system. England, "with its tithing, night watch, constable, and sheriff method of organization, had the greatest influence in shaping our law enforcement system."²

The English settlers lived in small settlements along the east coast of early America. Mutual needs banded them together. Quite naturally, they borrowed the night watch system and the military guard of their homeland. In most colonial towns, all able-bodied males over the age of 16 were detailed to the night watch without pay. The night watch system prevailed in the majority of American towns until about 1800. In the more rural agricultural districts of the South, as the farms flourished and areas grew into counties, it became natural to use the sheriff method of law enforcement.³

"The development of municipal policing in the new world was slow, due to the fact that the nation was of essentially a rural character. By 1790 there were six cities with a population over 8,000."⁴

¹Sullivan, op. cit., p. 2.

²Ibid., p. 17.

³Ibid.

⁴Germann, et. al., op. cit., p. 64.

In the early 1800's as towns grew into cities and crime became both a day and a night problem, cities were forced to provide a day watch. "Boston was one of the first cities to recognize this need, and in 1838 the city established the first day watch."¹

Not to be outdone by Boston, the New York Legislature, in 1844, created for New York City a united day and night force of 800 men with a Chief of Police. This organization followed the London plan and served as a model for urban police organizations throughout the United States.²

Many factors contributed to the development of the American police systems which prevail in today's cities. Among the most prominent were the various political wars and corruption which stemmed from the philosophy that "to the victors belong the spoins."³

During the late 1800's, there were forces for reform in almost every city in the United States. But only when people became aroused from their usual apathy because of shocking crime waves did reform movements appear . . .

When Congress passed the Pendleton Act in 1883, a real breakthrough to the establishment of civil service was accomplished for law enforcement. This act marked the end of the previous seventy-five years of 'to the winner goes the graft and political plums.'⁴

Today's sheriff, with roots stemming primarily from Great Britain, has become an integral part of American law enforcement. The past has proved that Americans like to elect the top law enforcement officers in their counties.⁵ "Since the formative years of our country, this office of sheriff has been coveted."⁶

Even persons outside law enforcement often campaign for the office of sheriff. In the past, unqualified and questionable political hacks sometimes were elected to office; however, with the great professional advancement of law enforcement, many high-caliber men now seek the sheriff's office.⁷

¹Ibid., p. 18.

²Ibid.

³Ibid., p. 19.

⁴Ibid.

⁵Ibid., p. 22.

⁶Ibid.

⁷Ibid.

"Unlike the municipal or local police, the state police system does not trace its origin to Biblical times, to medieval days, or to the English police."¹

The state police is a creation of the state legislature because police power is the reserved or inherent power of the states to legislate for the health, welfare, safety, and morals of the people.

Some states maintain a state police force endowed with general police power throughout the state. Still others have established a statewide force primarily to patrol highways and to enforce traffic laws. A number of states have developed state bureaus of identification and investigation which serve as a general clearinghouse for criminal matters pertaining to fingerprints, records, and laboratory examinations.²

In past years, "a feeling of animosity, jealousy, and ill will often existed between local and federal law enforcement agencies."³ This situation has been remedied through mutual participation in training, conferences, etc.

With higher local police standards, pay increases, and retirement and fringe benefits closely equaling and resembling federal civil service, the entire police profession has achieved a relatively favorable outlook and a comparatively secure future.⁴

As a result, "much of the conflict between local and federal law enforcement agencies has been swallowed up in an era of cooperative police effort."⁵

History of Methods of Identification

Criminal identification has progressed from the branding and maiming of early history, through the "photographic memory" of law enforcement officers, through the Bertillon measurements introduced in 1870, to the present infallible system of positive identification through fingerprinting.⁶

¹Ibid., p. 26.

²Ibid., p. 27.

³Ibid., p. 38.

⁴Ibid.

⁵Ibid.

⁶Ibid.

Many centuries before the Christian era, man was conscious of fingerprint ridges. In ancient Babylon, fingerprints were impressed in clay tablets to record business transactions. The Chinese used fingerprints on legal documents in the eighth century A.D., although it is doubtful that the fingerprints did any more than add solemnity to the business transaction. The fact that fingerprints are individual has been considered repeatedly through the ages, however, and, in the fourteenth century a Persian governmental official observed that the fingerprints of no two people were identical.¹

"The first authentic record of official fingerprint use in the United States was in 1882, when Mr. Gilbert Thompson of the United States Geological Survey placed his own fingerprint on official orders as a means of preventing their forgery."²

In 1883, Mark Twain published his book Life on the Mississippi in which he relates the identification of a murderer by his thumbprint; and in 1893, Twain's Pudd'n-head Wilson told the story of a court trial in which fingerprint identification proved its infallibility.³

Fingerprinting was introduced officially for purposes of criminal identification in England and Wales in 1901.⁴ This fingerprint system was based upon observations of Sir Francis Galton, renowned British anthropologist and a cousin of scientist Charles Darwin, and devised by Mr. Edward Richard Henry, later to become Sir Henry, Commissioner of the London Metropolitan Police.⁵ Henry produced a simplified fingerprint classification system, adapted to police needs.

Juan Vucetich, a noted criminologist as well as an Argentinian police official, using the patterns typed by Galton, first installed fingerprint files to provide official criminal identification. Fingerprinting was first used in conjunction with the Bertillon bodily measurement system but gradually replaced it . . .

Henry's fingerprint system and that of Vucetich are the foundation of all present-day, 10 finger systems of fingerprint identification.⁶

¹Ibid., p. 40.

²Ibid., p. 41.

³Ibid.

⁴Ibid., pp. 41-42.

⁵Ibid., p. 42.

⁶Ibid.

In solving the Rojas murder case in 1892 at La Plata, Argentina, Vucetich holds the record for the first official criminal identification by the fingerprint method at the crime scene.¹

In 1902, Dr. Henry P. DeForest, the American pioneer in the science of fingerprinting, introduced the practice of fingerprinting to the New York Civil Service Commission as a means of ensuring applicants for civil service testing. This was the first systematic use of fingerprinting in the United States and was followed, in 1903, by the first systematic use of fingerprints in criminal identification.²

Fingerprint experts estimate that there is only one chance in sixty-four billion that a fingerprint on one person may be the same as that of another person. Since there are fewer than four billion people in the world, the odds are tremendously in favor of no duplication.

Fingerprints form in a child during the fourth month of the mother's pregnancy, and there is no change in the prints during life. Only after death, when the skin actually becomes extinct, do the fingerprints disappear. The only positive method of removing or changing fingerprints is to burn the fingers to ashes. Ordinary plastic surgery cannot permanently change fingerprints satisfactorily. It is a criminal violation for a doctor even to attempt to change anyone's fingerprints. The notorious fugitive, John Dillinger, bank robber and escape artist of the early 1930's, had his face lifted, and a doctor endeavored to mutilate Dillinger's fingerprints. However, after Dillinger was killed in a gun battle with FBI agents, his body was positively identified by his fingerprints.³

Summary

A survey of the history of record-keeping, automation, law enforcement and methods of investigation, then, is pertinent in projecting effective systems of records management. The manual and electronic application of the historical principles of record-keeping and filing procedures can provide an invaluable basis for the establishment of current practices.

¹Ibid., p. 41.

²Ibid., p. 42.

³Ibid., p. 43.

CHAPTER IV

POLICE RECORDS MANAGEMENT

Introduction

The information explosion generated by twentieth-century technology has resulted in a deluge of paper data of immense proportions. "Experts estimate that by the year 2000 there will not be enough people in the entire labor force to handle the paperwork required in business and government. Modern business simply cannot exist without the information needed to make intelligent business decisions . . . "¹

Factors Affecting Police Records Management

Two primary concerns in the area of record-keeping for police management are the problems of reducing costs in the handling of records and the development of efficient systems and procedures in the process of retrieving information.² Information processing, a major administrative activity, involves the gathering, interpreting, and transmitting of facts and opinions to form the basis of decisions.³

¹Harry Huffman, Donald J. D. Mulkerne, and Allien Russon, Office Procedures and Administration (New York: McGraw-Hill Book Company, 1965), p. 272.

²Mary Claire Griffin, Records Management: A Modern Tool for Business (Boston: Allyn & Bacon, Inc., 1964), pp. 1-2.

³Carl Heyel, Computers, Office Machines, and the New Information Technology (London: The Macmillan Company, 1969), p. 1.

"Records management personnel are now evaluating their programs and establishing goals toward the creation and management of information rather than paper."¹ Attention is being directed toward the development of methods whereby useful information may be obtained reliably, quickly, and inexpensively.²

Two monumental facts have altered records management requirements greatly within the last decade. Management at all levels is demanding extensive information now available in ever increasing quantities only from techniques of automatic and mechanical data processing equipment; consequently,

. . . an estimated one million new pages are produced in industry's offices every minute of the day--three times bigger than 30 years ago, well over 3.5 billion pounds a year, or about 20 pounds for every individual. An estimated 250 billion pieces of this paper each year elude the wastebasket and are crammed into filing cabinets.³

Federal and state governments are requiring more complex records for tax and regulatory purposes. Many complicated and long-term records congest office files and hinder management functions, but a "paperwork jungle" does not have to exist for the alert police administrator who employs methods and equipment which are fully equal to the task.⁴

"The office, like the factory, turned to mechanization as the only practical means by which it could hope to meet the expanding information needs of the activities which it served."⁵ Mechanization of

¹Ibid., p. 10.

²Ibid., p. 2.

³Emmett Leahy, "Don't Do It Yourself," Systems and Procedures Journal (May-June, 1963), p. 12.

⁴Irene Place and Estelle L. Popham, Filing and Records Management (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966), p. 6.

⁵Leonard Rico, The Advance Against Paperwork: Computers, Systems, and Personnel (University of Michigan: Bureau of Industrial Relations, 1967), p. 28.

office work (police records) is not new; computerization is simply its newest form.¹

"Crime is easily one of our Nation's most serious social ills."² In the spring of 1967, after eighteen months of careful research, President Johnson's Commission on Law Enforcement and Administration of Justice reported that overt crime in the United States is a national disgrace. In a 300-page report, the Commission stated:

. . . the overall crime rate in this country has been steadily on the way up in recent years. In 1964 it rose by 13 percent, in 1965, by 5 percent and in 1966, by 11 percent. Perhaps computerized crime detection is only one of the ways the computer can be brought to bear on the problem. Maybe the most significant contribution that computer usage has to make in the area of crims is in prevention.³

The Florida Crime Information Center quotes the President's Commission on Law Enforcement and Administration of Justice as follows:

"States should assume responsibility for assuring that area-wide records and communication needs are provided . . . It is readily evident that many criminal justice problems result from the lack of complete and timely information. . . . Technical development most profoundly affecting criminal justice operations is the advent of computer based information systems."⁴

¹Ibid.

²Joseph Vierra, "Computers and the Law," Computer Usage Reprint (Spring, 1967), p. 4.

³President Lyndon B. Johnson's Commission on Law Enforcement and Administration of Justice as quoted by Joseph Vierra, Ibid.

⁴President Lyndon B. Johnson's Commission on Law Enforcement as quoted in the Independent Research Study by the Florida Crime Information Center, 1969), p. ii.

In 1967 the Justice Department granted the 143-year-old Franklin Institute in Philadelphia \$78,000 for a crime prevention study:

The study includes working with a local police department to try to pinpoint all the factors involved in crimes committed in one day. With the results, the experts hope to find some social pattern that would facilitate deploying police protection in a scientific way--rather than using intuition. Scientists have found that in many cases tangible factors play an intricate part in crime--weather, pay-day, neighborhood and other social-economic conditions that can be tabulated.¹

The goal of all of this police record keeping is the ability to predict crimes on an hour-by-hour, neighborhood-by-neighborhood basis.²

"The effectiveness of the administration of any law enforcement agency depends, in part, upon its ability to obtain, process, and utilize critical intelligence information."³ The late William Parker, Chief of the Los Angeles Police Department and one of the giants of the Police Intelligence Community, once said, "Against organized crime, Internal Affairs is my defensive arm; Intelligence is my offensive arm."⁴ Too often, police administrators are required to make major decisions based upon inadequate information. The function of intelligence information records is to fill the void which often exists in police decision-making.⁵

Possibly, quantities of derived data can become particularly burdensome when a police department has automatic data processing. Computers provide the opportunity to assemble statistics or to make

¹Vierra, op. cit., p. 5.

²Ibid.

³Donald O. Schultz and Loran A. Norton, Police Operational Intelligence (Springfield, Illinois: Charles C. Thomas, Publisher, 1968), p. vii.

⁴Ibid.

⁵Ibid.

comparisons, studies, or other paper-consuming print-outs of calculations which formerly could not have been done without a significant increase in personnel. Computer costs and speed of operation allow rapid processing of data and the effortless production of enormous amounts of information. Value of such material is often doubtful and the number of print-outs can exceed the functional needs.¹

In law enforcement, the following is true:

All managers must perform certain basic management functions in order to achieve company goals. The objectives pursued differ, of course, but the basic functions or activities are common to all. In other words, the activities of planning, organizing, staffing, and controlling are performed by all managers.

The success of any business is determined by how well its executives perform these activities. And how well these functions are carried out is dependent, in part, upon how well the information needs of managers are being met. (It is necessary to add that the manager must have the ability to effectively use the information which he received.)²

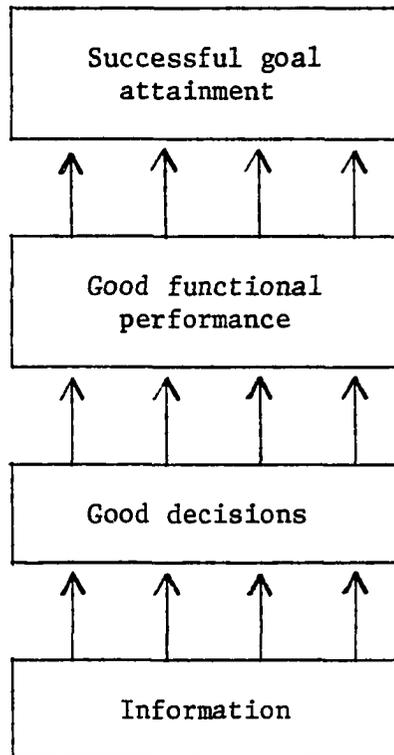
As noted in the following diagram, "quality information in the hands of those who can effectively use it will support good decisions; good decisions will lead to effective performance of managerial functions; and effective functional performance will lead to successful attainment of organizational goals."³ As Sisson and Canning have observed, "information is the cement that holds together any organization."⁴

¹N. Louis Senensieb, "Principles of Systems Analysis and Design," Reprinted in Computer Reading Series: Analysis, Design and Selection of Computer Systems (Arlington, Virginia: College Readings Inc., 1971), pp. 47-56.

²Donald Sanders, Computers and Management (New York: McGraw-Hill Book Company, 1970), p. 7.

³Ibid., p. 8.

⁴Roger L. Sisson and Richard G. Canning, A Manager's Guide to Computer Processing (New York: John Wiley & Sons, Inc., 1967), p. 1.



Statistics that should have remained within the computer's storage system and never printed are accumulated in the filing cabinets of law enforcement agencies. In some cases police managers have awakened to this new source of excess documentation and have imposed the restriction that only slight deviations from the routine are to be printed by the computer.¹

Daniel Peck writes in the March, 1966, issue of Administrative Management that routine data or details about normal operations that signal no need for action should not be presented to management through the high-speed printer to clog files, add to the paper flood, or usurp

¹Daniel Peck, "Operation Better Record Keeping," Administrative Management (March, 1966), 70-80.

the computer-time which should have been devoted to other needs.¹ Peck continues by enumerating the steps that can be taken to bring a record-keeping system into better order:

(1) Eliminate duplications where possible. (2) Maintain records in easily accessible locations. (3) Make use of labor saving and time saving devices. (4) Initiate the orderly and rapid flow of records from files to storage to eventual destruction. (5) Place adequately trained personnel in the record keeping department. (A current trend is to place one individual in charge of the entire records management operation.) (6) Standardize the methods of getting papers into the files, the actual order of filing the papers, forms, cards, and the equipment itself.²

Need for Police Records

"Information is the life blood of any law enforcement agency."³

Most local police agencies contain the following kinds of data: name and address files, fingerprint records, location indicators, and intelligence and investigation reports.⁴ Whisenand and Tamaru feel that police work can be translated into certain basic programs representing an attempt to achieve departmental objectives and the underlying philosophy of policing --"to protect and serve."⁵ These writers also point out that the perplexing

¹Ibid.

²Ibid.

³System Development Corporation, An Information System for Law Enforcement (Santa Monica, California: System Development Corporation, 1965), p. 1.

⁴Paul M. Whisenand and Tug T. Tamaru, Automated Police Information Systems (New York: John Wiley & Sons, Inc., 1970), p. 3.

⁵Ibid., p. 4.

enormity of requisite data and the reliance on other information subsystems (i.e., criminal justice, city government) has created a three-fold problem for local law enforcement:

The first problem for local law enforcement is centered in the collection, analysis, and utilization of police-oriented data designed to facilitate interaction among the relevant police personnel, machines, and procedures.¹

These interactions are designed to assist the police in making effective decisions.

In this instance, the type, not the amount, of information produced and available is critical to the system's function. A large amount of data is presently collected by police agencies with little or no reference to the objectives for which it is collected; much is not used; that which is used relates only haphazardly to the needs of decision makers in the policing process. A police information subsystem must be designed so that it places equal emphasis on the content and processes of data input, retrieval, and output.

A second problem is that much of the information required by a local law enforcement agency is collected and stored elsewhere in ² local, county, regional, or statewide criminal justice subsystems.

Whisenand and Tamaru feel that much of this information is currently unavailable because its existence is not generally known and no practical mechanism has been devised for its dissemination. "Here the major concern of the police information subsystem is for both the sharing and the accuracy of the data. One attractive method for the sharing and improvement of accuracy is through the integration of information processes based on advanced information processing technology."³

The third problem is that local law enforcement has yet to be thoroughly evaluated as an operating subsystem within municipal (local) government.⁴

¹Ibid.

³Ibid.

²Ibid.

⁴Ibid.

Apparently, little effort has been directed toward an analysis of information which may be common to more than one of the interrelated municipal information subsystems. Because of this inattention to common information, there is little data shared between the subsystems within the municipal data system.¹ Whisenand and Tamaru state:

In order to be fully integrated and in closer union with other subsystems, the police department information system must attempt to identify that information which is essential not only within its own boundaries but that of other municipal subsystems as well. Simply stated, data commonality is a prerequisite to an integrated information system for municipal government in general, and local law enforcement in particular.²

A law enforcement agency must decide what is involved in its information flow and whether this flow is vital to over-all productivity. Information-handling systems and procedures, costs, and efficiency must be analyzed to determine their relation to the total law enforcement operation.³

. . . if a modern police department is to operate efficiently and effectively in the framework of our present complex social and economic structure, then the department's operation must reflect society's complexity. A necessary and growing evil of this complexity is the ever-increasing amount of paper work which is slowly under most departments' backup operations. Much of this paper work is directly connected with the department's operation and control. A loss of information in a maze of documents is handicapping both police administrators and officers attempting to accomplish actual police line functions. Loss of information is extremely critical in a police department since information of one kind or another is the department's main stock in trade.⁴

¹Ibid.

²Ibid.

³Ibid.

⁴Sgt. D. L. Williams, "Real-Time Computer System for the Police Department," Law and Order (July, 1964), 8-15.

"Law enforcement records have been the means by which men have been returned to prison many years after an escape, families have been reunited, stolen property returned to owners, crimes solved, and the wrongfully accused declared innocent."¹

Elmer Graper in 1921 made the following remarks concerning the need for adequate police records:

. . . it should be emphasized that there is needed in every police department a bureau for the maintenance of permanent records of police activities . . . The purposes for which records and reports are kept are two in number. In the first place, they should bring before the administrative head of the department such information relative to crime conditions and the activities of the police as will enable him to direct the men at his disposal to the best advantage; in the second place, they should give to the public the information necessary to enable it to judge intelligently what the needs of the department are and the efficiency with which it is doing its work. This information will not be available unless records are kept from day to day, and finally summarized in the yearly report of the department.²

With an efficient records management program, not only is the cost self-liquidating, but substantial savings may be affected. Controlling the flood of records requires both a constant effort and a continual watchfulness. The increasing production of records can outstrip, outcost, and outsmart management.³

Records flow in such quantities that filing has taken on new dimensions and has evolved into records management. The billions of law enforcement records have at least one of the following purposes: to direct,

¹William H. Hewitt, Police Records Administration (Rochester: Aqueduct Books, 1968), p. 6.

²Elmer D. Graper, American Police Administration (New York: The MacMillan Company, 1921), pp. 276-277.

³V. A. Leonard, The Police Records System (Springfield, Illinois: Charles C. Thomas, Publisher, 1970), p. v.

to instruct, to inform, or to record.¹ Elimination of unnecessary paperwork is a primary objective since written communication is the slowest medium of information transfer.² In directing the police effort,

. . . law enforcement agency records provide information regarding the character, extent, location, and time of occurrence of criminal activity in the jurisdiction being served. With this information, it is possible to identify police hazards, determine needs for additional police service, determine changes in these needs, and have information upon which enforcement strategy may be based.³

Records management, for purposes of this study, is defined as "a science designed to control the quantity, quality, and cost of paperwork." The control of the life cycle of a record is from its creation, through processing, checking, maintenance, and protection, to its destruction.⁴ In other words, records management is the systematic control over the creation, activity, storage, protection, retrieval, and disposition of all types of records for the purpose of reducing costs, increasing efficiency, and servicing management through records procedures.⁵

In discussing the need for police records, O. W. Wilson, Superintendent, Chicago Police Department, stated:

¹Place and Popham, op. cit., p. 5.

²Griffin, op. cit., p. 2.

³Donald G. Hanna and John R. Kleberg, A Police Records System for the Small Department (Springfield, Illinois: Charles C. Thomas, Publisher, 1969), p. 3.

⁴Mina M. Johnson and Norman F. Kallaus, Records Management: A Collegiate Course in Filing Systems and Procedures (Cincinnati: Southwestern Publishing Company, 1967), p. 12.

⁵Ibid.

. . . In contrast with the simple task of law enforcement a few years ago, the police today are confronted with exceedingly complex and difficult problems. Success in preventing accidents, catching crooks, locating stolen property, and accomplishing the hundred and one other tasks of a modern police department depends upon carefully planned strategy and vigorous follow-through. To be effective, departments have to evaluate procedures continuously, improving techniques at one point, discarding unproductive methods at another. The facts necessary to the analysis of problems and the formulation of strategic moves are made available by an adequate records system.¹

Administration should consider the many-faceted area of records management as a major branch of law enforcement services. Paperwork management should be "designed to program the records' life cycle, to simplify and eliminate paperwork, to insure improved quality of information, and to aid administration in its fundamental responsibilities."²

Types and Sources of Police Records

Types of Police Records

The Jackson, Mississippi Police Department feels "Speed of reaction, top-quality equipment, and the accurate transmission and recording of messages are absolute 'musts' in the law enforcement activities of major police departments."³ Record systems analysts classify records as being of two basic types: (1) transaction documents; and (2) reference documents.⁴ Transaction documents, largely forms, include invoices,

¹O. W. Wilson, Police Records: Their Installation and Use (Chicago: Public Administration Service, 1942), p. 1.

²Johnson and Kallaus, op. cit., p. 235.

³Bud Dodge, "Communications Logging Equipment," Law and Order (June, 1968), 74.

⁴Johnson and Kallaus, op. cit., p. 235.

requisitions, purchase and sales orders, checks, and statements. Reference documents include letters, memos, reports, mug shots, fingerprints, maps, charts, computer print-outs, and other similar information.

Sources of Police Records

There are two principal sources of records systems for law enforcement officials: (1) civilian records systems; and (2) police records systems. Some of the civilian records systems are as follows:

1. City Directory
2. Credit Agencies
3. Insurance Companies
4. Telephone Companies
5. Utility Companies
6. Transportation Facilities
7. Financial Institutions
8. Newspaper Indexes
9. Service and Professional Organizations
10. Public Records Systems

Classification of Police Records

Five filing classification systems are generally recognized as being most widely used: alphabetical, chronological, geographical, numerical, and by subject. There are many derivatives and combinations of these basic systems. Few law enforcement agencies employ the strict use of only one system; most utilize some combination.¹ Choice of a classification system for an agency requires an analysis of the organizations' structure, relationships, policies, and objectives.² Factors that

¹Whisenand and Tamaru, op. cit., p. 3.

²Ibid.

require analysis before devising a classification system include the physical form of the recorded information, the type of information recorded and how it will be used, the volume of each type of stored reports, and the types of machines used in preparing and processing records, such as electronic data processing and duplicating equipment.¹

Criminal Identification Records

"In identification of criminals we find various possible methods available: photographs, fingerprints, physical description, method of operation (modus operandi), and names (including aliases and nicknames)."² Law enforcement agencies must, therefore, remember not only everything that happened in each crime accounted for, but must remember the description, characteristics and traits of each of the people that came in contact with the police. This situation becomes involved because criminals do not stay put in one location. Law enforcement agencies are constantly seeking information within their own states and neighboring states.

In the 1969 FBI Appropriation Request, Mr. J. Edgar Hoover stated:

The objective of the NCIC System is to improve the performance of law enforcement through the more efficient and effective retrieval and exchange of information. The net results, of course, will be to improve the solution rate of crime and to increase the risk of detection to the criminal since the system makes available to a police officer on the street information in a matter of seconds. . . . It is our concept that eventually fifty statewide systems will be established in the various states of the Union tied into the NCIC. . . . I consider it to be one of the greatest advances in law enforcement in recent times.³

¹Place and Popham, op. cit., p. 16

²Hewitt, op. cit., p. 641.

³John Edgar Hoover, Director FBI, Federal Bureau of Investigation's Appropriation Request, 1969.

The Florida Crime Information Center states:

Crime does not observe political boundaries; as crime does not stop at the city limit, state or county line, neither can law enforcement information. Certain categories of law enforcement information are already widely available through the FBI's National Crime Information Center (NCIC).¹

Hoover stated in the NCIC Operations Manual:

The NCIC will serve as an index for the eventual development of fifty statewide computerized law enforcement information systems. The states need to centralize crime information for management, operational, and research purposes.²

Criminal History Record File

O. W. Wilson, in his classic Police Records: Their Installation and Use, stated:

Criminal History File is a complete record in one place of the known criminal acts of individual offenders and is an important aid to the police. . . . to record each arrest as well as every other contact (such as minor complaints and traffic violations) which the police may have had with the criminal would involve an amount of work out of proportion to the value of the product. Consequently, the criminal history is usually limited to criminal offenses which have resulted in the fingerprinting of the subject.³

Wilson continues:

The only materials which properly belong in the Criminal History File are identification records (FBI Criminal History Sheets, description sheets, photographs, and extra fingerprint cards). Since the file is limited to FBI Criminal History Sheets, a separate photograph file is required. Description sheets and extra fingerprint cards are filed with the case.⁴

¹FCIC: Florida Crime Information Center An Independent Research Study Performed by Systems Science Corporation for the Florida Bureau of Law Enforcement, 1969, p. 3.

²John Edgar Hoover, Director FBI, Federal Bureau of Investigation's National Crime Information Center's Operation Manual, 1969.

³Wilson, op. cit., pp. 130-131.

⁴Ibid.

Hewitt states that the Criminal Jacket File is the "complete criminal history of individuals, based on fingerprint file checks and also correspondence relating to the individual."¹ Hewitt then discusses the Criminal History File:

As new histories are received from the FBI or the state identification bureaus, which also contain all local arrest information, older sheets should be destroyed and the latest ones put in their place. An extra copy of a subject's fingerprints may be kept in the Criminal History Record File, but photographs and negatives must be filed in their respective files. . .

A criminal history record should be on file for all persons who have conviction and arrest records in the local police department, or who have had criminal history sheets returned to the city after their fingerprints have been checked by a co-operating agency.²

The nature of the information in the Criminal History Files makes it necessary to have them available at all hours as a source of immediate information.³

Miscellaneous Criminal Files

Just as it is necessary to have the Criminal History Files available at all hours, it is also necessary to maintain the following Miscellaneous Criminal Files on a 24-hour basis:

Crime Scenes and Evidence Photo File: All negatives processed and filed after photographic prints are made and forwarded.

Fingerprint File: Fingerprint cards, filed according to the Henry System of fingerprint classification. Fingerprints are divided into three files: (1) Civilian fingerprints; (2) criminal fingerprints, male; and (3) criminal fingerprints, female.

Master Name Index File: A descriptive card is made on all persons whose fingerprints are filed for any reason. Wanted-person cards are also made and filed.

¹Hewitt, op. cit., p. 501.

²Ibid., pp. 591-592.

³Ibid.

Peddlers and Taxi Driver File: All of the applications are cleared by fingerprint checks where local law requires.

Pistol Licenses: All applicants for pistol licenses, carry or premises, are cleared by a fingerprint check with the identification bureau, state and federal agencies.

Rogues Gallery File:¹ Color photographs, filed by sex, color, age, and height grouping.

Modus Operandi Criminal Records

Modus Operandi, literally translated, means "method of operation."

In police work, it is used in connection with the activities of the criminal. The modus operandi, or method of operation of a criminal includes his individual peculiarities and the methods, techniques, and tools which he has used in committing a crime.²

William H. Hewitt states in his book, Police Records Administration that one theory upon which the MO System has been developed is that the criminal, like all human beings, is a creature of habit.

A habit may be started intentionally or accidentally. After a thing has been done once, memory will then assist and will determine whether or not the previous action will be repeated. Repetition will be influenced by the success or failure of the previous act, or the sensation of pleasure or displeasure felt when it was committed. If we are successful in doing something for the first time, we are likely to repeat the act in the same way--possibly making what we believe to be minor improvements.

His habits or his methods will be more or less influenced by the success or failure which he has in his operations.

We cannot say that he will always use the same tools, the same methods, or confine his crimes to attacks on the same type of buildings or against the same class of people, but the habitual criminal is inclined to follow the same pattern often enough that a systematic recording and indexing of such characteristics is of value to the investigator in identifying and apprehending him.

Factors other than habit may also affect the criminal's method of operation, such as his past training, his physical capabilities, his status as a fugitive, or the availability of a 'fence' to whom he can sell particular types of merchandise.

¹Ibid., pp. 501-502.

²Ibid., p. 463.

The modus operandi system of investigating and reporting a crime is one of the tools which the investigator has to assist him in his duty.

Report forms may vary slightly in different law enforcement agencies, but the modus operandi factors of a report are generally set forth in the following outline:

1. Time of attack--or date and time committed
2. Person attacked
3. Property attacked
4. How attacked
5. Means of attack
6. Object of attack
7. Trademark of peculiarity
8. What the suspect said
9. Transportation used

The crims report will also include information which is not strictly a part of the suspect's modus operandi, such as physical description or description of the property stolen; it will be of value in identifying him and in assessing responsibility for the crime.¹

Filing Cycle

Control of the creation, use, maintenance, retention, protection, preservation, and retrieval of records is recognized as an important phase of law enforcement management. Costs of handling the increasing number of records, particularly the storage of records, has increased the need for proper procedures.²

The following steps are necessary in an information storage and retrieval system:

1. Processing of data to create records containing accurate, uniform information
2. Storage of information
3. Control of record activity and information flow
4. Retention of adequate records
5. Protection of recorded data
6. Instant retrieval of information
7. Disposal of inactive or unnecessary records³

¹Ibid., pp. 463-464.

²Ibid.

³Johnson and Kallaus, op. cit., pp. 73-100.

Law enforcement agencies must establish some routine to provide for the regular and reliable collection of all papers to be filed. Records can be lost or misplaced before the actual filing operation begins. Each report or record to be filed is marked to show that it has received the required attention and is ready for filing. Such marks, known as release marks, may be initials, the date, or both.¹

Indexing, the second step in the filing cycle, is the process of determining the name, subject, or other caption under which the record is to be filed. In selecting an indexing caption, the indexer must determine the most likely heading under which the record will be requested.

Step three, coding, is the process of marking the record with the caption selected during the indexing operation. Sorting, step four, is the alphabetizing of records according to the captions selected. The process of placing papers in the files is speeded by arranging the records alphabetically.

The fifth step is storing or placing the records in a file container, according to a predetermined plan.²

Records Creation

Records creation is the recording of information on paper, printed forms, punched cards, tape, or any other information-transmitting media.³

The objectives of controlling records creation are as follows:

1. To limit the making of records to those essential in carrying out the organizational function.
2. To simplify, standardize, and improve the quality of essential records.
3. To produce, handle, and use records as efficiently and economically as possible.⁴

¹Whisenand and Tamaru, op. cit., pp. 3-5.

²Ibid.

³Griffin, op. cit., p. 13.

⁴Ibid.

The ultimate goal of record keeping is to reduce the volume and to improve the quality of recorded information. Approximately seventy percent of record cost is incurred when records are created.¹

The New Haven, Connecticut, Department of Police Service is developing a national reputation for pioneering work in the area of law enforcement record creation methods geared to the urgent needs of today's urban scene.

Typical is the flexible new telephone recording method for entering police reports which uniformed officers recently began phasing into. It was initiated in the detective division nearly a year ago. The new system will completely replace the traditional and time-consuming typing and longhand reporting with a dictating procedure using a Norelco Central Dictation System.²

The Wolcott, Connecticut, Police Department has added one hundred on-the-street man-hours to its force--without taking on more personnel.³

What's more, it is getting neater, more business-like reports, faster availability of information, and a superior use of office time.

Making the difference in efficiency at the 25-man department is a call-in-and-record system installed by Chief George C. Ranslow as a means of increasing protection without incurring higher personnel overhead.⁴

While records are of vital importance in maintaining control and efficiency in police operations, sometimes the number of reports and the time needed to prepare them has a tendency to engulf police personnel in a mass of paperwork.⁵

¹Ibid.

²Joseph P. Bartlett, "New Reporting System," Law and Order (March, 1971), 49.

³James Edwards, "Call-In-and-Record System," Law and Order (May, 1969), 100.

⁴Ibid.

⁵W. C. Van Buren, "Santa Cruz Police Department, One-Write Form System," Law and Order (December, 1970), 29.

The ideal way to solve this paperwork problem would be to have a single report form that would serve to record every type of police function with sufficient information and copies to provide for all or most known and contingency uses. Because of the nature of police operations, such an ideal has yet to be reached.

. . . A new Complaint Assignment Record form was developed that has eliminated a number of former record forms, log books, and other entries; speeded up paperwork handling; provided quicker and more assignment information to command officers; and provided better source records for data processing use while being utilized as a patron unit control document in the interim.¹

"The new form system has been in use for several months now," Chief Pini of Santa Cruz reported, "and we have found it far superior to our old method. Clerical records-handling time has been drastically reduced and copying errors have been eliminated. We also secure additional data, not previously available, which assists us in carrying out our duties."²

Information Flow

Law enforcement agencies cannot exist without adequate, accurate records. Records as an accumulation of knowledge and information serve a company as a memory serves a human being.³

The flow of information through a police department is a vital law enforcement activity. This is because investigation cannot begin, stolen property cannot be recovered, and suspects cannot be apprehended until the appropriate individuals have received copies of initiating reports. Thus, in essence, the more efficient the information flow, the more efficient the police department.⁴

The information flow for ORACLE, the new program of county-wide television information system for the Los Angeles County Sheriff's Department is as follows:

¹Ibid.

²Ibid., p. 30.

³San Houston, "Information Flow--A Key Factor in Law Enforcement," Law and Order (July, 1970), 29.

⁴Ibid.

To file a document in the Videofile system, an operator seated in front of a filing console places the document face down on a glass plate. Underneath the plate and pointed upward is a high-resolution television camera which scans and televises the document. To assure that the document is being televised properly, its image is shown on a television screen in front of the operator.

The camera, which attains resolution equaled only by spacecraft television cameras, converts the image to television signals.

The video signals are guided by the system control section to one of many large tape recording and playback machines (tape transports) and recorded on magnetic videotape. This is video recording, familiar to many people as television's 'instant replay.'

A second set of signals also is sent to the tape transport at the same time, but in computer language. These signals (digital address code) are keyed in by the operator while the document is being televised, and are also recorded on the tape adjacent to the document recording. The address identifies the document so it can be quickly retrieved.

To retrieve the document, a requestor keys in a series of numbers which translate into the document's digital address code. The appropriate reel of tape is located and the tape transport, directed by the system control section, searches the tape for the document.¹

The Redondo Beach, California, Police Department's survey of the paperwork processes in law enforcement performed by the North American Rockwell Information Systems gives a summary flow of police information through a typical law enforcement document system as displayed in Figure 3, page 119.

The flow diagram illustrates first the collection of data through submittal of field reports by the police officer. These reports flow to the case file, arrest file, or a special file through a system which requires logging, on ledgers, or tally sheets pertinent data required for local, state, and federal summary statistical reports.

Basic retrieval from these files is through a master name index, which usually has a summary of the related crime or incident, and references to associated file numbers. Index cards are prepared and filed to provide special information requirements such as accident locations, stolen, lost, found, or recovered property, or to indicate the existence of warrants.

¹Gregg Perry, "Law Enforcement Record-Keeping by Television; ORACLE: The Los Angeles County Sheriff's Department Videofile Information System," Law and Order (July, 1969), 80.

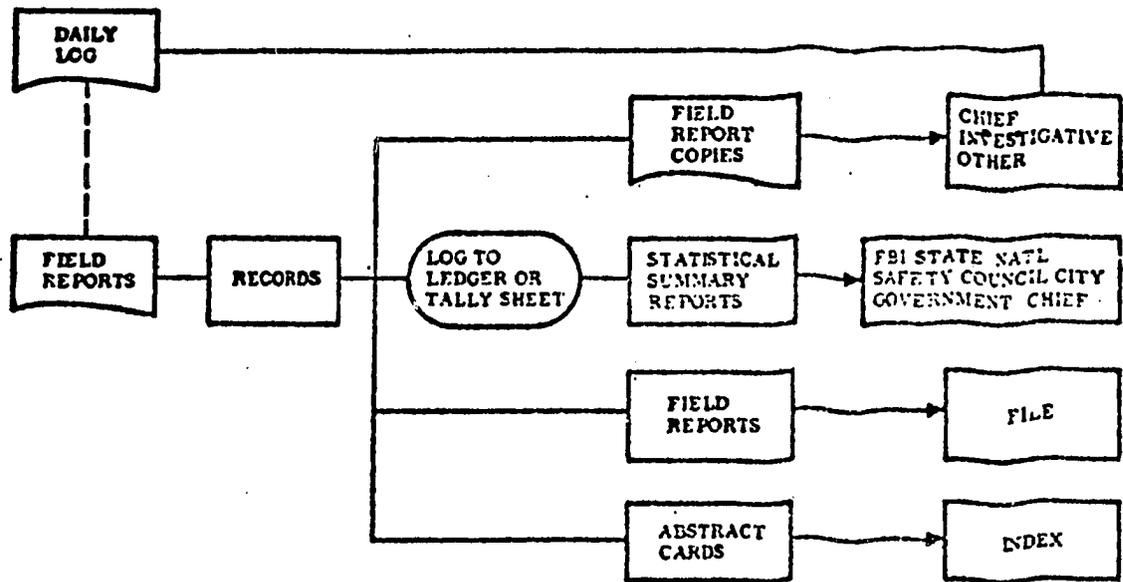


Fig. 3.--Information Flow Summary

In addition to replies to specific inquiries, the chief and other members of the department receive information from several sources. These include copies of the daily log and/or field reports. These copies are provided on a daily basis, and rarely is any effort at selective reporting relating to the recipient's needs attempted.

A final source of system-produced information consists of summary statistical reports prepared monthly and annually for city and other governmental agencies. These reports are designed for other agency use, and do not reflect information in a manner which will facilitate internal operations, planning, or control.

The report control (or information control) plans observed during the survey vary from virtually no control to strict accountability for every incident, offense, and activity. Three common patterns were found and are illustrated in Figure 4, page 121.

The most common practice, in 62 percent of the police departments surveyed, is shown in Pattern A (Figure 4) and relies completely on the officer's decision whether or not a report should be prepared. There is no provision for the assignment of a control number by the dispatcher. Consequently, there is no opportunity for matching events in incoming reports. In the absence of definitive departmental policies as to what constitutes an incident or activity requiring a formal report, this procedure places a great deal of authority with the field officer.

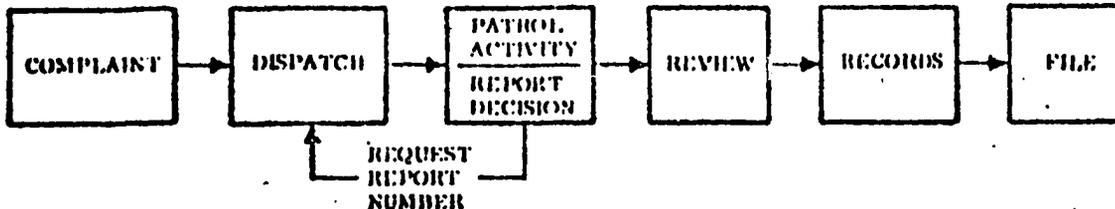
The other extreme in report control is illustrated in Pattern B (Figure 4). Some version of this basic plan is utilized in 25 percent of the departments. The procedure has a built-in requirement for the assignment of control numbers to all dispatched complaints or incidents observed in the field. The assignment of control numbers is made by the dispatcher. The procedure requires matching of control numbers to incoming field reports either at the point of report review and approval or at the entry into records for processing. All incidents require formal reports by the responsible officer.

The control plan shown in Pattern C (Figure 4) is a moderate approach used by 13 percent of the survey departments. All complaints require a disposition of the incident but do not necessarily require a formal report. Disposition is made by signing the control card or sheet. The matching of the assigned control number and the report often is optional in this plan.

Many departments justify a strict accountability procedure with reasons which are defensive in nature--to show some evidence of response to complaints received or incidents observed in the field when questions are raised by citizens or special interest groups.

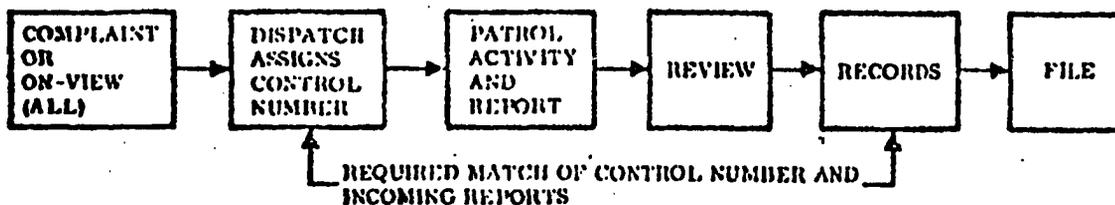
Many departments use a complaint record or 'dispatch card' concept of report control, but less than ten departments of the forty-six surveyed are using this record as a source of useful data. In these

NO CONTROL NUMBER ASSIGNED
OFFICERS DECISION TO REPORT
NO MATCHING



PATTERN A

ALL ACTIVITY ASSIGNED CONTROL NUMBER
A MATCH TO REPORT REQUIRED

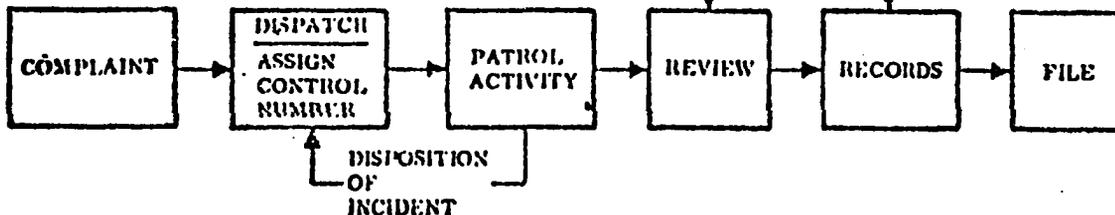


PATTERN B

ALL COMPLAINTS REQUIRE DISPOSITION OF THE INCIDENT
(NOT NECESSARILY A FORMAL REPORT)

MATCHING IS OPTIONAL.

MAY MATCH MAY MATCH



PATTERN C

Fig. 4.--Report Control Plans Observed

cases the control form provides a means of establishing the data required for total activity evaluation, response time measurement by type of incident, and finally, serves as a departmental record of minor infractions where it is sufficient.

It is the practice of many departments to permit officers to write their reports at the end of their watch. Often the supervisor reviewing the reports is on the next watch, and has only limited knowledge of the circumstances surrounding the reported incident. This tends to encourage cursory rather than comprehensive reviews.

In those departments which utilize mandatory matching of assigned control numbers and incoming reports, the review emphasis is placed on the matching of documents and control numbers rather than on the quality of the information contained in the reports.

In the absence of definitive management policies relative to the amount and quality of data required, supervision has no real criteria other than obvious omissions (e.g., street addresses, dates of birth, times) and grammatical errors. What is considered a review signature is actually an indication of the routing of the incoming field report through the organization structure.¹

Rieder concludes that there is a startling consistency of current practice in police records and information management; this consistency of approach is nationwide.²

Record Storage

Storing useless documents with important records makes searching and finding needed information more difficult and, in some instances, impossible. Most records encountered are mainly operational; they are the useful forms that impart information on routine matters and help carry out the daily duties of those who receive them. Operational documents are generally utilized for a brief span of time.³ Portions of these records having more durable value are frequently extracted from the entire original document and incorporated in a more important and lasting form.⁴

¹Robert J. Rieder, "Police Paperwork Problems: A Limited Survey of Law Enforcement Document Handling," Law and Order (October, 1970), 103-104.

²Ibid.

³Ibid.

⁴Ibid.

Police records have been kept in many ways, from filing in pigeonholes to the use of computers. The method used for storing records, however, is but one small facet of the overall system. Of prime importance are the facts contained in those records, their retrievability, their susceptibility to meaningful analysis, and the use to which their contained information is put.¹

Filing Equipment and Record Storage

The drawer file is probably the most basic form of record-keeping equipment, but law enforcement agencies can choose from among many types: visible storage installations, rotary and mechanized files, open and closed types of shelf filing equipment, transfer cases, and visible record equipment. Drawer files offer compactness without decreasing the accessibility of filed material, look neat, offer security from theft and fire, are available in various sizes and can be adapted to fit practically any filing system. Two other popular methods are shelf filing and mobile storage installations.²

"Basically, shelf filing consists of arranging file folders on shelving to make the material easily accessible."³ Shelf files offer a high degree of compactness at a relatively low cost. The shelf units can be placed closer together than file cabinets. Advocates of the open-shelf equipment estimate it provides twice the storage at about one-third to one-half the cost of closed cabinets and about 25 to 50 percent floor space is saved. Shelf filing will also increase efficiency in the retrieval of records since the folders are visible and easy to locate.⁴

¹Hewitt, op. cit., p. 6.

²Peck, op. cit., pp. 90-100.

³Ibid.

⁴Ibid.

Microfilm, another system tool like punched paper tape and the tabulating card, provides an effective medium of records storage. Like any other system tool, microfilm has its place in a law enforcement agency's overall information program. "Properly utilized, it can solve problems; in the wrong application, it can create bottlenecks and cause needless expense."¹ There are generally five reasons why a law enforcement agency should want to preserve records on microfilm rather than in some other way:

1. To conserve space and equipment.
2. To protect vital records.
3. To provide an information storage and retrieval tool.
4. To serve as part of an active business procedure or system.
5. To facilitate reproduction or transmittal of records.²

"It is worth while to note that three of the five reasons given involve day-to-day active business systems rather than storage. It is not wise or profitable to consider microfilm merely as a tool for saving space."³ In fact, microfilm is sometimes overused in that particular application.

With many new devices to aid quick retrieval, microfilm is becoming increasingly important in storage and retrieval areas. There is enough space in an average desk drawer to store almost fifty miles of continuous forms, after a twenty-six to one reduction has taken place on microfilm. Ease of storing and handling microfilm copies makes them convenient to use. Information recorded is easily read, and the production of a facsimile print of a record is easily accomplished. Microfilming records as they

¹ Joseph L. Kish, Jr., and James Morris, Microfilm in Business (New York: The Ronald Press Company, 1966), p. 3.

² Ibid.

³ Ibid.

are produced saves later rehandling and also provides more complete protection against possible record damage or loss by eliminating any unnecessary and inefficient time lag.¹

Tremendous savings are effected in the use of microfilm by police agencies. An album containing 150 photos in the old 'mug book' system, formerly cost about \$25 and weighed 10 pounds. A toll of microfilm, as presently used by the Chicago Police Department, containing 4,000 photos costs less than \$5 and contains all the information previously housed in 28 albums. This 100 foot roll of 16 mm film is so small it barely covers the palm of a man's hand.²

The Identification Section, Records and Communications Division, of the Chicago Police Department utilizes microfilm in criminal identification.

Instead of requiring victims of witnesses of crimes to appear at the Identification Section to look over 'mug shots,' detectives now take a portable microfilm reader to the scene of the crime. Having classified pictures of suspects on microfilm according to Modus Operandi, identification is facilitated. The initial Modus Operandi file was broken down as

Vice	Auto Theft Section
Narcotics	
Gamblers	Burglary Section
Hoodlums	
General Section	Robbery Section
Con-men	Homicide-Sex Section
Pickpockets	
Check-passers	
Shoplifters	Organized Crime Section

Each of these is further broken down by sex, color, age group and height. Thus, when given a description of a criminal, police produce the appropriate reels of cross-referenced film for identification.³

Through use of a computer-linked microfilm system, the Baton Rouge, Louisiana Police Department has eliminated a major paperwork problem and released five patrolmen for line duty.⁴ Chief Bauer states:

¹Hewitt, op. cit., p. 637.

²Ibid.

³Chief E. O. Bauer, Jr., and Major Emery B. Morel, "Microfilmed Records Free Five Officers for Line Duty," Law and Order (August, 1971), 54.

⁴Ibid.

Information-filing and retrieval involves the addition of more than 10,000 pieces of paper per month in eight record-keeping areas. Before we went to microfilm the files were jammed to capacity with more than 3.5 million documents dating back to the early 1950's.

A file inquiry, using the division's card index methods, was a slow process, and, in some cases, the data couldn't be found at all because of misfiled documents or removal by officers working on a case.

Further complicating the problem was a lack of expansion space for document storage. Twenty-six four-drawer file cabinets (stacked two drawers high) were in service, plus four banks of floor-to-ceiling 'pigeonhole' type file shelves.¹

Chief Bauer continues:

The Miracode system is a complete information retrieval system encompassing data-handling from original entry to retrieval and hard-copy prints. It has trimmed the time required for record retrieval to less than two minutes.

Moreover, the microfilm system virtually paid for itself during the first year of operation by making it possible for us to release the five line officers (rookie policemen and women clerks now perform the duties of these experienced officers), phase out twenty-two of the file cabinets, and significantly improve division efficiency.²

Chief Bauer and Major Morel note that:

. . . the value of microfilm in police work is obvious. It is a fast method of retrieving specific data--less than ten seconds to search a complete roll of film. It eliminates the volumes of pictures that a victim might have to plow through in the conventional 'mug' book or file, and it saves space.

. . . The microfilm system has solved a substantial problem that had been unresolved for some time--future expansion. Paper records are no longer to be considered, since microfilm storage puts millions of documents into a few square feet of cabinet space.³

In summary, these two law enforcement administrators state:

. . . The real payoff, however, is our improved service to the courts, fellow police officers, and the public. With increases in crime and the need to get full value from police department budgets, the advantage of returning experienced officers to the line duty in itself would have justified the installation of the microfilm system.⁴

¹ Ibid.

³ Ibid., 59.

² Ibid., 55.

⁴ Ibid., 67.

Records Retention

An effective records management program is one that regards stored material to be necessary information; has the integration of files on a company-wide basis as its main objective; keeps essential information accessible; implements the disposal of worthless paper; and facilitates the control of forms, systems, and procedures.¹

In 1920 Raymond B. Fosdick wrote in his excellent treatise, American Police Systems:

In several cities, notably St. Louis, Detroit and New York, a number of admirable records are maintained which can be studied with profit, although they vary in thoroughness and practicability with changing administrations. Certainly no record system is complete which does not afford the head of the detective bureau constant control over the work of his men by giving him at a glance a list of the cases which each is handling. To the absence of this information and control may be ascribed much of the careless hit-or-miss work which characterizes many of our detective bureaus today. Nor can a record system be called successful which fails to show the cases pending at a given moment, classified according to crimes, so that the head of the bureau, as well as the chief of police, has constantly before him the statistical measure of his accomplishment or failure. Without this information there is no way of ascertaining the weak spots in the department's work; consequently the force cannot be shifted to meet new problems or mobilized to attack an overwhelming outbreak of crime in a particular precinct.²

Fosdick also remarks:

As far as crime records are concerned, it is a safe generalization that every scrap of information worthy of being recorded on a precinct police blotter is worthy of permanent classification at police headquarters, whether it be a complaint, an arrest, a fire, a lost child or a stray animal. Sooner or later all this information is useful to the police in the prosecution of their work. Upon its careful tabulation a great deal of their success depends. Classification of missing persons, or stolen property, and of all sorts of crimes and criminals are increasingly indispensable to police forces as social relationships become more complex, and the problem of delinquency more difficult to handle. . .³

¹Place and Popham, op. cit., pp. 175-191.

²Raymond B. Fosdick, American Police Systems (New York: The Century Co., 1920), pp. 346-348.

³Ibid.

Record Control

Although control of the preparation and use of records should be the concern of everyone who works with them, an overall control of files is important in order to get worthwhile materials coordinated, properly classified, and safely filed so that required information can be retrieved quickly. Types of control include: (1) centralized, (2) decentralized, and (3) centralized control for decentralized locations.¹

There is much controversy among police officials and police science experts over whether or not police information files should be centralized or decentralized. In centralization of records, information files are in one central location under the direct supervision of a staff or other appropriate officers; in decentralization, the bulk of the records are in the headquarters division and contain designated records that are maintained either in the local bureau or in the precincts.²

Hewitt recommends that the information system be centralized. This insures its continuity, integrity, and security. There may be occasions when certain records are needed at the division, bureau, or precinct level. Hewitt gives the advantages of centralized information systems as follows:

1. Increase specialization in work.
2. Concentration of information activities in the hands of fewer individuals who can cultivate skill.
3. Training, supervision, control, and the placing of responsibility disentangled.
4. Inaccuracies resulting from want of skill, deliberate distortion, or unconscious inclination to make favorable returns minimized.
5. Time in hunting for records saved.

¹Place and Popham, op. cit., p. 20.

²Hewitt, op. cit., p. 29.

6. Passing the buck and pointless delay avoided.
7. Instant response to all calls from the community by telephone, radio, or telegram possible.
8. Uniform and consistent classification of crimes and other information data assured.
9. A skillfully administered central information system contributes to the effective and efficient operation and management of the department.
10. Single division head responsible for the effectiveness of information.
11. Data for administrative control assured.
12. Judicious distribution of resources and manpower promoted.
13. More valid evaluation of the efficiency and economy of operation permitted.
14. Readily available information for both short-and long-term planning created.
15. A prudent guardian for the assets of the department furnished.¹

Hewitt gives the following as pitfalls that may be encountered in a decentralized information system for law enforcement:

1. Ever greater decentralization.
2. Complete decentralization.
3. Individual, uncoordinated systems within a single unit.
4. "Vest pocket" records systems for each officer and detective likely.
5. Effective management of the department difficult.
6. Weaknesses of individuals and units not easily ferreted out.
7. Assignments cannot be judiciously made.
8. Integration of the numerous activities of the department into a well-rounded police program not fully realized.
9. No assurance that an honest accounting of police work is being developed.
10. No control and supervision over the quality of police reporting procedures.²

In summary, on the subject of centralization of police records,

O. W. Wilson made the following comment:

The integration of police records into a single centralized system provides many advantages that enhance the effectiveness and the facility of their use. . . . A specialized records staff views record-keeping more objectively than operating personnel whose effectiveness is reflected in the records themselves. . . . Information is available to all members and search for records is simplified and speeded up when the various records that relate to a specific incident, person, location, or problem are coordinated, and concentrated in one place. A centralized records system also assists in placing responsibility for the performance of each police task.³

¹Ibid., p. 28.

²Ibid.

³O. W. Wilson, Police Planning (2nd ed.; Springfield: Charles C. Thomas, Publisher, 1957), pp. 56-57.

Record Retrieval

All law enforcement agencies require fast information retrieval from stored records. Joy West has made the following statement concerning "police trouble areas" and "rapid information retrieval":

The ability of police agencies to anticipate trouble areas and detect crime trends through rapid information retrieval is one of the most effective crime deterrents available to law enforcement officers. Yet most police departments, large and small, are using such antiquated record storage systems that retrieval of information is virtually impossible. The nation's police are inundated with paper.¹

The need for instant and timely information is critical. "The value of information decreases proportionally with the time delay between the request and the response; long delays are intolerable."²

Too frequently, a person is released after being charged with a relatively minor offense, only to have it discovered a day or two later that he is wanted elsewhere for a more serious offense. If an officer stops a suspicious vehicle and radios his dispatcher for a vehicle check, he cannot wait for hours before he gets a response. If the car in question was stolen and the officer learns this an hour after the car is released, the vehicle check becomes worthless. In a potentially more critical situation, the officer may have been approaching a car wanted in connection with a serious crime and the occupants may have been armed and extremely dangerous.³

Computerized information retrieval for such information as criminal histories, warrants outstanding, and vehicle information is currently available through the National Crime Information Center:

. . . For example, consider all of the case histories, warrants outstanding, stolen items, et cetera of all law enforcement agencies throughout the country, including Canada, being available on request from one of several criminal data banks. Further, consider that the response time is limited only by the interrogator's ability to interrogate the storage bank. Such an arrangement, now partly operational in the form of the NCIC (National Crime Information Center), would permit a look-up on every suspect detained for any reason. With the

¹Joy West, "Microfilm Solves Paperwork Dilemma," Law and Order (May, 1969), 107.

²Florida Crime Information Center, op. cit., p. 3. ³Ibid.

NCIC producing approximately 600 hits per day imagine the potential if a computer was available that was 1,000 times faster than the current models.¹

"There's only one really indicative measure of computer speed: throughout. This is a measure of how fast a computer does a given task."² In summary, the efficiency of information retrieval for law enforcement agencies will be much more effective in the future. "It's felt by many experts that by 1980 computers will be about 1,000 times faster than they are today."³ Increased computer speed will certainly aid law enforcement agencies.

Record Protection

The Florida Crime Information Center states:

. . . In a real-time environment, every precaution must be taken to guard against data loss and file damage. Each program in the system must constantly check and recheck itself and other programs. Key data must be checked each time a file or record is accessed. Precautions must be taken to prevent unauthorized access and unauthorized use of FCIC data. The system must report all activity by each terminal and each type of information request to a special team responsible for monitoring the system. Any abuses of the system must be detected and dealt with immediately.⁴

Phil Schiedermayer notes that the safeguards necessary to preserve the data are generally the same ones which have for many years applied to secret national defense information:

. . . personnel screening and clearance, 'need to know,' protection of the input (often overlooked), as well as the information in the memory bank or libraries--perhaps with a classification system, whether it be Secret, Company Confidential, or 'Personal Private'--and control of the distribution of that information outside the Electronic Data Processing (EDP) Center.⁵

¹William Shaw, "The Role of the Computer in the Coming Decade," Law and Order (February, 1970), 63.

²Ibid., 60.

³Ibid.

⁴Florida Crime Information Center, op. cit., p. 15.

⁵Phil L. Schiedermayer, "The Many Aspects of Computer Security," The Police Chief (July, 1970), 20.

The State of Florida Crime Information Center notes that a provision for data backup of each file in the system is of paramount importance.

. . . If a file such as Criminal History were destroyed and no backup were provided, several man-years of effort would be required to build a new file. Files must be capable not only of being re-created, they must be capable of being re-created quickly. If a file goes down, a backup version must be standing by which can be placed on-line within minutes. Duplicate copies of active files must be maintained in case of malfunction; a copy of the Criminal History File might be stored on magnetic tape to replace the standard version normally resident on a magnetic disk storage device.¹

Schieder Mayer also states that:

. . . when the privacy issue comes up in relation to the computer, there is not only the problem of protection of the data in the computer from unauthorized access, as, for example, government or industrial espionage, but also the question of whether the vast array of personal information should be gathered at all into such a neat, compact package.²

The police are commissioned to uphold the law, but there are presently no laws governing what data banks may store and what they must not store. Once again the 'big brother' aspects of the computerized society raises its head. "Probably the best way to protect an individual from misuses of data banks is to show him exactly what the machines have to say about him and to give him the right to protest."³

Noel Greenwood wrote an article for the Los Angeles Times entitled "Computer Data Opens Door to Supersnooping." Greenwood reported proposals on records protection as follows:

1. Records would permit an individual to inspect his own file and challenge information in it if he believes that information is incorrect or unfairly stated.
2. Records would allow an individual to learn the name of any person who has had access to his file, and why that individual was given access to his file.

¹Florida Crime Information Center, op. cit., p. 16.

²Schieder Mayer, op. cit., 21.

³William Shaw, "The Computerized Society," Law and Order (July, 1971), 84.

3. Records would allow an individual to know where the data in his file came from.
4. Donn B. Parker, of Stanford Research Institute, has suggested that computer personnel working in sensitive areas of data be licensed by the state.
5. The experts talk about a variety of security measures: e.g., encoding all personal data in computerized files, requiring users to 'unscramble' the data before it is of any value.
6. John M. Cunniff, director of data communications for IBM, says a secure computer system should have the ability to identify each user and verify his right to use the system. Passwords, numbers, special keys and badges can be used singly or in combination to make the system operative, he notes. IBM is doing developmental work on identification by voice, and other experts have suggested fingerprints could be the means of entry to a system. Additionally, says Cunniff, a first-rate security system within a computer would be able to verify that the user is authorized to do what he has requested.
7. Cunniff envisions computer security systems with built-in spying ability to detect all accidental or deliberate attempts by users to violate the system.
8. Other experts have proposed data systems in which actual names of persons would be kept separate from their files. Files would bear, for instance, a special code number, and access to the master lists matching code numbers with names would be highly restricted.
9. There's no guarantee that even the most expensive combination of security measures would be foolproof.¹

According to Shaw, ". . . locks, guards, and burglar alarms, in a computer sense, do not exist physically but rather in the form of passwords and access codes."² Shaw concludes by saying that by exercising the right controls, unauthorized access to computer files could become almost impossible.³

In summary, records and computerized records systems need to be "people proof." The measures to "people proof" the computer stretch to infinity. Schiedermaier notes:

¹Noel Greenwood, "Computer Data Opens Door to Supersnooping," Los Angeles Times as reported in Schiedermaier's "The Many Aspects of Computer Security," The Police Chief (July, 1970), 64.

²Shaw, "The Computerized Society," op. cit., 84.

³Ibid.

Some measures should be applied in virtually all cases, some only for high risk situations. They have a cost in dollars, in morale, in efficient utilization of equipment. These measures include pre-employment screening, indoctrination programs, recertification after maintenance, lie detectors, undercover people and undercover audit programs, fidelity bonds, etc.

Why is all this necessary in computer security and record protection?

It isn't necessary for computer security! Outside of the movies, there has been no situation so far in which a computer has ever 'knowingly, willfully, feloniously and with intent to harm' committed any crime. People do that. This makes the protection problems not simple, but familiar, because it is NOT the machine which is so complicated, but the human mind.¹

Records Automation

The complexity of police problems and the volume of data to be accommodated are now reaching the point where the human factor is being challenged, and recognition must now be given to the gear of technology. Electronic data processing is now making available on a technologically feasible and acceptable cost basis information storage facilities of sufficient capacity and magnitude to foster the centralization of police records operations at the state level and on a statewide basis. The larger metropolitan departments may prefer to maintain their own supplementary computing and storage equipment, but this would not limit their participation in a statewide system.²

The use of automated equipment to develop management information is growing rapidly. "The objectives of an automated police information system are centered in the system's intended contribution to local law enforcement, total municipal government, and criminal justice agencies."³

¹Schiedermayer, op. cit., 67.

²V. A. Leonard, The Police Communications System (Springfield, Illinois: Charles C. Thomas, Publisher, 1970), p. 44.

³Whisenand and Tamaru, op. cit., pp. 7-19.

As the flow of information increases, the sheer volume calls for condensation and abstraction to highlight aspects without necessitating wading through thousands of facts.

Time and its judicious use is becoming--if it was not so in the past--one of the most important current considerations in the law enforcement operations. Larger departments having facilities for electronic data processing ultimately turn to this method for conserving time. Extensive studies are conducted in order to determine faster and better ways of performing tasks. Revisions in forms, policies, and operational procedures are being made daily in numerous departments, in an attempt to cope with the growing volume of data which constitutes the end result of the information explosion. This information explosion, in conjunction with the need for more operational time, has posed a serious problem to the law enforcement administrator in being able to provide his officers with the information which they require [to effectively carry out] their assignments.¹

The automation of files has increased the retrieval speed and decreased the number of personnel needed to service a record department. "Computers appear to offer the only way out of the morass of paperwork which is now clogging the channels of communication and impeding effective police work throughout the nation."²

Traditionally, the law enforcement 'man on the beat' has had a dynamic role. His dealings with the public, his responsibilities, and even crime, have steadily increased at a very rapid rate. New demands are made of the policeman daily; but until very recently the policeman has been provided with tools not much more advanced than those he used thirty years ago. Two major innovations which have assisted him in keeping up to date are the teletype and two-way radio. Recently, another powerful tool has been provided to the law enforcement family: the electronic computer. Through the use of two-way radio, teletype, or even telephonic communication, the computer arms the policeman with one of the latest and most effective weapons in his crime-fighting arsenal: timely and accurate information. The need for timely data is no greater in any other environment than in law enforcement. In addition to timeliness, data must be accurate and complete.

¹Martin R. Gardner, Sr., "Police-Vehicle Instruction Information Aid," Law and Order (December, 1968), 40.

²John L. Buckley, "The Future of Computers in Security and Law Enforcement," Law and Order (August, 1965), 11.

Computers in law enforcement data processing are capable of performing many tasks more economically and efficiently than could be accomplished manually.¹

William Shaw in his article, "The Role of the Computer in the Coming Decade" states that "by the simple process of elimination the computer technology stands out as the only area that will have any material impact on present-day police operations."² Shaw continues:

. . . the computer may never be adapted to some of the most hoped for police applications such as automated fingerprint or bullet identification, but this will not be because of the limitations of computer science but rather the practical aspects of acquiring samples in such a way that positive comparisons can be made. . . However, the point is the vastly increased speed, capacity, and decreased cost of tomorrow's computers will permit practically all levels of law enforcement to have available to them problem evaluation capabilities.³

Shaw further states:

. . . Currently specialists working for computer manufacturers as well as 'software factories' are analyzing law enforcement problems in a piecemeal manner. It must be grudgingly admitted that at this early stage it is the only logical approach. By pure necessity, however, this approach must change, because if law enforcement professionals do not become computer oriented by their own volitions, then they will be forced to by the very fact that they are the only ones who really understand the problems at hand. By this I do not mean that the police professional will have to learn the basic of computer programming but rather the capabilities and limitations of various computers . . .⁴

Rieder notes in his article, "Command and Control for Law Enforcement," that:

. . . At a minimum, a computer system can provide a significant service in the area of information storage and retrieval. Such items as a street index, vehicle status, vehicle availability, and want/warrant information can be routinely entered into the computer and retrieved upon demand. Through the use of mobile teleprinters in the Field Units and appropriate automatic switching in the command and control center, it is conceivable that officers in the field can query the

¹Florida Crime Information Center, op. cit., p. 3.

²Shaw, "The Role of the Computer in the Coming Decade," op. cit., 58.

³Ibid., 64.

⁴Ibid., 67.

computer directly. Even status and other reports can be transmitted from the field, processed through the computer system, and culminate in typed summaries of arrests or other actions taken.¹

Several major systems of information retrieval have been built around automated files. One such system combines closed circuit television to give great speed to the locating and transmitting of information. In this system, the automated file houses aperture cards with microfilm images. When a record is requested, the records librarian immediately retrieves it from the file and drops it into the slot of a television transmitter. A monitor receives the image so that the document can be read. If a hard copy is desired, a printer can be tied into the monitor unit to yield copies in seconds.²

Hewitt points out the following advantages of automation:

. . . reduction of search time; greater reliability and accuracy of search by eliminating the human equation; constancy of speed and accuracy per 24-hour period (no fatigue factors involved); computer could take advantage of peak reception periods for prints by 'batch searching'; allowance for increase in latent print searching; expansion possibility based on yearly ten percent growth factor; provide more efficient Modus Operandi and General Appearance file; decrease costs and reduce personnel requirements; expedite prisoner arraignment for courts and increase efficiency of security measures. An added feature worthy of mention would be the possibility of linking with computers of other police agencies on a regional or national basis, thus providing access to a greater number of files and exchange information with other municipal, state, and federal agencies.³

In William Shaw's article, "The Computerized Society," he notes:

. . . Computers have already affected the lives of every man, woman, and child in this country and have already found wide and important use in police work. . . there is nothing on the technical horizon which will have anywhere near the effect on police operations as will the rapidly growing computer network.

¹Robert J. Rieder, "Command and Control for Law Enforcement," The Police Chief (July, 1970), 29.

²Edward J. Menkhaus, "Tulsa's Multi-Media System," Business Automation (April, 1970), 54.

³Hewitt, op. cit., p. 643.

. . . what the majority of law enforcement professionals do not realize is that computer technology is advancing at such a tremendous pace! If you reflect on the history of law enforcement you will see that police operations remained pretty much the same until the advent of the motor vehicle and the telephone. High speed transportation and rapid communication transformed the police officer on patrol from an island unto himself into a member of a mobile and integrated team. But, keep in mind this did not come about because law enforcement needed these tools, but rather because our technical progress forced the police to keep up with our high speed, fast communicating society.

History tells us that the development of the automobile and the present communications network was comparatively slow when compared with the service career of a police officer. That is to say that a young police recruit in 1920 spent his entire career watching technical progress bring police work to the highly mobile system it is today. The rookie police officer of 1971, and the veteran of ten to fifteen years service, will not pass through a similar slow period of technical progress. Ten years from now the computer will so change society and consequently law enforcement work that even the most respected crystal ball gazers are hesitant to make anything but generalized forecasts.¹

According to John L. Sullivan, "the number one domestic problem in the United States is crime. As in other aspects of human endeavor, law enforcement agencies have appealed to science and technology to help solve this billion dollar social dilemma."²

The response has been spectacular. Scientists and technologists in every field are working in industrial and other research laboratories to develop new equipment and to utilize existing equipment to meet the challenge of crime.

Probably no single technological tool has helped law enforcement more in developing efficient methods in combating crime than has the electronic computer. The use of the computer ranges from relatively simple accounting and bookkeeping procedures to the actual enforcement of laws. The advantage of the computer is that it can store enormous numbers of records in the memory of a digital machine and that any one of these records can be retrieved almost immediately upon command. Since law enforcement depends heavily on records, reports, and numerous other kinds of data, a major problem has been record keeping and the retrieval of information at the source of need. Ideally, in this regard, every police officer in any city or town should have almost instantaneous access to every crime and criminal statistic, past and present, in the United States. The computer gives promise to make this ideal state approach a reality.³

¹Shaw, "The Computerized Society," op. cit., p. 81.

²John L. Sullivan, Introduction to Police Science (New York: McGraw-Hill Book Company, 1971), p. 303.

³Ibid.

Summary

The filing cycle was presented in detail to assist police administration in understanding the significance of each vital part of the records cycle. All of this was culminated with a presentation on information flow-- the nerve center of a law enforcement operation. The final topic involved the technological changes which affect the record keeping processes.

CHAPTER V

METHODS AND PROCEDURES

Introduction

Chapter V includes the methods and procedures employed in conducting this descriptive research project. The first task was to select the cities and law enforcement agencies to be used as the population for this study. Cities utilized were those with a population of 250,000-500,000 as listed in the Uniform Crime Report. It was then necessary to develop a data collection instrument which could be used for in-depth personal interviews and as a questionnaire to be completed by selected personnel for each law enforcement agency. The processes utilized in planning, gathering, analyzing, and summarizing the data obtained in this descriptive research project are presented in this chapter. The presentation of data collected is included in Chapter VI.

An exhaustive study was conducted of the research literature dealing with law enforcement theories, procedures, and practices in the following areas: records management with special emphasis on criminal records and modus operandi records; mechanical, manual, and electronic processing as used in records management programs in law enforcement; and the systems or processes for automating law enforcement records.

Research Methods and Procedures

Research Methods

From August, 1970, through July, 1971, the writer of this paper visited the Tulsa Police Department upon three separate occasions. During this same time period, the writer visited the Oklahoma City Police Department at least once a week or approximately fifty total visits. The visits to both Tulsa and Oklahoma City were to observe record-keeping techniques. Books, periodicals, and independent research studies from these cities' police libraries were utilized for familiarization with the information created and utilized in the general field of law enforcement.

Other areas of police activities such as the detective bureau, juvenile department, traffic department, research and development department, and training department were visited to determine the exact working relationship of the various departments and divisions with records management program personnel.

The records department was cited as the primary "support department" by Captain Tom Heggy and by Captain Bob Wilder of the OCPD, as well as by Lt. Harry Steege of the Tulsa Police Department; and as such, the records department was designated by these two agencies as an integral part of all police activities.

In addition to visiting these two departments and doing exhaustive reading of all available literature, visits were made between May-July, 1971, to various data processing installations in the Oklahoma City area. These visits included such places as Univac, Sperry-Rand, General Electric/Honeywell, IBM, and Computer Conjuneric. The writer also visited the data

processing installations at both the Oklahoma State Bureau of Investigation and the city of Oklahoma City.

Chapters II, III, and IV (Part I) were written, after the writer investigated the following sources of research data:

1. Dissertations which were related or analogous to the research study of automated records administration with applications for law enforcement records, particularly criminal and modus operandi files.
2. Independent studies which were conducted by or for law enforcement agencies which contained facts and concepts involving manual, mechanical, and electronic processing of law enforcement records.
3. Selected articles in recognized periodicals and newspapers which specifically involved the topics of records management, criminal records, and modus operandi files in relation to law enforcement records.
4. Special reports and books which specifically covered the topic of records programs.

With the help of Captain Tom Heggy, formerly with the Oklahoma City Research and Planning Department, a questionnaire was drafted and submitted for critical examination to such experienced police administrators as Captain Bob Wilder and Assistant Chief Weldon Davis, both of the Oklahoma City Police Department, and Lt. Harry Steege and Chief Jack Purdie of the Tulsa Police Department. Professional researchers including Professor Bill Willcutt and Dr. Dennis Maxey of the Marketing and Research Department at Oklahoma City University also reviewed the original questionnaire.

To gain additional information to be used for further revisions of the questionnaire, personal interviews were scheduled with three members of the Oklahoma City Police Department. The interviews were obtained in August, 1971. These interviews and the related observations of various police departments enabled the researcher to improve and refine the questionnaire as well as improve her technique in securing information. The introduction of the specific subject matter and the sequence of the questions were revised as a result of these trial interviews.

The Oklahoma City Police Department (OCPD) acted as the initial phase of the pilot study. At OCPD the questionnaire was completed by Sergeant Kenneth Smith. Primarily changes were made in the format of the questionnaire, specifically in actual work and question arrangement. It was at this time that the last two pages of the questionnaire were drafted to enable each department to have an easy checklist arrangement for reference to their various files. Changes were made in the wording of questions when it was deemed necessary to clarify the exact meaning of a particular question.

The OCPD printing department took the necessary photographs of the pages and decreased them to page size (8 1/2 x 11"); afterwards they printed the questionnaire.

The writer then initiated the second phase of the pilot study. The law enforcement agencies for cities in easy driving radius were selected for visit and questionnaire completion--all were located in the state of Texas. Two of these cities--Ft. Worth and San Antonio--were among the cities selected in the population for the research study. Houston, Austin, and Dallas were included to get additional opinions from some of the larger cities in Texas.

Using the printed questionnaire as an interview guide, key personnel of the five selected police departments--Ft. Worth, San Antonio, Houston, Austin, and Dallas--were interviewed. Specific information was sought that would be helpful in determining theories, practices, and procedures in law enforcement records administration programs. In each of the five interviews, the researcher did find it necessary to ask specific questions and to probe more deeply when the respondent appeared to have difficulty in adequately relating the information desired.

When possible, the researcher recorded answers verbatim on the face of the questionnaire, rechecked the information by going over the questionnaire a second time, and got the cooperating law enforcement official to verify the accuracy by signing his name to the end of the questionnaire. The information was then transferred to a separate questionnaire by typewriter on the same day. Permission was secured from each law enforcement agency interviewed to use the information acquired in the report of this research study.

The in-depth personal interviews were utilized to complete the questionnaires and to obtain as much feed-back as possible about the data collection instrument. During the interviews, the writer and selected members of these police departments went over the questionnaire in its entirety, question-by-question. The writer was also able to view each police department's records division in full operation, and additional reading material was collected. Approximately a half day was spent in each city going over the questionnaire and collecting information. All of these visits were made the last week of August and the first week of September, 1971.

After the writer returned from the approximately 1500-mile trip, the questionnaire was re-vamped in format; but again, only minor changes were made to the actual document in terms of content. A majority of the changes made were suggested in the initial screening with Captain Heggy, Captain Wilder, and Sergeant Smith of the Oklahoma City Police Department. The approval of Dr. Loy E. Prickett, Chairman of the writer's dissertation committee, was obtained at this time.

A letter of appreciation, as shown in the appendix, was mailed to each of the departments the writer visited (Dallas, Ft. Worth, Austin, San Antonio, and Houston), thanking them for their cooperation. This letter, dated September 10, 1971, was mailed under the name and title of E. W. Lawson, Chief of Police, and Captain Tom L. Heggy, Special Services Division, Oklahoma City Police Department.

A third phase of the pilot study was to visit a selected number of police departments at night to determine if the writer could observe any major differences between daytime activity and night time activity. In the selected cities of Austin, Oklahoma City, and Tulsa, a much greater amount of work was processed during the day, and there were more people working then. Comparison of the three departments revealed similar night time activities. These trips were made during the first two weeks of October, 1971.

The information and data collected about each police department's record section were assembled, and the analyses and interpretations of the five cities appear in Chapter VI. To illustrate how information and data for this research study were recorded for later analyses and interpretations, a complete interview guide is presented in the appendix.

It was felt by the dissertation committee and the Oklahoma City Police Department's law enforcement officials that the questionnaire might receive a better response if it were mailed out under the name of the Oklahoma City Police Department in cooperation with Marcia Grimes. With the cooperation of Captain Bob Wilder, Oklahoma City Police Department of Research and Planning, copies of the questionnaire were mailed to the Chiefs of Police for the following cities which comprised the population of this study:

Phoenix, Arizona
Chicago, Illinois
Los Angeles, California
Akron, Ohio
Albuquerque, New Mexico
Birmingham, Alabama
Charlotte, North Carolina
Cincinnati, Ohio
Dayton, Ohio
Norfolk, Virginia
Omaha, Nebraska
Rochester, New York
Sacramento, California
Tampa, Florida
Toledo, Ohio
Tulsa, Oklahoma

A copy of Captain Wilder's letter appears in the appendix. The questionnaire, letter, and stamped addressed envelopes for return were mailed on September 10, 1971.

On September 24, 1971, a letter a copy of which appears in the appendix, was mailed under the name and title of E. W. Lawson and Captain Heggy to Los Angeles, St. Louis, Wichita, Chicago, and Miami, asking for information in the following areas:

Criminal History Records

Criminal Identification Records

Modus Operandi Records

Fingerprint Records

Equipment (i.e., computer, microfilm, shelves) to house the above records and the estimated costs of equipment.

Even though all of these letters were mailed out under the names of various law enforcement administrators at the Oklahoma City Police Department, each letter was drafted by the writer of this paper.

A followup letter was mailed two weeks later on September 30, 1971. An example of the letter sent to Albuquerque appears in the appendix. Phone calls were made to three cities (Tulsa, Rochester, and Albuquerque); and one of them, Rochester, responded by sending in a partially completed questionnaire. The following cities returned completed questionnaires:

Birmingham, Alabama

Phoenix, Arizona

Los Angeles, California

Tampa, Florida

Omaha, Nebraska

Rochester, New York¹

Akron, Ohio

¹The questionnaire filled out by Rochester, New York, was only partially done; however, it is still included for analysis in Chapter VI.

Dayton, Ohio

Oklahoma City, Oklahoma

Austin, Texas

Dallas, Texas

Fort Worth, Texas

Houston, Texas

San Antonio, Texas

Norfolk, Virginia

Even after several telephone calls, the Tulsa Police Department did not return the questionnaire. During the initial phases of the research study (August, 1970--July, 1971), the writer visited the Tulsa Oklahoma Police Department in order to become familiar with their record-keeping techniques. A large portion of the research reading material was borrowed from this department. Lt. Harry W. Steege, the primary contributor from this agency, was most helpful to the writer of this paper.

Summary

Whenever survey data are to be gathered, there must be a decision as to the specific pattern or design which the data-collecting will follow. In this research study, the printed questionnaire served as the basis for the interview. In all cases, the personal, in-depth interview was guided by this questionnaire.

Responses received from the personal interview were similar to the responses received from the written questionnaire which tended to validate the reliability. No noticeable differences were noted as will be seen in Chapter VI.

Chapter VI does not employ a statistical means to analyze the data collected from the various police departments. Some numerical analysis is utilized, but the majority of the information is presented in a table format.

CHAPTER VI

ANALYSIS AND PRESENTATION OF FINDINGS OF RECORDS MANAGEMENT SYSTEMS IN SELECTED LAW ENFORCEMENT AGENCIES

Introduction

In a law enforcement field study, an attempt is made to study all facets of data used in the interrelations of the law enforcement structure. This structure is viewed as an information system utilizing that data necessary to achieve its stated objective "to protect and serve."¹

Name and address files, fingerprint records, location indicators, and intelligence and investigation reports are all examples of data to be found in the files of most police agencies. However, many of these police agencies' data are unavailable for timely retrieval because a definite analysis of information needs and procedures has not been fully developed.

Research into the sphere of law enforcement records management is in the embryonic state. The research problem requires the systematic collection of data from populations or samples of population through the use of survey techniques which include personal interviews and questionnaires. Operational methods, equipment, and activities must be evaluated to determine levels of adequacy and law enforcement expectations. Despite the large number of questions that can be asked in a single study as was

¹Paul M. Whisenand and Tug. T. Tamaru, Automated Police Information Systems (New York: John Wiley & Sons, Inc., 1970), p. 4.

illustrated in Chapter V, there are practical limits to the number of law enforcement topics that can be covered in any one research project. Tolerance of the time and effort required of the respondents must be taken into consideration.

Although the records programs of the law enforcement agencies studies have common goals, techniques of storing information vary according to equipment utilized and the types of information stored. Information is collected, reported, classified, processed, stored, retrieved, and utilized according to the conceptual and analytical techniques involved in the records management programs.

Analysis of law enforcement information processing in recent years reflects a growing need for more accurate information with faster, more effective retrieval. A loss of information and the inability to retrieve information when needed are critical factors in attempted accomplishments of any department's operations.

Most of the records management programs included in this study are built upon traditional manual clerical tasks such as recording, checking, and retrieving information. In most cases these functions have been upgraded by changing equipment as advances in technology were made. Most of the records management programs included in this study lack the capacity to receive and process large volumes of data and have limited provisions for rapid, accurate access to stored information. Therefore, immediate random access to data is seldom permissible. Unfortunately, dissemination of information at remote locations is not provided in adequate form or content resulting in an inadequate feedback of information for decision-making purposes. Large numbers of clerical personnel are required and multiple

cross-references and duplications are commonly inherent in the systems. Because of manual limitations, interface with systems in allied agencies is hampered since modification of the system is difficult.

The computer provides an alternative for immediate random retrieval of information. Computer utilization is producing startling advances in relieving law enforcement agencies of problems raised by the "information explosion."

Detailed Evaluation of Field Study

Sixteen police departments of the twenty-three surveyed returned completed questionnaires. Analysis of the findings emphasized both similarities and variations in equipment utilization and information requirements.

Table 1 in the appendix includes the various crime index figures, population sizes, geographical locations, and ratio of uniformed and civilian personnel for the respective cities.

Crime Index and Law Enforcement Personnel

As stated in the Uniform Crime Reports, crime rates relate the incidence of crime to population. A crime rate only takes into consideration the numerical factor of population. Crime classifications used in the crime index are murder and non-negligent manslaughter, forcible rape, robbery, aggravated assault, burglary, larceny \$50 and over, and auto theft.¹ Table 1 indicates that the number of crimes per unit of population is highest in the large, metropolitan cities of Los Angeles, Houston, and Dallas. Accumulation of informational reports and investigations is

¹John Edgar Hoover, Director, FBI, Uniform Crime Reports: Crime in the United States (Washington, D.C.: United States Government Printing Office, August 13, 1970), p. 1.

appreciable when comparing the crime index figures for these three cities with the corresponding percentages of sworn and civilian personnel. These correlations provide inadequate criteria as to comparative workload and personnel strength due to widely differing functions, responsibilities, and other factors.

Law Enforcement Administrative Procedures

Table 2 denotes assigned personnel in the records departments, the number of work shifts, and the average turnover rate of file clerks (continuity and record program improvement are both affected by turnover). All of the departments have on-the-job training and only two cities have formal training programs as evidenced in Table 3. Another significant factor in turnover rate relates to the fact that most of the data retrieved as shown in Table 30 is performed manually. It is necessary for good law enforcement management to have data readily available. This availability necessitates an evaluation of experienced, trained records management personnel as well as equipment and physical facilities.

All sixteen cities are presently utilizing some form of copying equipment as depicted in Table 4. Eight of the cities as indicated in Table 5, are presently utilizing some computerized equipment. Table 6 shows the utilization of typewriters. Approximately 50% of the typewriters in use are electric. Utilization of other automatic equipment by records administration personnel is shown in Table 7.

Of the sixteen cities surveyed, Table 8 reveals that only one city will release criminal records to the general public; twelve cities make traffic accident reports available; while only six cities will release offense reports (excluding homicide). It should also be noted that only

three cities will release an individual's personal file. The average cost of copies provided to civilians is \$1.00 per report, and in one city the highest cost was \$2.50 as indicated in Table 9. It is significant to note that the highest administrative law enforcement expense as shown in Table 10 is in salaries of personnel.

Criminal Records

An analysis of the Criminal Records Sections from the sixteen completed questionnaires indicates many similarities in practices and procedures as shown in Tables 11-22. Table 11 details the type of material kept in the criminal files. The earliest criminal data on file, Table 12, in two cities was 1900.

Eight of the sixteen departments, as shown in Table 13, indicated microfilm as a backup system for Bureau of Records packets, and another department indicated microfilm equipment would be purchased in the future. Three departments indicated utilization of the computer as an additional backup measure along with microfilm. Eight departments indicated that they did not have any backup system for criminal records. Fourteen cities had some method of cross-indexing criminal records (see Table 14).

File Retention

Table 15 depicts practices in file retention for criminal records, modus operandi files, and traffic records. All of the departments indicated that criminal files are held indefinitely. Three departments indicated removal of the records deceased subjects. Modus operandi files are held indefinitely by seven departments; nine departments indicated that no separate section is maintained for modus operandi files. One department indicated ten years as the time limit for holding the modus operandi files.

Handling of traffic files showed the greatest variation in file retention ranging from two and one-half months on line to indefinitely or until deceased. One department indicated that the courts maintained these records. Eight departments indicated two, three, five, six, or fifteen years as the time limit for the records to be held. The remaining departments indicated files are retained indefinitely or until deceased.

Records Security

Table 16 indicates that in seven departments no employees, other than records personnel, have access to records. In the other departments it was indicated that I.D. officers, internal security officers, detectives, parole officers, probation officers, court officials, the chief of police, and department chiefs had access to these records.

Another department stated that records access was limited to members of their criminal justice system. Security measures to protect the records area generally were indicated to be locked metal doors when personnel were not on duty.

One department indicated that file clerks were on duty twenty-four hours each day, providing security as well as service. Other departments stated that record security as well as the locked files or a positive ID check is in effect (see Table 17).

As detailed in Table 18, most departments indicated similarities regarding "refiling" responsibilities. Fifteen departments stated that no persons other than file clerks refiled these records. One department indicated that the chief also refiles records.

Miscellaneous criminal reports are filed in most departments by chronological numbering systems as shown in Table 19. Two departments filed

by type of crime and did not assign a number to the miscellaneous report. The type of criminal record information from the criminal jacket or packet stored on the computer varied. Six departments, reporting the use of computers, indicated that they need arrest information by type of crime. Types of crimes were reported as follows: warrants in one case; sex offenses in another; accident information in the third; statistical information in one case; and all information in still another department.

Equipment Utilization

As summarized in Table 20, twelve departments use four-drawer file cabinets for file storage, while seven other departments use open files, and five departments use electric elevator files. Three departments indicated that no changes in equipment utilization are planned for the near future.

Files for modifying the records program were reported by ten departments as shown in Table 21. Modification plans include the following: utilization of computers by four departments, placement of additional items on the computer by another department, and implementation of a new microfilm system is projected for four departments. One department indicated it is planning to enlarge the file area, and two departments reported plans to implement surveys soon.

Five departments indicated that no immediate changes are projected in either the file area or equipment utilization as shown in Table 22. Five departments mentioned acquiring advanced-model computers in their plans for equipment changes. One department is purchasing magnetic card typewriters, and one is discontinuing open shelves. Three departments stated that they are purchasing microfilm equipment, and two departments

indicated the purchase of open-shelf equipment. These departments also indicated that they are keeping the criminal jacket, as reported in Table 23, for backup purposes after the information is placed on the computer.

Modus Operandi Records

Modus operandi, literally translated, means "method of operation."

In police work, it is used in connection with the activities of the criminal. The modus operandi of a criminal includes his individual peculiarities and the methods, techniques, and tools which he uses in committing a crime. Tables 24-28 depict an analysis of modus operandi records.

Table 24 indicates problems other than money, manpower, and time in retrieving modus operandi records. One city indicated problems with misfiling due to the number of inquiries and the limited amount of storage space. Another city indicated problems with updating and classifying files. Table 25 lists problems other than money, manpower, and time in processing modus operandi records. Two cities indicated problems with organizing information into proper files and feeding information into the computer.

Fifty percent of the departments indicated that they maintain separate modus operandi records at this time; other stated that they have access to state records of this type; or indicated no capability for these particular records, as shown in Table 26. This table also shows that motor vehicle information related to sex crimes is stored in modus operandi files. The different departments use indicators, such as type of auto, license number, color of auto, and model year of vehicle.

Analysis of the data regarding modus operandi records as reported on the questionnaire shows that the information on the offenders kept on the computer include those guilty of auto theft, sex crimes, drug addiction,

and armed robbery. Records of offenders include coding by physical description of sex, race, height, age, weight, color of hair, and identifying marks, such as tatoos, birthmarks, and scars (see Table 27).

A written description of identifying marks or scars was maintained by each of the departments keeping modus operandi records. Table 28 shows methods used for annotating physical characteristics in modus operandi files. Six cities annotate their records by using a numerical code for the area of the body; three cities annotate modus operandi records with a written description; no city reported using an alphabetical code for area of the body to annotate these records.

In one city with a population over one million, the police department has done experimental work with a natural language modus operandi system which feeds the complete crime report into the computer where an analysis of the key words and phrases is made.

Fingerprint Records

Since the inception of fingerprint records in 1906, the Henry System (10 finger) of fingerprinting has been used by many police departments (see Tables 29-36). Fingerprints are filed according to the Henry System by nine of the sixteen departments reporting (Table 29). The other seven departments utilized modifications and extensions of the FBI System. The Henry System was adopted because, as the files grew and the volume of prints to be processed increased, it became necessary to divide large classifications into sub-groups so as to make manual searching more practical.¹

¹Questionnaire completed by the Oklahoma City Police Department, August 22, 1971.

To facilitate searching, a majority of the police departments have subdivided fingerprints files into the following age groups:

<u>Master File</u>	<u>Reference File</u>	<u>Presumed Dead</u>
Under 55	55 to 74	75 and over

The policy for federal authorities and for many state and city authorities is not to destroy any fingerprint record because of age.

All sixteen departments indicated, as shown in Table 30, that fingerprint files are manually operated. Eight departments indicated (Table 31) that they filed latent fingerprints by the type of crime, five departments filed by date, four by place of occurrence, and two by the individual's name. Ten cities completing the questionnaire (see Table 32) used a "single print" as their method of maintaining control over latent fingerprints.

Most departments, as depicted in Table 33, indicated a team approach to the crime scene search. Nine departments use a fingerprint technician, seven use a detective, six use an evidence technician, and three use an investigating officer to participate in the evidence search.

Table 34 indicates classification of fingerprint technicians varies considerably with several departments using more than one classification for these experts. Seven departments use the classification of detective; eight departments use the term "identification technicians" and four use the title "patrolmen." Four departments engage civilian technicians in this capacity. Just as the classification of fingerprint technicians varies considerably, so does the salary range of fingerprint technicians. Table 35 shows this range to vary from \$5,300 to \$15,600 per year.

Interaction with NCIC

In Table 36, eleven departments are shown to utilize the NCIC (National Crime Information Center) for checks of criminal records and stolen automobiles; ten departments use this source for gun checks. Thirteen departments reported the use of NCIC for serial number property checks, including stolen automobiles.

The late Mr. J. Edgar Hoover stated in the 1969 FBI Appropriation Request that the objective of NCIC is to improve the performance of law enforcement through the more efficient and effective retrieval of exchangeable information. Since NCIC can make information available to the police officer on the street in a matter of seconds, Mr. Hoover projected the net result of the efforts of NCIC would be to improve the crime solution rate and to increase the risk of detection to the criminal. He considered NCIC one of the greatest advances in law enforcement in recent times.¹

Computer Utilization

Complexity of police problems and volumes of data to be accommodated are now reaching the point where the human factor is being challenged and recognition is being given to computer technology. Installation of computer systems at the local level is an ongoing process that is most complex and conditioned by a host of factors involving politics, budget, personnel, policies, procedures, and availability of resources. Computer utilization is depicted in Tables 37-49.

Fourteen of the sixteen departments reporting are presently using computer facilities as shown in Table 37. Of the five cities of more than

¹John Edgar Hoover, Director, FBI, Federal Bureau of Investigation's Appropriation Request, 1969.

500,000, all have some kind of computer application. Of the eleven cities between 250,000 and 500,000, nine reported utilizing computer applications to some degree. Table 37 denotes the functional applications that are presently in use or are projected for use on computer-based systems.

Nine of these computer installations are using the Cobol language (see Table 38). Other languages used include the following: Fortran, ALGOL, RPG, ALC, BAL, and Assembler.

In project computer applications (see Table 39), Stolen Property no longer tops the list, but is interspersed with the other functions. Areas of Stolen Firearms, Warrants, and Wanted Persons are tied for the top area of projected computer application.

In Table 40, eleven departments are reported to have teletype terminals in use. Location of the terminals varies considerably, depending upon the number of terminals in operation. Nine departments (see Table 41 for a complete analysis) reported computer terminals as follows:

<u>Number of Terminals</u>	<u>Number of Departments</u>
43	1
8	1
7	2
5	1
4	2
2	1
1	1

According to Table 42, the functions of computer terminals are as follows: ten cities can add, nine cities can delete material from a computer terminal, ten cities can update material from the terminal, and in six cities the terminals have the ability to inquire.

Table 43 portrays the types of records retrieved on computer terminals as follows: six cities can retrieve criminal records; only one city can retrieve fingerprint records; three cities can retrieve gun

registration information; five cities can retrieve miscellaneous files; five cities can retrieve information concerning missing persons; three cities can retrieve modus operandi information; two cities are able to retrieve payroll information; four cities retrieve personnel information; nine cities retrieve information concerning stolen firearms or property records; five cities retrieve traffic data; six cities retrieve vehicle registration information, seven cities retrieve records of wanted persons; and six cities have the ability to retrieve information relating to warrants.

Table 44 shows the geographical servicing of computer terminals, and Table 45 indicates specific assignment of personnel for computer system utilization.

Table 45-49 depict computer utilization for processing and retrieving data from the following files: criminal, modus operandi, fingerprint, and miscellaneous, and well as a time schedule for implementing computer usage.

Eight of the departments are using the IBM Model 360; two are using the General Electric 427; and one department is using the RCA 131K.

From the data taken from the completed questionnaires, there is no trend at this time to establish a pattern of control, operation, or location of computer equipment. Computer systems are being rented in all but one case (see Table 37). All departments reported that they plan to upgrade their information storage system by the use of computer in at least one functional area.

Of current computer applications, the most frequently used are the Stolen Property area, with Traffic and Stolen Firearms ranking two and three in use. Other areas of application are scattered throughout the rest of the list.

Microfilm Utilization

Tables 50-56 contain an analysis of the utilization of microfilm. In Table 50, fifteen departments are reported to be currently using microfilm equipment. One department indicated that such equipment would be purchased within one year. Table 51 shows thirteen cities using microfilm, eleven using roll microfilm systems, and two using cartridge microfilm systems. Others are using equipment from Bell and Howell, 3M, and Remington Rand. Eight departments reported one station available for retrieval; and the remaining departments indicated two retrieval stations are available. None of the departments has more than ten retrieval stations.

Material presented in Table 52 depicts the various files stored on microfilm. The breakdown of the sixteen reporting departments is as follows: eleven cities store criminal records on microfilm; two cities store fingerprints; three cities store gun registration information; five departments store missing persons data; two cities keep modus operandi records; however, not one city reported keeping payroll information, vehicle registration data or warrants on microfilm. Five departments keep personnel records on microfilm; six departments store information concerning stolen firearms or property on microfilm; two cities keep records of wanted persons on microfilm; and thirteen cities store miscellaneous records on this medium.

Data in Table 53 shows that eight departments have one station available for retrieval of microfilm and other documents and that five departments have two stations available for retrieval of microfilm.

Information in Table 54 indicates the various locations of the microfilm process. Seven departments have the microfilm processed in the police department; two departments utilize the microfilm processing

services of an independent company; three departments use a microfilm systems company; and three departments have a "city microfilm station."

Ten departments reported that file clerks perform the microfilming process (see Table 55). Five of the other departments indicated that city personnel or microfilm systems company representatives perform this function. Microfilm systems were purchased in all cases by city funds with one department reporting federal assistance (see Table 56).

Administration, Creation, Retention, and Retrieval of Data

The final two pages of the questionnaire which were completed and returned by sixteen police departments were designed to collect data on file administration, creation of files, and the retention and retrieval of the following files: accident record files, criminal jacket files, fingerprint files, juvenile records files, miscellaneous files, modus operandi files, property records files, wanted and missing persons files, and warrant files.

For each of the eleven questions covered on the last two pages of the questionnaire, it was necessary to present the responses in twelve corresponding tables. Each table depicts one type of file for each question for the sixteen reporting cities.

File Arrangement

Question 1 asked how the files are arranged (A) Alphabetical, (N) Numerically, (G) Geographically, (S) Subject, (T) Terminal Digit, and (O) Other. Tables 57-68 show the file arrangement for the twelve different files.

Table 57 is the Arrangement of Accident Record Files. Several cities use a combination of alphabetical, numerical, and geographical methods. Eight cities file accident records alphabetically; seven cities file them numerically; eight cities file by using the terminal digit method; and two cities file by date or by the chronological method. One city did not respond to this part of the questionnaire.

Table 58 shows that thirteen cities arrange their Criminal Jacket Files numerically; three arrange them alphabetically; and two use the terminal digit method of filing. Table 59 shows the file arrangement of Fingerprint Files numerically; ten cities use a fingerprint classification as their method of filing them. The arrangement of Juvenile Records Files is depicted in Table 60. Twelve of the responding cities file these records alphabetically, and three cities use the numerical method for them.

Twelve cities arrange their Master Name Index Files alphabetically as shown in Table 61. One city uses the Soundex filing procedure, one city files by Alias, and three cities did not respond to this question. The file arrangement of Miscellaneous Files shown in Table 62, is evenly divided between alphabetical and numerical filing procedures. Eight cities use each method.

Nine cities responded, as shown in Table 63, by saying that the file arrangement of Modus Operandi Files is not applicable to their police department. One city files Modus Operandi Files alphabetically; one city files them numerically; one city files them geographically; one city files them by terminal digit; one city files them by physical description; and one city did not respond to this question.

Table 64 reveals that Property Records Files are arranged alphabetically in four cities; numerically in seven cities; by subject in four cities;

and geographically in one city. Nine cities arrange Traffic Records Files alphabetically (see Table 65), while five cities arrange these files numerically.

Vehicle Records Files, shown in Table 66, are arranged alphabetically in five cities and numerically in six cities. These files were not applicable in five cities and two cities made no response to this question. Eight cities, as indicated in Table 67, arrange Wanted and Missing Persons Files alphabetically, and three cities arrange these files numerically. Warrant Files, shown in Table 68, are arranged alphabetically in eleven cities and numerically in six cities.

Type of Equipment

Question 2 asked the type of equipment used to house the various files: (D) File Drawer, (S) Open Shelf, (C) Mechanical Card Veyer, (O) Other. Tables 69-80 reveal the type of equipment used for the twelve various types of files.

Table 69 shows that eight cities use file drawers to house their Accident Records. Four cities use open shelves for these files, five cities use mechanical card veyers, two cities use the computer, and two cities did not respond to this question.

Criminal Jackets are housed by seven cities in file drawers, by eight cities on open shelves, and by two cities in mechanical card veyers (see Table 70). Twelve cities house their Fingerprint Files in file drawers, as shown in Table 71; and one city uses a mechanical card veyer for these files. Three cities did not respond to this particular question.

Table 72 records that nine cities use file drawers to house their Juvenile Records; one city uses open shelves; two cities use the mechanical

card veyer; and four cities made no response or found the question not applicable to their police department.

Master Name Index Records are housed, according to Table 73, by seven cities in file drawers, by six cities in mechanical card veyers, and four cities made no response to the question. File drawers are used in six cities to house Miscellaneous Files (see Table 74). Four cities use open shelves for their Miscellaneous Files, three cities use mechanical card veyers, and one city uses the computer. Five cities made no response or found the question not applicable to their filing situation.

Seven cities found the question dealing with the type of equipment used to house Modus Operandi Records not applicable (see Table 75). Four cities made no response to this question. Five cities use file drawers to house their Modus Operandi Records and two of these five also use open shelves.

In Table 76, Property Records are shown to be housed by seven cities in file drawers, by one city on open shelves, by three cities in the mechanical card veyer, and by one city on the computer. Four cities made no response to this question, and two cities found this question not applicable.

Seven cities house their Traffic Records in file drawers, as shown in Table 77. One city uses open shelves; four cities use mechanical card veyers; and one city uses a computer. Four cities made no response to this question, and one city found the question not applicable.

Vehicle Records are housed in file drawers in six cities, on open shelves in two cities, in mechanical card veyers in two cities, and on the computer in two cities (see Table 78). Three cities made no response to this question, and three cities found this question not applicable.

Table 79 shows that nine cities house their Wanted and Missing Persons Records in file drawers. One responding city uses open shelves

for these records. Three cities house these records in mechanical card veyers, while two cities utilize computer facilities. Two cities made no response to this question, and two cities found the question not applicable.

Warrant Files are housed by nine cities in file drawers according to Table 80. Two cities use open shelves; one city uses a mechanical card veyer; and three cities use a computer for these records. Two cities made no response to this question.

File Material

Question 3 asked whether files are on (C) Cards; in (F) Folders; on (M) Microfilm, Microfiche, Cartridge, rolls, jackets; and (O) Other. Tables 81-92 depict the actual type of file material used for the twelve different types of files.

Seven of the cities responding (see Table 81) have their Accident Records on cards. Nine of the cities have these records in folders, and seven of the cities use some form of microfilm for their Accident Records.

Criminal Jacket Files are in folders in eleven cities, as shown in Table 82. Three cities use cards for these files, while four cities use some form of microfilm. Two cities made no response to this question.

Thirteen cities responding to the questionnaire indicated that their Fingerprint Files are on cards (see Table 83). Three cities made no response to this question. Juvenile Records are on cards in eleven cities and in folders in two cities (see Table 84). Two cities made no response to this question, and two cities found the question not applicable.

Table 85 reveals that thirteen cities have their Master Name Index Files on cards. One of these thirteen cities also uses some form of microfilm for these records. Three cities made no response to this question.

Miscellaneous Records are on cards in five cities, and five other cities have these records in folders according to Table 86. Two cities utilize microfilm, microfiche, cartridge, rolls, or jackets. One city uses a computer for its Miscellaneous Files. Four cities made no response to this question, and two cities found this question not applicable.

According to Table 87, four cities have their Modus Operandi Files on cards, one city uses folders, and two cities use some form of microfilm for these records. Three cities made no response to this question, and seven cities found the question not applicable.

Property Records are on cards in seven cities responding to the questionnaire, as shown in Table 88. One city utilizes folders for these records and one utilizes a computer. Two cities use some form of microfilm. Five cities made no response to this question, and three cities found this question not applicable.

Traffic Records are on cards in nine cities responding to the questionnaire as recorded in Table 89. Three cities use folders for these records, while two cities use some form of microfilm. One city employs computer facilities for Traffic Records. Two cities did not respond to this question, and three cities found this question not applicable.

Table 90 indicates that Vehicle Records are on cards in six cities, in folders in three cities, and on some form of microfilm in two cities. Two cities use a computer for these records. Three cities made no response to this question, and four cities found this question not applicable.

Records of Wanted and Missing Persons are on cards in nine cities responding to the questionnaire as reported in Table 91. Two cities have

these records in folders, and two cities use a computer for them. Two cities made no response to this question, and two cities found the question not applicable.

Warrant Files are on cards in nine cities according to Table 92. Two cities use folders, and one city uses some form of microfilm. Four cities use computers for their Warrant Files. Two cities made no response to this question.

File Operation

Question 4 asked the method of operating the files (A) Automated Computer, (X) Mechanical, or (M) Manual. Tables 93-104 portray the distribution of file operation for the twelve files.

Three of the cities who responded to this questionnaire used the automated computer for Accident Records Files (see Table 93). Five cities use mechanical methods of operation, and twelve cities use manual methods of operation for these records. Two cities did not respond to this question.

Fourteen cities, according to Table 94, operate their Criminal Jacket Files manually. Of these fourteen cities, one uses a combination of computer, mechanical, and manual; while another combines mechanical and manual methods. Two cities made no response to this question.

Thirteen cities responding to the questionnaire, as shown in Table 95, operate their Fingerprint Files manually. Three cities made no response to this question. In Table 96, twelve cities are shown to operate their Juvenile Records Files manually. One of these cities combines manual and mechanical methods for operating these files. Two cities made no response to this question, and two cities found this question not applicable.

According to Table 97, twelve cities operate their Master Name Index Files manually. Two cities combine manual and mechanical methods when operating these files, and one city uses only mechanical methods. Three cities made no response to this question.

Miscellaneous Files, as shown in Table 98, are operated by automated computer in one city, while ten cities use manual methods for operation of these files. Four cities made no response to this question, and one city found the question not applicable.

In six cities, Modus Operandi Files are operated manually (see Table 99). One city combines manual with mechanical methods of operation; and another city combines manual methods with the computer. Three cities made no response to this question, and seven cities found this question not applicable.

Property Records Files are operated manually, according to Table 100, in eight cities. Two cities utilize an automated computer as their method of operating these files. Three cities made no response to this question, and three cities found the question not applicable.

Traffic Records, as shown in Table 101, are operated manually in ten cities responding to the questionnaire. One city combines manual methods of operation with the use of a computer. One city uses only an automated computer for these records. Two cities made no response to this question, and three cities found this question not applicable.

Vehicle Records Files are operated manually in eight cities, according to Table 102. One city combines manual and mechanical methods of operation, and another city combines manual methods of operation and utilization

of the computer. Two cities use only the automated computer for these records. Two cities made no response to this question, and four cities found the question not applicable.

Table 103 depicts the method of operating Wanted and Missing Persons Files. Ten cities responding to the questionnaire operate these files manually. Three cities combine manual methods of operation and the automated computer. Two cities utilize just an automated computer for these files. One city combines manual and mechanical methods of file operation. Two cities made no response to this question, and two cities found the question not applicable.

Some cities combine manual methods of operation and the automated computer when describing their method of operating Warrant Files, as shown in Table 104. Eleven cities use manual methods when operating these files, and eight cities use the automated computer. Two cities made no response to this question.

Average Time for Records Processing

Question 5 asked for the average time involved in filing/processing records. Tables 105-116 portray filing time for the twelve files.

According to Table 105, the average time involved in filing/processing Accident Records is between fifteen seconds and forty-eight hours. Time differences are not so apparent in Table 106 which shows the average time to file/process Criminal Jacket Files. The minimum time reported is one minute and the maximum time is twenty-four hours. As shown in Table 107, the average time to file/process records involving Fingerprint Files varies from one minute to forty-eight hours.

Juvenile Records, as indicated in Table 108, reveal a time variation for filing/processing records of one minute to twenty-four hours. Whereas, in Table 109 which summarizes Master Name Index Files, the time difference is from thirty-seconds to twenty-four hours.

Table 110 shows that it also takes between one minute and twenty-four hours as an average time to file or process Miscellaneous Files.

Five cities did not respond to the question of the average time to file/process Modus Operandi Files, as shown in Table 111, and seven cities found this question not applicable to their record department. Of these cities responding to this question, the minimum time is thirty seconds and the maximum time is twenty-four hours.

Property Records take from thirty seconds to twenty-four hours to file and process. The summary of these times is recorded in Table 112. Traffic Records (see Table 113) vary the processing time from three minutes to forty-eight hours.

The longest filing or processing time is recorded in Table 114 and concerns Vehicle Records. Here the average time to file or process Vehicle Records ranges from thirty seconds to three months.

Wanted and Missing Persons Files, shown in Table 115, take between twenty-five seconds and twenty-four hours to file or process. While in Table 116 the average time to file/process Warrant Files is indicated as between twenty-five seconds and forty-eight hours.

Average Time for Records Retrieval

Question 6 asked for the average time to find or retrieve information from the various files, as illustrated in Tables 117-128. The average time to find/retrieve Accident Records Files, as shown in Table 117, varies

from fifteen seconds to three minutes. According to Table 118, the average time to find or retrieve Criminal Jacket Records is between thirty seconds and ten minutes. The average time for finding/retrieving Fingerprint Records (see Table 119) is somewhat longer. The time range is between thirty seconds and thirty minutes.

Table 120 depicts the average time to find/retrieve Juvenile Records as being between one and thirty minutes; whereas, Table 121 shows the average time to find/retrieve Master Name Index Records to be between thirty seconds and ten minutes. In all cases reported in Table 122, Miscellaneous Files are retrieved quickly. The time range given is between three seconds and three minutes.

A great time variance can be noted in Table 123 which shows the retrieval time for Modus Operandi Files. Those cities that answered this particular question had a time variance of between thirty seconds and four hours. However, the average time to find/retrieve Property Records Files, as shown in Table 124, varies from eight seconds to five minutes; and the average time to find/retrieve Traffic Records Files (see Table 125) varies between eight seconds and three minutes. Table 126 portrays the findings that Vehicle Records Files can be found and retrieved between two seconds and three minutes.

Wanted and Missing Persons Files, as indicated in Table 127, can be found and retrieved between seven seconds and five minutes. The same time span is recorded in Table 128 for Warrant Files, i.e., seven seconds to five minutes.

Average Number of Daily References

Question 7 asked for the average number of references per day for the twelve different files. The responses are indicated in Tables 129-140.

The average number of references per day for Accident Records (see Table 129) ranges between thirty-five and fifteen hundred. Table 130 discloses that between forty and sixteen hundred references are made daily to Criminal Jacket Files. Table 131 reveals that between five and seven hundred and sixty-five references are made per day to Fingerprint Files. Juvenile Records, according to Table 132, receive on an average between five and four hundred and fifty references per day.

Five of the responding police departments made no response concerning daily references to Master Name Index Files. One department felt that the question is not applicable to their records system. The average number of references made per day to these Master Name Index Files varies between twenty and sixteen hundred (see Table 133). The average number of references per day to Miscellaneous Files, as indicated in Table 134, ranges from a minimum of two references to a maximum of thirty-five hundred. Seven departments made no response to this question, and one department found the question not applicable.

Five cities made no response as to the average number of daily references for Modus Operandi Files, as shown in Table 135; and seven cities found this question not applicable to their records system. Of the four cities that responded to this question, two have an average of one reference per day, one has an average of two references per day, and one has an average of ten references per day.

Five departments made no response to the average number of daily references for Property Records (see Table 136); and three departments felt this question was not applicable. One city has an "unknown" number of references. Of those cities responding to this question, the average number of daily references ranges from a minimum of three to a maximum of one hundred and ten.

Four departments made no response, as shown in Table 137, to the average number of daily references for Traffic Records; and three departments found this question not applicable. One city has an "unknown" number of references. From the other responding cities, the average number of daily references is between two and six hundred.

Four cities made no response to the average number of daily references for Vehicle Records Files (see Table 138); three cities have an "unknown" number of such references; and four cities found this question not applicable. In other responding cities, there are between three and five hundred references daily.

Table 139 reveals that an average number of references per day to Wanted and Missing Persons Files is between ten and one thousand. Four cities made no response, as shown in Table 140, as to the average number of daily references for Warrant Files. Of those cities responding to this question, the average number of daily references was from thirty to one thousand.

Average Number of Records Added Yearly

Question 8 asked for the average number of references per year for the twelve separate files. Tables 141-152 present a tabulation of the responses.

Table 141 indicates that the average number of records added yearly to Accident Records ranges between 12,000 and 70,000. Five cities made no response to this question. Table 142 summarizes the data for annual additions to Criminal Jacket Files and the average number is between 1,700 and 3,000,000. Five cities made no response to this question and one city added an "unknown" number of such additions yearly.

The average number of records added per year for Fingerprint Files, as shown in Table 143, is between 3,600 and 3,000,000. Five cities made no response to this question, and one city adds an "unknown" number of records yearly. Table 144 shows the average number of annual additions to Juvenile Records as being between 200 and 50,000. Between 1,700 and 5,000,000 records are added yearly to Master Name Index Files according to Table 145.

Five cities made no response to the average number of records added yearly to Miscellaneous Files. One city has an "unknown" number of additions to these records. Two cities felt this question was not applicable to them. Of those cities responding to the question, between 3,600 and 400,000 such records are added yearly.

Five cities made no response as to the number of records added per annum to Modus Operandi Files; and seven cities felt this question was not applicable to their present records system. Four cities responded (see Table 147) as follows: one city reported that 350 records are added yearly; one reported 2,500; one reported 5,000; and one city listed 250,000 as an average number of records added yearly to their Modus Operandi Files.

The average number of records added annually for Property Records Files in these cities ranges between 7,500 and 5,000,000 as shown in Table 148.

Five departments made no response as to the average number of records added per annum to Traffic Records Files (see Table 149). Two departments add an "unknown" number of records to this file. Three cities felt that this question was not applicable to them. An average number of records added yearly for these files is between 46,000 and 184,103.

As indicated in Table 150, four departments made no response as to the average number of records added per year to Vehicle Records Files. Two departments add an "unknown" number of records to this file. Five departments found this question not applicable to them. Of the departments responding to the question, a minimum of 6,000 records and a maximum of 3,000,000 records are added yearly.

According to Table 151, an average of 300-60,000 records is added yearly to Wanted and Missing Persons Files. The range of 5,000-323,444 records represents an average number of records added annually to Warrant Files for the nine cities responding to this question (see Table 152).

Approximate Number of File Documents

Question 9 asked for the approximate number of documents on file. Tables 153-164 record these approximations for the twelve files.

Six departments did not respond, as shown in Table 153, to the approximate number of documents on file in Accident Record Files. One city has an "unknown" number of such documents on record. The average number of documents in these files ranges between 20,000 and 70,000,000. Table 154 gives the same type of data for Criminal Jacket Files. Again, six departments did not respond to this question. The approximate number of documents in these files is between 33,000 and 10,000,000 for each department.

Six departments made no response to the approximate number of documents in their Fingerprint Files. According to Table 155, these files contain a minimum of 105,000 and a maximum of 150,000,000 documents. Five departments made no response as to the number of documents in their Juvenile Record Files and four departments felt that the question was not applicable (see Table 156). The approximate number of documents in these files in the other cities is between 10,000 and 500,000.

Six departments did not respond to the approximate number of documents in the Master Name Index Files (see Table 157). The range is from 50,000 to 250,000,000 in the other cities. Seven departments did not respond as to the approximate number of documents in the Miscellaneous Files, as shown in Table 158, and one department felt the question was not applicable. The approximate number of documents in these files ranges between 75,000 and 3,000,000.

Only three cities responded to the approximate number of documents in Modus Operandi Files according to Table 159. The numbers indicated are 2,500; 25,000; and 100,000. Six cities made no response to this question; and seven cities felt that this question was not applicable to them.

As indicated in Table 160, five cities made no response as to the number of documents in their Property Records Files. Three cities felt this question was not applicable, and one city indicated an "unknown" number of documents in these files. The approximate number of these documents recorded by the other cities is between 9,000 and 20,000,000.

Six departments did not respond to the number of documents in their Traffic Records Files (see Table 161). Three departments felt the question

was not applicable; and two departments showed an "unknown" number of such documents. The approximate number of documents in these files is shown to be between 100,000 and 335,000.

As shown in Table 162, only four departments responded to the approximate number of documents in Vehicle Records Files and the range in these cities is between 300,000 and 15,000,000. Of the six departments who responded, the approximate number of documents in Wanted and Missing Persons Files (see Table 163) the minimum is 1,000 and the maximum is 105,000 documents.

Six departments did not respond to the approximate number of documents in their Warrant Files (see Table 164), one department felt the question was not applicable, and one department has an "unknown" number of documents in these files. The approximate number in these files in the other departments is between 5,000 and 657,293.

Percentage of File Capacity Presently Utilized

Question 10 asked for the percentage of file capacity presently utilized in each of the files. Tables 165-176 indicate these percentages for each of the twelve files.

Five departments did not respond as to the percentage of file capacity presently used in Accident Records Files (see Table 165). Only 66 percent was reported by one department, and four departments reported a percentage of 100% or +100%. The minimum percentage of file capacity utilized in Criminal Jacket Files was 75%, and the maximum percentage was 100%. Five departments made no response to this question as shown in Table 166.

The percentage of file capacity presently utilized in Fingerprint Files (Table 167), varies from 65% to 100%. Six departments did not respond

to this question. Seven departments made no response to the percentage of file capacity presently used in Juvenile Record Files; and one department felt the question was not applicable to their filing system. Of those departments completing this question, the percentage varies from 20% to 100% (see Table 168).

Three departments indicated, as shown in Table 169, the percentage of file capacity presently utilized in Master Name Index Files as 100% or +100%; two departments reported 99%; two reported 90%; and three departments reported the low figure of 80%. Six departments did not respond to this question.

Eight departments made no response to the percentage of file capacity presently used in Miscellaneous Files (see Table 170). In the other departments this figure varies between 66% and 150%. Only three departments responded to this question for their Modus Operandi Files (see Table 171). These departments reported 70%, 100%, and +100%. Seven departments made no response to this question, and six departments felt this question was not applicable.

Responses, as shown in Table 172, to the percentage of file capacity presently used in Property Records Files indicated a range of from 40% to 125%. Six departments did not respond, and three departments felt the question was not applicable to their filing situation. According to Table 173 of those departments responding to this question concerning the percentage of file capacity presently used in Traffic Records Files, the range was between 33 1/3% and 125%. Five departments made no response to this question, and three others felt the question was not applicable.

Of those departments responding to the percentage of file capacity presently used in Vehicle Records Files, the range is between 66% and 125% (see Table 174). Five departments made no response to this question, and four others felt the question was not applicable. The percentage of file capacity presently utilized in Wanted and Missing Persons Files ranges from 33 1/3% to + 100% (see Table 175). Five departments did not respond and three others felt this question was not applicable. Six departments did not respond to this question concerning their Warrant Files. The range of percentages for those departments responding to the question is between 33 1/3% and + 100% (see Table 176).

Record Creation

Question 11 asked for the area creating the record such as the following: (1) Central Records, (2) Communications, (3) Detective, (4) Intelligence, (5) juvenile, (6) Patrol, (7) Research and Planning, (8) Traffic, (9) Training, (10) Vice Unit, or (11) Other. Tables 177-188 portray the units creating the records.

According to Table 177, nine cities responded by saying the Patrol Unit creates the record in the Accident Record Files. Nine cities reported that the Traffic Unit creates these records; and two cities said it is the Central Records Unit which creates these records. Four cities made no response to this question.

Six departments said the Central Records Unit creates the records in the Criminal Jacket Files and six departments said the Detective Unit creates these records. Three departments each said the Intelligence Unit or the Traffic Unit creates these records. Four departments said the Juvenile Unit created the records in the Criminal Jacket Files; five

departments said these records are created by the Patrol Unit; and four departments had these records created by the Vice Unit. In the "other" category, the Identification Unit was listed by three departments. Four departments made no response to this particular question. This distribution is indicated in Table 178.

As shown in Table 179, records in the Fingerprint Files are created by the following units: seven departments listed the Central Records Unit; five departments listed the Detective Unit; three departments listed the Intelligence Unit; four departments listed the Juvenile Unit; three departments listed the Patrol Unit; three departments listed the Traffic Unit; two departments listed the Vice Unit; two departments listed the Identification Unit; and one department listed the Fingerprint Unit. Five departments made no response to this question.

Records in the Juvenile Record Files are created by the following units: two departments listed the Central Records Unit; two departments listed the Detective Unit; nine departments listed the Juvenile Unit; three departments listed the Research and Planning Unit; two departments listed the Traffic Unit; and one department listed the Vice Unit (Table 180). Six departments made no response.

Records in the Master Name Index Files (Table 181) are created by the following area or units: seven departments listed the Central Records Unit; two departments listed the Detective Unit; three departments listed the Intelligence Unit; two departments listed the Juvenile Unit; two departments listed the Patrol Unit; two departments listed the Traffic Unit; two departments listed the Vice Unit; and three departments listed the Identification Unit. Five departments made no response to this question.

Records in the Miscellaneous Files (Table 182) are created by the following areas or units: three departments listed the Central Records Unit; four departments listed the Detective Unit; three departments listed the Intelligence Unit; two departments listed the Juvenile Unit; six departments listed the Patrol Unit; two departments listed the Traffic Unit; two departments listed the Vice Unit; and three departments listed Miscellaneous Units. Seven departments made no response to this question.

Records in the Modus Operandi Files are created by the following areas or units: two departments listed the Detective Unit; two departments listed the Intelligence Unit; two departments listed the Patrol Unit; and two departments listed the Vice Unit (Table 183). Six departments made no response to the question, and six departments felt that it was not applicable to their filing system.

Records in the Property Record Files are created by the following areas or units: two departments listed the Central Records Unit; six departments listed the Detective Unit; one department listed the Intelligence Unit; two departments listed the Juvenile Unit; five departments listed the Patrol Unit; two departments listed the Traffic Unit; and one department listed the Vice Unit (Table 184). Five departments made no response, and three departments felt the question was not applicable to their records system.

Records in the Traffic Record Files are created by the following areas or units as shown in Table 185: three departments listed the Central Records Unit; one department listed the Detective Unit; one department listed the Patrol Unit; seven departments listed the Traffic Unit; and one department listed the Vice Unit. Four departments made no response and three departments felt this question was not applicable.

Records in the Vehicle Record Files are created by the following areas or units as shown in Table 186: two departments listed the Central Records Unit; two departments listed the Communications Unit; four Departments listed the Detective Unit; one department listed the Intelligence Unit; two departments listed the Juvenile Unit; three departments listed the Patrol Unit; and three departments listed the Traffic Unit. Four departments made no response, and four departments felt the question was not applicable to them.

Records in the Wanted and Missing Persons Files are created by the following areas or units as shown in Table 187: four departments listed the Central Records Unit; one department listed the Communications Unit; three departments listed the Detective Unit; two departments listed the Intelligence Unit; three departments listed the Juvenile Unit; three departments listed the Patrol Unit; one department listed the Research and Planning Unit; three departments listed the Traffic Unit; one department listed the Training Unit; and one department listed the Vice Unit. Five departments made no response, and two departments felt that this question was not applicable.

Records in the Warrant Files are created by the following areas or units as shown in Table 188: four departments listed the Central Records Unit; one department listed the Communications Unit; two departments listed the Detective Unit; two departments listed the Intelligence Unit; two departments listed the Juvenile Unit; six departments listed the Patrol Unit; one department listed the Research and Planning Unit; six departments listed the Traffic Unit; one department listed the Training Unit; and one department listed the Vice Unit. Four departments made no response to the question.

Record Utilization

Question 12 asked for the unit or area utilizing the records for the following areas: (1) Central Records, (2) Communications, (3) Detective, (4) Intelligence, (5) Juvenile, (6) Patrol, (7) Research and Planning, (8) Traffic, (9) Training, (10) Vice Unit, or (11) Other. Tables 189-200 portray the units utilizing the various files.

Records in the Accident Record Files are utilized by the following areas or units as shown in Table 189: eight departments listed the Central Records; three departments listed the Communications Unit; six departments listed the Detective Unit; six departments listed the Intelligence Unit; five departments listed the Juvenile Unit; eight departments listed the Patrol Unit; seven departments listed the Research and Planning Unit; nine departments listed the Traffic Unit; three departments listed the Training Unit; four departments listed the Vice Unit; and four departments made no response.

Records in the Criminal Jacket Files are reported as being utilized by the following areas or units as shown in Table 190: eight departments listed the Central Records Unit; four departments listed the Communications Unit; eight departments listed the Detective Unit; nine departments listed the Intelligence Unit; eight departments listed the Juvenile Unit; eight departments listed the Patrol Unit; seven departments listed the Research and Planning Unit; six departments listed the Traffic Unit; four departments listed the Training Unit; nine departments listed the Vice Unit; and four departments made no response to this particular question.

Records in the Fingerprint Files are utilized by the following areas or units as shown in Table 191: six departments listed the Central Records Unit; two departments listed the Communications Unit; five departments listed the Detective Unit; six departments listed the Intelligence Unit; four departments listed the Juvenile Unit; three departments listed the Patrol Unit; three departments listed the Research and Planning Unit; two departments listed the Traffic Unit; two departments listed the Training Unit; two departments listed the Vice Unit; and five departments made no response.

Records in the Juvenile Record Files are utilized by the following areas or units as shown in Table 192: five departments listed the Central Records Unit; four departments listed the Communications Unit; six departments listed the Detective Unit; five departments listed the Intelligence Unit; nine departments listed the Juvenile Unit; five departments listed the Patrol Unit; four departments listed the Research and Planning Unit; five departments listed the Traffic Unit; three departments listed the Training Unit; four departments listed the Vice Unit; and six departments made no response.

Records in the Master Name Index Files are utilized by the following areas or units as shown in Table 193: six departments listed the Central Records Unit; four departments listed the Communications Unit; six departments listed the Detective Unit; six departments listed the Intelligence Unit; five departments listed the Juvenile Unit; six departments listed the Patrol Unit; five departments listed the Research and Planning Unit; four departments listed the Traffic Unit; four departments listed the Training Unit; five departments listed the Vice Unit; and five departments made no response.

Records in the Miscellaneous Files are utilized by the following areas or units as shown in Table 194: five departments listed the Central Records Unit; four departments listed the Communications Unit; eight departments listed the Detective Unit; six departments listed the Intelligence Unit; five departments listed the Juvenile Unit; six departments listed the Patrol Unit; five departments listed the Research and Planning Unit; five departments listed the Traffic Unit; four departments listed the Training Unit; six departments listed the Vice Unit; and seven departments made no response.

Records in the Modus Operandi Files are utilized by the following areas or units as illustrated in Table 195: one department listed the Central Records Unit; one department listed the Communications Unit; three departments listed the Detective Unit; four departments listed the Intelligence Unit; one department listed the Juvenile Unit; two departments listed the Patrol Unit; one department listed the Research and Planning Unit; one department listed the Traffic Unit; one department listed the Training Unit; two departments listed the Vice Unit; six departments made no response to this question; and six departments felt that this question was not applicable to their filing situation.

Records in the Property Record Files are utilized by the following areas or units as portrayed in Table 196: four departments listed the Central Records Unit; two departments listed the Communications Unit; seven departments listed the Detective Unit; three departments listed the Intelligence Unit; three departments listed the Juvenile Unit; four departments listed the Patrol Unit; three departments listed the Research and Planning Unit; four departments listed the Traffic Unit; one department listed the

Training Unit; three departments listed the Vice Unit; five departments did not respond to this question; and three departments felt that this was not applicable.

Records in the Traffic Record Files are utilized by the following areas or units as shown in Table 197: six departments listed the Central Records Unit; four departments listed the Communications Unit; five departments listed the Detective Unit; five departments listed the Intelligence Unit; five departments listed the Juvenile Unit; seven departments listed the Patrol Unit; six departments listed the Research and Planning Unit; seven departments listed the Traffic Unit; three departments listed the Training Unit; five departments listed the Vice Unit; four departments did not respond; and three departments felt that the question was not applicable.

Records in the Vehicle Record Files are utilized by the following areas or units as indicated in Table 198: three departments listed the Central Records; three departments listed the Communications Unit; five departments listed the Detective Unit; three departments listed the Intelligence Unit; three departments listed the Juvenile Unit; four departments listed the Patrol Unit; two departments listed the Research and Planning Unit; four departments listed the Traffic Unit; one department listed the Training Unit; three departments listed the Vice Unit; four departments did not respond; and four departments felt this question was not applicable.

Records in the Wanted and Missing Persons File are utilized by the following areas or units as shown in Table 199: five departments listed the Central Records Unit; six departments listed the Communications Unit; six departments listed the Detective Unit; five departments listed the

Intelligence Unit; five departments listed the Juvenile Unit; five departments listed the Patrol Unit; four departments listed the Research and Planning Unit; six departments listed the Traffic Unit; four departments listed the Training Unit; five departments listed the Vice Unit; four departments made no response; and two departments felt this question was not applicable.

Records in the Warrant Files are utilized by the following areas or units as shown in Table 200: six departments listed the Central Records Unit; six departments listed the Communications Unit; six departments listed the Detective Unit; six departments listed the Intelligence Unit; five departments listed the Juvenile Unit; eight departments listed the Patrol Unit; six departments listed the Research and Planning Unit; nine departments listed the Traffic Unit; five departments listed the Training Unit; six departments listed the Vice Unit; and four departments made no response to this question.

File Retention

Question 13 asked for file retention schedules on selected types of records with the respondents answering with the following time periods: (1) less than 1 year, (2) between 1-5 years, (3) between 6-10 years, (4) other. Tables 201-212 show file retention schedules reported for the twelve types of files.

Length of retention for Accident Record Files (Table 201) is as follows: three departments listed less than 1 year; nine departments listed between 1-5 years; one department listed over 10 years; four departments retained their files on microfilm; and three departments did not respond to this question.

The length of retention for Criminal Jacket Files (Table 202) is as follows: four departments listed over 10 years; nine departments listed other; six departments hold these records indefinitely; and one department holds these records until the subjects are deceased. Three departments made no response to this question.

The length of retention of Fingerprint Files (Table 203) is as follows: five departments listed over 10 years and seven departments listed other. Five of the seven departments who listed an "other" retention period clarified their answer with "indefinite" and four departments made no response to this question.

The length of retention of Juvenile Records Files (Table 204) is as follows: one department listed between 1-5 years; one department listed between 6-10 years; one department listed over 10 years; and seven departments listed other. Five of the seven departments giving an "other" answer explained it further as follows: one stated "until deceased;" one stated "indefinitely;" three clarified the "other" with "until the person reaches age eighteen." Six departments made no response to this question.

The length of retention of Master Name Index Files (Table 205) is as follows: one department listed between 6-10 years; four departments listed over 10 years; and eight departments listed other. Six departments further clarified their answer of "other" as follows: one holds these records until the subject is deceased; three holds them ninety-nine years or until the subject is deceased; three hold them indefinitely; and one department microfilms these records. Four departments made no response.

The length of retention of Miscellaneous Files (Table 206) is as follows: two departments listed less than 1 year; three departments listed

between 1-5 years; one department listed between 6-10 years; three departments listed over 10 years; and five departments listed other. Four of the five departments stating the "other" answer utilize microfilm. Six departments did not respond to this question.

The length of retention of Modus Operandi Files (Table 207) is as follows: two departments listed between 1-5 years; two departments listed over 10 years; and one department listed other--microfilm. Six departments made no response, and six departments felt this question was not applicable to their filing system.

The length of retention of Property Record Files (Table 208) is as follows: four departments listed between 1-5 years; one department listed between 6-10 years; one department listed over 10 years; and three departments listed other. The three departments giving the "other" answer explained it as follows: guns are kept until recovered or indefinitely. Five departments made no response, and three departments did not feel that this question was applicable.

The length of retention of Traffic Record Files (Table 209) is as follows: six departments listed between 1-5 years; two departments listed over 10 years; and two departments listed other. In one department answering "other," these records are dropped "off line" after thirteen months. The other department answering "other" keeps these records until the subject is deceased. Four departments did not respond to this question, and three departments felt that this question was not applicable.

The length of retention of Vehicle Record Files (Table 210) is as follows: one department listed less than 1 year; three departments listed between 1-5 years; one department listed between 6-10 years; one department

listed over 10 years; and three departments listed other. The three departments giving the "other" answer clarified it as follows: indefinitely; until recovered; or recorded on microfilm. Three departments made no response to this question, and four departments felt this question was not applicable to their filing situation.

The length of retention of Wanted and Missing Persons Files (Table 211) is as follows: two departments listed between 1-5 years; two departments listed between 6-10 years; two departments listed over 10 years; and five departments listed other. Three of the five departments giving the answer "other," gave the reason as "indefinite" or "until the subject is arrested." Three departments made no response to this question, and two departments did not feel this question was applicable.

The length of retention of Warrant Files (Table 212) is as follows: seven departments listed between 1-5 years; one department listed between 6-10 years; and seven departments listed "other." Two departments made no response to this question.

Summary

The data tabulated and analyzed in this chapter offer a present performance approach to the types of equipment and the systems used for the filing and retention of pertinent police department records. Although some departments have indicated that they are using modern equipment, such as microfilm, to and new procedures to make the filing and retrieval of data more effective, others show a definite need for supplementing or replacing their current systems.

Perhaps the model system proposed in Chapter VII will offer a basis for updating those departments inclined to do so.

CHAPTER VII

PROPOSAL FOR A MODEL SYSTEM

Introduction

Based upon the need as developed and presented in Chapter II, III, and IV (Part I of the study) and analyzed data obtained from the descriptive part of the study, Chapters V and VI (Part II of the study), a recommended model was formulated for records management and information flow for cities 250,000-500,000 in population. The model is a conceptual arrangement rather than detailed hardware/software presentation. There are some examples which approach this concept which have been reported in earlier Chapters. For the most part, these were organized on a federal, state, or county level. It should be recognized that this model would have to be implemented in accordance with the environmental factors of a city.

Overview of ALERTS

An understanding of the real-time method of operation is basic to understanding the operational factors in ALERTS. Ordinarily in data processing, a group of information is allowed to collect and then at some period of time this data is processed to update records and make reports. Processing lead-time usually runs between one day and one month depending on the nature of the data. Information and reports in a group processing

system are always representative of some historical situation rather than a current set of values.

In a real-time system operation, data is processed when it becomes available rather than after a time delay waiting for a "batch" to collect. Information in the system is as near current as possible; therefore, the use of a real-time computer would permit a minute-to-minute recording on events occurring to the metropolitan department and to its policing areas. "On demand," the operational and/or administrative personnel could inquire of the system. They could inquire as to the number of accidents that were investigated during the past twenty-four hour period, week, or year. They can obtain a report as to the utilization of personnel in service for the day. Other decisions making data which may be requested includes: the names of persons who had been arrested; the names of all of the arrested persons' known associates; and/or answers to several thousand other questions useful in the performance of effective law enforcement.

ALERTS could relieve local law enforcement agencies of much routine record keeping by providing a central repository for law enforcement information, much of which is only of local interest.

Initially, computer files would be selected to serve the needs of working law enforcement officers. Included in these files would be information on stolen vehicles and parts, identifiable stolen property, missing license plates, felony warrants, wanted persons, misdemeanor warrants, vehicle registration, operator licenses including suspensions and revocations indexed by associated vehicle license numbers, and parking and traffic fines. Later, files for courts, prisons, probation boards and others might be added to expand the concept from a metropolitan law enforcement information system to a full system for the administration of justice.

Access into the systems file can be for two purposes: adding and/or updating data or for inquiry. Participating agencies would be able to enter new information into the system through a terminal device and this information would be immediately available to all other law enforcement agencies in the metropolitan area. For example, essential information from a stolen car reported would be transmitted in a prescribed format to the computer, where it would be automatically filed by license number and vehicle identification number. The current status of records could also be altered by any contributing agency. For instance, a stolen vehicle record could be changed from "stolen" to "recovered" by the agency recovering the vehicle. Present procedures on the local level for receiving and filing original theft reports and action taken after recovering a vehicle, would not necessarily be changed; however, if the local level is the metropolitan level, some of the procedures would be changed.

Inquiry into the computer files could be made from any terminal. Law enforcement officers would radio inquiries to the centers and receive replies by radio within seconds. Currently available equipment make this procedure feasible. Future developments in communication equipment may make it feasible to inquire into computer files directly from mobile radio terminals, bypassing the communications centers.

To inquire about the status of a suspect vehicle, the officer would find it necessary only to transmit an appropriate code, followed by the license plate number. The computer would search the files and transmit any available information back to the terminal within seconds. Potentially increased productivity would result from reducing waiting time during file inquiry. Along with increased law enforcement productivity, faster replies

to file inquiries would reduce inconvenience to citizens who must also wait for a reply.

Any case or individual record currently on file may be modified, deleted from the active file, and/or put on tape or disk for history. Whenever a record is originated on file or changed, the date will be recorded automatically and will be displayed upon inquiry of that record.

The cross-reference ability of the system is virtually unlimited, even though this is basically an information file. Once a possible "hit or match" occurs, the file originator would be contacted to delete the data on file. It must be remembered that leaving a solved entry on the file results in all other inquiring terminals receiving information that has not been updated.

It is proposed that the model system be connected to the National Crime Information Center (NCIC) operated by the FBI in Washington, D.C. All information checks on persons or vehicles and selected checks on property would be automatically routed, computer-to-computer, to NCIC. Here these checks would be processed against nationwide files. Selected information on persons, vehicles, and property would be sent to NCIC to be entered directly in the files. Certain categories of information such as stolen vehicle data would be available to law enforcement officials nationwide. Data in the NCIC system would be made available in real-time mode.

Participation in this system would be voluntary. Each local law enforcement agency would decide whether or not it was feasible for records of the department to be entered into the system. However, the greatest potential value of the proposed model would be its ability to make law enforcement information entered by one agency immediately available to all

other agencies on the metropolitan level. The full potential of the system could be reached only if all the local agencies participate. As crime does not stop at the city limit, county, or state line, neither can law enforcement information stop there.

Each local participating agency would pay for its own terminal and line to the central computer. In addition, a share of the cost of development and operation of a computer system would be paid by the agency using the service.

Cost of the central computer in storing the information used by all agencies would be financed by the entire metropolitan area with the additional possibility of both state and federal aid.

The computer would be programmed to accumulate statistics of system operation, such as the number of inquiries made by each terminal, the number of vehicles recovered, persons apprehended, and other data useful in operating and evaluating the system.

With the completion of the ALERTS concept, various benefits could be obtained by interfacing with other operational systems. Interfacing with state and federal law enforcement agencies could add statewide and national level activity to the local information, producing a complete, single inquiry history in each report.

Equipment Utilization

The ALERTS concept is not designed for any specific type of hardware, but demands a continuing evaluation of equipment specifications to assure adequate capacity and capability at minimum cost.

The system would consist of a real-time computer, random access storage files, a communications network and strategically located terminals

to give each participating law enforcement agency in the metropolitan area access to the information.

Reliability may be insured by selecting dependable equipment and by backing up or duplexing those components which could possibly fail. By providing adequate back-up, a system can be virtually 100% reliable. Arrangements should be made for utilization of a back-up computer in the area so that peripheral devices could be switched during preventive maintenance and other down times. The user must be assured that the system will be operational at all times.

The system is basically designed for a disk storage device and remote teleprocessing terminals, predominantly of the video tube type. Hard copy printing devices are associated with these tubes wherever the need for permanent printed material is noted. In most instances, video tubes can initiate printing on one hard copy device.

Entry of any record would be a direct entry via a communications terminal.

Lines and Terminals

Several types of terminals could be made available, depending on the volume of traffic. For example, terminals for communication centers with high volume could have magnetic tape readers. Low volume locations could utilize keyboards only.

Primarily, full-time leased lines would be used. In addition to leased lines, dial-up lines could be used since the necessary equipment is presently operational.

A communication system suitable for accessing computer files should have terminals distributed widely enough that any police car could be in

radio contact with a communication center equipped with a terminal or terminals linked to the computer. Design objectives of the communication system would be to:

1. Have every patrol car in radio contact with a center having a terminal.
2. Provide a system with adequate capacity to carry anticipated message traffic.
3. Interconnect law enforcement agencies, so that any agency with a terminal could communicate directly with any other agency with a terminal.
4. Make computer files of law enforcement data, such as stolen vehicles, vehicle registration, and operators' licenses, immediately accessible through the system.

ALERTS Data Base

The center would be a central computer file composed of a collection of law enforcement records. This system would provide rapid access to a complete case or a unique piece of data within that case.

An important aspect of the system would be accuracy and currency of the files. Each agency utilizing the centralized file would provide information which could be used by the other agencies. All participating agencies must verify the "update" of their records and commit themselves to the integrity of the system.

A number of factors would be involved in determining the manner and order that files are maintained for any organization. This would be true whether the files are kept annually or electronically. Therefore, the following analysis and concepts are outlined to give an insight to the "how" and "why" of the ALERTS file organization concept. The use of a complete data base with back-up disk would supplant the hard-copy records

which are presently utilized in virtually all metropolitan police agencies. Back-up disks should be stored in a fire-proof storage vault.

1. Hardware

These files would reside on disk modules for quick access by the monitor system. The monitor system would accept or return the programmed displays to the remote terminals requesting specific types of data.

2. Possible Contents of File by Segments

- a. Identity of originator of a particular entry.
- b. Name of a person associated with an entry and the personal identifiers connected to that person.
- c. Vehicle, whether wanted, associated with a person, recovered, and vehicle identifiers.
- d. License plates.
- e. Firearms with a numerical identifier.
- f. All other articles having numerical identifiers and not in a through e above.

3. Handling and Storing of the Contents of the File

Since only the file originator of the entry would know how many of the above segments are needed, the control of input and the defining types of segments required would be the responsibility of the originator.

The ALERTS file organization concept has been designed to handle all types of law enforcement records. Computer files would be selected and implemented on the following data:

1. By updating offense report files daily, the computer would weigh crime according to a pre-established plan that takes into account work load and specific crime patterns. This operation would provide a continuing analysis for police throughout the city.
2. Daily analysis of arrest records and arrest disposition files would show areas in the city where certain types of offenses are exceptionally high or low. Reports would also show the record of individual officers as well as the ratio between arrests and successful prosecutions.
3. Radio assignment records, handled by the computer, would provide a close check on manpower distribution

techniques, and could provide accurate time data with regard to distribution of offense and calls for service; they could also be used to show the actual time officers spent on the call.

4. Traffic citations would be stored in the system along with traffic accident data to show a correlation between enforcement activities and accident experience.
5. Officer activity reports could be put in punched card form for rapid analysis by the computer. There are too many of these reports to handle manually in a metropolitan police agency.
6. Maintenance of accurate motor vehicle records should reduce the time-lag in automobile recovering.
7. Pawnshop records, stolen property records, gun registration files, and stolen auto files could all be rapidly inspected by the computer.
8. The computer would automatically screen crime files and print an up-to-the-minute listing of wanted persons, stolen property, "hot" automobiles and the like.
9. Personnel records would be converted to either punched or magnetic tape for immediate analysis for any purpose desired.
10. Daily police officer assignment sheets would be automatically printed on the high-speed printer.

Anticipated Benefits of A Model System

Some of the benefits that members of the law enforcement community could accrue, if proper techniques were applied are as follows:

1. Identification and evaluation of alternatives in the purchase of new resources.
2. Improved control over the allocation of financial, equipment, and personnel resources.
3. Improved response to citizen calls for service.
4. Improved effectiveness in the preventive function of patrol units.
5. Enhanced police-community relationships arising from the apparent increased professionalism of the police agency.

Growing demands on every law enforcement agency make these anticipated benefits necessities. Police agencies will in all probability, find it necessary to meet the increased demands in manpower and other resources by utilizing the leverage offered by the science and technology as indicated in ALERTS.

ALERTS would save law enforcement officers hours now spent in checking volumes of manually kept information files. Information would be more effectively retrieved, thus increasing efficiency, and saving processing and personnel time.

ALERTS would assist in a more rapid apprehension of criminals. The present system for circulating stolen vehicle reports among law enforcement agencies in an area allows a thief three or more days without fear or apprehension. Habitual car thieves undoubtedly know of this deficiency and take advantage of it. ALERTS would close the time gap in law enforcement practice. Knowing that a stolen vehicle would be identifiable through ALERTS as soon as the theft is reported should serve as an effective deterrent.

The proposed system would allow greater safety for law enforcement officers. Patrolmen would already know the record, if any, of a driver they had stopped and the risks of encountering a dangerous criminal unprepared would be reduced. Patrolmen could quickly check the license number of vehicles before stopping them. They would, thus, be forewarned if the vehicle were reported as stolen, used in a serious crime, or owned by a known criminal. In addition, persons driving with revoked or suspended operators' licenses would be more readily identified and apprehended. The danger to other motorists which multiple offenders represent would be reduced. The file availability of suspended and revoked operators' licenses, through ALERTS should increase the rate of apprehension of persons driving without a valid licenses thereby increasing traffic safety.

In a real-time environment, every precaution must be taken to guard against data loss and file damage. Each program in the system must include an edit arrangement which checks every action taken regarding data. Precautions must be taken to prevent unauthorized access and unauthorized use of ALERTS data by including a code for each accessing terminal. A special team responsible for monitoring should receive reports of aborted attempts to utilize the system. Any abuses of the system should be detected and dealt with immediately.

ALERTS would be a new and powerful law enforcement tool. Vehicle license numbers of interest to any law enforcement agency participating in the system would be immediately available to every other agency. Drivers with suspended operators' licenses would no longer be able to present them as valid because of a delay in recording the suspension. A wanted criminal would not be released because his activity record could not be found. Burglars could no longer drive through a neighborhood in preparation for a night's work without fear of being apprehended for past crimes. Car thieves could no longer benefit from their mobility and the lack of information on stolen vehicles.

The primary advantages of ALERTS include the fact that information would be more retrievable, that efficiency would be increased, and that processing and personnel time would be saved. Additional advantages would be reduction of search time; greater reliability and accuracy of search; expansion possibility; decreased costs per retrieved record; provision of more efficient modus operandi files; and increased efficiency of security measures.

ALERTS could tip the balance of justice back toward law and order.

CHAPTER VIII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

From the background information presented in Chapter II and from the analysis of field study findings in Chapter VI, it is apparent that continued improvement in record management within the law enforcement information system is a demanding challenge.

Crime in the United States is on the upswing, both totally and in each individual category; and the demand for police services has kept pace with this increase in crime. The enormity of requisite police data resulting from the increase of crime, challenges law enforcement record administrators to seek solutions to the problems of handling the records efficiently and economically. Information-handling systems with their procedures, costs, and decision-making information must be analyzed to determine their relationship to the total law enforcement spectrum.

Numerous technological advances have focused particular attention upon the growing problem of records storage, control and retrieval for the modern law enforcement agency. Technical developments most profoundly affecting records programs include computer-based information systems and microfilm-based information systems. Automation of files has increased the retrieval speed, decreased the storage space needed, and changed the

procedures and job requirements for efficiently and effectively servicing the records and information needs of law enforcement agencies.

Summary

The problem of this study was to ascertain, analyze, and synthesize the theories, problems, procedures, and practices of records administration in law enforcement agencies for selected cities with populations between 250,000 and 500,000. Particular emphasis was placed upon the Criminal Files and the Modus Operandi Operational Files.

The study was limited to selected factors of records management programs of selected law enforcement agencies including: filing principles, records control, personnel, administration, equipment, and input and output data. Problems, procedures and practices as reported on the returned completed data collection instruments were also included. This research study excluded information which dealt with law enforcement such as: economics, personnel, theories, problems, procedures, and practices that were not directly related to the specific area of records management.

Phase I of this study included a thorough search and analysis of related literature and research for the purpose of acquiring pertinent information. This information served as a basis for the formulation of a valid questionnaire to be used to collect data on the status of records programs in selected cities. This phase also included the presentation of background material on the history, development, uses and needs of records programs, especially as they relate to law enforcement agencies. The information from this phase could be used as a basis for training programs and evaluative studies by individual law enforcement agencies.

Phase II of this study included the formulation of a valid questionnaire to be used as the data collecting instrument in gathering information on the status of records programs for selected law enforcement agencies. A pilot study was conducted with five cities. An additional 23 cities were selected for the study. The questionnaires were returned completed by 18. The final step in Phase II was the analysis, interpretation and presentation of the data.

Phase III of the study involved the formulation of a model records program for cities with the population size included in this study. A model program was developed which included a totally automated information system for law enforcement agencies in cities 250,000 and larger. This was specifically described in Chapter VII with the ALERTS model.

Field study data presented in this study was obtained from selected law enforcement agencies in cities of 250,000 to 500,000. Data presented in this research report is, therefore, not necessarily representative of the law enforcement agencies in smaller cities.

Conclusions

Numerous technological advances have focused particular attention upon the growing problem of records control and retrieval in the modern law enforcement agency.

The objective of this study was to determine the need for complete and accurate records of crime and criminal activity.

The purpose of this study was to identify and to analyze the procedures used by law enforcement agencies in operating their records programs in order to reach conclusions which would be helpful to individual law

enforcement agencies in understanding the nature of records programs. These conclusions are restricted to the limitations of this study and are presented as follows:

1. The police departments surveyed are very similar in organization and operational methods. Records programs used to support these operations provide minimum support to departmental needs.
2. Typical police records programs are designed to accomplish three major things: (a) retrieve documents or information related to a specific incident, person, or property item, (b) produce summary statistical reports for crime analysis, and (c) establish a permanent historical document of law enforcement activity.
3. The law enforcement agents are inadequately served by the information which is retrieved in the records departments as they are now operated.
4. Police records for cities reporting are never destroyed. Confusion seems to exist as to what must be kept from a legal standpoint.
5. The volume of records retained has created storage and retrieval problems.
6. The operational status accorded records programs in law enforcement agencies is significantly below the true importance of information in law enforcement work.
7. Computers are being used on a very limited basis by the law enforcement agencies who returned completed questionnaires.
8. A need exists for a model computer-based system for law enforcement agencies in cities with population between 250,000 to 500,000 which can be interfaced with systems of allied agencies and with NCIC, a computerized nationwide network.

9. The timely retrieval of necessary information is far below the need which creates an expensive time lag in law enforcement work.

10. Serious effort is being made by the majority of agencies reporting to update equipment and procedures used in records programs.

11. Analysis of law enforcement information processing from the research study's population sample reflects a growing need for more accurate information with faster, more effective retrieval.

12. Most of the records management programs included in this study lack the capacity to receive and process large volumes of data and have limited provisions for rapid, accurate access to stored information. Therefore, immediate random access to data is seldom permissible.

13. In most of the records management programs included in this study, dissemination of information at remote locations was not provided for in adequate form or content which resulted in an inadequate feedback of information for decision making purposes.

Recommendations

The recommendations of this study are formulated to serve as suggestions which might be helpful in understanding records programs for law enforcement agencies and how records programs may be improved.

1. It is recommended that a study be made to determine the costs in time, effort, and money caused by delays in timely retrieval of information needed in law enforcement work.

2. It is recommended that depth studies be made on a continuing basis so that new technological improvements may be discovered, evaluated, and utilized in records programs for law enforcement agencies.

3. It is recommended that studies be conducted relative to the establishment of a common data base for law enforcement agencies.

4. It is recommended that law enforcement administrators place the needed additional emphasis on records programs so that effective and efficient procedures and practices may be developed.

5. It is recommended that studies be made to implement and test model information systems as exemplified by ALERTS.

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APPENDICES

APPENDIX A

Questionnaire/Interview Guide

RECORDS ADMINISTRATION SURVEY

INSTRUCTIONS

- (1) Please answer in the blanks provided all of the questions that apply to your police department.
- (2) If a question does not apply to your department, put the letters "N/A" for not applicable.
- (3) Please check all of the circles that apply to your unit. You may have more than one check on some questions.
- (4) Please feel free to use the back of the pages of the survey to explain some question in detail.
- (5) It should be noted that all of the questions may be filled out by the Officer in Charge of the Division of Central Records, or he may delegate that parts of the survey be filled out by Research and Planning, Officer in Charge of Criminal Records, Officer in Charge of Modus Operandi Records, Officer in Charge of Fingerprints, etc.

RECORDS ADMINISTRATION SURVEY

Name of Law Enforcement Agency _____
 Address (City) _____ (State) _____ (ZIP Code) _____
 Chief of Police _____
 Director of Planning & Research _____
 Officer in Chg. of Records Division _____
 Total Population Served _____ City Sq. Mileage _____
 1970 Crime Index Rate, Part I _____ Part II _____
 Total Personnel of Department (Sworn) _____ (Civilian) _____

	Crim- inal	MO	Misc.	Finger- prints	Total Other
Total Records Personnel (Sworn)	_____	_____	_____	_____	_____
Total Records Personnel (Civilian)	_____	_____	_____	_____	_____
No. of Shifts of Personnel in Records Division	_____				
Av. Turnover of File Clerks	_____				

How is the Personnel Training in Central Files Conducted? On-the-Job Training , Formal Classes , Other, please name _____

In addition to filing equipment, please indicate the types, number and brands of equipment presently housed in your Central Records Division, such as:

- (1) Copying _____
- (2) Computer _____
- (3) Typewriters _____
- (4) Other, please name _____

Which files are available to the public? _____

What is the cost of copies provided to civilians (per page) \$ _____

What is the average yearly monies allotted for Central Records Divisions'

- (1) Equipment \$ _____ (2) Supplies \$ _____ (3) Total Salaries (Sworn) \$ _____ (4) Total Salaries (Civilian) \$ _____ (5) Building Up-keep \$ _____ (6) Other, please name _____

Please attach copies of the following:

- (1) Filing Instructions or Records Procedures Manual for Central Records
- (2) Police Department's Organizational Chart
- (3) Records Division's Organizational Floor Plan Layout (Please include either a drawing or actual photographs)
- (4) List of all filing equipment in Central Records (May use pictures) (For example, equipment might include: file cabinets, mechanical card veyers, open shelves for filing, etc.) (These pictures may be combined with those taken for the Organizational Floor Plan Layout in question 3)
- (5) Copies of training courses for Central Records' Personnel for the 1970 year and the 1971 year.

CRIMINAL RECORDS

1. What type of material is kept in a typical criminal file? Any police report pertaining to the individual , mug shot , fingerprint card , history sheet , all arrest records , FBI rap sheet , other, please name _____
2. Criminal records date from _____ to the present. (For example, 1912 to 1971)
3. What type back-up system is used for your Bureau of Records jackets or packets? None , computer , microfilm/microfiche , other, please name _____
4. What type of file duplication is there? _____
5. How is cross-indexing handled? _____
6. How many years are the criminal files held? Indefinitely , until the person is deceased , other, please name _____
7. How many years are the modus operandi files held? Indefinitely , until person is deceased , other, please name _____
8. How many years are the traffic files held? Indefinitely , until person is deceased , other, please name _____
9. What employees, other than Records' Personnel, have access to records? _____
10. Do you have any other type of "Record Access Security?" yes , no
If yes, what? _____
11. Does a person other than a file clerk refile material retrieved? yes , no . If yes, who? _____
12. How are miscellaneous reports stored? (burglary , crime against person , juvenile , larceny , other, please name _____
13. Describe in detail the type of equipment that Criminal Records are housed in. _____

14. Please note any plans for modifying records processing methods. _____

15. Please note any plans for equipment changes. _____

16. Is all of the information in the criminal jacket/packet on the computer? yes , no . If no, what information is? _____

17. Is the criminal jacket/packet still kept for back-up purposes after the material is placed on the computer? yes , no

MODUS OPERANDI RECORDS

1. Specific problems of retrieval of information other than money, manpower, and time. _____
2. Specific problems of processing information other than manpower, money, and time. _____
3. Do you store information on motor vehicles used in the perpetration of sex crimes; i.e., indecent exposure or attempting to pick up children? yes , no . If yes, how? type of auto , license number , color of vehicle , year of vehicle , other, please list _____
4. What types of offenders are kept on the computer? none , sex deviates , hi-jackers , addicts , other, please name _____
5. Since it is impractical to attempt to put M.O. acts and aberrations on the computer because of the variables involved, known offenders are coded by physical description. Which of the following "common denominators" do you use? sex , race , height , weight , color of hair , date of birth , tattoos , birthmarks , scars , other, please name _____
6. In your M.O. files, how are an offender's scars, birthmarks, or tattoos and their location on the body denoted? numeric code for the area of the body , written description , alphabetic code for the area of the body , other, please name _____
7. If the offender has no visible marks or scars, what descriptive element is then used to sort out subjects in the computer? _____

FINGERPRINT RECORDS

1. How are your fingerprints filed? by the Henry System , or by the Henry System with FBI's modification and extension
2. Are your master fingerprint files operated manually , mechanically , or by computer , or other, please name _____
If by computer, what brand? _____
3. How are latent fingerprints that are lifted from a crime scene filed? by the type of crime , suspect description , other, please name _____
4. Do you have a single fingerprint system by which to check latent fingerprints? yes , no . If no, what method is used to maintain control over latent prints? _____
5. Who makes your department's crime scene search? fingerprint technician , detective , other, please name _____
6. How are your fingerprint technicians classified? patrolmen , detectives , civilian , sgt. , ID technician , other, please name _____
7. What is the salary range of a fingerprint technician in your department? \$ _____ to \$ _____ per year.
8. In what way is the NCIC utilized for criminal checks? criminal records , guns , autos , other, please name _____

COMPUTER UTILIZATION

1. Does your department presently have computer utilization? yes , no
 2. If no, do you presently have plans for obtaining one? yes , no
 3. If yes, when? _____
- IF NO, PLEASE DISREGARD THE REMAINDER OF COMPUTER UTILIZATION QUESTIONS.
4. What brand of computer do you have? _____
 5. What size is it? _____
 6. What languages are used? fortran , cobol , algol , other, please name _____
 7. What specific files are stored at the present time on the computer? criminal , fingerprints , gun registration , miscellaneous , missing persons , modus operandi , payroll information , personnel information , stolen firearms , stolen property , traffic , vehicle registration , wanted persons , warrants , other, please name _____
 8. What specific files do you plan to store in the computer in the future? criminal , fingerprints , gun registration , miscellaneous , missing persons , modus operandi , payroll information , personnel information , stolen firearms , stolen property , traffic , vehicle registration , wanted persons , warrants , other, please name _____
Planned date for storage _____
 9. Do you now have teletype terminals installed? yes , no . If no, do you plan to install them in the near future (1972-1975)? yes , no
 10. Do you now have computer terminals installed in the police department? yes , no . If no, do you plan to install terminals between 1972-1975? yes , no
 11. If yes, how many computer terminals do you have in operation? _____
 12. In which units or area are the computer terminals located? criminal , fingerprints , gun registration , miscellaneous , missing persons , modus operandi , payroll , personnel information , stolen firearms , stolen property , traffic , vehicle registration , wanted persons , warrants , other, please name _____
 13. What functions can each terminal perform? add , delete , update , alter , other, please list _____
 14. What types of records are retrieved on terminals? criminal , fingerprints , gun registration , miscellaneous , missing persons , modus operandi , payroll , personnel information , stolen firearms , stolen property , traffic , vehicle registration , wanted persons , warrants , other, please name _____
 15. Are you leasing or purchasing your computer installation?
 16. How much does the computer installation cost? initially \$ _____
monthly \$ _____

COMPUTER UTILIZATION--Continued

17. How is the computer system funded? federal grant , state grant , city funds , other, please name _____
18. Are you only servicing your own city's police department? yes , no
19. If no, how many other city's police departments are included in your computer service? _____
20. Is your computer system shared with other city departments? yes , no
21. If yes, which ones? water , sanitation , gas , electric , other, please name _____
22. Are programmers, systems analysts, etc., assigned specifically for the police department? yes , no
23. If yes, how many? programmers _____, systems analysts _____, other, please list _____
24. Are programs prepared for processing and retrieving data from criminal files? yes , no
25. If no, what is the proposed time schedule for implementing processing and retrieval of criminal records? no plans , 6 mo. , 1 year , 2 years or more
26. Are programs prepared for processing and retrieving data from modus operandi files? yes , no
27. If no, what is the proposed time schedule for implementing processing and retrieval of modus operandi records? no plans , 6 mo. , 1 year , 2 years or more
28. Are programs prepared for processing and retrieving data from fingerprint files? yes , no
29. If no, what is the proposed time schedule for implementing processing and retrieval of fingerprint records? no plans , 6 mo. , 1 year , 2 years or more
30. Are programs prepared for processing and retrieving data from miscellaneous files? yes , no
31. If no, what is the proposed time schedule for implementing processing and retrieval of miscellaneous files? no plans , 6 mo. , 1 year , 2 years or more

MICROFILM UTILIZATION

1. Does your department presently have microfilm utilization? yes , no
2. If no, do you presently have plans for microfilm? yes , no
3. If yes, when? _____

IF NO, PLEASE DISREGARD THE REMAINDER OF MICROFILM UTILIZATION QUESTIONS

4. What brand of microfilm system do you have? _____
5. What type of system do you presently have? microfilm , microfiche , cartridge , roll , jacket , other, please name _____
6. What specific files are stored on microfilm, etc.? criminal , fingerprints , gun registration , miscellaneous , missing persons , modus operandi , payroll information , personnel information , stolen firearms , stolen property , traffic , vehicle registration , wanted persons , warrants , other, please name _____
7. How many stations are available for the retrieval of microfilm, etc. documents? _____
8. Where is the microfilming process performed? in the police department , sent outside the department to an independent company , sent outside the department to the microfilm systems company , other, please name _____
9. Who performs the microfilming process? officer , file clerk , microfilm systems company representative , other, please name _____
10. Approximately how much does the microfilm installation cost? initially (include the cost of the equipment, etc.) \$ _____ monthly (include the cost of the tapes, etc.) \$ _____
11. How was the microfilm system funded? federal grant , state grant , city funds , other, please name _____

Questionnaire completed by _____
 Title _____ Division _____
 Date _____

APPENDIX B

Letter of Appreciation

Letter of Transmittal No. 1

Letter of Transmittal No. 2

Follow-Up Letter

Police Department

September 10, 1971

E. E. Peters
Chief of Police
San Antonio Police Department
San Antonio, Texas

Dear Chief Peters:

Thank you very much for letting our representative Mrs. Marcia Grimes survey your Records Division. We are very pleased with the results of her visit to your police department.

She tells us that everyone in your department was very helpful and that it was a sincere pleasure to work with George Davis, and Capt. Aubrey Davenport of your Central Records Division.

As soon as the results of the survey are compiled, we shall be glad to send your department a copy.

Again, both Mrs. Grimes and I wish to express our thanks for your assistance.

Sincerely,

E. W. LAWSON
CHIEF OF POLICE

Tom L. Heggy, Captain
Special Services Division

TLH:sd

September 10, 1971

Jack Purdie, Chief of Police
Tulsa Police Department
Tulsa, Oklahoma 74103

Dear Chief,

The Oklahoma City Police Department is undertaking a survey of Record Keeping Procedures/Automation in selected cities of the United States.

Your Police Department has been chosen because of size, total crime index, and the fact that your record keeping procedures are progressive in nature.

The results of this survey will be incorporated into a doctoral dissertation by Mrs. Marcia Grimes. To date, there has not been any dissertations on the subject of record keeping or police record keeping. Since records are the heart beat of any efficiently run Police Department, a research study is certainly needed.

We would like to start compiling the results of the study no later than September 20, 1971. Only twenty cities were selected for this study and the importance of 100% participation cannot be stressed enough.

Would it be possible for your Planning and Research Unit or your Central Records Unit to complete and return the enclosed survey as soon as possible. A copy of the results of the survey will be sent, if you desire, to your department as soon as the results are compiled. A self-addressed, stamped envelope is enclosed for your convenience.

Very truly yours,

Captain Robert V. Wilder
Planning and Research Unit
Oklahoma City Police Department

Police Department

September 24, 1971

Chief of Police
Chicago Police Department
Chicago, Illinois

Dear Sir:

Our department is currently involved in a research study on Police Records Management. Since all state and municipal law enforcement agencies will be tied in to NCIC, the National Crime Information Center, we are asking for your assistance.

We need information in the following areas:

Criminal History Records
Criminal Identification Records
Modus Operandi Records
Fingerprint Records
Equipment (computer, microfilm, shelves, etc.) to house the above records and the estimated costs of the proposed equipment.

Any information and pictures dealing with criminal records and related material would certainly help us. Since time is critical, your prompt attention would be appreciated.

Sincerely,

E. W. LAWSON
CHIEF OF POLICE

Tom L. Heggy, Captain
Special Services Division

TLH:sd

September 30, 1971

Chief of Police
Albuquerque Police Department
Albuquerque, New Mexico

Dear Chief,

A Records Management survey was sent on September 10, 1971, to your department. It is critical that we receive the completed questionnaire so we can begin tabulating data. Since your completed survey has not been received, we feel that it must have been misplaced or lost in the mail.

Only twenty cities were selected to participate in this survey. Your department was chosen because of the progressive record keeping procedures that you are currently utilizing. Since an aggressive department is always looking to the future, we know you will want a copy of the survey results to aid in future planning.

This research study is being conducted for our department by Mrs. Marcia Grimes who is writing the first dissertation in the area of Police Records Management.

The results of this study will be mutually beneficial. A copy of the questionnaire and a self-addressed stamped envelope are enclosed for your convenience.

Very truly yours,

Captain Robert V. Wilder
Planning and Research Unit
Oklahoma City Police Department

APPENDIX C

Tabulated Data

TABLE 1
CRIME INDEX BY POPULATION

City	Population	Square Miles	Total Crime Index	Ratio Personnel to 1000 Population		Ratio Personnel Per Square Mile	
				Sworn	Civilian	Sworn	Civilian
Los Angeles	3,000,000	464	175,719	2.33	0.76	15.06	4.95
Houston	1,232,804	447	59,883	1.53	0.26	4.24	0.71
Dallas	860,000	300	50,391	2.05	N/A ^a	5.88	N/A
San Antonio	654,153	184	27,221	1.39	0.23	4.95	0.84
Phoenix	624,100	255	29,483	1.67	0.33	4.10	0.83
San Jose	483,500	141	14,492	1.15	0.20	3.97	0.70
Ft. Worth	395,000	226	16,652	1.66	0.26	2.90	0.46
Okla. City	366,481	649	11,386	1.58	0.19	0.89	0.11
Omaha	347,328	75	11,962	1.60	0.36	7.44	1.70
Norfolk	305,585	62	13,402	1.07	0.30	8.43	1.48
Birmingham	300,910	79	13,362	1.99	0.32	7.60	1.25
Akron	275,425	54	13,252	1.76	0.09	8.94	0.46
Tampa	274,000	84	13,986	2.04	0.55	6.78	1.79
Austin	250,000	81	6,794	1.32	0.37	4.09	1.16
Dayton	243,000	38	16,097	1.70	0.42	10.92	2.71
Rochester	293,000	NR ^b	12,442	NR	NR	NR	NR

^aN/A= Not Applicable

^bNR = No Response

TABLE 2
ASSIGNED RECORDS PERSONNEL

City	Total Records Personnel		Number of Personnel Work Shifts	Average Turnover of File Clerks
	Sworn	Civilian		
Los Angeles	25	317	3	46 to 51 Percent
Houston	8	57	3	50 Percent
Dallas	51	136	3	50 Percent
San Antonio	9	25	1	100+ Percent
Phoenix	12	55	3	2 a month
San Jose	NR ^a	NR	3	
Ft. Worth	5	15	3	1 Percent
Okla. City	17	19	3	5 Percent
Omaha	27	68	3	2 Percent
Norfolk	5	24	3	20 Percent
Birmingham	0	10	3	48 Percent
Akron	14	13	3	
Tampa	14	40		1 to 2 years
Austin	8	33	3	
Dayton	17	18	3	2 per year
Rochester	8	8	3	

^aNR = No Response

TABLE 3
TYPE OF TRAINING PROGRAM

City	On-the-Job Training	Formal Training
Los Angeles	X	X
Houston	X	
Dallas	X	
San Antonio	X	X
Phoenix	X	
San Jose	X	
Ft. Worth	X	
Okla. City	X	
Omaha	X	
Norfolk	X	
Birmingham	X	
Akron	X	
Tampa	X	
Austin	X	
Dayton	X	
Rochester	X	

TABLE 4

COPYING EQUIPMENT UTILIZED

City	XEROX		Brand Not Specified
Los Angeles	3600--1		
Houston	3600--1		
Dallas	3600--2	IBM--1	
San Antonio	3600--1	Bruning--1	
Phoenix	3600--1		
San Jose			3
Ft. Worth		Dennison--1	
Okla. City	3600--1	IBM--1	
Omaha		Minalta--1 IBM--2	
Norfolk	2400--1		
Birmingham	3600--1		
Akron	7000--1		
Tampa	3600--1	3M--1 Eastman Kodak--1	
Austin	3600--1		
Dayton	3600--1		
Rochester	3600--1		

TABLE 5
COMPUTER EQUIPMENT UTILIZED

City		
Los Angeles	2	IBM 360/50; Scantlin; Data Editor with Interface hardware sub-system
Houston		IBM
Dallas		IBM 360/50
San Antonio		IBM 360/40
Phoenix		N/A
San Jose		N/A
Ft. Worth		IBM 360/40
Okla. City		N/A
Omaha	S	IBM #2740; 4 IBM #2260; 1 IBM #2848
Norfolk		(city)
Birmingham		N/A
Akron		N/A
Tampa	1	IBM #2740, 1 RCA Video Data Terminal
Austin	1	IBM 360/20
Dayton		N/A
Rochester		N/A

TABLE 6
UTILIZATION OF TYPEWRITERS

City	IBM	Adler	Royal	Manual	No Response	Brand Not Specified
Los Angeles	20			13		
Houston						27 Manual & Electric
Dallas						12 Manual & Electric
San Antonio	X			X		
Phoenix						6 Electric
San Jose	15			10		
Ft. Worth	X					
Okla. City					X	
Omaha		30				
Norfolk	11			9		
Birmingham	13			3		
Akron	6			10		
Tampa						12 Manual & Electric
Austin	5		2			
Dayton	3		2	15		
Rochester					X	

TABLE 7

UTILIZATION OF OTHER EQUIPMENT

City	Utilization of Other Equipment	No Response
Los Angeles	1 datalog facsimile	
Houston	3 calculators	X
Dallas		
San Antonio	1 NCR cash register; 1 Eastman Kodak-miracode; 1 Diebold card veyer	
Phoenix	1 teletype	
San Jose	2 magnetic card typewriters	
Ft. Worth		X
Okla. City		X
Omaha		X
Norfolk	3 calculators; 2 adding machines	
Birmingham	1 Eastman Kodak-miracode	
Akron		X
Tampa		X
Austin	1 mimeograph	
Dayton		X
Rochester		X

TABLE 8

FILES AVAILABLE TO THE PUBLIC

City	Local Criminal Record	Criminal Report Face Sheet	Traffic Accident Reports	Offense Reports (Excluding Homicide)	Individual's Personal File	None	Crime Against Property	Traffic Record
Los Angeles			X	X				
Houston				X				
Dallas			X					
San Antonio			X		X			
Phoenix						X		
San Jose								X
Ft. Worth			X					
Okla. City			X				X	X
Omaha			X					
Norfolk			X	X	X			
Birmingham			X	X				
Akron					X			
Tampa	X	X	X					
Austin			X	X				
Dayton			X	X				
Rochester			X					

TABLE 9

COST OF COPIES PROVIDED TO CIVILIANS

City	Less than \$1.00	\$1.00	\$2.00	More than \$2.00	Explanation
Los Angeles				X	\$2.50 per report
Houston			X		
Dallas			X		
San Antonio		X			\$1.50 for accidents
Phoenix	X				\$0.10
San Jose		X			
Ft. Worth			X		
Okla. City		X			plus \$.50 for search
Omaha		X			
Norfolk		X			
Birmingham		X			Complete report-- no page limit
Akron			X		
Tampa		X			
Austin		X		X	\$1.00 for Xerox; \$3.00 for microfilm
Dayton		X			
Rochester			X		

TABLE 10

ALLOCATION OF YEARLY MONIES FOR CENTRAL RECORD DIVISION

City	Equipment	Supplies	Sworn Salaries	Civilian Salaries	Building Upkeep	Data Processing	Contracted Services
Los Angeles			\$375,000	\$3,000,000			
Houston							
Dallas	\$140,000	\$59,000	\$502,010	\$ 792,000			
San Antonio	\$ 86,635	\$ 8,875	\$ 88,703	\$ 104,632			
Phoenix	\$ 19,817	\$29,624	\$619,291		\$ 3,000		
San Jose	\$ 10,000						
Ft. Worth	\$ 1,375	\$ 4,392	\$152,427				\$17,918
Okla. City							
Omaha			\$ 18,360	\$ 34,000	\$32,000		
Norfolk							
Birmingham							
Akron							
Tampa	\$ 25,000	\$ 8,000	\$117,094	\$ 206,752	\$ 4,200	\$184,350	
Austin		\$11,000					
Dayton	\$ 24,000	\$ 3,000	\$221,000	\$ 126,000			

TABLE 11

TYPE OF MATERIAL KEPT IN CRIMINAL FILE

City	Indivi- ual's Police Report	Mug Shot	Finger- print Cards	History Sheet	Arrest Records	Local State, FBI, or CII Rap Sheet	Radio Grams	Stops	Missing Persons	Misc. Info. on Indiv.	Dept. of Public Safety Records
Los Angeles	X	X	X	X	X	X					
Houston	X		X	X	X						X
Dallas	X	X	X		X						
San Antonio	X	X	X	X	X	X				X	
Phoenix	X	X	X	X		X				X	
San Jose	X	X	X	X	X	X				X	
Ft. Worth		X		X	X	X					
Okla. City	X	X	X	X	X	X	X	X	X		
Omaha		X	X		X	X					
Norfolk		X			X	X					
Birmingham					X						
Akron		X	X	X	X	X					
Tampa		X		X	X	X					
Austin	X	X	X	X	X	X					
Dayton	X	X		X	X	X					
Rochester	X	X	X	X	X	X					

TABLE 13

BACK-UP SYSTEMS FOR BUREAU OF RECORDS JACKETS

City	None	Computer	Microfilm/Microfiche	Explanation
Los Angeles			X	
Houston			X	
Dallas			X	
San Antonio		X	X	
Phoenix	X			
San Jose	X			
Ft. Worth			X	
Okla. City	X			Back up on photographs and fingerprints
Omaha		X	X	
Norfolk	X			
Birmingham	X			
Akron	X			
Tampa			X	
Austin		X	X	
Dayton	x			
Rochester	X			

TABLE 14

METHOD OF CROSS INDEXING CRIMINAL RECORDS

City	Alpha	Numerical	Date	Location	Alias	Other	None
Los Angeles	X	X			X		
Houston	X					Soundex	
Dallas	X						
San Antonio	X			X			
Phoenix	X			X			
San Jose	X	X			X		
Ft. Worth						Fingerprint card	
Okla. City	X		X	X	X		
Omaha	X	X					
Norfolk	X	X					
Birmingham							X
Akron							X
Tampa						Microfilm	
Austin	X			X			
Dayton	X					Category	
Rochester						Court records	

TABLE 15
RETENTION OF FILES

City	Criminal Person		MO Person			Traffic Person		Other	
	Indefinitely	Deceased	Other	Indefinitely	Deceased	Other	Indefinitely		Deceased
Los Angeles	X					10 yr.		5 yr.	
Houston	X			N/A				3 yr. 2 1/2 mo. on line	
Dallas	X			N/A					
San Antonio	X	X	Computer 99 yr.	X	X	Computer 99 yr.	X	X	Computer 99 yr.
Phoenix	X			N/A				3 yr.	
San Jose	X	X		N/A				6 yr.	
Ft. Worth	X			N/A			N/A	Court maintenance	
Okla. City	X			X				15 yr.	
Omaha	X			X				5 yr.	
Norfolk	X			N/A			X	X	
Birmingham	X			X				5 yr.	
Akron	X			X			X		
Tampa	X			X				2 yr.	
Austin	X			N/A				MF	
Dayton	X			N/A			X	2 yr. then MF	
Rochester		X				No Response		X	

TABLE 16

ACCESS TO CRIMINAL RECORDS BY OTHER THAN RECORDS PERSONNEL

City	None	Public Officers	Court Officers	Law Enforcement Agencies	Detectives	Other Police Officers
Los Angeles		X	X	X		Probation Dept. Parole
Houston						X
Dallas			X	X		X
San Antonio					X	
Phoenix						Info. Bureau Personnel
San Jose					X	Department Personnel
Ft. Worth	X					
Okla. City						ID Officer Internal Security
Omaha	X					
Norfolk	X					
Birmingham	X					
Akron						Chief, Assistant Chief
Tampa	X					
Austin	X					
Dayton	X					
Rochester					X	Data Processing

TABLE 17

OTHER TYPES OF RECORD ACCESS SECURITY

City	Requests Routed Through Records Personnel	Records Office Not Open to Public	Locked Area-- Limited Access	None Mentioned	Other
Los Angeles			X		
Houston			X		
Dallas	X		X		
San Antonio					Back up by microfilm
Phoenix	X				Sign out slip
San Jose			X		
Ft. Worth	X				
Okla. City				X	
Omaha				X	
Norfolk				X	
Birmingham				X	
Akron			X		
Tampa	X	X			
Austin			X		
Dayton				X	
Rochester			X		

TABLE 18

PERSON REFILEING RETRIEVES CRIMINAL RECORD

City	File Clerk	Other
Los Angeles	X	
Houston	X	
Dallas	X	
San Antonio	X	
Phoenix	X	
San Jose	X	
Ft. Worth	X	
Okla. City	X	
Omaha	X	
Norfolk	X	
Birmingham	X	
Akron		Chief and Dept. Clerks
Tampa	X	
Austin	X	
Dayton	X	
Rochester	X	

TABLE 19

METHOD OF STORING MISCELLANEOUS CRIMINAL REPORTS

City	Burglary	Crime Against Person	Juvenile	Larceny	Offense Number	Other	No Response
Los Angeles						Open Jacket	
Houston	X	X		X			
Dallas						Service Number	
San Antonio						Case No. Order	
Phoenix						Number	
San Jose						Case No.	
Ft. Worth						Alpha & Number	
Okla. City						File Number	
Omaha						Numerical	
Norfolk						Numerical	
Birmingham	X	X		X			
Akron						Record Room	
Tampa					X		
Austin						Number	
Dayton						Category	
Rochester							X

TABLE 20

TYPE OF EQUIPMENT HOUSING CRIMINAL RECORDS

City	File Cabinets	Electric Elevator Files	Open Shelf Files	Other
Los Angeles		X		Magnetic tape: video file
Houston	X		X	
Dallas	X			
San Antonio	X			
Phoenix	X	X		
San Jose	X	X	X	
Ft. Worth			X	
Okla. City			X	
Omaha	X			
Norfolk	X		X	
Birmingham	X			
Akron		X		
Tampa	X		X	
Austin	X			
Dayton	X	X	X	
Rochester	X			

TABLE 21

PLANS FOR MODIFYING CRIMINAL RECORD PROCESSING METHODS

City	Microfilm	None	Computer	New Processing Method
Los Angeles				X
Houston			X	
Dallas		X		
San Antonio				X
Phoenix		X		
San Jose			X	
Ft. Worth		X		
Okla. City	X		X	
Omaha				X
Norfolk	X		X	
Birmingham				X
Akron		X		
Tampa	X			
Austin		X		
Dayton	X			
Rochester		X		

TABLE 22

PLANS FOR CRIMINAL RECORD EQUIPMENT CHANGES

City	Computer	Microfilm	None	Explanation
Los Angeles				Consolidation of city and county
Houston	X			
Dallas				Discontinuing open shelves
San Antonio	X			Going to IBM 370/40
Phoenix				Change from 4 drawer files to Space Finder File Units
San Jose			X	
Ft. Worth	X			
Okla. City	X	X		
Omaha			X	
Norfolk	X	X		
Birmingham				Going to open shelves
Akron			X	
Tampa			X	
Austin				4 magnetic card typewriters
Dayton		X		
Rochester			X	

TABLE 23

CRIMINAL JACKET INFORMATION KEPT ON COMPUTER

City	Criminal Jacket Information Kept on Computer		No Response	Criminal Jacket Kept for Back-up		
	None	Some		Yes	No	Projected
Los Angeles		X			X	
Houston	X			N/A		
Dallas	X			N/A		
San Antonio		X		X		
Phoenix	X			N/A		
San Jose		X		X		
Ft. Worth	X			X		
Okla. City		X		X		
Omaha		X		X		
Norfolk	X			N/A		
Birmingham	X			N/A		
Akron	X			N/A		
Tampa	X					
Austin		X		X		X
Dayton		X		X		
Rochester			X			

TABLE 24

PROBLEMS OTHER THAN MONEY, MANPOWER, AND TIME IN RETRIEVING
MODUS OPERANDI RECORDS

City	Not Applicable	No Response	None	Other
Los Angeles				Misfiled due to number of inquiries and storage space
Houston	X			
Dallas	X			
San Antonio			X	
Phoenix	X			
San Jose	X			
Ft. Worth	X			
Okla. City		X		
Omaha				Updating and classifying files
Norfolk	X			
Birmingham		X		
Akron			X	
Tampa			X	
Austin			X	
Dayton			X	
Rochester		X		

TABLE 25

PROBLEMS OTHER THAN MONEY, MANPOWER AND TIME IN PROCESSING
MODUS OPERANDI RECORDS

City	Not Applicable	No Response	None	Other
Los Angeles				High turnover; time required for in- dept. training program
Houston	X			
Dallas	X			
San Antonio			X	
Phoenix	X			
San Jose	X			
Ft. Worth	X			
Okla. City				Receiving current and accurate in- formation; feeding information into computer
Omaha				Organizing information into proper files
Norfolk	X			
Birmingham		X		
Akron			X	
Tampa			X	
Austin			X	
Dayton			X	
Rochester		X		

TABLE 26

MOTOR VEHICLE INFORMATION STORED IN MODUS OPERANDI FILES RELATED TO SEX CRIMES

City	Type of Auto	License Number	Color of Auto	Year of Vehicle	No Separate Section	No Response	Other
Los Angeles	X	X	X	X			
Houston					X		
Dallas					X		
San Antonio		X					
Phoenix					X		
San Jose					X		
Ft. Worth					X		
Okla. City	X	X	X	X			Damage to Vehicle
Omaha						X	
Norfolk					X		
Birmingham						X	
Akron						X	
Tampa							Felony Pick up on Warrants only
Austin					X		
Dayton					X		
Rochester	X	X	X	X			

TABLE 28

METHOD OF ANNOTATING PHYSICAL CHARACTERISTICS IN MODUS OPERANDI FILES

City	Numeric Code for Area of the Body	Alphabetic Code for Area of the Body	Written Description	Other
Los Angeles	X			
Houston	N/A			
Dallas	N/A			
San Antonio	X			
Phoenix	N/A			
San Jose	N/A			
Ft. Worth	N/A			
Okla. City	X			No Sex Deviate Report
Omaha			X	
Norfolk	N/A			
Birmingham	X		X	
Akron	N/A			
Tampa	X			
Austin	N/A			
Dayton	N/A			
Rochester	X		X	

TABLE 29
METHOD OF FILING FINGERPRINTS

City	Henry System	Henry System with FBI Modifications
Los Angeles		X
Houston		X
Dallas	X	
San Antonio	X	
Phoenix		X
San Jose	X	
Ft. Worth	X	
Okla. City		X
Omaha	X	
Norfolk	X	
Birmingham	X	
Akron	X	
Tampa	X	
Austin		X
Dayton		X
Rochester		X

TABLE 30

METHOD OF OPERATING MASTER FINGERPRINT FILES

City	Manually	Mechanically	By Computer
Los Angeles	X		
Houston	X		
Dallas	X		
San Antonio	X		
Phoenix	X		
San Jose	X		
Ft. Worth	X		
Okla. City	X		
Omaha	X		
Norfolk	X		
Birmingham	X		
Akron	X		
Tampa	X		
Austin	X		
Dayton	X		
Rochester	X		

TABLE 31

METHOD OF FILING LATENT FINGERPRINTS

City	Type of Crime	Offense Number	Pattern Type	Date	Name	Location
Los Angeles	X					X
Houston	X					
Dallas	X					X
San Antonio	X			X		X
Phoenix	X					X
San Jose	X					
Ft. Worth				X		
Okla. City				X		
Omaha					X	
Norfolk		X		X		
Birmingham			X		X	
Akron	X			X		
Tampa		X				
Austin			X			
Dayton	X					
Rochester			X			

TYPE 32

METHOD OF MAINTAINING CONTROL OVER LATENT FINGERPRINTS

City	<u>Single Print</u>		Explanation
	Yes	No	
Los Angeles		X	Modified 5 finger classification system
Houston	X		
Dallas		X	By date--6 months; retained 5 years
San Antonio		X	Filed by MO--type of offense
Phoenix	X		
San Jose	X		
Ft. Worth		X	Suspect
Okla. City	X		Strip file (by code)
Omaha	X		
Norfolk	X		
Birmingham	X		
Akron		X	
Tampa		X	
Austin	X		
Dayton	X		
Rochester	X		

TABLE 33

RESPONSIBILITY FOR CRIME SCENE SEARCH

City	Investigating Officer	Detective	Fingerprint Technician	Evidence Technician
Los Angeles	X	X	X	
Houston				X
Dallas		X		
San Antonio	X	X	X	
Phoenix		X		X
San Jose			X	
Ft. Worth				X
Okla. City			X	
Omaha			X	
Norfolk		X	X	
Birmingham				X
Akron		X	X	
Tampa	X			X
Austin		X	X	
Dayton				X
Rochester			X	

TABLE 34

CLASSIFICATION OF FINGERPRINT TECHNICIANS

City	Patrolmen	Detectives	Civilians	Sergeant	Technicians	Other
Los Angeles	X	X	X	X		Fingerprint Experts
Houston					X	
Dallas	X	X				
San Antonio		X				Uniform Investigators
Phoenix			X			
San Jose					X	Police Women
Ft. Worth	X					
Okla. City		X			X	
Omaha	X		X		X	
Norfolk		X			X	
Birmingham			X			
Akron		X				
Tampa					17	
Austin					X	
Dayton		X				
Rochester					X	

TABLE 35

SALARY RANGE OF FINGERPRINT TECHNICIAN

City	Range	No Response
Los Angeles	\$9,368--\$12,564	
Houston	\$8,000--\$15,600	
Dallas	\$8,800--\$11,220	
San Antonio	\$7,300--\$ 9,108	
Phoenix	\$6,420--\$ 8,448	
San Jose		X
Ft. Worth	\$6,000--\$ 8,000	
Okla. City	\$6,900--\$ 8,820	
Omaha	\$7,320--\$ 9,960	
Norfolk	\$6,114--\$ 8,472	
Birmingham	\$5,300--\$ 7,500	
Akron		X
Tampa	\$5,408--\$ 7,759	
Austin	\$6,000--\$ 7,800	
Dayton	\$8,778--\$10,025	
Rochester		X

TABLE 36

UTILIZATION OF NCIC FOR CRIMINAL CHECKS

City	Criminal Records	Guns	Autos	Other	No Response
Los Angeles	X	X	X	Convert Henry to fingerprint code	
Houston			X		
Dallas	X	X	X		
San Antonio			X	Serial numbered items	
Phoenix	X	X	X	Stolen serial property	
San Jose	X	X	X		
Ft. Worth				Wanted persons	
Okla. City	X	X	X		
Omaha	X	X	X	Serial numbered items	
Norfolk	X	X	X	Persons and items	
Birmingham	X	X	X	Serial numbered items	
Akron					X
Tampa	X		X		
Austin	X			Name checks	
Dayton		X	X	Property	
Rochester	X	X	X	Wanted persons	

TABLE 37

COMPUTER UTILIZATION

City	Present Computer Utilization	Projected Computer Utilization	Lease, Purchase or Shared	Monthly Cost	Annual Cost	Method of Funding
Los Angeles	X		Lease	\$156,000		Federal and City
Houston	X		Lease	\$ 1,800		Federal and City
Dallas	X		Lease	N/A	N/A	City
San Antonio	X		Lease		\$ 75,000	City
Phoenix	X		Shared w/City	N/A	N/A	City
San Jose	X		Lease	N/A	N/A	City
Ft. Worth	X		Lease	\$ 20,000		City
Okla. City	X		Lease	\$ 12,700		City
Omaha	X		Lease	N/A	N/A	Federal and City
Norfolk	X		Purchase		\$511,000	Federal and City
Birmingham	N/A	None				
Akron	N/A	None				
Tampa	X		Lease		\$184,350	City
Austin	X		Lease	\$ 3,990		City
Dayton	X		Lease	\$ 3,500		City
Rochester	X		Shared w/City	N/A	N/A	City

TABLE 38

COMPUTER LANGUAGES UTILIZED

City	Fortran	Cobol	ALGOL	RPG	Assembler	Other	No Computer System	No Response
Los Angeles		X			X	B-TEM		
Houston		X						
Dallas						ALC		
San Antonio		X		X				
Phoenix		X						
San Jose								X
Ft. Worth		X						
Okla. City		X						
Omaha		X						
Norfolk						BAL		
Birmingham							X	
Akron							X	
Tampa	X	X		X	X			
Austin				X	X			
Dayton			X					
Rochester		X						

TABLE 39

FILES PRESENTLY STORED OR PROJECTED FOR STORAGE ON THE COMPUTER

City	Criminal	Fingerprints	Gun Registration	Misc.	Missing Persons	MO	Payroll Information
Los Angeles	M ^a	P ^b		P		S ^c	S
Houston	P					P	S
Dallas				S	S		
San Antonio	S	P	S	S	P	S	S
Phoenix	M		P		P	P	
San Jose	S		M				M
Okla. City	M	P	M	P	M	M	M
Omaha					S	S	
Norfolk	P	P		P			S
Birmingham							
Akron							
Tampa	S				P		S
Austin			S				
Dayton	M	M	P	P		P	
Rochester	S						P

^aM = Modification of present Storage System

^bP = Projected

^cS = Presently Stored

TABLE 39--Continued

City	Personnel Information	Stolen Firearms or Property	Traffic	Vehicle Registration	Wanted Persons	Warrant	No System
Los Angeles	S	S	S	S	S	S	
Houston	M	M	S		S	S	
Dallas		S	P	S	S	S	
San Antonio	M	S	S	P	P	S	
Phoenix	P	P	M			P	
San Jose		M	M	M	M	M	
Okla. City	S	M	S	S	P	P	
Omaha	M	M	P	P	P	S	
Norfolk	S	S	S	S	S	S	
Birmingham	P	S	S	S	S	S	
Akron							X
Tampa							X
Austin		P			P	P	
Dayton		S		S			
Rochester	M	P	M	M	M	M	

TABLE 40

UTILIZATION OF TELETYPE TERMINALS

City	Presently Installed	Projected Installation	No System
Los Angeles	X		
Houston	X		
Dallas	X		
San Antonio	X		
Phoenix		X	
San Jose	X		
Ft. Worth	X		
Okla. City	X		
Omaha	X		
Norfolk	X		
Birmingham			X
Akron			X
Tampa	X		
Austin		X	
Dayton		X	
Rochester	X		

TABLE 41

COMPUTER TERMINAL UTILIZATION

City	War- rants	Data Change	Communi- cations	Central Records	Detective Bureau	No Response	No System	Projected No. of Computer Terminals	No. of Computer Terminals Installed
Los Angeles		X	X	X	X				115
Houston				X					14
Dallas				X					43
San Antonio				X					1
Phoenix						N/A			0
San Jose	X			X					8
Ft. Worth			X	X					2
Okla. City				X					5
Omaha				X					7
Norfolk			X	X	X				0
Birmingham							X		0
Akron							X		0
Tampa	X	X	X	X					4
Austin						N/A			0
Dayton						X			0
Rochester			X						1

TABLE 42

FUNCTIONS OF COMPUTER TERMINALS

City	Add	Delete	Update	Alter	Inquire	N/A
Los Angeles	X	X	X	X	X	
Houston	X	X	X	X	X	
Dallas	X	X	X	X	X	
San Antonio					X	
Phoenix						X
San Jose	X		X			
Ft. Worth	X	X	X	X	X	
Okla. City	X	X	X	X	X	
Omaha	X	X	X	X		
Norfolk	X	X	X	X		
Birmingham						X
Akron						X
Tampa	X	X	X	X		
Austin						X
Dayton						X
Rochester	X	X	X	X		

TABLE 43

TYPES OF RECORDS RETRIEVED ON COMPUTER TERMINALS

City	Criminal	Fingerprints	Gun Registration	Misc.	Missing Persons	MO	Payroll Information
Los Angeles						X	X
Houston				X			X
Dallas	X				X		
San Antonio	X		X	X	X		
Phoenix							
San Jose	X		X		X		
Ft. Worth							
Okla. City	X		X	X	X	X	
Omaha	X	X		X	X	X	
Norfolk				X			
Birmingham							
Akron							
Tampa	X						
Austin							
Dayton							
Rochester							

TABLE 43--Continued

City	Personnel Information	Stolen Firearms or Property	Traffic	Vehicle Registration	Wanted Persons	Warrant	No Response
Los Angeles	X	X	X	X	X	X	
Houston	X	X	X		X		
Dallas		X		X	X	X	
San Antonio		X	X			X	
Phoenix							X
San Jose	X	X		X	X	X	
Ft. Worth			X				
Okla. City		X					
Omaha	X	X	X	X	X	X	
Norfolk		X			X	X	
Birmingham							X
Akron							X
Tampa		X		X	X		
Austin							X
Dayton							X
Rochester				X			

TABLE 44

GEOGRAPHICAL SERVICING OF COMPUTER TERMINALS

City	Police Dept. Only	Other Police Depts.	Other Law Agencies	Other City Departments			Account- ing	No System
				Water	Sanitation	Court Gas/Electric		
Los Angeles		X	X		X	X	X	
Houston	X			N/A				
Dallas		X		X			X	
San Antonio	X			X				
Phoenix	N/A	N/A	N/A	N/A				
San Jose		X	X					
Ft. Worth	X	X		X				
Okla. City	X			X	X	X	X	
Omaha			X					
Norfolk		X		X	X	X	X	
Birmingham								X
Akron								X
Tampa				X	X		X	
Austin	X					X		
Dayton	X							
Rochester			X	X	X			

TABLE 45

SPECIFIC ASSIGNMENT OF PERSONNEL FOR COMPUTER SYSTEM UTILIZATION

City	Number of		<u>Assigned Specifically for Police Department</u>		No System
	Programmers	Systems Analysts	Yes	No	
Los Angeles	N/A	N/A		X	
Houston		1	X		
Dallas	3	5	X		
San Antonio	2	1	X		
Phoenix	2	1	X		
San Jose	N/A	N/A		X	
Ft. Worth	1	1	X		
Okla. City	N/A	N/A		X	
Omaha	N/A	N/A		X	
Norfolk	N/A	N/A		X	
Birmingham					X
Akron					X
Tampa					
Austin	1	1	X		
Dayton	2		X		
Rochester	2	1	X		

TABLE 46

COMPUTER UTILIZATION FOR CRIMINAL FILES

City	Use of Computer Programs for Processing and Retrieving Data from Criminal Files		Proposed Programs No Plans	Time Schedule for Implementing Computer			No System
	Yes	No		6 Months	1 Year	2 Years or More	
Los Angeles	X		N/A				
Houston		X		X			
Dallas	X		N/A				
San Antonio	X		N/A				
Phoenix	X		N/A				
San Jose		X	N/A				
Ft. Worth		X	X				
Okla. City		X		X			
Omaha	X		N/A				
Norfolk		X			X		
Birmingham							X
Akron							X
Tampa	X		N/A				
Austin	X		N/A				
Dayton	X		N/A				
Rochester	X		N/A				

TABLE 47

COMPUTER UTILIZATION FOR MODUS OPERANDI FILES

City	Use of Computer Programs for Processing and Retrieving Data from <u>Modus Operandi</u> Files		Proposed Programs No Plans	Time Schedule for Implementing Computer			No System
	Yes	No		6 Months	1 Year	2 years or More	
Los Angeles	X		N/A				
Houston		X		X			
Dallas		X	X				
San Antonio		X				X	
Phoenix		X				X	
San Jose		X	X				
Ft. Worth		X	X				
Okla. City	X		N/A				
Omaha	X		N/A				
Norfolk		X	X				
Birmingham							X
Akron							X
Tampa		X				X	
Austin	X		N/A				
Dayton		X			X		
Rochester		X				X	

TABLE 48

COMPUTER UTILIZATION FOR FINGERPRINT FILES

City	Use of Computer Programs for Processing and Retrieving Data from Fingerprint Files		Proposed Programs No Plans	Time Schedule for Implementing Computer			No System
	Yes	No		6 Months	1 Year	2 Years or More	
Los Angeles		X				X	
Houston		X		X			
Dallas		X	X				
San Antonio		X				X	
Phoenix		X	X				
San Jose	X		N/A				
Ft. Worth		X	X				
Okla. City		X			X		
Omaha	X		N/A				
Norfolk		X				X	
Birmingham							X
Akron							X
Tampa						X	
Austin		X	X				
Dayton	X		N/A				
Rochester		X	X				

TABLE 49

COMPUTER UTILIZATION FOR MISCELLANEOUS FILES

City	Use of Computer Programs for Processing and Retrieving Data from Miscellaneous Files		Proposed Programs No Plans	Time Schedule for Implementing Computer			No System
	Yes	No		6 Months	1 Year	2 Years or More	
Los Angeles	X		N/A				
Houston		X		X			
Dallas	X		N/A				
San Antonio	X		N/A				
Phoenix	X		N/A				
San Jose		N/A	N/A				
Ft. Worth		X			X		
Okla. City	X					X	
Omaha	X		N/A				
Norfolk		X			X		
Birmingham							X
Akron							X
Tampa	X					X	
Austin	X		N/A				
Dayton	X		N/A				
Rochester	X		N/A				

TABLE 50
MICROFILM SYSTEMS

City	Presently Utilized	Projected Utilization
Los Angeles	X	
Houston	X	
Dallas	X	
San Antonio	X	
Phoenix	X	
San Jose	X	
Ft. Worth	X	
Okla. City		X
Omaha	X	
Norfolk	X	
Birmingham	X	
Akron	X	
Tampa	X	
Austin	X	
Dayton	X	
Rochester	X	

TABLE 51

TYPE OF MICROFILM SYSTEMS

City	Microfilm	Microfiche	Cartridge	Roll	Jacket	Other	No Response
Los Angeles	X						
Houston	X			X			
Dallas	X		X				
San Antonio	X			X			
Phoenix	X			X			
San Jose				X			
Ft. Worth	X			X			
Okla. City	No System						
Omaha				X			
Norfolk	X			X			
Birmingham	X		X				
Akron	X						
Tampa	X			X			
Austin	X			X			
Dayton	X			X			
Rochester	X			X			

TABLE 52

FILES STORED ON MICROFILM

City	Criminal	Fingerprints	Gun Registration	Misc.	Missing Persons	MO	Payroll Information
Los Angeles	X						
Houston	X		X	X			
Dallas	X			X	X		
San Antonio	X		X	X	X		
Phoenix	X			X			
San Jose				X			
Ft. Worth	X			X			
Okla. City							
Omaha	X			X	X		
Norfolk	X						
Birmingham		X		X		X	
Akron	X		X	X	X	X	
Tampa	X			X	X		
Austin	X			X			
Dayton				X			
Rochester		X					

TABLE 52--Continued

City	Personnel Information	Stolen Firearms or Property	Traffic	Vehicle Registration	Wanted Persons	Warrant	No System
Los Angeles		X	X				
Houston							
Dallas		X	X		X		
San Antonio		X			X		
Phoenix	X						
San Jose							
Ft. Worth							
Okla. City							X
Omaha	X	X	X				
Norfolk							
Birmingham	X						
Akron				X			
Tampa	X	X	X				
Austin			X				
Dayton		X	X				
Rochester	X		X				

TABLE 53

STATIONS AVAILABLE FOR RETRIEVAL OF MICROFILM AND OTHER DOCUMENTS

City	1	2	No Response
Los Angeles		X	
Houston		X	
Dallas		X	
San Antonio	X		
Phoenix		X	
San Jose	X		
Ft. Worth	X		
Okla. City	No System		
Omaha	X		
Norfolk	X		
Birmingham		X	
Akron	X		
Tampa	All File Clerks		
Austin	X		
Dayton	X		
Rochester			X

TABLE 54

LOCATION OF MICROFILMING PROCESS

City	In Police Department	Independent Company	Microfilm Systems Company	Other
Los Angeles	X			
Houston			X	
Dallas			X	
San Antonio				City Microfilm Station
Phoenix				City Microfilm
San Jose		X		
Ft. Worth	X			
Okla. City	No System			
Omaha			X	
Norfolk		X		
Birmingham	X			
Akron	X			
Tampa	X			
Austin				City Microfilm
Dayton	X			
Rochester	No Response			

TABLE 55

PERSON PERFORMING MICROFILMING PROCESS

City	Officer	File Clerk	Microfilm System Co. Representative	Other	No Response
Los Angeles		X			
Houston		X			
Dallas			X		
San Antonio		X			
Phoenix				City Personnel	
San Jose			X		
Ft. Worth		X			
Okla. City	No System				
Omaha		X			
Norfolk		X			
Birmingham		X			
Akron		X			
Tampa	X	X			
Austin				City Personnel	
Dayton		X			
Rochester					X

TABLE 56

INITIAL COST AND METHOD OF FUNDING OF MICROFILM INSTALLATION

City	Initial Cost	Method of Funding			Other
		Federal Grant	State Grant	City Funds	
Los Angeles	\$ 6,500			X	
Houston	N/A			X	
Dallas	N/A			X	
San Antonio	N/A			X	
Phoenix	N/A			X	
San Jose	N/A			X	
Ft. Worth	N/A			X	
Okla. City	No System				
Omaha	N/A			X	
Norfolk	\$ 3,100				
Birmingham	\$34,000	X		X	
Akron	N/A			X	
Tampa	\$ 4,600			X	
Austin	N/A			X	
Dayton	\$ 4,000			X	
Rochester					No Response

TABLE 57

ARRANGEMENT OF ACCIDENT RECORD FILES

City	Alphabetical	Numeric	Geographic	Subject	Terminal Digit	Chronological	No Response
Los Angeles	X	X	X	X			
Houston			X			X	
Dallas		X					
San Antonio			X				
Phoenix		X	X				
San Jose	X	X					
Ft. Worth	X	X					
Okla. City	X		X				
Omaha	X		X	X	X	X	
Norfolk	X						
Birmingham			X				
Akron							X
Tampa	X	X			X		
Austin			X				
Dayton		X					
Rochester	X						

TABLE 58

ARRANGEMENT OF CRIMINAL JACKET FILES

City	Alphabetical	Numeric	Geographical	Subject	Terminal Digit	Other	No Response
Los Angeles	X	X					
Houston		X					
Dallas		X					
San Antonio	X	X				Fingerprint	
Phoenix					X		
San Jose							X
Ft. Worth		X				Color	
Okla. City	X	X					
Omaha		X			X		
Norfolk		X					
Birmingham		X					
Akron							X
Tampa		X					
Austin		X					
Dayton		X					
Rochester		X					

TABLE 59

ARRANGEMENT OF FINGERPRINT FILES

City.	Alphabetical	Numeric	Geographical	Subject	Terminal Digit	Fingerprint Classification	No Response
Los Angeles		X				X	
Houston						X	
Dallas						X	
San Antonio						X	
Phoenix						X	
San Jose							X
Ft. Worth						X	
Okla. City					X	X	
Omaha							X
Norfolk						X	
Birmingham		X					
Akron							X
Tampa						X	
Austin						X	
Dayton		X					
Rochester					X		

TABLE 60

ARRANGEMENT OF JUVENILE RECORDS FILES

City	Alphabetical	Numeric	Geographic	Subject	Terminal Digit	Other	No Response
Los Angeles	X	X					
Houston	X						
Dallas							N/A
San Antonio	X						
Phoenix	X						
San Jose							X
Ft. Worth	X						
Okla. City	X						
Omaha	X	X					
Norfolk							N/A
Birmingham	X						
Akron							X
Tampa	X	X					
Austin	X						
Dayton	X						
Rochester	X						

TABLE 61

ARRANGEMENT OF MASTER NAME INDEX

City	Alphabetical	Numeric	Geographical	Subject	Terminal Digit	Other	No Response
Los Angeles	X						
Houston						Soundex	
Dallas	X						
San Antonio	X						
Phoenix	X						
San Jose							X
Ft. Worth	X					Alias	
Okla. City	X						
Omaha							X
Norfolk	X						
Birmingham	X						
Akron							X
Tampa	X						
Austin	X						
Dayton	X						
Rochester	X						

TABLE 62

ARRANGEMENT OF MISCELLANEOUS FILES

City	Alphabetical	Numeric	Geographical	Subject	Terminal Digit	Other	No Response
Los Angeles	X	X	X				
Houston	X	X	X				
Dallas	X	X					
San Antonio	X	X					
Phoenix		X					
San Jose							X
Ft. Worth	X	X					
Okla. City	X						
Omaha							X
Norfolk							N/A
Birmingham		X					
Akron							X
Tampa							X
Austin		X		X			
Dayton	X						
Rochester	X						

TABLE 63

ARRANGEMENT OF MODUS OPERANDI FILES

City	Alphabetical	Numeric	Geographical	Subject	Terminal Digit	Other	No Response
Los Angeles			X				
Houston							N/A
Dallas							N/A
San Antonio	X						
Phoenix							N/A
San Jose							N/A
Ft. Worth							N/A
Okla. City						Physical Description	
Omaha							X
Norfolk							N/A
Birmingham							N/A
Akron							
Tampa		X					
Austin							N/A
Dayton							N/A
Rochester					X		

TABLE 64

ARRANGEMENT OF PROPERTY RECORDS FILES

City	Alphabetical	Numeric	Geographical	Subject	Terminal Digit	Other	No Response
Los Angeles	X	X	X	X			
Houston		X		X			
Dallas							N/A
San Antonio		X					
Phoenix				X			
San Jose							X
Ft. Worth							N/A
Okla. City		X					
Omaha	X	X					
Norfolk							X
Birmingham	X						
Akron							X
Tampa	X	X				Article	
Austin		X		X			
Dayton							N/A
Rochester							X

TABLE 65

ARRANGEMENT OF TRAFFIC RECORDS FILES

City	Alphabetical	Numeric	Geographical	Subject	Terminal Digit	Other	No Response
Los Angeles	X	X	X	X			
Houston		X					
Dallas							N/A
San Antonio	X	X					
Phoenix							X
San Jose							X
Ft. Worth							N/A
Okla. City	X						
Omaha	X	X					
Norfolk	X						
Birmingham	X						
Akron							X
Tampa		X			X		
Austin	X						
Dayton	X						
Rochester	X						

TABLE 66

ARRANGEMENT OF VEHICLE RECORDS FILES

City	Alphabetical	Numeric	Geographical	Subject	Terminal Digit	Other	No Response
Los Angeles	X	X	X	X			
Houston		X					
Dallas							N/A
San Antonio		X					
Phoenix							N/A
San Jose							X
Ft. Worth		X					
Okla. City	X						
Omaha	X						
Norfolk						Computer	
Birmingham	X	X					
Akron							X
Tampa	X	X				Make	
Austin							N/A
Dayton							N/A
Rochester							N/A

TABLE 67

ARRANGEMENT OF WANTED AND MISSING PERSONS FILES

City	Alphabetical	Numeric	Geographical	Subject	Terminal Digit	Other	No Response
Los Angeles	X	X					
Houston						Juvenile Classification	
Dallas		X					
San Antonio	X						
Phoenix							N/A
San Jose							X
Ft. Worth	X						
Okla. City	X						
Omaha	X						
Norfolk						Computer	
Birmingham		X					
Akron							X
Tampa	X		X				
Austin							N/A
Dayton	X						
Rochester	X						

TABLE 68

ARRANGEMENT OF WARRANT FILES

City	Alphabetical	Numeric	Geographical	Subject	Terminal Digit	Other	No Response
Los Angeles	X	X					
Houston		X					
Dallas		X					
San Antonio	X	X					
Phoenix	X	X					
San Jose							X
Ft. Worth	X						
Okla. City	X						
Omaha	X	X					
Norfolk						Computer	
Birmingham	X						
Akron							X
Tampa	X		X				
Austin	X						
Dayton	X						
Rochester	X						

TABLE 69

TYPE OF EQUIPMENT ACCIDENT RECORDS HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles	X	X	X		
Houston		X			
Dallas				Computer	
San Antonio	X				
Phoenix	X				
San Jose					X
Ft. Worth		X		Computer	
Okla. City		X			
Omaha	X		X		
Norfolk	X				
Birmingham	X				
Akron					X
Tampa	X				
Austin			X		
Dayton			X		
Rochester	X				

TABLE 70

TYPE OF EQUIPMENT CRIMINAL JACKETS HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles		X			
Houston	X	X			
Dallas	X				
San Antonio		X	X		
Phoenix	X	X			
San Jose					X
Ft. Worth		X			
Okla. City		X			
Omaha					X
Norfolk	X		X		
Birmingham	X				
Akron					X
Tampa		X			
Austin	X				
Dayton		X			
Rochester	X				

TABLE 71

TYPE OF EQUIPMENT FINGERPRINT HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles	X				
Houston	X				
Dallas	X				
San Antonio	X				
Phoenix	X				
San Jose					X
Ft. Worth	X				
Okla. City	X				
Omaha					X
Norfolk	X				
Birmingham			X		
Akron					X
Tampa	X				
Austin	X				
Dayton	X				
Rochester	X				

TABLE 72

TYPE OF EQUIPMENT JUVENILE RECORDS HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles	X				
Houston	X				
Dallas					N/A
San Antonio	X				
Phoenix	X				
San Jose					X
Ft. Worth	X				
Okla. City			X		
Omaha	X				
Norfolk					N/A
Birmingham			X		
Akron					X
Tampa	X				
Austin	X				
Dayton		X			
Rochester	X				

TABLE 73

TYPE OF EQUIPMENT MASTER NAME INDEX HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles			X		
Houston	X				
Dallas	X				
San Antonio	X		X		
Phoenix			X		
San Jose					X
Ft. Worth	X				
Okla. City			X		
Omaha					X
Norfolk					X
Birmingham	X				
Akron					X
Tampa			X		
Austin	X				
Dayton			X		
Rochester	X				

TABLE 74

TYPE OF EQUIPMENT MISCELLANEOUS HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles	X	X	X		
Houston		X			
Dallas				Computer	
San Antonio	X				
Phoenix	X	X			
San Jose					X
Ft. Worth		X			
Okla. City			X		
Omaha					X
Norfolk					N/A
Birmingham	X				
Akron					X
Tampa					X
Austin	X				
Dayton			X		
Rochester	X				

TABLE 75

TYPE OF EQUIPMENT MODUS OPERANDI HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles	X				
Houston					N/A
Dallas					N/A
San Antonio	X				
Phoenix					N/A
San Jose					X
Ft. Worth					N/A
Okla. City	X	X			
Omaha					X
Norfolk					N/A
Birmingham					X
Akron					X
Tampa	X	X			
Austin					N/A
Dayton					N/A
Rochester	X				

TABLE 76

TYPE OF EQUIPMENT PROPERTY RECORDS HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles	X	X	X		
Houston	X				
Dallas					N/A
San Antonio				Computer	
Phoenix	X				
San Jose					X
Ft. Worth					X
Okla. City			X		
Omaha	X				
Norfolk					X
Birmingham	X				
Akron					X
Tampa			X		
Austin	X				
Dayton					N/A
Rochester	X				

TABLE 77

TYPE OF EQUIPMENT TRAFFIC RECORDS HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles	X	X	X		
Houston	X				
Dallas					N/A
San Antonio				Computer	
Phoenix					X
San Jose					X
Ft. Worth					X
Okla. City			X		
Omaha	X				
Norfolk			X		
Birmingham	X				
Akron					X
Tampa	X				
Austin	X				
Dayton			X		
Rochester	X				

TABLE 78

TYPE OF EQUIPMENT VEHICLE RECORDS HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles	X	X	X		
Houston		X			
Dallas					N/A
San Antonio	X				
Phoenix					X
San Jose					X
Ft. Worth				Computer	
Okla. City			X		
Omaha	X				
Norfolk				Computer	
Birmingham	X				
Akron					X
Tampa	X				
Austin					N/A
Dayton					N/A
Rochester	X				

TABLE 79

TYPE OF EQUIPMENT WANTED AND MISSING PERSONS HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles	X	X			
Houston	X				
Dallas				Computer	
San Antonio	X		X		
Phoenix					N/A
San Jose					X
Ft. Worth	X				
Okla. City			X		
Omaha	X				
Norfolk				Computer	
Birmingham	X				
Akron					X
Tampa	X		X		
Austin					N/A
Dayton	X				
Rochester	X				

TABLE 80

TYPE OF EQUIPMENT WARRANT HOUSED IN

City	File Drawer	Open Shelf	Mechanical Card Veyer	Other	No Response
Los Angeles	X	X			
Houston		X			
Dallas				Computer	
San Antonio				Computer	
Phoenix	X				
San Jose					X
Ft. Worth	X				
Okla. City			X		
Omaha	X				
Norfolk				Computer	
Birmingham	X				
Akron					X
Tampa	X				
Austin	X				
Dayton	X				
Rochester	X				

TABLE 81

ACCIDENT RECORD FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche, Cartridge, Rolls, Jackets	Other	No Response
Los Angeles	X	X	X		
Houston		X	X		
Dallas				Reports	
San Antonio		X		Reports	
Phoenix		X	X		
San Jose	X				
Ft. Worth		X			
Okla. City	X				
Omaha		X	X		
Norfolk		X			
Birmingham	X				
Akron					X
Tampa	X	X	X	Forms	
Austin		X	X		
Dayton	X		X		
Rochester	X				

TABLE 82

CRIMINAL JACKET FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche, Cartridge, Rolls, Jackets	Other	No Response
Los Angeles		X		X	
Houston		X		X	
Dallas		X			
San Antonio		X			
Phoenix		X			
San Jose					X
Ft. Worth		X			
Okla. City		X			
Omaha	X	X			
Norfolk	X			X	
Birmingham				X	
Akron					X
Tampa		X			
Austin		X			
Dayton	X				
Rochester		X			

TABLE 83

FINGERPRINT FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche, Cartridge, Folls, Jackets	Other	No Response
Los Angeles	X				
Houston	X				
Dallas	X				
San Antonio	X				
Phoenix	X				
San Jose					X
Ft. Worth	X				
Okla. City	X				
Omaha					X
Norfolk	X				
Birmingham	X				
Akron					X
Tampa	X				
Austin	X				
Dayton	X				
Rochester	X				

TABLE 84

JUVENILE RECORDS FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche, Cartridge, Rolls, Jackets	Other	No Response
Los Angeles	X	X			
Houston	X				
Dallas					N/A
San Antonio	X				
Phoenix	X				
San Jose					X
Ft. Worth	X				
Okla. City	X				
Omaha	X				
Norfolk					N/A
Birmingham	X				
Akron					X
Tampa		X			
Austin	X				
Dayton	X				
Rochester	X				

TABLE 85

MASTER NAME INDEX FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche, Cartridge, Rolls, Jackets	Other	No Response
Los Angeles	X				
Houston	X				
Dallas	X				
San Antonio	X				
Phoenix	X				
San Jose					X
Ft. Worth	X				
Okla. City	X				
Omaha					X
Norfolk	X				
Birmingham	X				
Akron					X
Tampa	X				
Austin	X		X		
Dayton	X				
Rochester	X				

TABLE 86

MISCELLANEOUS FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche, Cartridge, Rolls, Jackets	Other	No Response
Los Angeles	X	X	X		
Houston					N/A
Dallas				Computer	
San Antonio		X			
Phoenix		X			
San Jose					X
Ft. Worth		X			
Okla. City	X				
Omaha					X
Norfolk					N/A
Birmingham	X				
Akron					X
Tampa					X
Austin		X	X		
Dayton	X				
Rochester	X				

TABLE 87

MODUS OPERANDI FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche, Cartridge, Rolls, Jackets	Other	No Response
Los Angeles	X				
Houston					N/A
Dallas					N/A
San Antonio		X			
Phoenix					N/A
San Jose					X
Ft. Worth					N/A
Okla. City	X				
Omaha					X
Norfolk					N/A
Birmingham				X	
Akron					X
Tampa	X			X	
Austin					N/A
Dayton					N/A
Rochester	X				

TABLE 88

PROPERTY RECORD FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche, Cartridge, Rolls, Jackets	Other	No Response
Los Angeles	X	X	X		
Houston	X				
Dallas					N/A
San Antonio				Computer	
Phoenix	X				
San Jose					X
Ft. Worth					N/A
Okla. City	X				
Omaha					X
Norfolk					X
Birmingham	X				
Akron					X
Tampa	X		X		
Austin	X				
Dayton					N/A
Rochester					X

TABLE 89

TRAFFIC RECORDS FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche, Cartridge, Rolls, Jackets	Other	No Response
Los Angeles	X	X	X		
Houston	X		X		
Dallas					N/A
San Antonio				Computer	
Phoenix					N/A
San Jose					X
Ft. Worth					N/A
Okla. City	X				
Omaha	X	X			
Norfolk	X				
Birmingham	X				
Akron					X
Tampa	X				
Austin		X			
Dayton	X				
Rochester	X				

TABLE 90

VEHICLE RECORDS FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche Cartridge, Rolls, Jackets	Other	No Response
Los Angeles	X	X	X		
Houston		X		X	
Dallas					N/A
San Antonio	X	X			
Phoenix					N/A
San Jose					X
Ft. Worth				Computer	
Okla. City	X				
Omaha	X				
Norfolk				Tape Computer	
Birmingham	X				
Akron					X
Tampa	X		X		
Austin					N/A
Dayton					N/A
Rochester					X

TABLE 91

WANTED AND MISSING PERSONS FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche, Cartridge, Rolls, Jackets	Other	No Response
Los Angeles	X			X	
Houston	X				
Dallas				Computer	
San Antonio	X	X			
Phoenix					N/A
San Jose					X
Ft. Worth		X			
Okla. City	X				
Omaha	X				
Norfolk	X				
Birmingham				Disk Computer	
Akron					X
Tampa	X				
Austin					N/A
Dayton	X				
Rochester	X				

TABLE 92

WARRANT FILES ARE ON

City	Cards	Folders	Microfilm, Microfiche, Cartridge, Rolls, Jackets	Other	No Response
Los Angeles	X			X	
Houston	X		X		
Dallas				Computer	
San Antonio				Computer	
Phoenix	X	X			
San Jose					X
Ft. Worth	X				
Okla. City				Computer	
Omaha	X				
Norfolk				Disk Computer	
Birmingham	X				
Akron					X
Tampa	X			Forms	
Austin		X			
Dayton	X				
Rochester	X				

TABLE 93

METHOD OF OPERATING ACCIDENT RECORDS FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles			X	
Houston			X	
Dallas	X			
San Antonio			X	
Phoenix		X		
San Jose				X
Ft. Worth			X	
Okla. City		X	X	
Omaha	X	X	X	
Norfolk			X	
Birmingham			X	
Akron				X
Tampa		X	X	
Austin	X	X		
Dayton			X	
Rochester			X	

TABLE 94

METHOD OF OPERATING CRIMINAL JACKET FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles			X	
Houston			X	
Dallas			X	
San Antonio			X	
Phoenix			X	
San Jose				X
Ft. Worth			X	
Okla. City			X	
Omaha	X	X	X	
Norfolk		X	X	
Birmingham			X	
Akron				X
Tampa			X	
Austin			X	
Dayton			X	
Rochester			X	

TABLE 95

METHOD OF OPERATING FINGERPRINT FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles			X	
Houston			X	
Dallas			X	
San Antonio			X	
Phoenix			X	
San Jose				X
Ft. Worth			X	
Okla. City			X	
Omaha				X
Norfolk			X	
Birmingham			X	
Akron				X
Tampa			X	
Austin			X	
Dayton			X	
Rochester			X	

TABLE 96

METHOD OF OPERATING JUVENILE RECORDS FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles			X	
Houston			X	
Dallas				N/A
San Antonio			X	
Phoenix			X	
San Jose				X
Ft. Worth			X	
Okla. City			X	
Omaha			X	
Norfolk				N/A
Birmingham			X	
Akron				X
Tampa		X	X	
Austin			X	
Dayton			X	
Rochester			X	

TABLE 97

METHOD OF OPERATING MASTER NAME INDEX FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles			X	
Houston			X	
Dallas			X	
San Antonio		X	X	
Phoenix		X		
San Jose				X
Ft. Worth			X	
Okla. City			X	
Omaha				X
Norfolk			X	
Birmingham			X	
Akron				X
Tampa		X	X	
Austin			X	
Dayton			X	
Rochester			X	

TABLE 98

METHOD OF OPERATING MISCELLANEOUS FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles			X	
Houston			X	
Dallas	X			
San Antonio			X	
Phoenix			X	
San Jose				X
Ft. Worth			X	
Okla. City			X	
Omaha				X
Norfolk				N/A
Birmingham			X	
Akron				X
Tampa				X
Austin			X	
Dayton			X	
Rochester			X	

TABLE 99

METHOD OF OPERATING MODUS OPERANDI FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles		X	X	
Houston				N/A
Dallas				N/A
San Antonio			X	
Phoenix				N/A
San Jose				X
Ft. Worth				N/A
Okla. City	X		X	
Omaha				X
Norfolk				N/A
Birmingham			X	
Akron				X
Tampa			X	
Austin				N/A
Dayton				N/A
Rochester			X	

TABLE 100

METHOD OF OPERATING PROPERTY RECORDS FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles			X	
Houston			X	
Dallas				N/A
San Antonio	X			
Phoenix			X	
San Jose				X
Ft. Worth				N/A
Okla. City			X	
Omaha			X	
Norfolk				X
Birmingham			X	
Akron				X
Tampa	X			
Austin			X	
Dayton				N/A
Rochester			X	

TABLE 101

METHOD OF OPERATING TRAFFIC RECORDS FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles			X	
Houston	X		X	
Dallas				N/A
San Antonio	X			
Phoenix				N/A
San Jose				X
Ft. Worth				N/A
Okla. City			X	
Omaha			X	
Norfolk			X	
Birmingham			X	
Akron				X
Tampa			X	
Austin			X	
Dayton			X	
Rochester			X	

TABLE 102

METHOD OF OPERATING VEHICLE RECORDS FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles			X	
Houston			X	
Dallas				N/A
San Antonio			X	
Phoenix				N/A
San Jose				X
Ft. Worth	X			
Okla. City			X	
Omaha		X	X	
Norfolk	X			
Birmingham			X	
Akron				X
Tampa	X		X	
Austin				N/A
Dayton				N/A
Rochester			X	

TABLE 103

METHOD OF OPERATING WANTED AND MISSING PERSONS FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles	X		X	
Houston			X	
Dallas	X			
San Antonio		X	X	
Phoenix				N/A
San Jose				X
Ft. Worth			X	
Okla. City			X	
Omaha	X		X	
Norfolk	X			
Birmingham			X	
Akron				X
Tampa	X		X	
Austin				N/A
Dayton			X	
Rochester			X	

TABLE 104

METHOD OF OPERATING WARRANT FILES

City	Automated Computer	Mechanical	Manual	No Response
Los Angeles	X		X	
Houston	X		X	
Dallas	X			
San Antonio	X			
Phoenix			X	
San Jose				X
Ft. Worth			X	
Okla. City	X		X	
Omaha	X		X	
Norfolk	X			
Birmingham			X	
Akron				X
Tampa			X	
Austin	X		X	
Dayton			X	
Rochester			X	

TABLE 105

AVERAGE TIME TO FILE/PROCESS ACCIDENT RECORDS

City	Time	No Response
Los Angeles	5'	
Houston	24 hrs.	
Dallas	15"	
San Antonio	1/2'	
Phoenix	1-2'	
San Jose		X
Ft. Worth	24 hrs.	
Okla. City	15'	
Omaha	24 hrs.	
Norfolk	40'	
Birmingham		X
Akron		X
Tampa	5'	
Austin	24 hrs.	
Dayton	30'	
Rochester	2'	

TABLE 106

AVERAGE TIME TO FILE/PROCESS CRIMINAL JACKET FILES

City	Time	No Response
Los Angeles	5'	
Houston	24 hrs.	
Dallas	5'	
San Antonio	10'	
Phoenix	1'	
San Jose		X
Ft. Worth	24 hrs.	
Okla. City	15'	
Omaha	8 hrs.	
Norfolk	20'	
Birmingham		X
Akron		X
Tampa	1'	
Austin	2'	
Dayton	10'	
Rochester		X

TABLE 107

AVERAGE TIME TO FILE/PROCESS FINGERPRINT FILES

City	Time	No Response
Los Angeles	1'	
Houston	24 hrs.	
Dallas	10'	
San Antonio	10'	
Phoenix	1'	
San Jose		X
Ft. Worth	48 hrs.	
Okla. City	10-25'	
Omaha		X
Norfolk	20'	
Birmingham		X
Akron		X
Tampa	1'	
Austin	10'	
Dayton	20'	
Rochester		X

TABLE 108

AVERAGE TIME TO FILE/PROCESS JUVENILE RECORD FILES

City	Time	No Response
Los Angeles	5'	
Houston	24 hrs.	
Dallas		N/A
San Antonio	1'	
Phoenix	1'	
San Jose		X
Ft. Worth	24 hrs.	
Okla. City	3'	
Omaha		N/A
Norfolk		N/A
Birmingham		X
Akron		X
Tampa		X
Austin	10'	
Dayton	10'	
Rochester		X

TABLE 109

AVERAGE TIME TO FILE/PROCESS MASTER NAME INDEX FILES

City	Time	No Response
Los Angeles	5'	
Houston	24 hrs.	
Dallas	5'	
San Antonio	1/2'	
Phoenix	1'	
San Jose		X
Ft. Worth	5'	
Okla. City	3'	
Omaha		X
Norfolk	20'	
Birmingham		X
Akron		X
Tampa		N/A
Austin	24 hrs.	
Dayton	15'	
Rochester		X

TABLE 110

AVERAGE TIME TO FILE/PROCESS MISCELLANEOUS FILES

City	Time	No Response
Los Angeles	5'	
Houston	24 hrs.	
Dallas	1 hr.	
San Antonio	3'	
Phoenix	1'	
San Jose		X
Ft. Worth	8 hrs.	
Okla. City	3'	
Omaha		X
Norfolk		N/A
Birmingham		X
Akron		X
Tampa		X
Austin	24 hrs.	
Dayton	15'	
Rochester		X

TABLE 111

AVERAGE TIME TO FILE/PROCESS MODUS OPERANDI FILES

City	Time	No Response
Los Angeles	24 hrs.	
Houston		N/A
Dallas		N/A
San Antonio	1/2'	
Phoenix		N/A
San Jose		X
Ft. Worth		N/A
Okla. City	30"-1 hr.	
Omaha		X
Norfolk		N/A
Birmingham		X
Akron		X
Tampa	30'	
Austin		N/A
Dayton		N/A
Rochester		X

TABLE 112

AVERAGE TIME TO FILE/PROCESS PROPERTY RECORDS FILES

City	Time	No Response
Los Angeles	5'	
Houston	1'	
Dallas		N/A
San Antonio	1/2'	
Phoenix	1'	
San Jose		X
Ft. Worth		N/A
Okla. City	3'	
Omaha		N/A
Norfolk		X
Birmingham		X
Akron		X
Tampa	8'	
Austin	24 hrs.	
Dayton		N/A
Rochester		X

TABLE 113

AVERAGE TIME TO FILE/PROCESS TRAFFIC RECORDS FILES

City	Time	No Response
Los Angeles	5'	
Houston	48 hrs.	
Dallas		N/A
San Antonio	24 hrs.	
Phoenix		N/A
San Jose		X
Ft. Worth		N/A
Okla. City	3'	
Omaha		N/A
Norfolk	20'	
Birmingham		X
Akron		X
Tampa		X
Austin	5'	
Dayton	5'	
Rochester		X

TABLE 114

AVERAGE TIME TO FILE/PROCESS VEHICLE RECORDS FILES

City	Time	No Response
Los Angeles	5'	
Houston	1'	
Dallas		N/A
San Antonio	1/2'	
Phoenix		N/A
San Jose		X
Ft. Worth	3 mos.	
Okla. City	3'	
Omaha		N/A
Norfolk		N/A
Birmingham		X
Akron		X
Tampa	5'	
Austin		N/A
Dayton		N/A
Rochester		X

TABLE 115

AVERAGE TIME TO FILE/PROCESS WANTED AND MISSING PERSONS FILES

City	Time	No Response
Los Angeles	4'	
Houston	24 hrs.	
Dallas	25"	
San Antonio	1/2'	
Phoenix		N/A
San Jose		X
Ft. Worth	15'-30'	
Okla. City	3'	
Omaha		N/A
Norfolk	2'	
Birmingham		X
Akron		X
Tampa	5'	
Austin		N/A
Dayton	5'	
Rochester		X

TABLE 116

AVERAGE TIME TO FILE/PROCESS WARRANT FILES

City	Time	No Response
Los Angeles	3'	
Houston	48 hrs.	
Dallas	25''	
San Antonio	3'	
Phoenix	6'	
San Jose		X
Ft. Worth	24 hrs.	
Okla. City	5'	
Omaha		N/A
Norfolk	2'	
Birmingham		X
Akron		X
Tampa	5'	
Austin	2'	
Dayton	5'	
Rochester		X

TABLE 117

AVERAGE TIME TO FIND/RETRIEVE ACCIDENT RECORDS FILES

City	Time	No Response
Los Angeles	2'	
Houston	1'	
Dallas	15"	
San Antonio	1'	
Phoenix	1/2'	
San Jose		X
Ft. Worth	1'	
Okla. City	3'	
Omaha		X
Norfolk	2'	
Birmingham		X
Akron		X
Tampa	2'	
Austin	2'	
Dayton	3'	
Rochester	2'	

TABLE 118

AVERAGE TIME TO FIND/RETRIEVE CRIMINAL JACKET RECORDS FILES

City	Time	No Response
Los Angeles	2'	
Houston	1'	
Dallas	1/2'	
San Antonio	1/2'	
Phoenix	3'	
San Jose		X
Ft. Worth	10'	
Okla. City	3'	
Omaha		X
Norfolk	2'	
Birmingham		X
Akron		X
Tampa	1'	
Austin	2'	
Dayton	3'	
Rochester		X

TABLE 119

AVERAGE TIME TO FIND/RETRIEVE FINGERPRINT RECORDS FILES

City	Time	No Response
Los Angeles	1'	
Houston	1'	
Dallas	1/2'	
San Antonio	1/2'	
Phoenix	3'	
San Jose		X
Ft. Worth	10'	
Okla. City	3'	
Omaha		X
Norfolk	2'	
Birmingham		X
Akron		X
Tampa	1'	
Austin	5'-30'	
Dayton	5'	
Rochester		X

TABLE 120

AVERAGE TIME TO FIND/RETRIEVE JUVENILE RECORDS FILES

City	Time	No Response
Los Angeles	5'	
Houston	2'	
Dallas		
San Antonio	1'	N/A
Phoenix	2'	
San Jose		X
Ft. Worth	5'	
Okla. City	3'	
Omaha		N/A
Norfolk		N/A
Birmingham		X
Akron		X
Tampa	3'	
Austin	5'-30'	
Dayton	3'	
Rochester		X

TABLE 121

AVERAGE TIME TO FIND/RETRIEVE MASTER NAME INDEX FILES

City	Time	No Response
Los Angeles	3'	
Houston	1'	
Dallas	1/2'	
San Antonio	1'	
Phoenix	3'	
San Jose		X
Ft. Worth	10'	
Okla. City	3'	
Omaha		X
Norfolk	2'	
Birmingham		X
Akron		X
Tampa	1'	
Austin	2'	
Dayton	3'	
Rochester		X

TABLE 122

AVERAGE TIME TO FIND/RETRIEVE MISCELLANEOUS FILES

City	Time	No Response
Los Angeles	2'	
Houston	1'	
Dallas	3"-15"	
San Antonio	3'	
Phoenix	2'	
San Jose		X
Ft. Worth	2'	
Okla. City	3'	
Omaha		X
Norfolk		N/A
Birmingham		X
Akron		X
Tampa		X
Austin	2'	
Dayton	3'	
Rochester		X

TABLE 123

AVERAGE TIME TO FIND/RETRIEVE MODUS OPERANDI FILES

City	Time	No Response
Los Angeles	4 hrs.	
Houston		N/A
Dallas		N/A
San Antonio	1'	
Phoenix		N/A
San Jose		X
Ft. Worth		N/A
Okla. City	30"-1 hr.	
Omaha		X
Norfolk		N/A
Birmingham		X
Akron		X
Tampa	10'	
Austin		N/A
Dayton		N/A
Rochester		X

TABLE 124

AVERAGE TIME TO FIND/RETRIEVE PROPERTY RECORDS FILES

City	Time	No Response
Los Angeles	2'	
Houston	1/2'	
Dallas		N/A
San Antonio	8"	
Phoenix	2'	
San Jose		X
Ft. Worth		N/A
Okla. City	3'	
Omaha		X
Norfolk		X
Birmingham		X
Akron		X
Tampa	5'	
Austin	2'	
Dayton		N/A
Rochester		X

TABLE 125

AVERAGE TIME TO FIND/RETRIEVE TRAFFIC RECORDS FILES

City	Time	No Response
Los Angeles	2'	
Houston	8"	
Dallas		N/A
San Antonio	8"	
Phoenix		N/A
San Jose		X
Ft. Worth		N/A
Okla. City	3'	
Omaha		X
Norfolk	2'	
Birmingham		X
Akron		X
Tampa		X
Austin	2'	
Dayton	3'	
Rochester		X

TABLE 126

AVERAGE TIME TO FIND/RETRIEVE VEHICLE RECORDS FILES

City	Time	No Response
Los Angeles	2'	
Houston	1/2'	
Dallas		N/A
San Antonio	1/2'	
Phoenix		N/A
San Jose		X
Ft. Worth	5"	
Okla. City	3'	
Omaha		X
Norfolk		N/A
Birmingham		X
Akron		X
Tampa	2"-7"	
Austin		N/A
Dayton		N/A
Rochester		X

TABLE 127

AVERAGE TIME TO FIND/RETRIEVE WANTED AND MISSING PERSONS FILES

City	Time	No Response
Los Angeles	11.1"	
Houston	1'	
Dallas	15"	
San Antonio	1/2'	
Phoenix		N/A
San Jose		X
Ft. Worth	5'	
Okla. City	3'	
Omaha		X
Norfolk	7"	
Birmingham		X
Akron		X
Tampa	5'	
Austin		N/A
Dayton	3'	
Rochester		X

TABLE 128

AVERAGE TIME TO FIND/RETRIEVE WARRANT FILES

City	Time	No Response
Los Angeles	11.1"	
Houston	8"	
Dallas	15"	
San Antonio	8"	
Phoenix	3'	
San Jose		X
Ft. Worth	5'	
Okla. City	3'	
Omaha		X
Norfolk	7"	
Birmingham		X
Akron		X
Tampa	5'	
Austin	2'	
Dayton	3'	
Rochester		X

TABLE 129

AVERAGE NUMBER OF REFERENCES PER DAY FOR ACCIDENT RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	305		
Houston	350		
Dallas	1,500		
San Antonio	200		
Phoenix	1,500		
San Jose			X
Ft. Worth	100		
Okla. City	50		
Omaha	35		
Norfolk	40		
Birmingham			X
Akron			X
Tampa	40		
Austin	137		
Dayton	50		
Rochester			X

TABLE 130

AVERAGE NUMBER OF REFERENCES PER DAY FOR CRIMINAL JACKET FILES

City	Number	Unknown	No Response
Los Angeles	1,600		
Houston	750		
Dallas	350		
San Antonio	100		
Phoenix	300		
San Jose			X
Ft. Worth	160		
Okla. City	500		
Omaha	70		
Norfolk	150		
Birmingham			X
Akron			X
Tampa	40		
Austin	250		
Dayton	100		
Rochester			X

TABLE 131

AVERAGE NUMBER OF REFERENCES PER DAY FOR FINGERPRINT FILES

City	Number	Unknown	No Response
Los Angeles	765		
Houston	15		
Dallas	100		
San Antonio	100		
Phoenix	200		
San Jose			X
Ft. Worth	5		
Okla. City	30		
Omaha			X
Norfolk	5		
Birmingham			X
Akron			X
Tampa	60		
Austin	100		
Dayton	25		
Rochester			X

TABLE 132

AVERAGE NUMBER OF REFERENCES PER DAY FOR JUVENILE RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	450		
Houston	100		
Dallas			N/A
San Antonio	13		
Phoenix	5		
San Jose			X
Ft. Worth	10		
Okla. City		X	
Omaha	10		
Norfolk			N/A
Birmingham			X
Akron			X
Tampa			N/A
Austin	100		
Dayton	20		
Rochester			X

TABLE 133

AVERAGE NUMBER OF REFERENCES PER DAY FOR MASTER NAME INDEX FILES

City	Number	Unknown	No Response
Los Angeles	1,600		
Houston	750		
Dallas	350		
San Antonio	300		
Phoenix	1,500		
San Jose			X
Ft. Worth	160		
Okla. City	600		
Omaha			X
Norfolk	300		
Birmingham			X
Akron			X
Tampa			N/A
Austin	20		
Dayton	100		
Rochester			X

TABLE 134

AVERAGE NUMBER OF REFERENCES PER DAY FOR MISCELLANEOUS FILES

City	Number	Unknown	No Response
Los Angeles	125		
Houston	402		
Dallas	3,500		
San Antonio	2		
Phoenix	500		
San Jose			X
Ft. Worth	100		
Okla. City			X
Omaha			X
Norfolk			N/A
Birmingham			X
Akron			X
Tampa			X
Austin	30		
Dayton	300		
Rochester			X

TABLE 135

AVERAGE NUMBER OF REFERENCES PER DAY FOR MODUS OPERANDI FILES

City	Number	Unknown	No Response
Los Angeles	1		
Houston			N/A
Dallas			N/A
San Antonio	2		
Phoenix			N/A
San Jose			X
Ft. Worth			N/A
Okla. City	10		
Omaha			X
Norfolk			N/A
Birmingham			X
Akron			X
Tampa	1		
Austin			N/A
Dayton			N/A
Rochester			X

TABLE 136

AVERAGE NUMBER OF REFERENCES PER DAY FOR PROPERTY RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	15		
Houston	50		
Dallas			N/A
San Antonio	110		
Phoenix	100		
San Jose			X
Ft. Worth			N/A
Okla. City		X	
Omaha	10		
Norfolk			X
Birmingham			X
Akron			X
Tampa	21		
Austin	3		
Dayton			N/A
Rochester			X

TABLE 137

AVERAGE NUMBER OF REFERENCES PER DAY FOR TRAFFIC RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	305		
Houston	600		
Dallas			N/A
San Antonio	100		
Phoenix			N/A
San Jose			X
Ft. Worth			N/A
Okla. City	300		
Omaha	150		
Norfolk	25		
Birmingham			X
Akron			X
Tampa		X	
Austin	2		
Dayton	90		
Rochester			X

TABLE 138

AVERAGE NUMBER OF REFERENCES PER DAY FOR VEHICLE RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	25		
Houston	3		
Dallas			N/A
San Antonio	60		
Phoenix			N/A
San Jose			X
Ft. Worth	500		
Okla. City		X	
Omaha	200		
Norfolk		X	
Birmingham			X
Akron			X
Tampa		X	
Austin			N/A
Dayton			N/A
Rochester			X

TABLE 139

AVERAGE NUMBER OF REFERENCES PER DAY FOR WANTED AND MISSING PERSONS FILES

City	Number	Unknown	No Response
Los Angeles	400		
Houston	15		
Dallas	1,000		
San Antonio	15		
Phoenix			N/A
San Jose			X
Ft. Worth	10		
Okla. City		X	
Omaha		X	
Norfolk	1,000		
Birmingham			X
Akron			X
Tampa		X	
Austin			N/A
Dayton	40		
Rochester			X

TABLE 140

AVERAGE NUMBER OF REFERENCES PER DAY FOR WARRANT FILES

City	Number	Unknown	No Response
Los Angeles	400		
Houston	600		
Dallas	1,000		
San Antonio	125		
Phoenix	100		
San Jose			X
Ft. Worth	30		
Okla. City	500		
Omaha		X	
Norfolk	1,000		
Birmingham			X
Akron			X
Tampa		X	
Austin	50		
Dayton	50		
Rochester			X

TABLE 141

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR ACCIDENT RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	67,000		
Houston	56,585		
Dallas	70,000		
San Antonio	22,000		
Phoenix	23,000		
San Jose			X
Ft. Worth	22,000		
Okla. City	16,500		
Omaha			X
Norfolk			X
Birmingham	16,000		
Akron			X
Tampa	14,500		
Austin	18,000		
Dayton	12,000		
Rochester			X

TABLE 142

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR CRIMINAL JACKET FILES

City	Number	Unknown	No Response
Los Angeles	80,000		
Houston	30,000		
Dallas	3,600		
San Antonio	8,250		
Phoenix	5,000		
San Jose			X
Ft. Worth	3,600		
Okla. City		X	
Omaha			X
Norfolk			X
Birmingham	3,000,000		
Akron			X
Tampa	8,000		
Austin	7,400		
Dayton	1,700		
Rochester			X

TABLE 143

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR FINGERPRINT FILES

City	Number	Unknown	No Response
Los Angeles	68,000		
Houston	60,000		
Dallas	3,600		
San Antonio	29,411		
Phoenix	12,000		
San Jose			X
Ft. Worth	3,600		
Okla. City		X	
Omaha			X
Norfolk			X
Birmingham	3,000,000		
Akron			X
Tampa	8,000		
Austin	7,400		
Dayton	7,300		
Rochester			X

TABLE 144

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR JUVENILE RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	50,000		
Houston	20,000		
Dallas			N/A
San Antonio	4,800		
Phoenix	22,800		
San Jose			X
Ft. Worth	4,200		
Okla. City		X	
Omaha	200		
Norfolk			N/A
Birmingham			X
Akron			X
Tampa			N/A
Austin	1,946		
Dayton	3,300		
Rochester			X

TABLE 145

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR MASTER NAME INDEX FILES

City	Number	Unknown	No Response
Los Angeles	80,000		
Houston	30,000		
Dallas	3,600		
San Antonio	300,000		
Phoenix	300,000		
San Jose			X
Ft. Worth	3,600		
Okla. City		X	
Omaha			X
Norfolk			X
Birmingham	5,000,000		
Akron			X
Tampa	22,500		
Austin	30,000		
Dayton	1,700		
Rochester			X

TABLE 146

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR MISCELLANEOUS FILES

City	Number	Unknown	No Response
Los Angeles	330,000		
Houston	146,641		
Dallas	400,000		
San Antonio	36,000		
Phoenix	85,000		
San Jose			X
Ft. Worth	3,600		
Okla. City		X	
Omaha			X
Norfolk			N/A
Birmingham			X
Akron			X
Tampa			N/A
Austin	39,444		
Dayton	18,000		
Rochester			X

TABLE 147

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR MODUS OPERANDI FILES

City	Number	Unknown	No Response
Los Angeles	250,000		
Houston			N/A
Dallas			N/A
San Antonio	350		
Phoenix			N/A
San Jose			X
Ft. Worth			N/A
Okla. City	5,000		
Omaha			X
Norfolk			N/A
Birmingham			X
Akron			X
Tampa	2,500		
Austin			N/A
Dayton			N/A
Rochester			X

TABLE 148

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR PROPERTY RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	173,000		
Houston	30,000		
Dallas			N/A
San Antonio	9,000		
Phoenix	25,000		
San Jose			X
Ft. Worth			N/A
Okla. City		X	
Omaha		X	
Norfolk			X
Birmingham	5,000,000		
Akron			X
Tampa	7,500		
Austin	30,000		
Dayton			N/A
Rochester			X

TABLE 149

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR TRAFFIC RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	67,000		
Houston	50,000		
Dallas			N/A
San Antonio	184,103		
Phoenix			N/A
San Jose			X
Ft. Worth			N/A
Okla. City		X	
Omaha		X	
Norfolk			X
Birmingham			X
Akron			X
Tampa	46,000		
Austin	60,000		
Dayton	48,000		
Rochester			X

TABLE 150

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR VEHICLE RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	102,000		
Houston	13,573		
Dallas			N/A
San Antonio	6,000		
Phoenix			N/A
San Jose			X
Ft. Worth			N/A
Okla. City		X	
Omaha		X	
Norfolk			X
Birmingham	3,000,000		
Akron			X
Tampa	15,000		
Austin			N/A
Dayton			N/A
Rochester			X

TABLE 151

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR WANTED AND MISSING PERSONS FILES

City	Number	Unknown	No Response
Los Angeles	8,600		
Houston	60,000		
Dallas	20,000		
San Antonio	5,200		
Phoenix			N/A
San Jose			X
Ft. Worth	4,200		
Okla. City		X	
Omaha		X	
Norfolk	5,000		
Birmingham			X
Akron			X
Tampa			N/A
Austin			N/A
Dayton	300		
Rochester			X

TABLE 152

AVERAGE NUMBER OF RECORDS ADDED PER YEAR FOR WARRANT FILES

City	Number	Unknown	No Response
Los Angeles	323,444		
Houston	50,000		
Dallas	20,000		
San Antonio	45,600		
Phoenix	10,000		
San Jose			X
Ft. Worth	10,800		
Okla. City		X	
Omaha		X	
Norfolk	5,000		
Birmingham			X
Akron			X
Tampa			N/A
Austin	12,000		
Dayton	5,000		
Rochester			X

TABLE 153

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN ACCIDENT RECORD FILES

City	Number	Unknown	No Response
Los Angeles	335,000		
Houston	1,500,000		
Dallas	20,000		
San Antonio	75,000		
Phoenix	70,000		
San Jose			X
Ft. Worth	110,000		
Okla. City			X
Omaha			X
Norfolk			X
Birmingham	70,000,000		
Akron			X
Tampa		X	
Austin	30,000		
Dayton	36,000		
Rochester			X

TABLE 154

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN CRIMINAL JACKET FILES

City	Number	Unknown	No Response
Los Angeles	400,000		
Houston	198,000		
Dallas	98,756		
San Antonio	450,000		
Phoenix	75,000		
San Jose			X
Ft. Worth	33,000		
Okla. City			X
Omaha			X
Norfolk			X
Birmingham	10,000,000		
Akron			X
Tampa	200,000		
Austin	72,250		
Dayton	50,000		
Rochester			X

TABLE 155

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN FINGERPRINT FILES

City	Number	Unknown	No Response
Los Angeles	1,500,000		
Houston	105,000		
Dallas	750,000		
San Antonio	500,000		
Phoenix	120,000		
San Jose			X
Ft. Worth	500,000		
Okla. City			X
Omaha			X
Norfolk			X
Birmingham	150,000,000		
Akron			X
Tampa	200,000		
Austin	305,000		
Dayton	400,000		
Rochester			X

TABLE 156

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN JUVENILE RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	250,000		
Houston	500,000		
Dallas			N/A
San Antonio	112,000		
Phoenix	40,000		
San Jose			X
Ft. Worth	12,600		
Okla. City			X
Omaha			N/A
Norfolk			N/A
Birmingham			X
Akron			X
Tampa			N/A
Austin	36,000		
Dayton	10,000		
Rochester			X

TABLE 157

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN MASTER NAME INDEX FILES

City	Number	Unknown	No Response
Los Angeles	3,000,000		
Houston	250,000		
Dallas	100,000		
San Antonio	1,500,000		
Phoenix	1,500,000		
San Jose			X
Ft. Worth	115,000		
Okla. City			X
Omaha			X
Norfolk			X
Birmingham	250,000,000		
Akron			X
Tampa	800,000		
Austin	200,000		
Dayton	50,000		
Rochester			X

TABLE 158

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN MISCELLANEOUS FILES

City	Number	Unknown	No Response
Los Angeles	2,621,000		
Houston	3,000,000		
Dallas	84,000		
San Antonio	114,000		
Phoenix	1,250,000		
San Jose			X
Ft. Worth	75,000		
Okla. City			X
Omaha			X
Norfolk			N/A
Birmingham			X
Akron			X
Tampa			X
Austin	877,750		
Dayton	1,500,000		
Rochester			X

TABLE 159

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN MODUS OPERANDI FILES

City	Number	Unknown	No Response
Los Angeles	100,000		
Houston			N/A
Dallas			N/A
San Antonio	2,500		
Phoenix			N/A
San Jose			X
Ft. Worth			N/A
Okla. City			X
Omaha			X
Norfolk			N/A
Birmingham			X
Akron			X
Tampa	25,000		
Austin			N/A
Dayton			N/A
Rochester			X

TABLE 160

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN PROPERTY RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	1,340,800		
Houston	150,000		
Dallas			N/A
San Antonio	23,000		
Phoenix	125,000		
San Jose			X
Ft. Worth			N/A
Okla. City			X
Omaha		X	
Norfolk			X
Birmingham	20,000,000		
Akron			X
Tampa	9,000		
Austin	200,000		
Dayton			N/A
Rochester			X

TABLE 161

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN TRAFFIC RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	335,000		
Houston	150,000		
Dallas			N/A
San Antonio	200,000		
Phoenix			N/A
San Jose			X
Ft. Worth			N/A
Okla. City			X
Omaha		X	
Norfolk			X
Birmingham			X
Akron			X
Tampa		X	
Austin	100,000		
Dayton	150,000		
Rochester			X

TABLE 162

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN VEHICLE RECORDS FILES

City	Number	Unknown	No Response
Los Angeles	731,000		
Houston		X	
Dallas			N/A
San Antonio		X	
Phoenix			N/A
San Jose			X
Ft. Worth	300,000		
Okla. City			X
Omaha		X	
Norfolk			X
Birmingham	15,000,000		
Akron			X
Tampa	340,000		
Austin			N/A
Dayton			N/A
Rochester			X

TABLE 163

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN WANTED AND MISSING PERSONS FILES

City	Number	Unknown	No Response
Los Angeles	5,697		
Houston	105,000		
Dallas	21,000		
San Antonio		X	
Phoenix			N/A
San Jose			X
Ft. Worth	12,600		
Okla. City			X
Omaha		X	
Norfolk	7,000		
Birmingham			X
Akron			X
Tampa			N/A
Austin			N/A
Dayton	1,000		
Rochester			X

TABLE 164

APPROXIMATE NUMBER OF DOCUMENTS ON FILE IN WARRANT FILES

City	Number	Unknown	No Response
Los Angeles	657,293		
Houston	150,000		
Dallas	21,000		
San Antonio	32,000		
Phoenix	40,000		
San Jose			X
Ft. Worth	32,400		
Okla. City			X
Omaha		X	
Norfolk			X
Birmingham			X
Akron			X
Tampa			N/A
Austin	10,692		
Dayton	5,000		
Rochester			X

TABLE 165

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN ACCIDENT RECORD FILES

City	Percentage	Unknown	No Response
Los Angeles	125%		
Houston	66%		
Dallas	95%		
San Antonio	100+%		
Phoenix	100%		
San Jose			X
Ft. Worth	100%		
Okla. City			X
Omaha	85%		
Norfolk	100%		
Birmingham			X
Akron			X
Tampa	80%		
Austin	80%		
Dayton	75%		
Rochester			X

TABLE 166

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN CRIMINAL JACKET FILES

City	Percentage	Unknown	No Response
Los Angeles	100%		
Houston	90%		
Dallas	100%		
San Antonio	75%		
Phoenix	100%		
San Jose			X
Ft. Worth	80%		
Okla. City			X
Omaha	96%		
Norfolk	90%		
Birmingham			X
Akron			X
Tampa	80%		
Austin	80%		
Dayton	90%		
Rochester			X

TABLE 167

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN FINGERPRINT FILES

City	Percentage	Unknown	No Response
Los Angeles	95%		
Houston	100%		
Dallas	65%		
San Antonio	75%		
Phoenix	85%		
San Jose			X
Ft. Worth	80%		
Okla. City			X
Omaha			X
Norfolk	80%		
Birmingham			X
Akron			X
Tampa	80%		
Austin	80%		
Dayton	80%		
Rochester			X

TABLE 168

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN JUVENILE RECORDS FILES

City	Percentage	Unknown	No Response
Los Angeles	100%		
Houston	80%		
Dallas			X
San Antonio	95%		
Phoenix	99%		
San Jose			X
Ft. Worth	75%		
Okla. City			X
Omaha	90%		
Norfolk			N/A
Birmingham			X
Akron			X
Tampa	20%		
Austin			X
Dayton	80%		
Rochester			X

TABLE 169

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN MASTER NAME INDEX FILES

City	Percentage	Unknown	No Response
Los Angeles	100%		
Houston	100%		
Dallas	80%		
San Antonio	100+%		
Phoenix	90%		
San Jose			X
Ft. Worth	80%		
Okla. City			X
Omaha			X
Norfolk	99%		
Birmingham			X
Akron			X
Tampa	90%		
Austin	99%		
Dayton	80%		
Rochester			X

TABLE 170

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN MISCELLANEOUS FILES

City	Percentage	Unknown	No Response
Los Angeles	125%		
Houston	66%		
Dallas	95%		
San Antonio	95%		
Phoenix	95%		
San Jose			X
Ft. Worth	100%		
Okla. City			X
Omaha			X
Norfolk			X
Birmingham			X
Akron			X
Tampa			X
Austin	150%		
Dayton	80%		
Rochester			X

TABLE 171

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN MODUS OPERANDI FILES

City	Percentage	Unknown	No Response
Los Angeles	100%		
Houston			N/A
Dallas			N/A
San Antonio	100+%		
Phoenix			N/A
San Jose			X
Ft. Worth			N/A
Okla. City			X
Omaha			X
Norfolk			X
Birmingham			X
Akron			X
Tampa	70%		
Austin			N/A
Dayton			N/A
Rochester			X

TABLE 172

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN PROPERTY RECORDS FILES

City	Percentage	Unknown	No Response
Los Angeles	125%		
Houston	85%		
Dallas			N/A
San Antonio	85%		
Phoenix	50%		
San Jose			X
Ft. Worth			N/A
Okla. City			X
Omaha	40%		
Norfolk			X
Birmingham			X
Akron			X
Tampa	80%-85%		
Austin	99%		
Dayton			N/A
Rochester			X

TABLE 173

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN TRAFFIC RECORDS FILES

City	Percentage	Unknown	No Response
Los Angeles	125%		
Houston	100+%		
Dallas			N/A
San Antonio	85%		
Phoenix			N/A
San Jose			X
Ft. Worth			N/A
Okla. City			X
Omaha	98%		
Norfolk	99%		
Birmingham			X
Akron			X
Tampa	100+%		
Austin	33 1/3%		
Dayton	60%		
Rochester			X

TABLE 174

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN VEHICLE RECORDS FILES

City	Percentage	Unknown	No Response
Los Angeles	125%		
Houston	66%		
Dallas			N/A
San Antonio	100+%		
Phoenix			N/A
San Jose			X
Ft. Worth	95%		
Okla. City			X
Omaha	80%		
Norfolk	100%		
Birmingham			X
Akron			X
Tampa	75%		
Austin			N/A
Dayton			N/A
Rochester			X

TABLE 175

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN WANTED AND MISSING PERSONS FILES

City	Percentage	Unknown	No Response
Los Angeles	100%		
Houston	100%		
Dallas	33 1/3%		
San Antonio	100+%		
Phoenix			N/A
San Jose			X
Ft. Worth	75%		
Okla. City			X
Omaha	50%		
Norfolk	70%		
Birmingham			X
Akron			X
Tampa			N/A
Austin			N/A
Dayton	40%		
Rochester			X

TABLE 176

PERCENTAGE OF FILE CAPACITY PRESENTLY USED IN WARRANT FILES

City	Percentage	Unknown	No Response
Los Angeles	100%		
Houston	100+%		
Dallas	33 1/3%		
San Antonio	85%		
Phoenix	90%		
San Jose			X
Ft. Worth	75%		
Okla. City			X
Omaha	75%		
Norfolk			X
Birmingham			X
Akron			X
Tampa	75%		
Austin	100+%		
Dayton	60%		
Rochester			X

TABLE 177

UNIT OR AREA CREATING THE RECORD IN THE ACCIDENT RECORD FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^c
Los Angeles						X		X				
Houston						X		X			1 ^a	
Dallas						X		X				
San Antonio						X		X				
Phoenix								X				
San Jose												X
Ft. Worth						X		X				
Okla. City								X				
Omaha	X					X		X				
Norfolk	X					X						
Birmingham												X
Akron												X
Tampa											2 ^b	
Austin						X		X				
Dayton						X						
Rochester												

^a1 = Accident Investigation

^b2 = Uniformed Division

^cNR= No Response

TABLE 178

UNIT OR AREA CREATING THE RECORD IN THE CRIMINAL JACKET FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^b
Los Angeles			X		X	X		X		X		
Houston											ID Unit	
Dallas											ID Unit	
San Antonio	X		X									
Phoenix	X											
San Jose												X
Ft. Worth											ID Unit	
Okla. City	X											
Omaha			X	X	X	X		X		X		
Norfolk	X		X	X		X		X		X		
Birmingham												X
Akron												X
Tampa	X		X	X	X	X				X	1 ^a	
Austin			X		X	X						
Dayton	X											
Rochester												X

^a1 = Uninformed Division

^bNR= No Response

TABLE 179

UNIT OR AREA CREATING THE RECORD IN THE FINGERPRINT FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^a
Los Angeles	X		X		X	X		X		X		
Houston											ID Unit	
Dallas											Finger- print Unit	
San Antonio	X		X					X				
Phoenix	X											
San Jose												X
Ft. Worth											ID Unit	
Okla. City	X											
Omaha												X
Norfolk	X		X	X	X	X		X				
Birmingham												X
Akron												X
Tampa	X		X	X	X	X				X		
Austin			X	X	X							
Dayton	X											
Rochester												X

^aNR = No Response

TABLE 180

UNIT OR AREA CREATING THE RECORD IN THE JUVENILE RECORD FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^a
Los Angeles			X		X	X		X		X		
Houston					X							
Dallas												X
San Antonio					X	X		X				
Phoenix			X		X	X	X					
San Jose												X
Ft. Worth					X							
Okla. City					X							
Omaha					X							
Norfolk												X
Birmingham												X
Akron												X
Tampa	X				X							
Austin					X							
Dayton	X											
Rochester												X

^aNR = No Response

TABLE 181

UNIT OR AREA CREATING THE RECORD IN THE MASTER NAME INDEX FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^a
Los Angeles				X								
Houston											ID Unit	
Dallas											ID Unit	
San Antonio	X											
Phoenix	X		X	X	X			X		X		
San Jose												X
Ft. Worth	X										ID Unit	
Okla. City	X											
Omaha												X
Norfolk	X		X	X	X	X		X		X		
Birmingham												X
Akron												X
Tampa	X											
Austin							X					
Dayton	X											
Rochester												X

^aNR = No Response

TABLE 182

UNIT OR AREA CREATING THE RECORD IN THE MISCELLANEOUS FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^a
Los Angeles			X		X	X						
Houston			X	X		X					All Offices	
Dallas	X										X	
San Antonio			X	X		X		X		X	Narco Unit	
Phoenix	X		X	X	X			X		X		
San Jose												X
Ft. Worth						X					All Offices	
Okla. City						X						
Omaha												X
Norfolk												X
Birmingham												X
Akron												X
Tampa												X
Austin						X						
Dayton	X											
Rochester												X

^aNR = No Response

TABLE 183

UNIT OR AREA CREATING THE RECORD IN THE MODUS OPERANDI FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^b
Los Angeles				X		X				X		
Houston												N/A
Dallas												N/A
San Antonio			X									
Phoenix												N/A
San Jose												X
Ft. Worth												N/A
Okla. City											X	
Omaha												X
Norfolk												X
Birmingham												X
Akron												X
Tampa			X	X		X				X	1 ^a	
Austin												N/A
Dayton												N/A
Rochester												X

^a1 = Uniformed Division^bNR= No Response

TABLE 184

UNIT OR AREA CREATING THE RECORD IN THE PROPERTY RECORD FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^b
Los Angeles			X		X	X		X			X	
Houston	X											
Dallas												N/A
San Antonio	X		X			X						
Phoenix			X			X						
San Jose												X
Ft. Worth												N/A
Okla. City			X									
Omaha			X	X	X	X		X		X		
Norfolk												X
Birmingham												X
Akron												X
Tampa												
Austin			X			X						
Dayton												N/A
Rochester												X

^a1 = Uniformed Division^bNR= No Response

TABLE 185

UNIT OR AREA CREATING THE RECORD IN THE TRAFFIC RECORD FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^b
Los Angeles						X		X				
Houston						X		X				
Dallas												N/A
San Antonio						X		X				
Phoenix												N/A
San Jose												X
Ft. Worth												N/A
Okla. City								X				
Omaha				X	X	X		X		X		
Norfolk						X		X				
Birmingham												X
Akron												X
Tampa											1 ^a	
Austin						X		X				
Dayton	X											
Rochester												X

^a1 = Uniformed Division^bNR= No Response

TABLE 186

UNIT OR AREA CREATING THE RECORD IN THE VEHICLE RECORD FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^c
Los Angeles			X		X	X		X				
Houston	X		X								X	
Dallas												N/A
San Antonio						X		X				
Phoenix												N/A
San Jose												X
Ft. Worth											1 ^a	
Okla. City			X									
Omaha		X	X	X	X	X		X				
Norfolk											X	
Birmingham												X
Akron												X
Tampa	X	X									2 ^b	
Austin												N/A
Dayton												N/A
Rochester												X

^a1 = State Department of Highways

^b2 = Uniformed Division

^cNR= No Response

TABLE 187

UNIT OR AREA CREATING THE RECORD IN THE WANTED AND MISSING PERSONS FILE

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^b
Los Angeles												X
Houston											ID Unit	
Dallas											All Offices	
San Antonio						X		X				
Phoenix												N/A
San Jose												X
Ft. Worth					X							
Okla. City			X									
Omaha	X		X	X	X	X		X				
Norfolk	X	X	X	X	X	X	X	X	X	X		
Birmingham												X
Akron												X
Tampa	X										1 ^a	
Austin												N/A
Dayton	X											
Rochester												X

^a1 = Uniformed Division
^bNR= No Response

TABLE 188

UNIT OR AREA CREATING THE RECORD IN THE WARRANT FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^d
Los Angeles	X										1 ^a	
Houston						X		X				
Dallas											All Offices	
San Antonio						X		X				
Phoenix											X	
San Jose												X
Ft. Worth						X		X			2 ^b	
Okla. City											Court	
Omaha	X		X	X	X	X		X				
Norfolk	X	X	X	X	X	X	X	X	X	X		
Birmingham												X
Akron												X
Tampa											3 ^c	
Austin						X		X			Public	
Dayton	X											
Rochester												X

^a1 = Police Commission, Property Division

^b2 = Courts, All Officers

^c3 = Uniformed Division

^dNR = No Response

TABLE 189

UNIT OR AREA UTILIZING THE RECORD IN THE ACCIDENT RECORD FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^d
Los Angeles	X		X	X	X	X	X	X		X	X ^c	
Houston	X										3 ^b	
Dallas						X		X			2 ^b	
San Antonio	X		X	X	X		X	X			Public	
Phoenix												
San Jose							X	X				X
Ft. Worth						X		X			1 ^a	
Okla. City	X	X	X	X	X	X	X	X	X	X		
Omaha	X											
Norfolk	X		X	X		X	X				X	
Birmingham												X
Akron												X
Tampa	X	X	X	X	X	X	X	X	X	X		
Austin								X			Public	
Dayton	X	X	X	X	X	X	X	X	X	X		
Rochester												X

^a1 = Courts, Department of Public Safety, and Public
^b2 = Courts, Department of Public Safety, and Public
^c3 = Insurance Companies, Staff Officers
^dNR= No Response

TABLE 190

UNIT OR AREA UTILIZING THE RECORD IN THE CRIMINAL JACKET FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^b
Los Angeles	X		X	X	X	X	X	X		X	X	
Houston		X	X	X	X	X	X	X		X	ID Unit, All Officers 1 ^a	
Dallas												
San Antonio	X		X	X						X	Public	
Phoenix	X	X	X	X	X	X	X	X	X	X		
San Jose												X
Ft. Worth											ID Unit, All Officers	
Okla. City	X	X	X	X	X	X	X	X	X	X		
Omaha	X			X	X	X	X	X		X		
Norfolk	X		X	X	X	X	X			X	X	
Birmingham												X
Akron												X
Tampa	X		X	X	X	X			X	X	Uniformed Division All Officers	
Austin												
Dayton	X	X	X	X	X	X	X	X	X	X		
Rochester												X

^a1 = Used by all government and law enforcement officials

^bNR= No Response

TABLE 191

UNIT OR AREA UTILIZING THE RECORD IN THE FINGERPRINT FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^c
Los Angeles	X		X	X	X	X	X				X ₂ ^b	
Houston											1 ^a	
Dallas											Fingerprint	
San Antonio	X		X	X							X	
Phoenix	X			X								
San Jose												X
Ft. Worth											ID Unit, All Officers	
Okla. City	X	X	X	X	X	X	X	X	X	X		
Omaha												X
Norfolk			X	X	X							
Birmingham												X
Akron												X
Tampa	X											
Austin											All Officers	
Dayton	X	X	X	X	X	X	X	X	X	X		
Rochester												X

^a₁ = Used by all government and law enforcement agencies

^b₂ = Any police agency

^c_{NR} = No Response

TABLE 192

UNIT OR AREA UTILIZING THE RECORD IN THE JUVENILE RECORD FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^b
Los Angeles	X		X	X	X	X	X	X		X	X ^a	
Houston					X						1 ^a	
Dallas												X
San Antonio	X	X	X	X	X			X				
Phoenix	X	X	X	X	X	X	X	X	X	X	X	
San Jose												X
Ft. Worth					X						All Officers	
Okla. City	X	X	X	X	X	X	X	X	X	X	X	
Omaha			X			X						
Norfolk												X
Birmingham												X
Akron												X
Tampa					X						All Officers	
Austin					X						ID Unit	
Dayton	X	X	X	X	X	X	X	X	X	X		
Rochester												X

^a1 = Any police agency^bNR= No Response

TABLE 193

UNIT OR AREA UTILIZING THE RECORD IN THE MASTER NAME INDEX FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^b
Los Angeles	X			X								
Houston											ID Unit 1 ^a	
Dallas												
San Antonio	X		X	X	X	X	X			X	Narcotic Division	
Phoenix	X	X	X	X	X	X	X	X	X	X		
San Jose												X
Ft. Worth											All Officers ID Unit	
Okla. City	X	X	X	X	X	X	X	X	X	X		
Omaha												X
Norfolk	X	X	X	X	X	X	X	X	X	X		
Birmingham												X
Akron												X
Tampa											All Officers	
Austin			X			X						
Dayton	X	X	X	X	X	X	X	X	X	X		
Rochester												X

^a1 = Used by all government and law enforcement agencies
^bNR= No Response

TABLE 194

UNIT OR AREA UTILIZING THE RECORD IN THE MISCELLANEOUS FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^b
Los Angeles	X		X	X	X	X	X	X		X	X ^a	
Houston			X								1 ^a	
Dallas	X	X	X	X	X	X	X	X	X	X	All Officers	
San Antonio				X						X	Narcotic Division	
Phoenix	X	X	X	X	X	X	X	X	X	X		
San Jose												X
Ft. Worth			X								All Officers, Courts	
Okla. City	X	X	X	X	X	X	X	X	X	X		
Omaha												X
Norfolk												X
Birmingham												X
Akron												X
Tampa												X
Austin			X			X						
Dayton	X	X	X	X	X	X	X	X	X	X		
Rochester												X

^a1 = DA's Office, Staff Officers^bNR= No Response

TABLE 195

UNIT OR AREA UTILIZING THE RECORD IN THE MODUS OPERANDI FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^a
Los Angeles				X						X		
Houston												N/A
Dallas												N/A
San Antonio			X	X								
Phoenix												N/A
San Jose												X
Ft. Worth												N/A
Okla. City	X	X	X	X	X	X	X	X	X	X		
Omaha												X
Norfolk												X
Birmingham												X
Akron												X
Tampa			X	X		X				X		
Austin												N/A
Dayton												N/A
Rochester												X

^aNR = No Response

TABLE 196

UNIT OR AREA UTILIZING THE RECORD IN THE PROPERTY RECORD FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^a
Los Angeles	X		X	X	X	X	X	X		X	X	
Houston			X									
Dallas												N/A
San Antonio	X		X									
Phoenix			X				X	X				
San Jose												X
Ft. Worth												N/A
Okla. City	X	X	X	X	X	X	X	X	X	X		
Omaha	X	X	X	X	X	X		X		X		
Norfolk												X
Birmingham												X
Akron												X
Tampa												
Austin			X			X					All Officers	
Dayton												N/A
Rochester												X

^aNR = No Response

TABLE 197

UNIT OR AREA UTILIZING THE RECORD IN THE TRAFFIC RECORD FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^a
Los Angeles	X		X	X	X	X	X	X		X	X	
Houston						X	X	X			Court	
Dallas												N/A
San Antonio	X						X					
Phoenix												N/A
San Jose												X
Ft. Worth												N/A
Okla. City	X	X	X	X	X	X	X	X	X	X		
Omaha	X	X	X	X	X	X		X		X		
Norfolk	X	X	X	X	X	X	X	X	X	X		
Birmingham												X
Akron												X
Tampa												
Austin											All Officers ID Unit. Public	
Dayton	X	X	X	X	X	X	X	X	X	X		
Rochester												X

^aNR = No Response

TABLE 198

UNIT OR AREA UTILIZING THE RECORD IN THE VEHICLE RECORD FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^b
Los Angeles	X		X	X	X	X	X	X		X	X	
Houston			X									
Dallas												N/A
San Antonio		X	X			X		X				
Phoenix												N/A
San Jose												X
Ft. Worth											Data Processing	
Okla. City	X	X	X	X	X	X	X	X	X	X		
Omaha	X	X	X	X	X	X		X		X		
Norfolk											1 ^a	
Birmingham												X
Akron												X
Tampa											All Officers	
Austin												N/A
Dayton												N/A
Rochester												X

^a1 = Credit bureau, insurance companies, employment, government
^bNR= No Response

TABLE 199

UNIT OR AREA UTILIZING THE RECORD IN THE WANTED AND MISSING PERSONS FILE

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^c
Los Angeles	X	X	X	X			X	X	X	X	X ₂ ^b	
Houston											1 ^a	
Dallas												
San Antonio		X	X			X		X				
Phoenix												N/A
San Jose												X
Ft. Worth					X						All Officers	
Okla. City	X	X	X	X	X	X	X	X	X	X		
Omaha	X	X	X	X	X	X	X	X	X	X		
Norfolk	X	X	X	X	X	X	X	X	X	X		
Birmingham												X
Akron												X
Tampa											All Officers	
Austin												N/A
Dayton	X	X	X	X	X	X	X	X	X	X		
Rochester												X

^a₁ = Using Regional Police agencies^b₂ = Any police agency^cNR= No Response

TABLE 200

UNIT OR AREA UTILIZING THE RECORD IN THE WARRANT FILES

City	Central Records	Com- muni- cations	Detec- tive	Intel- li- gence	Juve- nile	Pa- trol	Research and Planning	Traf- fic	Train- ing	Vice Unit	Other	NR ^b
Los Angeles	X	X	X	X			X	X	X	X	X	
Houston						X	X	X			X	
Dallas											Court	
San Antonio						X		X			1 ^a	
Phoenix	X	X	X	X	X	X	X	X	X	X	Warrant	
San Jose											Division	
Ft. Worth												X
Okla. City	X	X	X	X	X	X	X	X	X	X	All Officers,	
Omaha	X	X	X	X	X	X		X		X	Court	
Norfolk	X	X	X	X	X	X	X	X	X	X		
Birmingham												X
Akron												X
Tampa											All Officers,	
Austin						X		X			Municipal	
Dayton	X	X	X	X	X	X	X	X	X	X	Court	
Rochester											Warrant	
											Office	
												X

^a₁ = Using regional police agencies

^bNR= No Response

TABLE 201

LENGTH OF RETENTION OF ACCIDENT RECORD FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^a
Los Angeles		X				
Houston		X			Then Microfilm	
Dallas	On line 2 1/2 mo.				Then Microfilm	
San Antonio		X			Then Microfilm	
Phoenix	X				Then Microfilm	
San Jose						X
Ft. Worth		X				
Okla. City		X				
Omaha	X					
Norfolk		X				
Birmingham		X				
Akron						X
Tampa				X		
Austin		X			Then Microfilm	
Dayton		X				
Rochester						X

^aNR = No Response

TABLE 202

LENGTH OF RETENTION OF CRIMINAL JACKET FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^a
Los Angeles					Deceased	
Houston					Indefinite	
Dallas					Indefinite	
San Antonio					Indefinite	
Phoenix					X	
San Jose						X
Ft. Worth					Indefinite	
Okla. City				X		
Omaha					Indefinite	
Norfolk				X		
Birmingham					X	
Akron						X
Tampa				X		
Austin					Indefinite	
Dayton				X		
Rochester						X

^aNR = No Response

TABLE 203

LENGTH OF RETENTION OF FINGERPRINT FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^a
Los Angeles				X		
Houston					Indefinite	
Dallas					Indefinite	
San Antonio					Indefinite	
Phoenix					X	
San Jose						X
Ft. Worth					Indefinite	
Okla. City						
Omaha				X		
Norfolk						X
Birmingham				X		
Akron						X
Tampa				X		
Austin					Indefinite	
Dayton				X		
Rochester						X

^aNR = No Response

TABLE 204

LENGTH OF RETENTION OF JUVENILE RECORD FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^a
Los Angeles					Deceased	
Houston					Indefinite	
Dallas						X
San Antonio					Until person becomes of age	
Phoenix					Until person reaches age 18	
San Jose						X
Ft. Worth		X				
Okla. City				X		
Omaha					Until person reaches age 18	
Norfolk						X
Birmingham					X	
Akron						X
Tampa					X	
Austin						X
Dayton				X		
Rochester						X

^aNR = No Response

TABLE 205

LENGTH OF RETENTION OF MASTER NAME INDEX FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^a
Los Angeles					Deceased	
Houston					Indefinite	
Dallas					Indefinite	
San Antonio					99 years or deceased	
Phoenix					X	
San Jose						X
Ft. Worth					Indefinite	
Okla. City				X		
Omaha						X
Norfolk				X		
Birmingham					X	
Akron						X
Tampa				X		
Austin			X			
Dayton				X		
Rochester						X

^aNR = No Response

TABLE 206

LENGTH OF RETENTION OF MISCELLANEOUS FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^a
Los Angeles				X		
Houston		X			Then Microfilm	
Dallas	On line 2 1/2 mo.					
San Antonio		X			Then Microfilm	
Phoenix					X	
San Jose						X
Ft. Worth	X				Then Microfilm	
Okla. City			X			
Omaha						X
Norfolk						X
Birmingham				X		
Akron						X
Tampa						X
Austin		X			Then Microfilm	
Dayton				X		
Rochester						X

^aNR = No Response

TABLE 207

LENGTH OF RETENTION OF MODUS OPERANDI FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^a
Los Angeles		X				
Houston						N/A
Dallas						N/A
San Antonio		X			Then Microfilm	
Phoenix						N/A
San Jose						X
Ft. Worth						N/A
Okla. City				X		
Omaha						X
Norfolk						X
Birmingham						X
Akron						X
Tampa				X		
Austin						N/A
Dayton						N/A
Rochester						X

^aNR = No Response

TABLE 208

LENGTH OF RETENTION OF PROPERTY RECORD FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^a
Los Angeles				X		
Houston		X			Guns kept indefinitely	
Dallas						N/A
San Antonio					Until recovered	
Phoenix		X				
San Jose						X
Ft. Worth						N/A
Okla. City			X			
Omaha					Indefinite	
Norfolk						X
Birmingham		X				
Akron						X
Tampa		X				
Austin						X
Dayton						N/A
Rochester						X

^aNR = No Response

TABLE 209

LENGTH OF RETENTION OF TRAFFIC RECORD FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^a
Los Angeles		X				
Houston		X				
Dallas						N/A
San Antonio		X			After 13 mo. dropped off line	
Phoenix						N/A
San Jose						X
Ft. Worth						N/A
Okla. City		X				
Omaha					Deceased	
Norfolk						X
Birmingham		X				
Akron						X
Tampa				X		
Austin		X				
Dayton				X		
Rochester						X

^aNR = No Response

TABLE 210

LENGTH OF RETENTION OF VEHICLE RECORD FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^a
Los Angeles				X		
Houston		X			Then Microfilm	
Dallas						N/A
San Antonio					Until recovered	
Phoenix						N/A
San Jose						X
Ft. Worth	X					
Okla. City			X			
Omaha					Indefinite	
Norfolk		X				
Birmingham				X		
Akron						X
Tampa		X				
Austin						N/A
Dayton						N/A
Rochester						X

^aNR = No Response

TABLE 211

LENGTH OF RETENTION OF WANTED AND MISSING PERSONS FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^b
Los Angeles					1 ^a	
Houston					Indefinite	
Dallas		On line until apprehended			Purged after 2 years	
San Antonio					Until recovered	
Phoenix						N/A
San Jose						X
Ft. Worth		X				
Okla. City			X			
Omaha					Until arrested	
Norfolk					X	
Birmingham				X		
Akron						X
Tampa			X			
Austin						N/A
Dayton				X		
Rochester						X

^a1 = Wants retained 90 days plus validation, felony indefinite

^bNR = No Response

TABLE 212

LENGTH OF RETENTION OF WARRANT FILES

City	Less than 1 yr.	Between 1-5 yrs.	Between 6-10 yrs.	Over 10 yrs.	Other	NR ^b
Los Angeles					1 ^a	
Houston		X				
Dallas		On line until apprehended			After 2 yrs. file purged	
San Antonio					Until disposed of	
Phoenix					X	
San Jose						X
Ft. Worth		X				
Okla. City		X				
Omaha					Until arrested	
Norfolk					X	
Birmingham		X				
Akron						X
Tampa				X		
Austin		X			Or until Judge changes	
Dayton		X				
Rochester						X

^a1 = 7 yrs. high grade misc., 8 yrs. movers, 18 mos. parkers

^bNR= No Response