CRIME ANALYSIS SYSTEM SUPPORT

Descriptive Report of Manual & Automated Crime Analysis Functions

CRIME ANALYSIS SYSTEM SUPPORT:

DESCRIPTIVE REPORT OF MANUAL
AND AUTOMATED
CRIME ANALYSIS FUNCTIONS

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FOREWORD

This document was produced in recognition of the importance of crime analysis as a tool for the effective allocation of manpower, and investigative and administrative needs of law enforcement through the joint efforts of the Law Enforcement Assistance Administration and the International Association of Chiefs of Police.
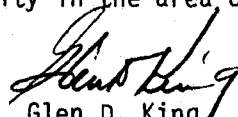
Crime analysis serves the varying needs of law enforcement agencies by providing timely and pertinent information for efficient tactical, strategic, and administrative planning. With the support of an automated crime analysis system, the ability of law enforcement agencies to respond to community needs in a timely and effective manner is greatly enhanced. Therefore, this document is designed to assist all law enforcement agencies in the development and/or upgrading of their crime analysis systems and will serve as a reference book for those agencies wishing to improve the efficiency and effectiveness of an already existing system.

Specifically, this document identifies and describes those crime analysis functions which are vital to efficient and effective law enforcement operations. It is also the intent of this document to provide guidelines to police administrators in determining what crime analysis functions are candidates for automation. Automated Data Processing (ADP) personnel using this document will be provided with basic system/program design guidelines to automate their crime analysis functions.

We believe that this document will benefit the law enforcement community by providing:

- A better understanding by the police administrator of alternative crime analysis functions

- Greater information concerning basic systems analysis common to all law enforcement crime analysis environments

- Greater uniformity of crime analysis methods within the law enforcement community

- An improved identification of areas for crime analysis programs.

Within the next few years, it is expected that many law enforcement agencies will benefit from this developmental effort for uniformity in the area of automated crime analysis systems.

Glen D. King
Executive Director
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of Police

ACKNOWLEDGMENT

PREFACE

Informally, policemen have been performing crime analysis at various levels for a great number of years. Now with society changing as rapidly as it is in terms of population growth, mass rapid transit, and "The Age of Computers," law enforcement agencies recognize a need to develop a means of staying abreast of technological development in order to provide our respective communities with adequate police services.

In September, 1977, the International Association of Chiefs of Police was awarded a Law Enforcement Assistance Administration (LEAA) Grant (#77-SS-99-6023) entitled, "Crime Analysis System Support" (CASS). The CASS project grew out of the need for police departments to have timely access to tactical and strategic crime analysis information. Thus, the primary objective of the CASS project was to improve crime analysis capabilities in police departments through more effective use of automation.

Specifically, this document designed for law enforcement practitioners in crime analysis was produced to provide the basis for design, development, and implementation of a model crime analysis system. Specific objectives were: (1) to assist police administrators in determining what crime analysis functions are candidates for automation, and (2) to assist ADP personnel by providing basic systems analysis information common to each function described.

The methodology for accomplishing Phase I of the Crime Analysis System Support project was based on a research model for performing systems requirements analyses and consisted of three major tasks: (1) a state of the art literature review; (2) the identification and definition of crime analysis functions essential to police operations, and (3) utilization of site visits to determine effectiveness of automated crime analysis functions in an operational environment.

An Advisory Committee consisting of eleven members with experience in police requirements systems analysis was selected by the IACP with approval of the LEAA project monitor. This Committee provided staff guidance in three major areas of expertise:

(1) The practical and innovative experience of police administrators with crime analysis units

(2) The practical concerns of the law enforcement executives developing or upgrading their agencies' crime analysis functions

(3) The theoretical and dynamic approaches of the crime analysis specialists and academicians.

The Advisory Committee was necessary because of the ambiguous nature of crime analysis, and the limited development of the state of the art. The makeup of the Advisory Committee was predicated upon the need to provide the project with a wide range of philosophical, conceptual as well as pragmatic knowledge and experiences in crime analysis operations.

The Committee members' knowledge in various functional law enforcement areas, such as planning and research, patrol, criminal investigations and systems analysis, was beneficial in defining the need for crime analysis information as an operational tool and as a basis for effective management of resources.

Through the combined efforts of project staff and the Advisory Committee, the following goals were accomplished during the course of the CASS project:

- Identification and definition in detailed, non-technical terms of seven crime analysis functions and activities (both tactical and strategic) which can be supported by automation.

- Identification and definition of the data requirements and sources necessary to support the automation of each crime analysis function.

A literature search for unpublished reports relative to the requirements for, and the development of, automated crime analysis was conducted by project staff. Inquiries were sent to approximately 3,400 law enforcement agencies throughout the United States to obtain information relating to crime analysis functions and activities.

After reviewing the responses to the mail inquiry and all available literature, seven crime analysis functions were identified as being the most universal for effective law enforcement operations. These functions are discussed in the seven chapters of this document, as briefly described below.

Chapter I addresses Crime Pattern Detection, the identification of related or similar crimes based upon geography, trends, and common suspect and methods of operation.

Chapter II, Crime Suspect Correlations addresses the methods used to develop crime files that will assist in identifying perpetrators by several means, after a pattern or a known M.O. has been identified.

Chapter III, Target Profiles discusses demographic data that has a direct effect upon a community and focuses upon a "community services" approach to crime prevention. Emphasis is placed upon increasing the analysis of the human environment so that programs may be developed to prevent and reduce crime.

Chapter IV, Forecast Crime Potentials is a discussion of predicting time and location of future criminal events. This function is an inferential step that proceeds from pattern analysis.

Chapter V, Exception Reports based on crime thresholds discusses the establishing of limits for crimes, and how those limits can be utilized for triggering operational planning when those limits are exceeded.

Chapter VI, Forecast Crime Trends deals primarily with the prediction of crime volume in the time domain based upon various statistical techniques.

Chapter VII, Resource Allocation is a discussion on a systematic cost effective method of distributing police manpower and equipment. The discussion of managing time, money, and materials is the central underlying theme of this chapter.

Part of the project methodology involved staff visits to police departments where the selected crime analysis functions and activities were performed in an operational environment.

Although the need for a resource allocation capability is being addressed in part by other LEAA projects, the Committee recognized that the subject of Investigations Resource Allocation has not yet been fully and completely explored. For this reason, Deputy Chief George W. Sicaras, Major Charles R. Connery, and Mr. Fred Newton formed a subcommittee to address this particular need. Appendix I of this document is the report of their findings. It provides some fundamental approaches to data collection and their utility in assessing/managing an investigative operation. It is the intent of this report to identify those data elements most police executives should routinely expect of investigative managers thereby giving the executive the information he needs to make informed management decisions. Chiefs of small to medium sized departments may find the data requirements identified in Appendix I particularly useful. We encourage the reader to study this report thoroughly.

INTRODUCTION

The term "Crime Analysis" first appeared in 1963 [1] in the second edition of Wilson's Police Administration. Since then, the Law Enforcement Assistance Administration (LEAA) through its various programs and emphasis upon crime reduction and criminal apprehension has had a great impact upon the development of formal crime analysis capabilities in police departments. The recent activities funded by LEAA typify the growing interest in crime analysis on a national scale. A "Prescriptive Package" entitled Police Crime Analysis Unit Handbook (73-TA-99-1000), developed in 1973, describes the benefits available to law enforcement agencies through the establishment and operation of a Crime Analysis Unit and illustrates how such a unit can be developed.

The Integrated Criminal Apprehension Program (ICAP), a major LEAA discretionary program initiated in 1976 relies on the idea that utilization of crime analysis information is a key element for directing deployment and tactical operations to increase the efficiency and effectiveness of police field activities.

The Geographic Base Files (GBF) for Law Enforcement project [2] analyzed the major uses of geographic based data by law enforcement agencies and developed computer programs to assist in base file development. Crime analysis was one of the major areas studied and several valuable types of information were gathered. A section of the Geographic Base Files for Law Enforcement: Descriptive Report dealt with crime analysis activities in eight law enforcement agencies. This Descriptive Report discussed hardware and software use, and department developmental approaches. The Geographic Base Files project along with other recent LEAA funded projects, such as "Standardized Crime Reporting System" (SCRS), has addressed data collection issues, underscoring the importance of good and reliable data as the basis for crime analysis activities.

The ICAP "Crime Analysis Operations Manual", indicates that there are five steps in the crime analysis procedures: (1) data collection; (2) data collation; (3) data analysis; (4) information dissemination, and (5) feedback and evaluation between the users in an agency and the Crime Analysis Unit. The Crime Analysis System Support (CASS) Project was funded to support "data/information analysis," Step 3.

During the course of the CASS project, a literature search for unpublished reports relative to the requirements for, and the development of, automated crime analysis was conducted by project staff. Inquiries were sent to approximately 3,400 law enforcement agencies throughout the United States to obtain information relating to crime analysis functions and activities. The information received as a result of these mail inquiries was vague and uninformative and in most cases, dealt with crime reporting or Management Information Systems (MIS) rather than crime analysis. Numerous agencies stated that they were involved in a crime analysis program but upon close examination only a few could be described as being comprehensive or current, or having an effective operational program. Many of the departments which responded were not using computers to any significant degree in crime analysis, although some had plans for such capabilities in the future.

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[1] For a more detailed description of crime analysis history see the Introduction of "Crime Analysis Executive Manual," September, 1977, Integrated Criminal Apprehension Program, Law Enforcement Assistance Administration.

[2] The projects (Grants #74-SS-99-3305 & #76-SS-99-6064) were awarded to the IACP by the National Criminal Justice Information & Statistics Service, LEAA.

A questionnaire was developed and geared toward agencies that perform crime analysis functions and activities. This questionnaire served as a site visit instrument and was also completed by the law enforcement agencies of the Advisory Committee members. In summary, we received 201 responses out of a possible 3,400 or 6 percent. The responses received showed the following distribution:

- 44% (89) responded having automated crime analysis

- 56% (112) no automated crime analysis.

All information gathered and developed at this stage was incorporated into the site selection process and furnished background data for the selection of crime analysis functions and the development of this document.

After reviewing the responses to the mail inquiry and all available literature, seven crime analysis functions were identified as being the most universal for effective law enforcement operations. The following functions were selected on the basis of their commonality of use by police departments throughout the nation, current or potential use of automation, potential for transfer, priority within law enforcement agencies and cost of development:

- Detect Crime Patterns

- Suspect Crime Correlations

- Target Profile Analysis

- Forecast Crime Potentials

- Exception Reports

- Forecast Crime Trends

- Resource Allocation.

It is realized that crime analysis tasks can be divided into three main areas:

(1) Strategic   - long range applications of crime data such as resource allocation

(2) Tactical   - quick response to immediate problems in the field

(3) Administrative - reports and analysis supplied to administrative personnel, mainly demographic, economic, and social implication.

To validate whether or not these seven functions were in fact vital to efficient, effective law enforcement operations, the Committee voted to observe these functions and activities being performed in an operational environment. Relying upon the response for the mail inquiry and their firsthand knowledge of the state of the art of crime analysis, the Committee then selected ten cities that were performing those crime analysis functions, and represented a fair cross section of law enforcement agencies across the country.

We then visited those agencies selected by the Advisory Committee and interviewed the chiefs of police, patrol commanders, criminal investigation commanders, directors of planning and research units, crime analysis unit personnel, patrolmen, detectives, and data processing personnel. The questions asked varied depending upon the user group and type of information required for their use, but in general they were asked what type of information did they need for their specific operation, and the amount of detail required to make that information useful. They were also asked about the utility of information they were presently receiving and the timeliness of same. Crime analysis personnel were asked questions about how they performed various tasks related to specific functions. They were asked about data sources, methods of collection, collation methods and dissemination.

This document was written expressly for those law enforcement agencies that are interested in improving their crime analysis operations and for those agencies that would like to develop a crime analysis system. The document is organized into seven chapters and within each chapter the specific function addressed is divided into three major categories and discussed.

Each chapter contains the following information:

(1) A definition of the crime analysis function;

(2) Objectives of the function, which generally address such issues as what should you accomplish, and how it is applied, and

(3) Analysis of the function which includes such issues as discussions on approaches and activities, data sources, requirements, formats, and contents. Dissemination for the specific activity is also discussed.

Function 1, Crime Pattern Detection, is a commonly known and conducted function by crime analysts in police departments. The main objectives of this function are to monitor and discover crime occurrences which share common attributes or characteristics such as (1) geographic location of occurrence, (2) time of occurrence, (3) modus operandi (M.O.) information. This function primarily supports small scale and short range police action. The most common approaches to performing this function are through (1) crime maps and/or (2) crime recapitulations (daily, weekly, or monthly, etc.). Some systematic approaches are introduced in Chapter I. This function is more tactical oriented.

Function 2, Crime Suspect Correlations, is another commonly known function implemented in various law enforcement agencies during the last five years.

Crime Suspect Correlations refer to some basic activities which provide information to operational personnel on possible suspects, and from that point, good old-fashioned police work has to be employed to bring about the apprehension and successful prosecution of the responsible perpetrator(s). This information may be obtained from Crime Suspect Correlation files, such as: Career Criminal File, Suspect Vehicle File, M.O. File, and other files which are discussed in detail in Chapter II.

Crime analysis is merely a tool that supports law enforcement operations. It is not a panacea for our crime problems, but rather a means to assist law enforcement, from executives to patrol officers, in the decision-making process. As is the case of Crime Suspect Correlations, the component itself does not solve crimes. Regardless of the

sophistication of a Crime Analysis Unit, the human element will be required to produce the end result. It is wishful thinking to desire a crime analysis system that will tell where the crime is, and who is doing it. In the final analysis, the law enforcement system must still rely on the officers in the street to make this entire concept function. So to dispel any of the myths that have arisen from previous discussions on crime analysis, it is not intended to eliminate the investigative function, which many investigators feel is occurring, but to enhance it.

To deal with specific crime problems, target offenses should be identified prior to the establishment of a crime suspect component. After determining the target offenses and detecting any patterns, the question of "Who" should be addressed. It would be desirable to ask questions such as who is responsible for the burglaries in the Southeast District, or who is the armed robber holding up the Safeway Stores throughout the city, and retrieve information from the Crime Suspect Correlation files (e.g., the name, date of birth, and address of the perpetrator(s)). The Crime Suspect Correlation component can narrow down the possibilities and give field officers and investigators leads to follow for case closures. When establishing a crime suspect component, remember the major objectives to be accomplished in the end result. Apprehension of suspects and convictions, as well as recovered property, will be of main concern when developing this component so that it will assist in bringing those objectives to fruition.

Function 3, Target Profiles, may also be referred to as victimization profile analysis. It involves an in-depth analysis of victimized persons and/or premises by specific geographic areas to specify the nature of the objects which might be attached.

Target Profiles have different meanings to different law enforcement agencies. The administrative and strategic applications of this function will be addressed in Chapter III of this report. In some law enforcement agencies, Target Profiles consist of listings of the types of targets/victims. Included in those listings are:

- Day of Week
- Time of Day
- Type of Target
- Object of Attack.

With this kind of information field units can better understand the nature of crime in their areas. The information generated under this function may assist operational units in implementing a variety of crime prevention, suppression and apprehension activities. Many law enforcement agencies develop tactical strategies to combat specific crime problems by utilizing Target Profiles and detailed suspect information.

Another aspect of this function is to correlate the attributes of crime incidents with demographic information such as population density, number and type of housing units, and age of residents.

Function 4, Forecast Crime Potential, is the ability to predict the exact time and location of future crime events for short range purposes. This function is one of the most desired crime analysis capabilities since the majority of the police administrators interviewed for this project named the prediction of crime potentials for specific targets as the ultimate goal of crime analysis. The current achievement of such predictions with any degree of accuracy, however, is often thought to be virtually impossible. Yet, many police departments engage in specific target forecasting with some success. The discrepancy in opinion about the present feasibility of this kind of forecast is due, in large part, to differing views of what should constitute such forecasts and

when they may be applied.

In fact, this function is an inferential process which proceeds from the first three functions, particularly, Function 1, Crime Pattern Detection, which is a "necessary" step to achieve these predictions. Forecasting Crime Potentials is to examine problems of crime incidents to develop projections of probable locations, target types, and time ranges.

Function 5, Exception Reports, is performed by periodically monitoring at fixed intervals (i.e., daily, weekly, or monthly) the occurrence of crime incidents citywide or by geographic area to identify "out-of-control" points based on crime thresholds. Using statistical techniques and based on the historical crime data, a "normal" range of crime volume is established. If the crime volume fluctuates within this "normal" or "acceptable" range, it may be interpreted as what is expected or "normal." When crime volume exceeds the range "upper" or "lower" thresholds, an Exception Report is produced to alert operational personnel so that proper action can be taken.

Function 6, Forecast Crime Trends, is the statistical analysis of crime incidents by type, area and/or time to identify trends in support of long-term police action. It is used primarily for strategic, administrative, and long-range applications in crime analysis. Forecasting Crime Trends involves the prediction of crime volume in time domain, i.e., forecasting by time of day, day of week, based on the historical crime data by using statistical methods and techniques. A typical strategic application is Resource Allocation, Function 7.

Function 7, Resource Allocation, is the process by which the most optimal use and allocation of available manpower for (1) patrol operation, and (2) criminal investigation are periodically determined in order to achieve some department operational goals and objectives.

With the recent development of patrol Resource Allocation models such as PCAM and Hypercube and their continued modification and evaluation, Resource Allocation in the patrol mode is making significant progress. In the investigative mode, however, little or no progress is apparent. It is the recommendation of the CASS Subcommittee on Investigations Resource Allocation, that either the current CASS project or another separate project be undertaken to produce guidelines in this area.

Appendix I of this report addresses the issues related to "Investigations Resource Allocation."

As a result of Phase I of the CASS Project the following issues have been identified relative to the initiation, modification, and automation of seven crime analysis functions:

(1) No universal interpretation exists for crime analysis functions.

(2) Crime Analysis Units, though not uncommon in police agencies, vary in their degrees of effectiveness and sophistication.

(3) An accurate, specific and consistent crime incident report is necessary for crime analysis activities to achieve an acceptable level of utility.

(4) Data timeliness at reception and throughout the crime analysis process is of critical importance in the success of crime analysis activities.

(5) Equal accessibility in support of all user groups is also of paramount importance to the acceptance and success of a Crime Analysis Unit.

(6) Although certain crime analysis functions lend themselves more easily to computerization than others, the development of an automated data retrieval, sorting and report generation mechanism is the most fundamental automation need identified at this time.

(7) While patrol Resource Allocation requirements have been and continue to be addressed through the development of various techniques and models (even computerized forms), Investigations Resource Allocation has not yet been successfully or thoroughly addressed and the need exists for greater attention to be focused on that aspect of Resource Allocation. (See Appendix I.)

In conducting the site visitations, the CASS project team found that although the host police agencies were conducting several crime analysis activities the nomenclature utilized to classify those activities was not consistent from department to department. This was primarily due to the overlap inherent in the definitions of particularly the first four crime analysis functions (i.e., Crime Detection, Crime Suspect Correlation, Target Profiles, and Forecast Crime Potentials). The nature of these functions is such that clear demarcations between them may not be apparent in all environments. For instance, some departments may not choose to differentiate in the time domain between Target Profiles and Forecast Crime Potentials while others may consider Crime Suspect Correlations as part of the routine Crime Pattern Detection process.

In that regard, the project staff found that not all departments had implemented each of the seven major crime analysis functions and that various degrees of success had been achieved with those functions that were operative. Crime Pattern Detection and Crime Suspect Correlation were the most universally established crime analysis functions while Target Profiling and Exception Reporting (both with respect to their strictest definitions) were the least utilized functions.

Critical to the successful application of any crime analysis function, however, is the nature and timeliness of the input data, the speed with which the function activities can be accomplished and disseminated and the credibility of the Crime Analysis Unit among its user groups. Obviously to gain credibility the analysis products presented to the users have to be acceptable. This can be accomplished by utilizing timely and accurate source information as well as by disseminating a needed product in time for it to be utilized successfully. This was best accomplished when:

1. Crime data can be obtained within 24 hours of occurrence.

2. That data is consistent and thorough from report to report.

3. Analysis information can be disseminated within the same day that the initial information is received.

4. The Crime Analysis Unit is placed in a neutral and highly accessible position in the organizational structure of the police department.

If the above criteria can be realized, successful accomplishment of one or more of the seven major crime analysis functions discussed in this document should be possible.

A model crime analysis system flow chart illustrating the typical interrelationships among the input data sources and output products of the seven crime analysis functions is presented in Figure 1, page xxii   (obtained from the San Diego Police Department).

In an effort to achieve input data timeliness and overcome manpower limitations, many police departments have turned to automation with various degrees of success. Most often, however, the net result of automation has been the accumulation of vast amounts of computerized data with no rapid and simple means of accessing that data. The primary automation need expressed by the majority of the departments visited by the CASS project staff was for the development of a data retrieval and report formatting system that could be utilized by any police department with automated data base files (i.e., a machine independent data management system). Such a system could support each of the seven crime analysis functions by providing at least the basic data required by the analyst to pursue further analysis. In other cases, the complete reports could be generated indicating correlations, patterns, problem areas, etc. (see applicable discussions in Chapter I). The utility of such a device would be limited only by the kind of data available and the ingenuity of the analyst.

DATA SOURCES   AUTOMATED FILES   ANALYSIS METHODS   PRODUCTS

A1
CENSUS/
MARKET
SURVEYS

A2
DEMOGRAPHIC
FILES

A3
CRIME MODEL
CONSTRUCTION

A4
CRIME
TREND
FORECASTS

A5

B1
CRIME
REPORTS

B2
VICTIM/
LOCATION
FILE

B3
THRESHOLD
ANALYSIS

B4
EXCEPTION
REPORTS

B5

C1
FOLLOW-UP
REPORTS

C2
DETAILED
CRIME
FILE

C3
TARGET/
OFFENDER
PROFILING

C4
AREA
CRIME
EVALUATIONS

C5

D1
PAWN
SLIPS

D2
PAWN/
PROPERTY
FILE

D3
CRIME
SERIES/
PATTERN
ANALYSIS

D4
CRIME
POTENTIAL
FORECASTS

D5

E1
ARREST
REPORTS

E2
KNOWN
OFFENDER
FILE

E3
SUSPECT TO
CRIME
CORRELATION

E4
CRIME
SERIES
BULLETINS

E5

F1
CRIMINAL
HISTORY

F2
JAIL
CENSUS AND
RECORDS

F3
PROPERTY TO
CRIME
MATCHING

F4
CRIME
CLEARANCE
LISTS

F5

G1
BOOKING
SLIPS

G2
F.I.
FILE

G3
CRIME TO
SUSPECT
MATCHING

G4
PROBABLE
SUSPECT
LISTING

G5

H1
FIELD
INTERVIEW
REPORTS

H2
VEHICLE
FILE

H3

H4

H5

J1
TRAFFIC
CITES/
WARNINGS

J2
WANTS/
WARRANTS
FILE

J3

J4

J5

K1
COURT

K2

K3

K4

K5

Figure 1
SAN DIEGO POLICE DEPARTMENT

CHAPTER I

CRIME PATTERN DETECTION

The identification of related or similar crimes has long been a goal of the law enforcement community. Shortly after the turn of the century, August Vollmer in an essay entitled, "The Police Beat" stated:

> "On the assumption of regularity of crime and similar occurrences, it is possible to tabulate these occurrences by areas within a city and thus determine the points which have the greatest danger of such crimes and what points have the least danger."[1]

Now in virtually all police departments, activities of some type are being conducted in pursuit of this goal. These activities may be formalized as part of the daily routine of a Crime Analysis Unit or may be informally engaged in by individuals in a department as a means of improving the effectiveness of their responsibilities.

With the increased professional and public awareness of the impact of the repeat offender on the crime rate,[2] it has become increasingly important for a police department to monitor crime occurrences for possible similarities. Individual offenders can be responsible for scores of crimes, many of which may share common characteristics. Thus, the arrest and prosecution of even one such individual could have a significant effect on a city's crime rate.

Crime patterns consist of groups of offenses which share common attributes or characteristics. The crimes in a pattern are, therefore, similar in certain respects, but are not necessarily related (i.e., committed by the same individual(s)). For example, several burglaries may be committed in the same neighborhood by different suspects. Although the burglaries are located in the same general area and may even exhibit other similarities (e.g., type of property taken, time of occurrence), different perpetrators could quite possibly be involved.

Obviously, any group of crimes will display some similarities. A good crime pattern, however, should reveal one or more of the following kinds of associations between its member offenses:

(1) The same geographic location

(2) A common suspect or method of operation (M.O.)

(3) A possible crime trend or target potential.

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[1]Crime Analysis Systems Manual (Preliminary Draft). Integrated Criminal Apprehension Program. LEAA, U. S. Department of Justice. April, 1977, p. 1-2.

[2]Dallas Repeat Offender Study. Dallas Police Department. Dallas, Texas, January, 1973.

Geographic patterns can suggest patrol or tactical preventive deployments. Related suspects can yield suspect/crime correlations resulting in case clearances while crime trend identification may lead to shifts in the emphasis of future police operations, community education programs, and "target hardening" projects.

Good crime patterns can be distinguished from those with general similarities by the presence or absence of unique or distinct crime attributes or data element values. That is one should consider not only the similarity of the information among crime reports, but also their significance.

For example, a robbery might be described as having been committed by a white male of medium height and weight, with medium length brown hair, brown eyes, dressed in a dark shirt and slacks, carrying a small caliber handgun and apparently fleeing on foot. This type of information might also be reported in connection with several additional robberies, giving the impression that a wealth of similar offenses are available to the analyst or investigator. But little in the way of distinctive information about any of the individual crimes exists, so that any number of people could qualify as the suspect in such instances.

In another example, a crime report may list a suspect with a gold tooth, or a suspect vehicle with a damaged front end, or a partial license plate, thus providing a more distinctive point for comparison.

In other words, a distinctive similarity lends credibility to a crime pattern and thereby provides a significant investigative lead for possible police action.

Several methods or techniques have been developed to detect crime patterns. The technique(s) utilized primarily depend upon the type of pattern being addressed, the individual preferences of the agency involved and the resources available to pursue the activity. Pattern detection techniques can basically be categorized into geographical and similar offense applications. These can be further divided into manual and automated techniques. The geographical applications to be addressed in this chapter include pin or spot mapping and offense logging or tallying activities. A geographical crime profiling system and a computerized mapping procedure will be discussed as examples of automated geographical applications. Similar offense applications to be addressed will include manual crime characteristic analysis techniques as well as automated data management and similar offense identification systems.

Manual Techniques

A manual crime analysis system can be defined as "one in which unit personnel manually collect, collate and analyze crime data obtained from various departmental sources."[3] Although most manual pattern detection techniques can be automated with varying degrees of success, automation is not always advisable for every department. Automation is generally only cost effective where crime occurs in such volumes that manual analysis techniques are rendered inadequate because of manpower limitations. Manual techniques can be quite effective where staff levels can adequately cope with the crime volume and respond to the various demands characteristic of Crime Analysis Units within the proper time frame. Agencies contemplating the addition of pattern detection activities (or any crime analysis activity), in either the manual or automated mode, should consider

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[3]Crime Analysis Systems Manual, p. 3-2.

the following factors:

- The crime volume anticipated

- The staff size available

- The anticipated demand for service

- The nature of the demands.

The crime volume essentially determines the amount of time devoted to the routine duties of offense processing. Typically, in a manual Crime Analysis Unit with a pattern detection capability, crime analysis personnel receive each morning, copies of all Offense/Incident Reports, Arrest Reports, and Supplement Reports turned in to the department during the preceding twenty-four hour period. Specific offense categories (e.g., robbery, burglary) may be separated along with Supplement and Arrest Reports for the same crime categories. Once the Offense Reports are sorted into the proper crime categories, each offense location may be posted on maps or recorded in log books or tally sheets to aid geographical pattern detection. Information from the Offense Reports, Arrest Reports, or Supplements can then be extracted, summarized on cards and filed by name, M.O. element, vehicle description, or any other appropriate data element. By studying the crime reports daily and noting their locations, times of occurrence, modes of operation, suspects and automobiles involved, crime analysis personnel can identify geographic offense concentrations, establish connections between offenses, and detect crime trends.

Since the above activities are routine duties that must be performed each day to main-tain the Crime Analysis Unit, much of the staff time in a manual operation is expended in their accomplishment. As much as half a day can be consumed by such activities.[4] As the crime volume increases and staff levels fail to keep pace, the effectiveness of a Crime Analysis Unit to satisfy its user requests and the level of analysis it can apply toward their resolution will suffer. It is at this point, that automation should be considered.

Automated Techniques

Computerized applications are of basically two types:

(1) Semi-automated systems

(2) Fully automated systems.

In a semi-automated system, crime information normally stored in manual filing systems is stored instead in a computer. The analyst then addresses the computer to sort and retrieve any information needed. The chief advantage in a semi-automated system is in the clerical time saved by the unit staff. Instead of devoting time to maintaining cumbersome and lengthy card files with key crime information, the information is entered into the computer and is available for instant recall whenever necessary. This approach saves not only data input time, but if the sort routines are effectively written, can save data extraction time by allowing the analyst to search and retrieve just the information wanted on an appropriately formatted report. This approach thus saves manual searching and information extraction time, as well as report preparation and typing time.

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[4] See major limitations on page 12.

Unlike manual filing systems, computerized information never has to be replaced or refiled after it is used. Thus, it can never be lost or replaced out of sequence as can cards in a manual filing system.

In a semi-automated system, the analyst must make the retrieval requests before the computer will respond. The analyst must, therefore, continue to be responsible for the analysis involved in any interaction with the computer. Although the computer will determine, for example, that there have been seven jewelry burglaries involving white vans during the last three months in a particular city, the analyst must still ask the computer the question, "How many jewelry burglaries involving white vans have there been in the last three months?"

If the source data has been carefully entered into the computer, the response is generally more thorough and accurate than in a manual retrieval mode (i.e., a manual search may have, in the above example, determined that there were six such crimes - human error causing the omission of the seventh). Data entry should be accomplished in at least the same time frame that the superseded manual files were updated (i.e., daily) in order for an automated system to be fully effective. There is no advantage to be gained in situations where it takes days for new crime information to be input into the computer.

The advantages of semi-automated systems, therefore, are:

- Retrieval speed

- Relatively finalized report format (depends on the sophistication of the automated system utilized)

- Search accuracy.

The disadvantages of semi-automated systems are:

- Coding errors

- Access

- Time delays.

Any disadvantages with semi-automated systems lie generally in data entry problems (this can affect fully automated systems as well), and in the fact the analyst must still determine what to ask the computer about. With the semi-automated system, the crime analyst has a passive tool to utilize in detecting crime patterns, or making crime/suspect correlations. The analyst must still depend on others (e.g., patrolmen, investigators) or his/her own insight to suggest possible patterns or correlations for analysis. Many systems exist that are hybrids exhibiting characteristics of both semi-automated and automated systems.

Fully automated systems provide decision-making capabilities as well as data storage, search, and retrieval facilities. A fully automated system can be designed, for example, to automatically search for crime patterns or make crime/suspect correlations. The analyst is provided with what the computer determines to be a good pattern, or a good crime/suspect match. By utilizing preprogrammed comparison criteria, a fully automated system is able to evaluate the degree of similarity between individual data elements and thereby reach decisions on the overall similarity (or lack of similarity) between any two crimes, or M.O.'s.

The advantage to such systems is that the analyst does not have to depend as much upon requests from others or his/her own insight to suggest possible patterns, and correlations. The analyst can very often go to investigators, patrolmen or other frequent user groups with identified patterns and crime/suspect matches. A fully automated system allows a Crime Analysis Unit to adopt a more proactive posture than is usually possible with manual or semi-automated systems.

The possible patterns, matches or correlations suggested by fully automated systems must, however, be carefully validated by crime analysis personnel before they are disseminated to the various users. Since computers cannot read narrative portions of Offense or Arrest Reports or take advantage of non-computerized information, some bad patterns or investigative leads will be generated. Fully automa·d systems should, therefore, be looked upon not as replacements for, but as aids to human analysis activities. An automated system is just another source for possible pattern or suspect related information.

GEOGRAPHIC PATTERNS

Geographic crime pattern detection is the most universal pattern detection technique employed by police agencies. Even where no formal crime analysis activities exist, it is not unusual to find individual efforts in geographic pattern detection occurring at the precinct or patrol district station level as in the Dallas, Texas Police Department prior to 1970.

In geographic crime patterns, the location of occurrence is the most distinct similarity among the individual offenses. While there may be several other similarities - even data that establishes a definite relationship among the crimes - the common location of the offenses in the same general vicinity is the primary cause for at least their initial identification and grouping.

Geographic crime patterns are most frequently identified through record logging or mapping techniques. As the crime location data is logged or mapped each day, areas of high crime incidence become readily apparent.

The techniques used for recording and detecting crime patterns generally provide the means for monitoring or updating those same patterns. Pin or spot-mapping procedures, for example, provide a visual history of the progress or decline of a geographical pattern. Since, in agencies where they are utilized, spot maps are usually updated daily with new offense locations, geographical crime patterns are monitored and updated as part of the daily maintenance routine.

Similarly tally or logging procedures provide the same automatic monitoring and updating features wherever they are employed. New offenses added to a partition in a log or tally sheet representing a beat or reporting area, currently experiencing a crime problem would indicate the continuation of the problem. A lack of new offenses may mean the end of the problem.

The size of a geographic pattern is often dependent upon the method or technique employed by a police agency to monitor geographic crime concentrations. In agencies employing pin or spot mapping techniques, the exact boundaries of a geographic pattern can be determined by simply inspecting a map. In agencies utilizing record logging procedures only, with no provisions for any visual aids, geographic patterns are detected by monitoring the increases in crime in the geographic subunits of the city used by the

agency for patrol deployment or statistical data collection (e.g., patrol beats, reporting areas, census tracts). Consequently, in such instances, a geographic pattern is usually defined in terms of one or more beats or reporting areas.

Geographic patterns may last anywhere from two or three days to well over a week. Therefore a systematic procedure for recording and monitoring crime location on a daily basis is mandatory if an agency is going to address this kind of pattern. Simple, quick techniques for geographic pattern detection like pin-mapping are often more advantageous than automated systems if data entry is a problem.

Manual Techniques

Basically there are two approaches to detect geographic crime patterns. One is the logging technique discussed under Manual Techniques page 31 and the other approach is crime mapping.

Manual Crime Mapping

Manual crime mapping procedures simply involve the determination and posting of offense locations on city or jurisdictional maps. Crime locations are most typically extracted from daily Offense/Incident Reports. Most agencies engaging in crime mapping activities select only certain crimes to analyze in this manner. The crime categories usually chosen include burglary, robbery, sex crimes, auto theft, and various larceny categories. These crime types are selected because they are considered preventable from a police action standpoint while other incidents such as most murders, assaults are not.

The selected crime categories are generally posted on separate maps. This is particularly true in high crime volume environments where a single map could quickly become cluttered with too many offense locations. The posting process consists of placing colored or flagged pins at the approximate locations on the map where the offenses occurred. Because of the tendency of pins to quickly wear out the surface of the map, colored self-adhesive coding dots placed on acetate overlays protecting the map are often used.

As the offenses are posted each day, crime concentrations will become apparent. Current patterns can be distinguished from older no longer viable patterns by simply marking the date of occurrence on the surface of the coding dot or flagged pin marking each offense location. Other symbols denoting offense clearance, premise type, victim or suspect characteristics, can also be placed on the coding dot or pin flag. The color of the dot or flag can also be used to signify any of the above, although color is generally reserved to represent the month or watch (workshift) in which the offense occurred.

After the Offense/Incident Reports have been sorted and the locations posted, they are then read for distinctive features such as vehicle or weapon descriptions or stolen property types are marked on the report. Such features can be underlined on the report, or each qualified report can be tagged with a colored adhesive label. Tags are preferable because they can be placed on the leading edges of the Offense Reports which can then be easily retrieved from the file.

Once read and tagged, the offenses are ready to be filed. Offense/Incident Reports used for geographical pattern detection should be filed by geographical area (i.e., patrol beat, sector). This will allow the Offense Reports for any identified pattern to be quickly found by referring to the proper geographical area in the Offense File. The Offense/Incident Reports for the current and previous month should be stored for each crime category posted. This allows reports for patterns that overlap from one

month to the other to be quickly accessed. The Offense Reports can be filed by date within each beat to further facilitate their access. In high crime volume jurisdictions, each month's offenses may be kept in separate files (i.e., active/inactive) to avoid overcrowding problems. Supplement Reports, when they are available, should be filed with the appropriate Offense Reports. (Figure 1-2, page 8, summarizes the manual offense posting process.)

The primary data source for pattern detection activities is the Offense/Incident Report. This document and any associated Supplement and Arrest Reports are the only data sources required to conduct ninety-five percent of all manual pattern detection activities. Intelligence information (e.g., F.I. cards), and parole and probation data account for the remainder. From the above information sources, the following initial data elements are required for offense posting:

- Crime type

- Crime location addresses

- Dates of occurrence.

The following initial data elements are optional:

- Times of occurrence

- Premises type (type of business, residence)

- Property taken or stolen vehicle type and recovery status

- Crime clearance and arrest data.

The maps on which the offense locations are posted should be large enough to indicate block number designations of individual streets. The maps should also be large enough to accommodate a two-month accumulation of ¼" coding dots without becoming too cluttered. On property crimes like burglary and larceny, where volume may be a problem, different maps may be used for crime-type subcategories (e.g., business burglary, residential burglary, bicycle theft). Half dots (split coding dots) may also be used to differentiate subcategories of less voluminous crime types such as robbery (e.g., commercial robbery and robbery of individuals).

The optional data elements can be utilized if time and space permit. Denoting the status of the crimes, for example (i.e., a check or shaded portion of the coding dot indicating a cleared offense), is very helpful in conjunction with the dates of occurrence in determining the current validity of any geographic pattern. Premises type indicators, too, if placed on the coding dots, may indicate geographical patterns or trends beyond simple crime clusters. Watch or work shift indicators determined from the times of occurrence may also be helpful in characterizing crime patterns and in informing the proper patrol elements.

After posting, the following subsequent data elements are required for detailed pattern analysis:

- Suspect descriptions

- Vehicle descriptions
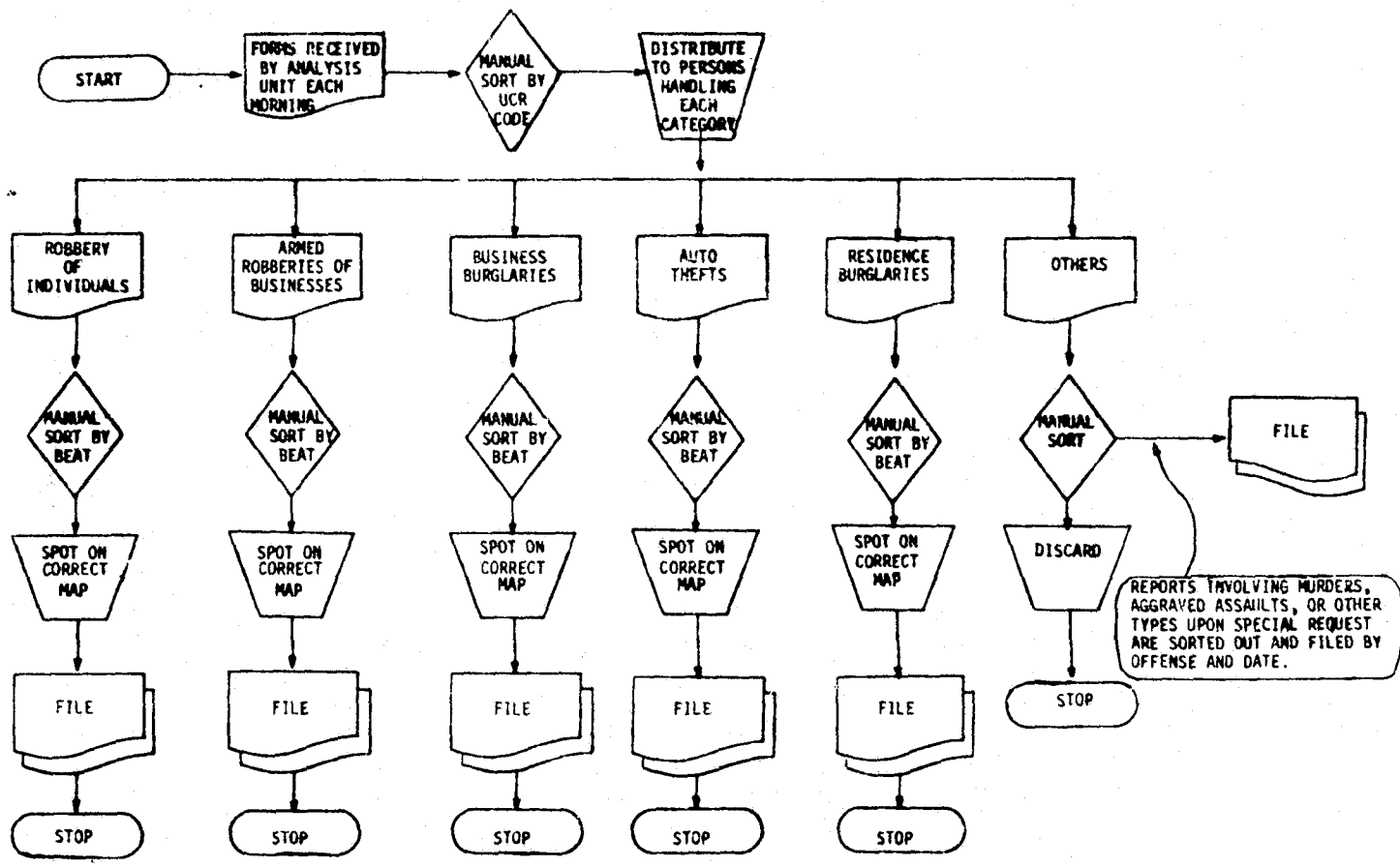
Figure 1-2

- Distinct M.O. elements

- Property taken or stolen vehicle type and recovery status (if not extracted earlier)

- Crime clearance and arrest data (if not extracted earlier)

- Times of occurrence (if not extracted earlier)

- Possible known offenders who match the suspect descriptions.

The above data items are necessary to profile a crime pattern for possible preventive action and to build the various M.O., vehicle and known offender files required for detailed crime analysis. The major data source for all of the above items is again the daily Offense/Incident, Supplement and Arrest Reports. Part of the information in each file may be supplemented with F.I. cards, other intelligence information and parole/probation data.

Due to the volume and detail of the information required to support tactical deployments or adequately brief preventive patrol elements, the crime pattern profile should be presented in a written format rather than in informal telephone or face-to-face communications. Examples of crime analysis reports depicting geographical crime patterns are shown in Figure 1-3, page 10 (Arlington, Texas Police Department) and Figure 1-4, page 11 (St. Petersburg, Florida Police Department).

The distribution of geographical pattern information depends upon the purpose for which the information was developed. If it is intended to supplement routine preventive patrol activities, the information may be disseminated on a regular schedule (i.e., daily, weekly) to patrol bureau personnel. In such instances, it is recommended that the pattern information be distributed to all patrol divisions since lack of information about citywide crime conditions is a common complaint aired by patrol. This is especially true if accurate suspect/known offender information is involved. The information should be sent to all the watch (shift) lieutenants for distribution to the sector sergeants and beat patrolmen. The sergeant(s) supervising the area where the crime pattern is situated may also be informally contacted over the telephone and alerted of the forthcoming report. This avoids possible distribution problems (e.g., reports being forgotten on someone's desk) and may improve feedback opportunities.

If the information is intended to influence possible tactical or directed patrol deployments, it may not be possible to distribute the reports on a regularly scheduled basis. Tactical and directed patrol deployments tend to be very irregular in duration reflecting the status of the crime problem initiating the assignment. In such situations, it is best to distribute the reports to the affected units as they are generated by crime analysis personnel (i.e., as the patterns are identified). Tactical commanders can then decide if an older assignment should be discontinued in favor of a new problem.

Geographical pattern information may or may not be of interest to anyone other than patrol or tactical personnel. If the identities of the suspects have been determined, or well-substantiated inferences made as to their possible identities, investigative personnel should be made aware of the information. To avoid the possible duplication of effort or the generation of competition between different user groups, each group should be made aware of every other operational unit that has also been given the information. If possible, regular meetings attended by representatives of all crime analysis user groups should be encouraged. Such gatherings are useful in moderating possible conflicts as well as in encouraging information exchange. They are particularly

crime analysis bulletin

CRIME ANALYSIS UNIT
ARLINGTON POLICE DEPARTMENT

- Distribution -

[ ]	Chief of Police	[ ]	Deputy-Chief Administration	[ ]	Deputy-Chief Operations
[ ]	Legal Advisor	[ ]	Special Unit	[ ]	All Dept. Supervisors
[ ]	All Staff Officers	[ ]	All Commissioned Officers	[ ]	All Dept. Personnel

Division ( )-Commander ( )-Supervisors ( )-All Personnel

TO: Crime Specifics and Patrol Personnel   DATE: June 22, 1978

FROM: Crime Analysis Unit/JCM

SUBJECT: Microwave Oven thefts - District 318

****

We are once again being hit on microwave oven thefts. During the last five days, four microwave ovens have been taken. The thefts have been taking place in District 318. Below is a breakdown on the locations of the thefts:

4815 Hidden Oaks 6/16-19/78 5:30PM to 8:00AM, Fri-Mon
Unknown suspect entered through garage door

4802 Hidden Oaks 6/21-22/78 6:00PM to 9:00AM, Wed-Thur
House unsecured, unknown point of entry

4703 Wood Springs Ct 6/21-22/78 6:00PM to 9:00AM, Wed-Thur
House unsecured, unknown point of entry; exit possibly through garage door

4704 Spring Creek 6/21-22/78 6:00PM to 9:00AM, Wed-Thur
House unsecured, unknown point of entry

There are several other houses near completion in this area. The houses that were hit on Wednesday-Thursday were completed and ready to be moved into. Unfortunately the builder on these three houses does not believe in locking the houses. He feels that the burglar will get into the house no matter what he does.

Apparently we are going to have to shift our attention from Districts 311 and 313. A heavy concentration of patrol and crime specifics personnel may be needed to stop the thefts in this new trouble spot. We need any information on any unusual activity in this area, especially during the late evening and midnight shifts.

While the MO's on these latest offenses differ from those on the north side of town the same suspects may be involved. Prior suspects are N/M Tommy L. Doe, 9-09-51, 5'8", 145, black/brown; and N/M Steven W. Smith. Vehicle information on the prior thefts show that a green 1970 Ford Maverick ABC 123 may be involved. As of 6/10/78 Doe had misdemeanor warrants on him out of Ft. Worth. Another suspect vehicle is a Green 71 Chevrolet Vega ACD 321.
Please forward any information to Crime Analysis Office.

Figure 1-3

MEMORANDUM
CITY OF ST. PETERSBURG

TO _____   **Date** 12 Jan 78   **19** ____

FROM Barbara Winfrey, Crime Analysis Division_____

RESIDENTIAL BURGLARY

Attention: Zone 02, Evening & Midnight Shifts

Area:	30-40 A/S from 6-8 S/S	Off#'s: 1855/1867
Activity:	5 breaks in area past week (1 previous week)	2025
Time:	1900-0400	2381
MO/POE:	Pry front door	2577
	All occupied at time of break	2736
	2 in mobile home parks in area	
	1 a SAR of 2 FWs by 2 MBs-ransacked, phone pulled,	
	threat to rape	
Loss:	Cash, jewelry, tools	

Suspects: 0# 1844/1867 (2 vics) - #1-MB 25, 5'10", 165#, med bld, dk complxn, short afro,
lsw brn or blue knit cap pulled over face to below nose, dk l/s sweatshirt,
dk pants   #2-same physical desc & clothing as #1
Subjs assaulted FW76 & FW83, ransacked res, pulled phone

Attention: Zone 07, Midnight Shift

Area:	11-22 A/S from 3-6 S/S	Off#'s: 630
Activity:	5 nighttime breaks in area past week (2 previous	1987
	week, unoccupied)	2261
Time:	0030-0330	2368
MO/POE:	Pry rear window	2664
	3 occupied	
	2 unoccupied/ransacked	
Loss:	Cash, TVs, jewelry, clock	

Suspect: 0# 2368 - MB med bld & complxn, lg afro 2-3" long combed up to rear of head
in wedge
Sus reaching thru window to remove objects (TV, clock) when seen
& fled.

Attention: Zone 04, Evening Shift

Area:	13-16 A/S from 35-45 S/S	Off#'s: 1386
Activity:	6 breaks in area past week (none previous week)	1572
Time:	1800-2100	1800
MO/POE:	Pry rear door or window	1516
	3 ransacked	2245
	2 vacant	2252
Loss:	TV, cash, tape player, jewelry	

No suspects noted in area.

Figure 1-4

useful for new Crime Analysis Units since they aid in defining user needs and in providing feedback on previously supplied information.

Exchange of pattern information with other nearby police agencies should be encouraged and become part of the normal routine in a crime analysis unit. Very often, criminals from a larger community will be active in surrounding communities or vice versa. Information may be developed in one department that, together with what is available from another agency, might benefit all concerned. One agency, for example, may have more detailed or current information about a particular known offender than another agency.

The major limitation of manual crime mapping processes is that they tend to be too time consuming. In a high crime volume environment (i.e., larger cities), the basically manual nature of the traditional approach results in a significant time delay between crime problem identification and the implementation of possible solution strategies (e.g., tactical deployment). Typically, the time delay develops as follows:

(1) When a crime is committed, it is generally not available for analysis until the following day. It takes approximately eight hours for Offense Reports to arrive at a particular destination from officers in the field. The reports are usually turned in at the end of a tour of duty (work shift) or collected at various intervals during the duty tour and turned in.

Each report must then be reviewed, UCR coded,[5] selected data captured for computer records (if automation is available), reproduced and distributed to the various departmental user groups (e.g., investigators, crime analysts, etc.). Since crime analysis personnel are normally available on only one work shift per day in most police departments, the majority of the Offense Reports are received one day late.

(2) In the crime analysis area, the Offense Reports are sorted, read, posted to a wall map and filed. If a geographic concentration or offense/offender pattern is discovered, an analysis of the situation is made. Since the first part of each day is normally devoted to sorting, posting and filing Offense Reports from the day before, crime problem analysis is generally not started until the afternoon and not concluded until the end of the day.

(3) After analysis, a handwritten report may be prepared and typed onto a standard format for deployment personnel. Depending on the work load of the secretarial staff, typing may be completed either in the morning or afternoon of the third day.

Thus, a significant time lag may frequently accompany the utilization of this approach to geographic crime analysis in many police departments. When this occurs, tactical deployment personnel are too often placed in the position of chasing or following crime problems rather than intercepting them.

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[5]Uniform Crime Reporting is a standardized method of crime classification initiated by the IACP and utilized by most police agencies.

Automated Techniques

The automated techniques for geographic crime pattern detection are discussed in the following sections on Computer Generated Maps and the Real-Time Tactical Deployment System.

Computer Generated Maps

Computer mapping is a technique used to display data or information geographically by using the computer through a central processing unit, line printer, plotter, cathode-ray tube, or other device. It is a relatively new approach, the technology of which has been developed within the last 25 years. It is just beginning to be recognized as an effective and powerful tool in information management. It requires x-y coordinate geocodes associated with the data, or data zone reference files (geographic base file) correlated with nominal area geocodes.[6] Typical examples of computer generated maps are: pin-point maps (Figure 1-5, page 14) and choroplethic (shaded) maps (Figure 1-6, page 15). The contour map is another kind of computer generated map which is also of two varieties: two dimensional line or shade-varying maps (Figure 1-7, page 16), and perspective line maps (Figure 1-8, page 17). The pin-point and the choroplethic maps may be classified as descriptive in purpose as they present true or summary information of the data. Contour maps, on the other hand, could be classified as abstract as these maps commonly employ interpolation and smoothing to modify the basic data in order to generalize the nature of the distribution.

With computer mapping, raw data can be analyzed and displayed geographically. This information can also be compared to other sets of data such as demographic data or data categorized by crime type. The advantages of having computer generated maps are:

- Assuming the computer can provide short turnaround time, a large volume of data can be processed

- A more complete spatial and aspatial analysis of crime data can be performed.

Aspatial analysis refers to the tabulating, aggregating, and statistical analysis of data geographically, such as by area but without regard for positional relationships. Examples are tabulation of crime by police precinct, sector, and traffic accident by intersection. Aspatial analysis refers to commonly mentioned statistical analysis, i.e., arithmetic mean, variance, standard deviation, all of which can be graphically displayed.

Spatial analysis is analogous to aspatial analysis, describing the centrality, dispersion, and skewness of data distribution, but in a two dimensional sense, so that the computer can in effect produce a map. The typical statistics of the spatial or geographic analysis are:

a. Center of gravity (similar to arithmetic mean value)

b. Principle axis (similar in concept to a straight line regression) describes the directional trend of a distribution

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[6]Nominal area geocode: Name of a geographic location, e.g., census tract, census block, police sector, or car beat.

San Diego Police Department
NEIGHBORHOOD CRIME PREVENTION PROGRAM

Figure 1-5
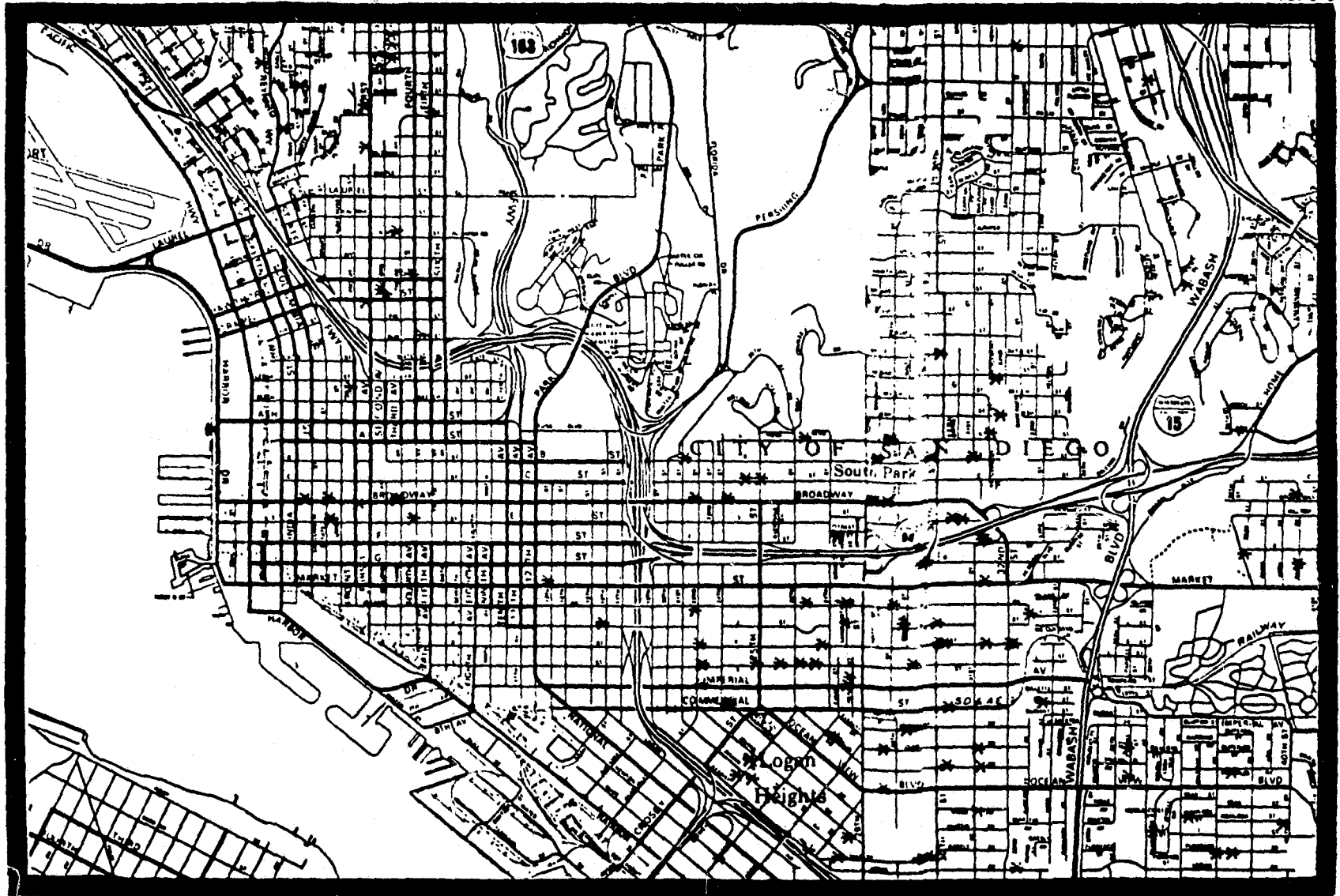
NOTE: "*" are the locations of Residential Burglaries for the month of October, 1978.

CRIME IN BUFFALO

Auto Theft, 1971-1975,
Offenses Known to the
Police
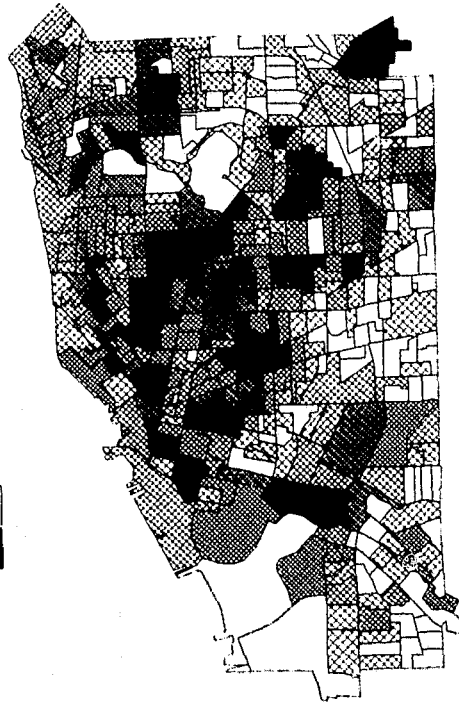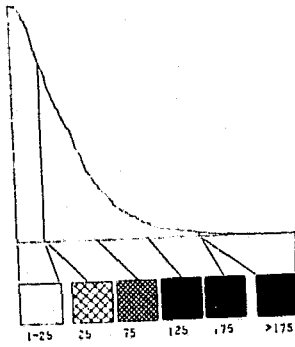
Continuous Shading
Choropleth Map

Reprint from the report: "A Crime Analysis Research Package (CARP)"
A strategy for the display and analysis of spatially referenced
crime data by Perry O. Hanson, III, K. Barassel, Jack Utano;
Geographic Information Systems Laboratory, State University of
New York at Buffalo.

Figure 1-6

Figure 1-7

3D DENSITY PLOT

DOWNTOWN MPLS ASSAULTS
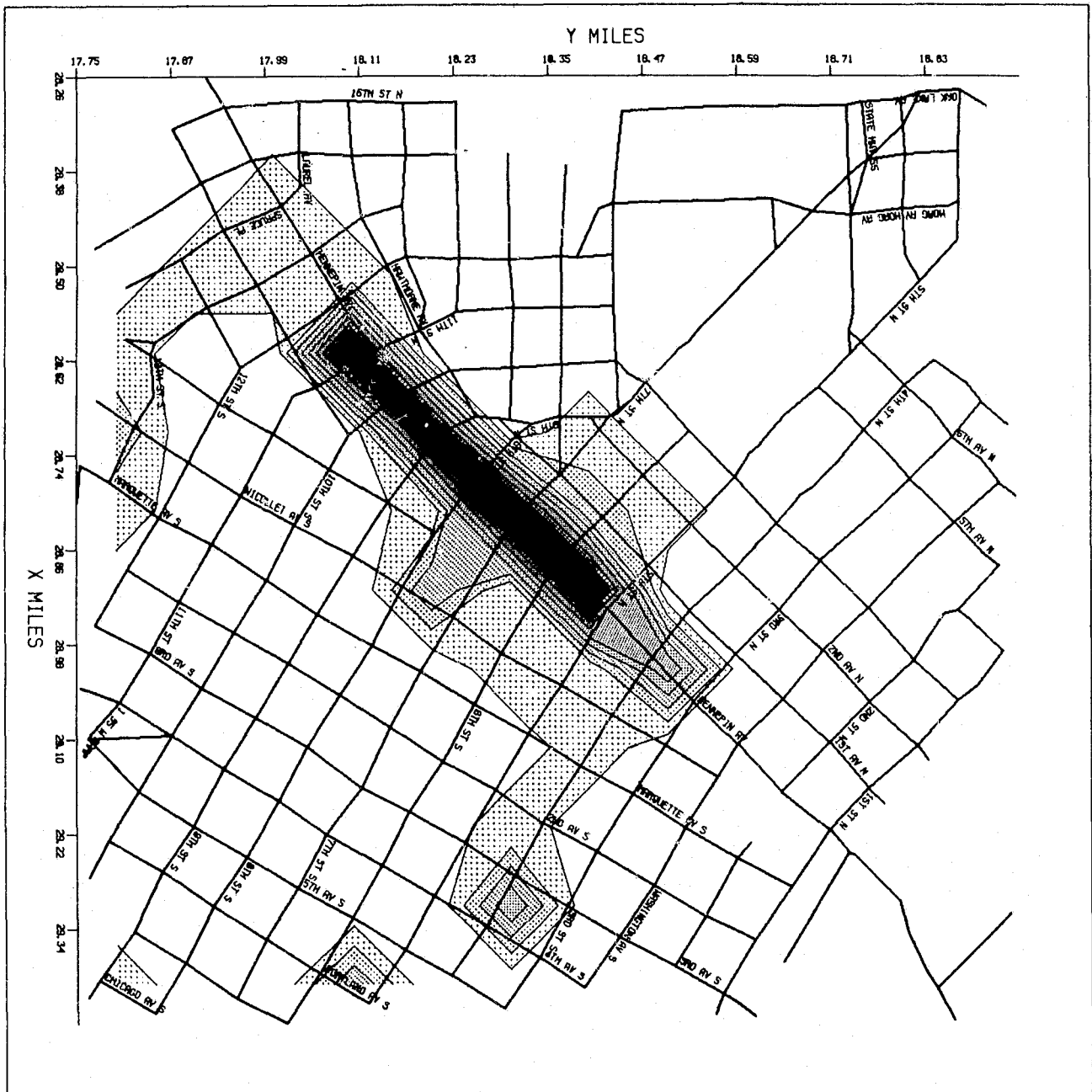
Copyright 1979 by the Minnesota Crime Prevention Center
2344 Nicollet Avenue, Minneapolis, Minnesota 55404.
Used by permission.

Figure 1-8

    c.   Standard distance (the first standard deviation of radial distance of the distribution from the center of gravity) is a measure of dispersion.

The above mentioned analysis is sometimes referred to as descriptive spatial analysis. For pattern detection purposes, crime patterns can be very easily visualized.

The key requirement of performing computer mapping is that all data be geocoded. Furthermore, if the user wants to produce pin maps, an x-y coordinate geocoded data base is required. At present, there are very few effective and operational geocoding systems in the country. The "Geographic Base File (GBF) for Law Enforcement,"[7] project funded by LEAA to the IACP in 1974-1978, studied the requirements and feasibility of implementing GBF in law enforcement agencies, and provided technical assistance in implementing geocoding.[8]

There are two primary requirements for computer mapping to effectively replace manual spot mapping activities:

- The input data must include at least the address of the crime location, the date of occurrence and the crime type.

- The data must be captured, geocoded and produced in the computer plotted format at the beginning of each working day.

If the second requirement cannot be met, computer mapping should be utilized for other purposes (e.g., for research activities and the preparation of administrative studies and reports).

Since computer mapping (in its most basic form) replaces only the crime posting activity in geographical pattern detection, the other data requirements listed for manual crime mapping procedures must also be satisfied if the complete pattern detection process is to be successful. Similarly, the same output and dissemination requirements also apply. If additional kinds of input data are geocoded, then further automation of the geographical pattern detection process is possible (e.g., output reports). Such possibilities are examined in the remaining sections of this chapter.

Two possible difficulties may arise in utilizing computer mapping techniques:

    (1) Lack of detail on the maps provided

    (2) Loss of facility in detecting similar offense crime patterns.

The maps produced through computer mapping sometimes cover too large an area to effectively be used to determine by sight if a valid geographical crime pattern exists. If too large an area is displayed, street detailing is too vague to determine if two or more crimes are situated close to each other or are several blocks apart. Some map displays may not even display the street within a geocoded area. Such lack of detailing hinders the analysis process.

The above problems can be avoided by providing map detailing to at least the beat or patrol area level (or portions of a beat or patrol area, if necessary). As in the manual mapping process described earlier, blocks of individual streets should be

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[7]LEAA Grant #74-SS-99-3305 and #76-SS-99-6040, Geographic Base File for Law Enforcement: Technical Assistance and Services.

[8] For further information regarding the procedure of establishing geographic base files in law enforcement and other technical related information for mapping and display software development and transferability contact the IACP.

discernible on computerized maps as well. Care and thoroughness in the street structuring stage of building a geographic base file will pay off later with more usable map products.

As geographical crime patterns are identified, the subsequent crime analysis process (see page 7) often reveals that geographical patterns are composed of two or more separate similar offense patterns (page 30). In such instances (typically, high crime residential neighborhoods or high victim/opportunity target areas such as tour sites, parks, or retail business concentrations, two or more different individuals or groups may be victimizing the area because they live in or near the area or it offers attractive criminal opportunities. Analysis of the offenses comprising such patterns will disclose consistent differences in the M.O.'s utilized, suspect or vehicle descriptions, between subgroups involved. The larger the geographical area affected by the crime pattern, the more likely it will contain such subpatterns.

In reading each day's Offense Reports as part of the routine manual crime mapping process (page 6) distinct or unique data elements will be noticed and remembered by the analyst. Two or more Offense Reports containing for example a bright orange suspect vehicle or an unusual M.O. such as eating food found on the premises while committing a residential burglary can be linked together through the memory of the analyst even though the crimes may have occurred several days apart in different areas of the city. Therefore, computerized mapping must not replace the need for the analyst to read all incoming Offense Reports as an integral part of the overall crime analysis process.

In reading through each day's Offense Reports, distinct or unique data elements will be remembered by the analysts. In this manner similar offenses can be effectively detected. The memory of the analyst is, in fact, the primary element in most similar offense pattern detection processes. It is, therefore, important to retain the opportunity for the analysts to exercise their talent in this area.

Real-Time Tactical Deployment System

Although automation of the crime mapping process can save time in high crime volume environments, other time expedient approaches to geographical crime pattern detection are possible. One such approach is the "Real-Time Tactical Deployment System" (RTD) utilized by the Dallas, Texas Police Department. The RTD system provides detailed geographical crime information quickly enough to allow tactical assignment areas to be selected daily, if necessary, without the use of spot maps or manually prepared analysis reports. Tactical planners need only to review the information provided to decide where to make deployments (and where to conclude previous deployments).

The RTD system is operated daily by the Dallas Police Department's Crime Analysis Section to identify and analyze "hot"[9] crime areas in the city. To date, crime analysis personnel have concentrated the use of the system on residential burglaries during the week and business burglaries on the weekends. Other crime types are addressed as needed.

Each of the 158 patrol beats in Dallas is evaluated each morning for burglary problems through examination of summary reports provided by the RTD system. The information provided in these reports identifies "hot" areas by evaluating the daily burglary occurrence frequency for beats experiencing an abnormally high number of crimes during a fourteen-day period.

_____

[9]"Hot" area during a fourteen-day period, an area which shows an increase in crime occurrence during the second week when compared to the first week. This is the fundamental definition of a "hot" area.

The report is output separately in two sort orders, one by number of crimes (Figure 1-9, page 21) and one by beat (Figure 1-10, page 22) to provide the crime analysts with two independent perspectives of viewing current crime patterns.

If an increasing trend is indicated (e.g., more burglaries during the last seven days), then that area is designated "hot" and analyzed further. For such further analysis, detailed reports are provided daily in a format that can be disseminated to tactical and patrol personnel. These reports include a fourteen-day burglary review of each "hot" beat (see Figure 1-11, page 23), all suspect descriptions (Figure 1-12, page 24), and all suspect vehicle descriptions for the preceding fourteen days (Figure 1-13, page 25). Other information provided on an as-needed basis includes people arrested in "hot" areas, partial license plate checks against traffic citation and wanted vehicle files, known offenders living in "hot" area (Figure 1-14, page 26), and reviews of other repressible crime types. Utilizing this process, the RTD system provides tactical forces with the information necessary for deployment within three to twenty-four hours of crime problem occurrence.

The two major software components of the RTD system are:

● Adjacency

● DS/3 Data Management System.

The Adjacency Program performs the analysis of crime occurrences and produces the summary and detail crime occurrence reports previously described. The DS/3 system produces reports containing supplemental information to support crime problem analysis and deployment operations. The system also provides generation of special ad hoc reports on a same-day basis using either the on-line terminal or the computer center batch procedure. (Figure 1-15, page 27 illustrates the operation of the RTD system.)

The data requirements for the RTD system are the same as those for a manual geographical pattern detection system except that the data must be geocoded and in machine readable form. After Offense Record information is captured, geocoded, and stored in computer files, the requirements of the RTD system are:

● Access to the Offense Record File and its associated cross reference files.

● Capture of additional vehicle and suspect data from the Offense/Incident Report.

● Suspect and vehicle information (if not already captured) must be entered into two new computer files. The information in these files comes from the Offense/Incident Reports for robberies, thefts, murders, rapes, aggrevated assaults, auto thefts, and sex offenses.

● Data entry for all files is required within 24 hours of reporting the related crime.

● Updates to the vehicle and suspect data is required as Offense Supplement Reports come in.

● The vehicle and suspect data must be purged on the same basis as the offense file information.

Figure 1-9

HOT ADJACENCY
SUMMARY REPORT

02/05/79 THRU 02/20/79

			1ST 7 DAY CNT	* 1ST WEEK *						14 DAY HISTORY				* 2ND WEEK *			2ND 7 DAY CNT	REPORT DAY TUE	DIFF. 1ST-2ND 7 DAYS	14 DAY AVERAGE
	HOT BEATS	TOTAL CRIMES LAST 14 DAYS		TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON				
1.	361	****** 14	10	3	2	1	2	1		1	. 1			1			2	4		-6	1.0
2.	454	12	7	3		1	1	1		1	. 2	1	1	1				5		-2	.8
3.	442	11	7	4			1		2	. 1		2	1					4	1	-3	.7
4.	534	11	7	1		1	2	2	1	. 1	1	1		1		1	1	6	2	+2	.7
5.	118	10	4	1		1		1		.	1	1	2		1	1		5	1	+1	.6
6.	126	9	4		1		2		1	.	2	1	1								.6
7.	245	9	3			1		1	1	. 1	1	2	1	1				6		+3	.6
8.	313	8	4	1		2		1		. 1	1	1	1					4	1		.5
9.	315	8	6		1		2	1	2	.		1	1					2		-4	.5
10.	316	8	5		1	1		1		. 1	1					1		3		-2	.5
11.	332	8	4	1		1	2			.	2	1				1		4	1		.5
12.	341	8	1				1		2	1		2		1	1		7	1	+6	.5
13.	412	8	6		2	1	1		2	. 1		1					2		-4	.5
14.	426	8	7	4		1	1	1	.			1				1		-6	.5
15.	433	8	5		2		1	1	1	.	2	1					3	2	-2	.5
16.	434	8	3		2		1		.	1	3			1		5		+2	.5
17.	233	7	3			1			2	. 2	1	1				4		+1	.5
18.	236	7	3	3					. 1		2	1			4		+1	.5
19.	246	7	4	1	1		1	1	.	1		1		1		3		-1	.5
20.	254	7	7	2	2		1		2 .								-7	.5
21.	347	7	4			1	1	1	1	. 1	1	1				3		-1	.5
22.	356	7								. 1	1		3	1		1	7	1	+7	.5

HOT ADJACENCY
SUMMARY REPORT

02/05/79 THRU 02/20/79

	HOT BEATS	TOTAL CRIMES LAST 14 DAYS	1ST 7 DAY CNT	* 1ST WEEK * TUE	WED	THU	FRI	SAT	SUN	MON	2ND WEEK TUE	WED	THU	FRI	SAT	SUN	MON	2ND 7 DAY CNT	REPORT DAY TUE	DIFF. 1ST-2ND 7 DAYS	14 DAY AVERAGE
146.	111 ****	4	1						1	.	1		1	1				3		+2	.2
147.	112	4	2	1	1					. 2								2			.2
148.	113	2	1			1				.	1							1	1		.1
149.	114	3	2			1	1			.					1			1		-1	.2
150.	115	2	1				1			.		1						1			.1
151.	116	4	2					1		1 .	1					1		2			.2
152.	117	2	1	1						.						1		1			.1
153.	118	10	4	1		1		1		1 .	1	1	2		1	1		6	2	+2	.7
154.	121	2	2		1					1 .										-2	.1
155.	122	4	2				1		1	.				1	1			2			.2
156.	123	1	1					1		.										-1	.0
157.	124	3	1	1						.		1		1				2		+1	.2
158.	125	2	1				1			.		1						1			.1
159.	126	9	4		1		2		1	. 2	1	1			1			5	1	+1	.6
160.	127	4	2			1	1			.		2						2			.2
161.	131	1								. 1								1		+1	.0
162.	134	3								.		3						3		+3	.2
163.	135	3	1							.			1	1				2		+1	.2
164.	136	5	3			1	1	1		.						2		2		-1	.3
165.	141	2	1				1			. 1								1			.1
166.	143	6	2			1			1	. 1	1	1			1			4		+2	.4
167.	144	3	2			1	1			.				1				1		-1	.2

Figure 1-10

Figure 1-11

RESIDENTIAL BURGLARIES
FOR BEAT 361

DATE OF OFFENSE 1	DATE OF OFFENSE 2	DAY	TOF 1	TOF 2	BLOCK NO	STREET	OBJECT OF ATTACK	PROPERTY	BURG M.O.	BURG ENTRY	STATUS	SERVICE NUMBER	TYPE OF SUSP INFO AVAILABLE	
2/06/79		TUE	700	1600		CEDARCRESTBLVD APT		TV	FORCE	DOOR F	SUSPENDE	048087K		
		TUE	740	1715		RONNIEVIEWRD	SINGLE FAM	GUN /TV	PRY	DOOR F	SUSPENDE	048166K		
	2/07/79	TUE	2000	0		CEDARCRESTBLVD APT		MISC/CLOT	UNLOCK	WIND S	SUSPENDE	048644K		
2/07/79		WED	500	1210		CEDARCRESTBLVD APT		MONY/APPL	PRY	DOOR F	SUSPENDE	048996K		
		WED	2200	2230		CEDARCRESTBLVD APT		MISC/MONY	PRY	DOOR F	SUSPENDE	050187K	VEH	SUS
2/08/79		THU	1619			HIGHHILLPL APT		PHOT/MISC	UNLOCK	WIND R	SUSPENDE	050590K		SUS
2/09/79		FRI	830	1310		HIGHHILLBLVD APT		MISC/TV	PRY	DOOR R	CLEAR-AR	051753K		
		FRI	835	1040		BERWICKAVE	SINGLE FAM	TV /JEWL	PRY	WIND R	SUSPENDE	051596K		
2/10/79		SAT	200	300		AVEF	SINGLE FAM	TV /CB R	UNLOCK	WIND S	CLEAR-AR	053017K	VEH	SUS
2/12/79		MON	1930	2130		CEDARCRESTBLVD APT		MISC	PRY	WIND R	OPEN	056831K		SUS
2/13/79		TUE	1440	1450		LAMPERTST	SINGLE FAM	MISC/TV	PRY	DOOR F	OPEN	057586K		SUS
2/16/79		FRI	800	2100		AVEB	SINGLE FAM	MISC/RADI	UNLOCK	WIND S	OPEN	062361K		SUS
2/19/79		MON	1	125		CEDARCRESTBLVD APT		MONY/RADI	UNLOCK	WIND F	OPEN	065416K		SUS
		MON	800	1500		HIGHHILLPL APT		RADI/MONY	PRY	DOOR F	OPEN	066136K		
CNT			14											

SUSPECTS FOR TAC OFFENSES

BEAT	CRIME	DATE OF OFFENSE1	SERVICE NUMBER	S T	S E X	RAC	HAIR	EYE	HEIGHT	BLD	AGES	ODDITY1	WEAPON	CAL	WPN FEATURE	N A M D	A D	MAKE	MOD	IY	COL	LIC
331	BURG	6/02/75	0182446G	O	M	NEG					22					F						
		6/06/75	0187095G	S	M	NEG			507	LGT	16											
					M	NEG			507	LGT	17											
	ROB	6/02/75	0181930G	S	M	NEG			508	MED	21/22											
					M	NEG			508	MED	20/21											
		6/04/75	0184981G	C	M	NEG					17/21					P						
					M	NEG					17/21					P						
					M	NEG					17/21					P						
332	BURG	5/28/75	0175658G	S	M	NEG			602	MED	25	MUSTACHE										
		6/02/75	0181798G	S	M	NEG					19/20							CHEV	CAM	20	BLU	
					M	NEG					20											
		6/04/75	0185080G	O	M	NEG					27					F		FORD		20	GRN	HYN641
					M	NEG			509	MED	22	BEARD FU				P						
		6/07/75	0189094G	S	M	NEG												CHEV			BLK	
	ROB	6/02/75	0182501G	O	M	NEG			506/507	MED	20/21	MUSTACHE	REV	.32	CHROME							
			0182516G	S	M	NEG			504		22		HANDGUN		CHROME							
		6/10/75	0192184G	O	M	NEG					19		SHOTGUN			F						
					M	NEG			507	MED	22		HANDGUN	.22	CHROME							
		6/11/75	0192633G	O	M	NEG			602	MED	24/25		HANDGUN	BS								
					M	NEG			600	HVY						P						
333	BURG	5/29/75	0176608G	C	M	NEG					15					F						
					M	NEG																
					F	NEG																
			0177130G	S	M	NEG			806		14/15											
		5/30/75	0178843G	O	M	NEG					16					F						
					M	NEG				MED	14/16											
		6/01/75	0181026G	C	M	NEG					15					F		CHEV			GRN	
					M	NEG					16					F						
	ROB	5/30/75	0177985G	S	M	NEG			600	MED			HANDGUN									
		6/04/75	0185340G	O	F	NEG					18/19											
					F	NEG					18											
334		6/03/75	0182865G	O	M	NEG			601	LGT	18/20		HANDGUN									
336	BURG	5/30/75	0184002G	O	M	NEG					24					F						
					M	NEG					50					F						
		6/02/75	0182169G	S	M	NEG												BUIC			BLK	
		6/07/75	0188206G	O	M	NEG					25					F		OLDS			GRY	
					M	NEG			508	HVY						P						
	ROB	5/28/75	0175236G	S	M	NEG			509		20											
					M	NEG			507	LGT	22											
		6/05/75	0185806G	C	M	NEG					19					F						
					M	NEG					18					F						
					M	NEG					16					F						
		6/10/75	0192454G	C	M	NEG			504		20											
					M	NEG			504		20		REV		CHROME							
337	BURG	5/29/75	0176824G	S	M	NEG																
					M	NEG																
		6/06/75	0186981G	S	M	NEG			510	LGT	19											

Figure 1-12

Figure 1-13

VEHICLE INFORMATION FOR
SUSPECT VH

BEAT	CRIME	SERVICE NUMBER	STATUS	DATE OF OFFNI	TIME OF OFFNI	LIC NUM	LIC STATE	LIC YEAR	MAKE	MODEL	STYLE	TOP COLOR	BOTTM COLOR
421	RAPE	0048224K	CLEAR-ARR	2/06/79	1610				CHRY		2DOOR	BROWN	BROWN
	THEFT	0050421K	OPEN	2/15/79	1100	HLH 577			FORD			GREEN	BLACK
422	THEFT	0052792K	SUSPENDED	2/10/79	210				LINC		2DOOR	BLACK	***
		0053695K	OPEN	2/10/79	1745				MERC		2 DR	BLACK	YEL/ORG
		0049913K	SUSPENDED	2/08/79	145				FORD	GRANA		WHITE	WHITE
		0059956K	SUSPENDED	2/15/79	100				OLDS	CUT	2DR	RED/PK	WHITE
		0063140K	SUSPENDED	2/17/79	1030				CHEV			WHITE	BLUE
		0055286K	SUSPENDED	2/18/79	2300				BUIC	RIV	2DOOR	BLUE	***
423	ASSLT	0054701K	CLEAR-ARR	2/11/79	1030	FWS423	TX	79	PLYM	DUS	2DR	GREEN	***
424	THEFT	0049400K	SUSPENDED	2/07/79	1730	MZJ615	TX	79	CHEV		CAMAR	***	***
425	ROB	0057952K	OPEN	2/17/79	330				OLDS	CUT	2D	WHITE	OTR/UNK
	THEFT	0049837K	CLEAR-EXCP	2/07/79	845	SAQ983			FORD	PIN		GREEN	***
		0054171K	SUSPENDED	2/10/79	2330	HQF402	TX	79	CHEV		2 DR	TAN/BGE	YEL/ORG
		0055251K	SUSPENDED	2/11/79	1920	JDD153	TX	79	MERC		2DR	TAN/BGE	BLUE
		0058494K	SUSPENDED	2/14/79	550							TAN/BGE	TAN/BGE
		0059201K	SUSPENDED	2/14/79	1700	MGJ675			CHEV		CAMER	***	***
		0061066K	SUSPENDED	2/15/79	2200							YEL/ORG	YEL/ORG
		0055817K	OPEN	2/19/79	1100	MD 6813	TX	79	DODG		PU	BROWN	YEL/ORG
426	THEFT	0049510K	SUSPENDED	2/07/79	2024						4DR	WHITE	WHITE
		0049512K	SUSPENDED	2/07/79	1430	HZF306	TX	79	CHEV	NOV		TAN/BGE	***
		0051066K	SUSPENDED	2/08/79	2230							GREEN	GREEN
		0055203K	SUSPENDED	2/11/79	1830	MZ647			CHEV		2 DR	GREEN	GREEN
		0055748K	SUSPENDED	2/11/79	1950	HFD14A						***	***
		0056569K	SUSPENDED	2/12/79	1905	QSY350	TX	79	VOLK			***	***
		0056707K	SUSPENDED	2/11/79	1430	HTE259						***	***
		0058409K	SUSPENDED	2/14/79	315	QC7119	TX	79	CHEV		2DR	BLACK	***
		0059707K	SUSPENDED	2/14/79	2255	HWR812						TAN/BGE	***
		0050114K	SUSPENDED	2/15/79	730	HRU903	TX	79	CHEV			TAN/BGE	TAN/BGE
		0054944K	SUSPENDED	2/18/79	1810						PK	BLUE	***
427	THEFT	0048789K	CLEAR-EXCP	2/07/79	730	QFP651	TX	79	CADI			RED/PK	***

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PEOPLE ARRESTED IN OR LIVING IN PROBLEM AREA
BURGLARY ARRESTS

DEFENDANT NAME	RACE	SEX	HEIGHT	WEIGHT	DOB	HOME ST NUM	HOME STR NAM	HOME BEAT	APREST ST NO	ARREST ST NAM	ARREST BEAT	ARREST DATE	ARREST NUMBER
XXXX,VICTOR,BERNARD,	N	M	509	155	590120	XXX0	ILLINOIS	332	2528	ILLINOIS	332	75C626	267832
RXXXENS,DENNIS,EARL	N	M	602	185	560700	XXXX	OVERTON RD	332	3215	SOUTHERN OAKS		750626	267853
RXXXLS,JHNNY,RAY	N	M	6C0	285	551120	XXXX	PENNSYLVANIA	342	2906	KIEST BLVD		75C702	269447
ZZ72SON,KENNETH,RAY	N	M	507	132	580118	XXXX	PENNSYLVANIA	343	2906	KIEST BLVD		750702	269448
XROOERS,JIMMY,DON	N	M	5C8	14C	580812	XXXX	LEANING OAKS	337	3142	ILLINOIS		75C706	270773
XXXX,GERALD,GLENN	N	M	5C2	85	610818	XXX2	SOUTHERN OAKS	332	3252	SOUTHERN OAKS		650716	273257
XXXXN,MICHAEL,LYNN,	N	M	509	103	581124	XXXX9	ILLINOIS	332	3100	SOUTHERN OAKS		75C718	273989
XXXXER,RANDY,WAYNE	N	M	3C0	5C	670504	XXX0	SPANISHFORT	332	3111	BONNIEVIEW		750719	274271
XXXXN,MARK,ANTHONY	N	M	4C3	8C	640221	XXX7	BARDWELL	332	3111	BONNIEVIEW		75C719	274275
XXXXEK,KENNETH,RAY	N	M	4C0	85	640315	XXX0	SPANISHFORT	332	3111	BONNIEVIEW		750719	274277
XXXXN,CURTIS,VON	N	M	4C0	70	630219	XXXX	BARDWELL	332	3111	BONNIEVIEW		75C719	274278
XXXXN,RONNY,DUANE	N	M	4C5	45	0	XXX0	SPANISHFORT	332	3100	BONNIEVIEW		750719	274281
XXXXER,LARNELL,NATHA	N	M	4C0	7C	650331	XXX0	SPANISHFORT	332	3100	BONNIEVIEW		75C719	274284
XXXXSON,ROBERT,GENE,	N	M	6C1	185	500521	XXXX	DEERWOOD	424	2919	ILLINOIS AVE		750724	275580
XXXXENS,DUNCAN,ERICK	N	M	5C7	134	580623	XXX6	OVERTON	332	3100	OVERTON		750725	275688
XXXXON,JESSIE,LEE	N	M	5C8	172	580715	XXXX	HIGH HILL	331	3035	ILLINOIS		750731	277212
XXXXTT,PURVIS,LEON,	N	M	6C1	190	500403	XXX3	PARNELL	343	3039	KIEST		750801	277530

Figure 1-14

RTD SYSTEM OVERVIEW
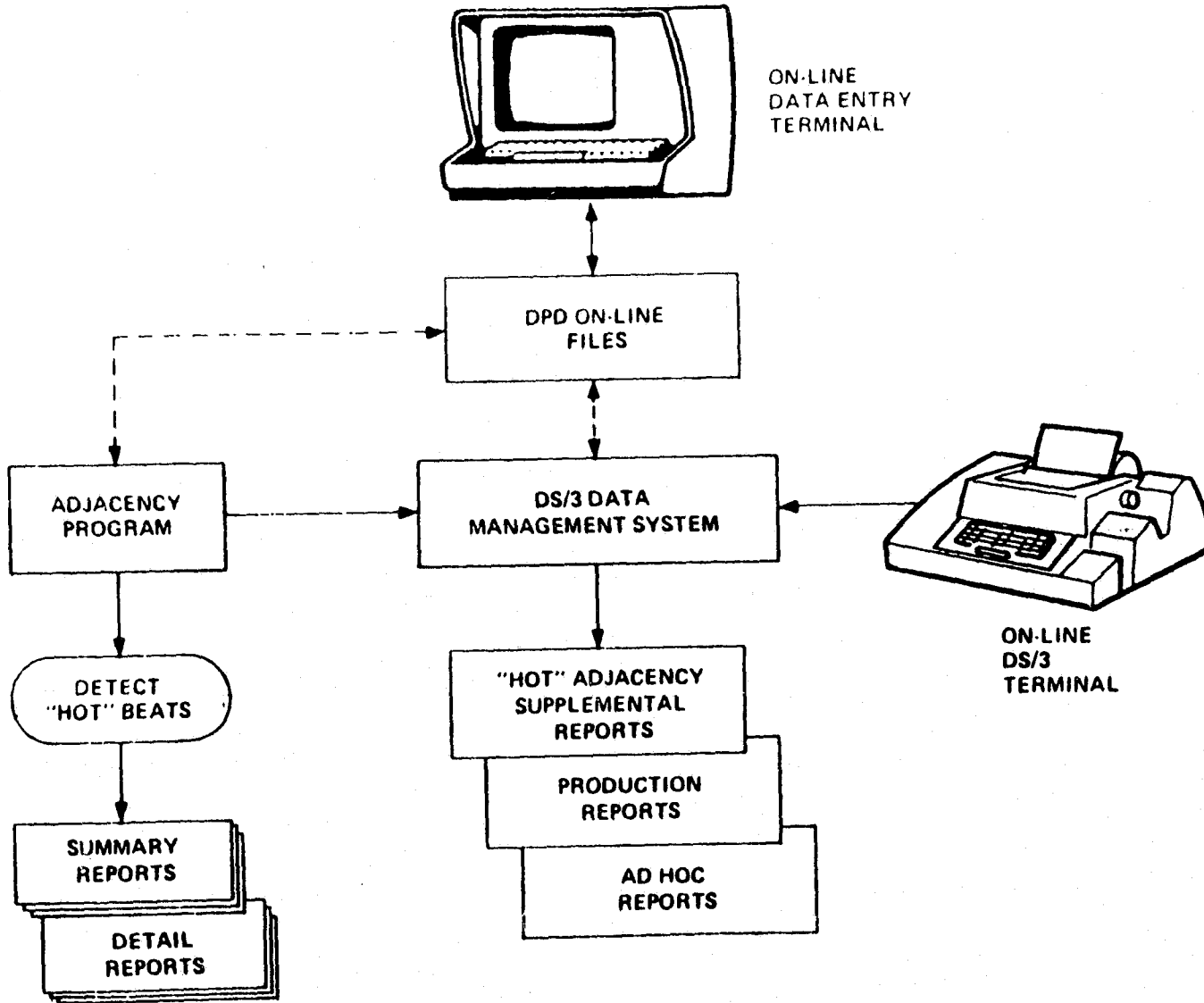
Figure 1-15

Other related system characteristics are:

- The capability to display the crime occurrence frequency for the geocoded area type (i.e., beat, reporting area) used on a daily basis.

- Optional selection of the specific crime types used for operation of the system.

- The option of having crime occurrence reports automatically generated for each patrol area in the city.

The output requirements for an automated system such as RTD are essentially the same as those for a manual system and have been illustrated in Figures 1-9, page 21, through 1-14, page 26. The crime occurrence table replaces the need for spot mapping and also illustrates when it is appropriate to withdraw tactical deployments from occupied areas by indicating crime decreases as well.

The Dallas RTD system is maintained on ITEL AS-4 OS equipment (IBM system 370-148 equivalent). Smaller cities, where the crime volume is not as great as in Dallas (approximately 85,000 index crimes per year), could adapt a system such as RTD to a smaller computer—perhaps even a mini-computer. The major advantage of such a system transfer would be to shorten the time delay between pattern detection and report dissemination which may take up to three days in a manual mode. In Dallas, this three-day time lag was reduced to just a few hours with the RTD system.[10]

The success of the RTD system is based on fast turnaround time. Through the Dallas Police Department's Direct Entry Field Reporting System,[11] all major Offense Reports are called in and entered into the computer within two hours of crime occurrence. The RTD reports are batch processed between two and four in the morning and delivered to the Crime Analysis Section by 6:00 a.m.; this crime information can be as current as only a few hours old. The reports are then separated, analyzed and distributed by 8:00 a.m., each morning.

Although the Summary and Detail Reports are ideally designed for tactical applications, they are also distributed to patrol. The Summary Reports allow patrol planners to identify problem areas while the detail reports provide convenient summaries for individual patrol elements. For such purposes, a ten-day Summary Report of all major crime is provided daily by the RTD system (Figure 1-16, page 29).

A possible problem that could develop with a system such as RTD is the overlooking of similar offense crime patterns. Since the RTD system eliminates the analyst's dependence upon the Offense/Incident Report as a source for geographical data or further analysis information, the analyst may be tempted to avoid reading daily Offense Reports altogether. If this occurs, an important technique of identifying related crimes will be lost. (See Computer Generated Maps, page 19.)

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[10] Real-Time Tactical Deployment System: Evaluation and Final Report. Dallas Police Department, System Development Corporation, May 1975.

[11] LEAA Grant No. AC-75-F01-3609.

CRIME SUMMARY FOR PREVIOUS TEN DAYS
CENTRAL DIVISION
FIRST WATCH

BEAT	CRIME	OFFENSE	BLOCK NO	D I R	STREET	COMP NAME	PREMISES	DATE 1	DATE 2	TIME 1	TIME 2	R A C	S E X	A G E	MAKE	MOD	COLORS	LIC NO	VEH REC TYPE	S T	SERVICE NUMBER
121	BURG	BURG-BUS	03131		MCKINNEYAV	*SCHEPPS	DRIVE-IN	11/18		515										S	464237J
	CHILD		03517		COLEAVE	LIESMANN,	APT	11/14		106										O	457965J
	MURDE		02422		ELLISST	GARDNER,	HYWY-ST	11/18		260										O	464043J
	OTHR		03529		MCKINNEY A	*FOXY LAD	BAR	11/14		30										C	457903J
	ROB	ROB-IND	02300	N	HALLST	HICKS,JER	PK OTHER	11/10		345		N	M	18					****	C	461709J
												N	M	13					****		
												N	M	13					****		
				N		MIRANDA,T	HYWY-ST	11/10		330		N	M	18					****	S	451732J
												N	M	18					****		
												N	M	18					****		
												N	M	18					****		
				N		CARNELL,F	HYWY-ST	11/18		15		N	M						****	O	464165J
		HALL			THOMAS	NGUYEN,NA	PK OTHER	11/12		45		N	M						****	O	456028J
												N	M						****		
												N	M						****		
		THEFT AUTO PART	03333		BLACKBURNS	CARLISLE,	PK APT	11/15	11/16	2030	800									S	461110J
			03221		COLFAVE	*CLABORN	PK APT	11/09	11/10	2230	730			BUIC		YEL/***	QSM 66	AUTO	S	451807J

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SIMILAR OFFENSE PATTERNS

While geographical crime analyses are often useful in deploying police resources to high crime areas, they constitute only one method of examining crime occurrence in the city. Very often, the offenses in any specific geographical area have been committed by several individuals working independently of one another.

The greater the number of independent offenders in an area, the more limited a solely geographical analysis becomes to investigators seeking to clear the offenses. Several conflicting suspect descriptions, vehicle descriptions, or methods of operation in any given area, tend to confuse, prolong, or even defeat an investigation. Today's criminal is mobile and diverse in his activities. The prevalent use of the automobile has made it much easier for the criminal to expand his operations citywide. Thus, much broader analyses encompassing the entire city and several major crime types are needed to isolate an offender or his method of operation. Similar offense crime patterns often occur as by-products of geographic pattern detection. As an analyst reads incident reports, other kinds of similarities among the offenses become apparent. The distinctive data element(s) in such instances may involve any item (e.g., a suspect descriptor, a vehicle descriptor, or an M.O. element). The possible M.O. descriptors can include such diverse kinds of information as victim characteristics, date and time parameters, type of premises information (i.e., location classification - convenience food store, drug store, apartment, parking lot), property taken, weapon descriptions, and suspect actions.

Pattern recognition involves the detection of distinct similarities among crimes. The following list summarizes the objectives of crime pattern detection:

- Recognition of the pattern.

- Identification of additional relationships within the pattern.

- Collection of all pertinent offense information concerning the pattern for the purpose of tactical decisions.

- Identification of perpetrators or possible suspects.

- Monitoring and updating of the problem through its duration.

Similar offense patterns are more difficult to identify than geographic patterns and are usually recognized as a result of other data recording and analysis activities. Once the initial pattern has been detected and the major point(s) of similarity determined, additional relationships among the offenses may be identified. Geographic patterns, in particular, are often composed of one or more groups of offenses committed by the same suspect(s). As such, similarities will exist in a suspect or vehicle description, or M.O., relating the offenses in a subgroup to each other. Often, however, such similarities may not be distinct enough to establish a valid relationship. Distinction, therefore, is just as important in determining additional relationships within a pattern as it is in detecting the pattern initially.

In establishing additional relationships with a pattern, it is important to identify as many of the related subgroups of offenses as possible. If this is not done, the conflicting suspect, vehicle, victim, or M.O. descriptions will confuse any analysis attempt and distort information developed about the original pattern. The "one pattern-one suspect" adage that applies to most similar offense crime patterns does not necessarily apply to geographic patterns.

Any suspect information available about a crime pattern should, if it is distinct
enough, be correlated with known offender information to determine the identities of
the possible perpetrators. Vehicle information should also be further developed when-
ever appropriate. Vehicle color, make, style, oddities, and decals, should be compared
with known offender vehicle files, field interrogation records or traffic citation files
if possible, to determine possible investigative leads. Full license numbers or suspect
names can be checked against state or national vehicle registration records to determine
the identities and home addresses of possible suspects. Similarly, unique or distinct
M.O. information can be compared to known offender M.O. descriptions, if such files are
available. Crime/Suspect Correlations are addressed fully in Chapter II, page 57.

Manual Techniques

Related offenses present a much more difficult detection problem to crime analysts than
do geographical crime problems. Whereas, it is quite easy to post offense locations
on a spot map and watch for crime accumulations to occur, similar or related offense
patterns not geographical in nature are often detectable only through the identification
of unique data elements. Since very few systematic procedures exist for identifying
and classifying unique data descriptors, the analyst frequently has only his/her memory
to rely on in attempting to make data element associations (see Computer Generated Maps,
page 13). As a result, crime report reading is of paramount importance in similar
offense crime pattern detection.

In reading daily Offense Reports, certain techniques may be adopted to assist the analyst
in remembering unique features. One such technique is the use of a logging form such
as that used by the Santa Cruz, California Police Department to quickly record identifying
features and outstanding characteristics of the offense. This logging device (Figure 1-17,
page 32) has the advantage of being very quick and easy to fill out and includes the
following basic information contained on the Offense/Incident Report: patrol zone,
business name or victim address, type of incident, day of week and time of occurrence
(watch or work shift) and a space to write the most unique characteristic about the
offense. Due to the small size of the city (approximately 40,000 inhabitants), only
one logging form is utilized for all crime occurrences. The crimes are recorded in the
order in which they are read by the analyst.

By quickly scanning such log forms, outstanding characteristics can quickly be matched.
In addition, offenses of the same crime type and similarities in day and time of
occurrence can easily be determined because of the black-out format for these data
elements.

Possibilities exist for larger departments to also use such a data collection form.
In such applications, it may be advisable to use a separate form for each kind
of offense analyzed. A robbery log may contain entries for weapon descriptions while
a burglary log could record method and point of entry/exit or property type taken.
It may be more advantageous to approach such information logging procedures from the
suspect/vehicle description aspect instead. Vehicle license information or vehicle
colors, in particular, provide excellent opportunities to match offenses. The crime
types and incident identification numbers would, of course, be recorded as well on
such forms, thus providing the cross references from offense to offense.

In designing such forms, it must be remembered that they should be kept as brief and
easy to use as possible. If they are too cumbersome for the analyst to quickly complete,
they will become more of a burden than an assistance and may severely hamper other
analysis activities because of the loss in time. Properly designed, however, they are
a good substitute for the computerized summary reports available in other agencies.
(See Similar Offense Patterns-Automated Techniques, page 33.)

MANUAL PATTERN DETECTION SHEET

CASE NUMBER	Z-QZ	VICTIM LOCATION OCCURRENCE	INCIDENT	CRAO DAY-HOUR	MISC. INFORMATION
218 890	9-3	ALBERTSONS	488SL		WMJ-13
891	13-2	510 LEIBRANDT	10852/488		WMJ-17
892	5-3	PALOMAR	602J/466/602		2 WMJ's
893	19-2	300 BLK. RIVERSIDE (TRIMBLE)	496/10852/488		NMA-22
894	9-3		10851		
895	9-3		6478		
896	12-1	100 BLK OF CHICO (DuGUID)	488		UNLOCKED - BRECASE & CALC.
897	13-1	THRUN FUN DODGE	459		6 CAMPERS - AM-FM RADIOS
898	14-2		10851		
899	13-2	SEABRIGHT BEACH (McCRACKEN)	488		CLOTHING / CAMP EQUIP / ETC.
900	9-1				
901	8-4	308 MAPLE (CORDY)	488		FLOWERS & POT FROM PORCH
3/6 902	14-2	SANTA CRUZ YACHT HAR (U.C. SANTA CRUZ)	487		CUT LOCK - POWER TOOLS
903	4-2	200 BUTTON	594		62 CHEV P/U-ROCK-WINDSHIELD-STREET ON
904	5-4	1919 SOQUEL (S.C. AUTO PARTS)	459		WMA-48
905	13-2		WRNTS		
906	7-3	162 CASTILLION TERR.	459		OPEN DOOR - BOY'S 10SP MERCIER BIKE
907	13-1	54 FRONT ST. (OCHOA)	488 BIKE		UNLOCKED OUTSIDE BLDG.
908	10-2		242		
909	12-4		45/A		
910	14-1		FOUND MARIJUANA		
911	9-3				
912	9-1		300 A's b W/T		
913	3-4		10851		
914	9-1	137 RIVER (RENEE'S)	484G		NMA-24 USES CR-CARD TO PUR $265
915	6-1	719 MORRISSEY	594		72 PINTO - LR ROCK - REAR DOOR - ON STREET
916	9-3		901		
917	9-4		901		
918	10-1	819 SUMNER (JUST/BROWN/SPEARS)	459		UNLOCKED BACK DOOR - MISC.
919	9-3	212 ROBERTS (FERGUSON)	459		FORCE WIN. MINOR JEWELRY - SUS TO E.L.E. (DOG FORCED)
920	12-4		653m		
921	9-1	COOPER & FRONT - LOT (STEVENSON)	488		MIRROR
922	9-1		10851		
923	7-1	445 MEDER	594		BB'S THRU WINDOWS
924	3-2		901		
925	13-2		242		
926	9-3		242		
218 927	9-4		33102		

Figure 1-17

Since only the Offense/Incident Report is required for such forms and the output require-
ments have been adequately covered for manual systems in the section on Manual Crime
Mapping (page 6), the input and output requirement sections for this topic have been
eliminated.

Since the linking of similar offenses falls into the realm of case investigation,
investigators, as well as patrol or tactical personnel, will be vitally interested in
any successes obtained by such pattern detection activities. In fact, in most police
departments, investigators are often the source of requests for similar offense informa-
tion. Such requests often result from the arrest of an active burglar, auto thief or
robber. The investigator will want to know what other crimes the arrestee may have
committed. The crime analyst then has to compare the characteristics of the known
offense (the crime for which the suspect was arrested) with others of the same general
type or suspect and vehicle description. The log forms described above would become
very valuable in such instances.

In disseminating similar offense information to investigators or other users, it is
sometimes best to merely release the information informally over the telephone or
through personal contact with the user rather than by a formal written report or
memorandum. This is particularly true in instances where the suspect has already been
arrested and there is no need for detailed deployment oriented reports. Informal
information exchange is much quicker and also helps to establish rapport and confidence
between the analyst and the information user. (See Manual Crime Mapping Section,
page 6, for information on limitations involved with any manual system that is
inadequate for the crime volume or staffing level involved.)

Automated Techniques

Similar or related offense pattern detection procedures can be either semi-automated
or fully automated. In the semi-automated form, the approach may consist of batch
computer runs output either at regular intervals on a production basis or upon request.
The approach may also consist of an on-line interactive query system in which the
analyst inputs specific requests or questions and the computer outputs the results at
the same terminal or on a later batch report. A fully automated approach, however,
differs in that the computer supplies what it has determined to be similar offenses
without any input or instructions from the analyst.

In agencies having access to a computer or serviced by a large central computer facility,
daily, weekly, or monthly crime summary reports can be commonly produced. Reports
may be especially designed for crime analysis activities such as the provision of
summary reports to assist similar offense pattern detection. These computerized crime
summaries can take the place of the manual log sheet previously described.

On computer summary reports, more kinds of data can be displayed than on manual log
sheets because the crime analysts generally do not have to capture and enter the data
into the computer themselves. This function is frequently performed by coding staff
in another departmental unit or in another city department. Consequently, no analyst
time is lost in the data entry process. Thus, as much crime data as is coded from a
crime incident report can be included in any subsequent computer summary.

Another advantage of computerized reports is that they can be sorted in any way required.
Suspect vehicle information can, for example, be presented by vehicle license number
(Figure 1-18, page 34)[12] or vehicle make (Figure 1-19, page 35). Burglary
information can contain detailed suspect and M.O. descriptions as well as date, time and
day of week data, and be sorted in the same way that the original Offense Reports are

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[12]Figures from Dallas, Texas Police Department.

Figure 1-18

SUSPECT VEHICLE LICENSE REVIEW
FIRST HALF 1978

LIC NU	LIC ST	MAKE	MODEL	STYLE	YR	COLORS	VEHICLE FEATURE CODES	VEH REC TYPE	CRIME	BEAT	BLOCK NO	D I R	STREET	PREMISES TYPE	DATE	S T	SERVICE NUMBER
RN 978		CHEV		M C	78	TAN/BRO		SUSP	ROE	364	0 200	S	LANCASTER RD	PK SHOP/CNT	7/03	C	251630J
RN 158	TX	PONT	GRA	2DR	78	BRO/***		AUTO	THEFT	233	0 151		MARKVILLEDR	PK APT	6/28	S	242433J
RN 326	TX	CHEV	CAP	2DR	78	RED/***		AUTO	THEFT	323	0 132		PIEDMONTDR	**********	4/03	S	114778J
RN 602	TX	PONT	CAT	2DR	60	WHI/YEL		SUSP	VANDAL	236	0 030		ARAPAFORD	APT	5/24	C	188902J
RN 650	TX	CADI	ELD	2DR	77	YEL/***		AUTO	THEFT	213	0 310		SOUTHWESTERNBL	PK APT	6/29	S	244451J
RP 931						BRC/BRO		SUSP	UNFOUND	522	0 100		MAPLEAVE	YWCA	5/15	L	175001J
RP 24						***/***		SUSP	VANDAL	112	0 010		CADDOST	**********	5/03	S	157727J
RO 425		CHEV		2DR	73	YEL/TAN		SUSP	THEFT	234	1 009		COITRC	SERV STAT	6/23	S	235771J
RO 363	TX	BUIC			67	GRE/GRE		SUSP	VANDAL	112	0 101		BRYANST	FURN OFF	5/05	S	160441J
RO 669	TX	BUIC		2DR	70	WHI/RED		AUTO	UNFOUND	214	0 019		LAVISTADR	YARD	6/14	L	221972J
RO 093	TX					YEL/YEL		SUSP	THEFT	324	0 415	W	MOCKINGBIRDLN	SERV STAT	6/16	S	225082J
RO 88	TX	CHEV	MAL	2DOOR	69	OTH/OTH		SUSP	THEFT	145	0 313	N	FITZHUGHAVE	APT	5/24	S	189273J
RO 289	TX	CHEV	CAM	2D	78	BRO/***		SUSP	ROE	241	0 100		SCNORTHPARK	PK SHOP/CNT	6/23	C	234795J
RO 488	TX	PONT		2DR	78	BLL/***		SUSP	THEFT	535	0 541		FORESTLN	CAR WASH	6/20	C	230476J
RO 56	TX				78	WHI/TAN		SUSP	BURG	235	0 933		WOODSTONELN	GARAGE	6/12	S	217850J
RO		CHEV	VEG			GRA/***		SUSP	THEFT	422	0 701	S	LANCASTERRD	WIG	5/24	S	189078J
RO 442	TX	BUIC		4DR	68	GRA/GRA		SUSP	THEFT	451	0 800		SCWYNNEWOODVIL	VARIETY	5/24	C	189743J
RO 46	TX	OLDS			65	YEL/YEL		SUSP	SEX	244	0 100		MEADOWRD	PK SHOP/CNT	6/24	S	236691J
RO 559	TX					OTH/OTH		SUSP	OTH AS	215	0 400	E	MOCKINGBIRD LN	YWCA	5/06	S	162046J
RO 818	TX	CHEV	CAM	2DOOR	70	WHI/TAN		SUSP	OTH AS	366	0 624		FIFTYFIRSTST	SINGLE FAM	4/30	S	152350J
		CHEV		2DR		BRC/BRO		SUSP	THEFT	423	0 025	S	LANCASTERRD	SERV STAT	6/28	S	243333J
RO 513	TX	MERC		4DOOR	78	BRC/BRO		SUSP	THEFT	242	0 106		SCMEADOWCENTRA	CLEANERS	4/26	C	147908J
RO 888	TX	BMW		2D		YEL/***		SUSP	OTHR OF	244	0 225		FAIROAKSAVE	YWCA	5/24	C	188975J
RO 134	TX	FORD		MUSTA	73	GRE/***		AUTO	THEFT	211	0 400		SKILLMAN ST	PHONE BOOTH	5/27	C	194043J
RO 181						OTH/***		SUSP	THEFT	535	0 541		FORESTLN	WIG	5/31	S	199643J
RO 37	TX	MERC		4DR	73	WHI/GRE		SUSP	ASSLT	123	0 710		HARRYHINESBLVD	PHONE BOOTH	5/22	C	185093J
RO 914	TX	MERC		LINC	73	TAN/TAN		SUSP	UNFOUND	241	0 500		HILLCRESTRD	YARD	6/05	L	206992J
RO 819	TX	FORD	MUS	2DR	69	RED/***		SUSP	ASSLT	327	0 900	N	JIMMILLERRD	HWY-ST	7/09	C	262052J
RO 541	TX			2DR	78	BRC/BRO		SUSP	THEFT	254	F RES		PLANO	WIG	5/17	S	178568J
RO 732	TX	LINC	CON	MARK5	77	GRA/***		BEMV	THEFT	532	0 526		DELOACHEAVE	YARD	5/30	C	197755J
RO 569	TX	CHEV	CAM	2DR	69	YEL/YEL		SUSP	BURG	355	0 805		FIRESIDEDR	**********	5/31	C	199331J
RO 294	TX	CHEV		2DR		BLL/BLU		SUSP	MURDER	121	0 213		THOMASAVE	PHONE BOOTH	4/05	C	116915J
	TX	CHEV		2DR		BLL/BLU		SUSP	ASSLT	121	0 213		THOMAS AVE	RDR MTCYC	4/05	C	116919J
RO 132	TX					***/***		SUSP	VANDAL	252	1 502	E	NORTHWESTHWY	REST	5/18	S	175561J
RO 694	TX	PONT		2DR	78	YEL/YEL		SUSP	BURG	245	0 951		MELODYLN	APT	4/13	S	129370J
RO 750	TX				78	BRC/BRO		SUSP	THEFT	255	1 705	E	NORTHWESTHWY	WIG	5/17	S	178731J
RO 191	TX	PONT	GRA	2DR	76	***/***		SUSP	VANDAL	421	0 109		OVERTONRD	HOTEL MOTEL	6/19	C	228502J
RO 514	TX	BUIC	ELE	225	77	BLU/***		SUSP	THEFT	456	0 115	S	POLKST	MARKET SUPER	6/28	S	242996J
RO 681	TX	CHEV		PC	66	WHI/WHI		SUSP	THEFT	432	0 300		FTWORTHAVE	SERV STAT	6/21	S	232088J
PR 349		FORD	TOR		74	GRA/GRA		SUSP	THEFT	434	0 450	S	COCKRELLHILLRD	PIZZA	7/09	C	261648J
RR 664	TX	DODG	COR	4DR	75	TAN/BRO		SUSP	AUTO T	535	0 626		VILLAVERDE	PK APT	6/05	S	214360J
RR 355	TX	CADI			78	GRE/GRE		SUSP	ROE	121	0 003		CARLISLEST	MISC OFFICE	6/30	C	245899J
RR 492	TX	AMER	MAL	WAGON	64	BRC/BRC		SUSP	THEFT	124	0 732		MAPLE AVE	SERV STAT	6/12	S	217876J
RR 776	TX	CHEV	MAL			GRE/GRE		SUSP	THEFT	242	0 701	N	CENTRAL EXPWY	WIG	4/23	S	144087J
RS 144	TX	PONT		2DR	77	GRE/GRE		SUSP	ROE	436	0 865	S	WALTONWALKER	SERV STAT	6/26	S	239361J
RU 77		TOYT			75	GRE/***		SUSP	UNFOUND	311	0 908		GRANDAVE	APT	6/21	L	232054J
RV 266	TX			2DR	78	BLA/WHI		BEMV	THEFT	253	0 509	E	NORTHWESTHWY	YWCA	5/04	S	158713J
RV 783	TX	VOLK		2DR		YEL/YEL		SUSP	THEFT	222	0 810		GARLANDRD	WIG	2/12	S	221713J
RV 947	TX	FORD	TOR		68	GRE/***		SUSP	THEFT	333	0 747	S	LOOP12	PK BAR	6/19	S	227133J
RW 808	TX	PONT		2D		BRC/BLA		SUSP	THEFT	137	0 314	S	INDUSTRIALBLVD	REST	6/29	S	244557J
RW 743	TX	CHEV		2DR	78	WHI/***		SUSP	UNFOUND	321	0 900	E	R L THORNTON	SERV STAT	7/05	S	255074J
RX 994	TX	CHEV	MOC		72	***/***		SUSP	VANDAL	242	1 721		PRESTONRD	SERV STAT	7/04	C	252785J
RY 747	TX					***/***		SUSP	VANDAL	116	0 322		ELM ST	BAR	6/20	S	230108J
RZ 643	TX	BUIC		2DR	78	WHI/***		SUSP	OTH AS	245	0 814		GREENVILLEAVE	SERV STAT	6/25	S	238686J
RZ 998		CHEV	IMP	4DR		TAN/BRO		SUSP	UNFOUND	233	0 455		FORESTLN	SERV STAT	6/27	L	241839J
RZ 647	TX	OLDS		SUPRE	78	BLL/BLU		SUSP	OTH AS	148	0 414		BONITAAVE	SINGLE FAM	6/15	C	223501J
SA 11		CHEV				GRE/GRE		SUSP	THEFT	453	0 800	S	POLK ST	SERV STAT	6/14	S	221733J
SA 984	MO	CHEV		2DR	75	BLA/YEL		SUSP	THEFT	212	0 844		GREENVILLEAVE	REST	7/01	S	248601J
SA 036						WHI/GRE		SUSP	THEFT	542	0 301		EMPIRECENTRAL	WIG	5/22	S	098832J
SB	TX	CHEV		2DR		BRC/RED		SUSP	THEFT	422	0 701	S	LANCASTERRD	WIG	5/24	S	188562J
SG 20057	KS	CHEV		SW		WHI/***		SUSP	BURG	536	0 130		TANBARKRD	SINGLE FAM	2/05	S	042359J
SI ACE		CADI		COUPE	77	YEL/***		SUSP	VANDAL	222	0 400		GUSTHOMASSON	PHONE BOOTH	4/06	S	119495J
SK 218	TX	PLYM		2DR	67	RED/RED		SUSP	ROE	213	0 115		SCMEDALLIONCEN	PK SHOP/CNT	7/06	C	257731J
SM LE		PONT		TRANS		BLL/***		SUSP	THEFT	455	0 300	W	CAMPWISDOMRD	PHONE BOOTH	5/27	S	193966J
SM LY3	TX	FORD	THU	2DOOR	76	BLL/BLU		BEMV	UNFOUND	427	0 900		LEIGHANNDR	PHONE BOOTH	4/04	L	116588J
SU 338				CAB		***/***		SUSP	THEFT	523	0 025		LEMMONAVE	REST	5/16	S	177237J
SY 152	NM	PONT	GTO	2D	64	WHI/BLU		SUSP	THEFT	336	0 000	S	LANCASTERRD	WIG	2/04	S	039842J

SUSPECT VEHICLE REVIEW
BY MAKE & MODEL
JULY 1977 TO DATE

MAKE	MODEL	STYLE	YR	LIC NO	LIC ST	COLORS	VEHICLE FEATURE CODES	VEH REC TYPE	CRIME	BEAT	BLOCK NO	DIR	STREET	PREMISES TYPE	DATE	S T	SERVICE NUMBER
BUIC		2 DR	75	EB252	TX	BLU/BLU		BEMV	THEFT	535	100		SCNORTHTOWNMAL	PK OTHER	7/03	C	251753J
			76	VW221	TX	BLU/***		SUSP	THEFT	412	454	S	R L THORNTON	SERV STAT	7/04	S	252604J
				CJ617	TX	GRE/***		SUSP		335	100	E	LEDBETTER DR	SERV STAT	7/07	S	258485J
				TZ 544	TX	***/***		SUSP		427	165	S	R L THORNTON	SERV STAT	7/22	S	281378J
		2DR		AX618	TX	BLU/***		SUSP		252	405		JUPITERRD	DRIVE-IN GRO	8/05	S	305327J
		2DR		NK		BRO/BRO		STOL	UNFOUND	244	141		WALNUTHILLLN	PK APT	7/09	U	261766J
		2DR	77	R CHAP	TX	BLA/BLA		SUSP	THEFT	333	911	E	LEDBETTER DR	DRIVE-IN GRO	7/03	C	250769J
				NL 640	TX	BLA/BLA		SUSP		455	909	S	HAMPTONRD	SERV STAT	7/15	S	271147J
			78	YS44	TX	WHI/RED		SUSP	SEX	332	529		WILHURTAVE	SINGLE FAM	8/06	C	306558J
						YEL/***		SUSP	THEFT	422	701	S	LANCASTERRD	SERV STAT	7/10	S	263290J
		2DR				BLA/BLA		SUSP		422	701	S	LANCASTERRD	SERV STAT	7/22	S	282782J
	CEN	2DR	78	TS459	TX	WHI/***		SUSP	ASSLT	332	818		FORDHAMRD	YARD	7/22	C	282454J
	ELE			CT 491	TX	BLA/WHI		SUSP	ASSLT	344	803		HATCHERST	AUTO PARTS	8/07	D	307975J
		2DR				GRA/GRA		SUSP	OTH AS	335	445	S	LOOP 12	APT	7/24	C	284817J
		4DR		NU 247	TX	BLA/RED		SUSP	ROB	334	200		CATANBOLN	HYWY-ST	7/26	C	288106J
				2512	MO	***/***		SUSP	THEFT	253	934		ABRAMSRD	REST	7/02	S	250081J
		2D		HH525	TX	BRO/TAN		SUSP		333	903	E	LEDBETTERDR	SERV STAT	7/04	S	253411J
				GD262		BLU/***		SUSP		243	741		PRESTONRD	SERV STAT	7/18	C	275592J
		4DR	65	ZZ148	TX	WHI/GRA		SUSP	THEFT	518	00		SYLVAN	MISC LOC	7/24	C	286146J
		4DR	72	SS854	TX	BRO/BRO		SUSP	VANDAL	246	826		VISTADAKSDR	YARD	7/21	S	279709J
			73	QP499		BLU/***		SUSP	ASSLT	231	400		HUGHESLN	HYWY-ST	7/04	S	253624J
		4DF		QA170	TX	BLU/BLU		SUSP	UNFOUND	342	700		BIRMINGHAM AVE	HYWY-ST	7/26	U	288010J
		4DR	77	NR21	TX	BLA/BLU		SUSP	OTH AS	417	600		FERNWOODAVE	HYWY-ST	8/02	D	300218J
	LES		69	ON-R	TX	BLA/***		SUSP	FRAUD	455	235	S	HAMPTONRD	SERV STAT	7/01	S	247688J
			70			WHI/BLU		SUSP	OTHR OF	524	603		WHEELERST	APT	8/06	C	306838J
	RIV	2DR	69			BRO/***		SUSP	OTH AS	413	225	S	LANCASTER AVE	PK APT	7/29	C	292489J
		2DR	71			BLA/RED		SUSP	OTH AS	115	422		PAULINEST	SINGLE FAM	7/18	C	275763J
	SKY	4DR	65	YP521	TX	BLU/BLU		SUSP	VANDAL	222	302		MORANDR	SINGLE FAM	7/08	S	259873J
		2DR	67			TAN/GRE		SUSP	VANDAL	114	810		LIVE OAK ST	TIRE ST	7/04	S	253248J
		2DOOR	68	HE 294	TX	TAN/BRO		SUSP	THEFT	542	320	N	STEMMONSFRWY	SERV STAT	7/29	S	292573J
		2DR	71	WR536	TX	WHI/YEL		SUSP	THEFT	141	300		SAMUELLBLVD	PK BAR	8/03	S	300598J
		2 DR	75	S 7623	TX	***/***		SUSP	ASSLT	137	500	S	INDUSTRIALBLVD	HYWY-ST	7/28	C	292456J
		2D		S 7623	CO	***/***		SUSP	OTHR OF	133	196	S	HARWOOD ST	POLICE BLDG	7/28	S	292457J
	SPE	2DR	77	YT 820	TX	YEL/***		SUSP	OTH AS	143	012		JUNIUSST	APT	7/04	S	253424J
CNT															79		
CADI		4DR				BRO/***		SUSP	ASSLT	251	RLA		PEAVY	HYWY-ST	7/04	S	252567J
		4DR				BRO/***		SUSP		141	320		SAMUELLBLVD	BAR	7/25	C	286359J
						BLA/BLA		SUSP	BURG	535	524		VILLAVERDE	APT	7/12	S	267304J
						GRA/GRA		SUSP	ROB	347	800		METROPOLITANAV	HYWY-ST	7/04	S	252999J
						WHI/***		SUSP		453	000	W	FIVEMILEPKWY	HYWY-ST	7/06	S	256730J
						BLA/***		SUSP		127	TZH		MCKINNEY	HYWY-ST	7/06	S	256901J
						WHI/BLU		SUSP		142	338		LINDSLEYAVE	CLEANERS	7/17	S	274699J
				UE971	TX	WHI/YEL		SUSP		141	422		SAMUELLBLVD	HOTEL MOTEL	7/18	S	276510J
						BLU/BLU		SUSP		241	335	W	NORTHWESTHWY	PK EMPL	8/04	D	302776J
						TAV/***		SUSP	THEFT	529	800		CEDARSPRINGSRD	HOTEL MOTEL	7/15	S	271130J
				J2612	TX	GRA/GRA		SUSP		313	812		DOLPHINRD	SERV STAT	7/15	S	271737J
				LU866		BRO/BRO		SUSP		427	165	S	R L THORNTON	SERV STAT	7/22	S	282383J
				EP781	TX	WHI/***		SUSP		542	301		EMPIRECENTRAL	SERV STAT	7/25	C	287231J
						BLA/YEL		SUSP		112	500		LEMMON AVE	SERV STAT	7/26	S	289140J
						/		SUSP		315	347		FRANKST	HOTEL MOTEL	7/30	C	294897J
		2DR		DA381		WHI/WHI		SUSP		414	041	S	BECKLEYAVE	SERV STAT	8/06	C	306939J
		4DR		EM 217		BRO/***		SUSP	UNFOUND	136	801	S	HARWOODST	SERV STAT	7/01	U	247954J
		4DR		RT840	TX	YEL/BLA		SUSP		353	250	S	BUCKNER BLVD	SERV STAT	7/15	U	271901J
		4DR		FN434		BRO/BRO		SUSP		422	701	S	LANCASTERRD	SERV STAT	7/16	U	27251+J
		2DR		79VQY	TX	WHI/WHI		SUSP		246	900		FORESTLN	SERV STAT	7/18	U	276176J
		4DR				BRO/***		SUSP		141	320		SAMUELLBLVD	BAR	7/25	U	286027J
				V9158		WHI/***		SUSP		454	627		FOLKLORETR	APT	7/31	U	297076J
			62			TAN/***		SUSP	THEFT	112	201		SANJACINTOST	PK APT	7/24	S	285945J
			66	SV66	TX	BRO/BRO		SUSP	THEFT	415	718	S	EWINGAVE	SERV STAT	7/14	C	270057J
		4D2DR	67		TX	TAN/TAN		SUSP	OTH AS	544	318		IRVINGBLVD	PK OTHER	7/27	C	289299J
		2DR	68	BH781	TX	BLA/BLU		SUSP	BURG	136	632	S	HARWOODST	USED CAR	8/03	S	258252J
		4 DR		ZZ796	TX	WHI/BLU		SUSP	FRAUD	112	800		CADDO ST	HYWY-ST	7/20	C	279219J
		4DR				WHI/WHI		SUSP	UNFOUND	221	232		FERGUSONRD	SERV STAT	7/07	U	259625J
		SDN		EA773	TX	YEL/YEL		SUSP	VANDAL	114	516		SWISSAVE	HYWY-ST	7/06	C	257919J

Figure 1-19

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filed (e.g., by crime type and beat of occurrence. (See Figure 1-20, page 37, San Jose, California Police Department.)

Some police departments (e.g., Los Angeles, San Diego, Dallas and others) have on-line access to their computerized crime record files. On-line access provides the advantage of immediate responses to most analyst queries. In some instances (e.g., Los Angeles and Dallas), batch processing of more complicated requests is also possible. Such data management systems allow crime analysts to design and maintain their own crime data base.

The following is an example of a typical on-line query and response:

Analyst query: Subset where month equal December and crime equal burglary

Computer response: 1400 entries qualify

Analyst query: Subset where premises equal pharmacy and property includes
                      drugs and entry method equal force, pry and entry point
                      equal side door, rear door

Computer response: 11 entries qualify

Analyst command: Print beat, complainant name, address, date, time, case
                      status, offense identification number.

The computer would then print out the above requested data items for each of the eleven qualifying offense records.

It is obvious that the ease of this kind of data access and availability can be beneficial to pattern detection activities. Requests from investigators or other users can easily be accommodated either directly on-line or through batch processing. Known suspect descriptions, vehicles or M.O.'s can be entered in the form of data parameter queries and the appropriate qualifying records retrieved. User response in agencies where such systems are employed is very enthusiastic with investigators, in particular, becoming very dependent upon the crime analysis information in case solution or multiple clearance development (e.g., Dallas, Texas Police Department).

In fact, among the agencies surveyed for this report, an automated method to access stored computer records and perform conditional data element searches (i.e., an information retrieval or data management system) was one of the most frequently mentioned crime analysis enhancements desired. Today, many police departments of all sizes computerize crime data but very few are able to access it in ways that could really benefit potential users. A data management system with multiple data search parameter and flexible output format capabilities would satisfy this need. Data requirements, output requirements, dissemination and limitations for semi-automated systems parallel those described for other automated systems mentioned previously (see section on Real-Time Tactical Deployment System, page 19).

Varying success has been achieved with implementing fully automated pattern detection systems. The following quote from a Stanford Research Institute Study on determination factors in successful felony case investigations is perhaps indicative of many previous efforts in this area:

B E A T	HOUSE NUMBER	D I R	STREET	CASE NUMBER	FROM DATE TIME DAY	TO DATE TIME DAY	POE LOC.	POE	METHOD OF ENTRY	#O F F	Y O B EE	SRR EAO XCL	Y O B EE	SRR EAO XCL	Y O B EE	SRR EAO XCL	Y O B EE	SRR EAO XCL	PREMISES
11	1 70	N	CAPITOL AVE	780190155	0119 0100 THU	0119 0840 THU	REAR	DOOR	PRY TOOL										RESTAURT
	1 39	N	CAPITOL AVE	780090933	0108 2300 SUN	0109 1000 MON	FRNT	DOOR	PRY TOOL										LIQR STR
	3 74		LANDESS AVE	780030041	1231 2000 SAT	0101 0800 SUN	FRNT	WIND	BRKGLASS										BUSINESS
	1 98		NORTH CAPITOL AVEN	780220354	0121 2200 SAT	0121 2200 SAT	FRNT	WIND	BRKGLASS										GAS STAT
12	70	E	TAYLOR	780080069	0108 0050 SUN	0108 0050 SUN	REAR	WIND	BRKGLASS	1	56MWS								BUSINESS
	05	E	TAYLOR ST	773400154	1206 0300 TUE	1206 0300 TUE	UNK.	UNK.	OPN/UNLK	2	62MWA		57MMA						WAREHOUS
	56	N	1ST ST	780010508	0101 1600 SUN	0101 1600 SUN	REAR	DOOR	PRY TOOL	1	57MMA								BUSINESS
	68	N	1ST ST	780170160	0116 1800 MON	0116 0630 MON	UNK.	UNK.	UNKNOWN										BUSINESS
	00	N	13TH	780100928	0110 2330 TUE	0110 2330 TUE	FRNT	DOOR	BODYFRCE	3	MMS		MMS		59	S			SUPERMKT
	01	N	13TH ST	780160216	0118 0300 WED	0118 0630 WED	FRNT	DOOR	BRKGLASS										BUSINESS
	98	N	4TH	780300263	0129 2000 SUN	0130 0850 MON	FRNT	WIND	BRKGLASS										TAKE-OUT
13	1 61		AIRPORT BLVD	780049500	0104 0035 WED	0104 0035 WED	FRNT	OTHR	OPN/UNLK	2	57MWA		57MWA						BAR
	1 40	N	FIRST ST	780220372	0122 0715 SUN	0122 0430 SUN	FRNT	DOOR	OPN/UNLK	3	55MWS		MWS		FWS				MOTEL
	02		HORNING	780300216	0127 1200 FRI	0130 0730 MON	SIDE	DOOR	BRKGLASS										BUSINESS
	30		HORNING	780020146	0102 0355 MON	0102 0355 MON	SIDE	WIND	PRY TOOL	2	55MMA		57MMS						BAR
	90	W	YOUNGER	780249513	0123 0000 MON	0124 0000 TUE	FRNT	DOOR	BRKGLASS										GAS STAT
	1 50	N	1ST	780260571	0126 0830 THU	0126 0830 THU	OTH.	DOOR	OTHER										MOTEL
	1 10	N	1ST	780168083	0115 2130 SUN	0116 0530 MON	FRNT	DOOR	BRKGLASS										GAS STAT
	1 10	N	1ST ST	780090376	0107 1300 SAT	0109 1100 MON	FRNT	DOOR	PRY TOOL										MOTEL
	1 50	N	1ST ST	780030661	0108 1300 SUN	0108 1300 SUN	OTH.	DOOR	OPN/UNLK	1	53MWS								MOTEL
	1 31	N	1ST ST	780239546	0120 0000 FRI	0120 0000 FRI	UNK.	UNK.	UNKNOWN										BUSINESS
	1 40	N	1ST ST	780271014	0127 1800 FRI	0127 2300 FRI	UNK.	UNK.	UNKNOWN										MOTEL
	30	N	9TH ST	780050294	0104 1700 WED	0105 0700 THU	SIDE	DOOR	PRY TOOL										BUSINESS
14	12000		BERRYESSA RD N121	780210331	0121 0000 SAT	0121 0000 SAT	FRNT	DOOR	CUTTING										BUSINESS

Figure 1-20

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Many law enforcement agencies have spent hundreds of thousands, and collectively perhaps tens of millions, of dollars in installing a variety of computers to assist in offender identification. The mystique of the computer as manipulating vast amounts of data and spewing out all sorts of information has captured the imagination of hard-pressed law enforcement agencies seeking assistance in tracking and identifying felony crime offenders. However, such systems have yet to demonstrate marked success, particularly in solving modus operandi (M.O.) investigation problems.[13]

On the other hand, the same publication cites an ICMA study which concludes that:

...the surface has only been scratched when it comes to the use of the computer for criminal investigation...[14]

The pioneering effort in this area is the Los Angeles Police Department's PATRIC System.[15] PATRIC (Pattern Recognition and Information Correlation) derives its data from Offense/ Incident and Field Interrogation Reports. . Through a series of programmed sort routines, a PATRIC analyst can compare new offenses, investigator requests or arrest descriptions against the information in the computer files for possible matches. PATRIC also utilizes a flexible data management system for ad-hoc information retrieval.

However, the latest example of a fully automated, pattern detection system is that now operational in the Dallas, Texas Police Department.[16] The Real-Time Pattern Detection System (RTPD) was developed by the firm of Booz-Allen and Hamilton, Inc., and was implemented in January, 1978. The RTPD System which operates in a batch mode is described below. The development of the system is also reviewed since design concepts are presented which may aid agencies contemplating similar systems.

In conceptualizing the development of a fully automated pattern detection system for Dallas, it was first thought that every offense committed in the city each day should be compared to every other offense committed over a three to six month period to determine what kind of similarities existed. There were certain problems with this idea, however. With an average of 75 data items per offense and 240 index crimes per day in Dallas, if each crime were compared to a six month history period, almost 400 million comparisons would result. Even at computer processing speeds of approximately 5000 data items per second, a computer could be tied up almost twenty-four hours processing such a daily load. Obviously, an effective limiting approach was needed that would both reduce insignificant comparisons and select the most probable offense similarities.

The approach selected was:

● To omit comparisons between different offense categories.

● To limit the history period the system would normally operate in.

● To limit the number of similarities generated.

● To design the system so that when special needs arose the above constraints could be changed to expand the system's limits without program redesign.

[13]*Felony Investigation Decision Model - An Analysis of Investigative Elements of Information.* Stanford Research Institute, Menlo Park, California. December, 1975, p. 111.
[14]Ibid, p. 111.

[15]*PATRIC Design Requirements. Volume II: Research Results.* Los Angeles Police Department - System Development Corporation. July, 1972.
[16]*Real-Time Pattern Detection Project.* LEAA Grant No. AC-76-BO-3683.

The first decision was to compare an offense only against its own crime category. Investigators felt that it was more important to compare offenses in the same category for a longer time period than to compare an offense against every crime category for a shorter time duration. An important exception was rape. It was felt that rapes should be compared against residential burglary offenses but not vice versa. Index crimes are therefore compared within crime category (except rape and burglary) for 40 day periods relative to murder, rape, robbery, and aggravated assault and to 30 day periods relative to burglary, larceny and auto theft. To limit the similarities reported by the system to only those that would be significant to crime investigation, it was found necessary to consider not only the degree of similarity between two offenses but the significance of the similarity as well. The offenses considered for similarity processing must contain significant or unique (i.e., distinctive) information in order to be accepted for comparison. Lastly, the system was designed to be user adjustable relative to overlapping offense categories, extended search periods and weighting and scoring factor flexibility.

The RTPD System operates by considering four basic criteria in comparing any two offenses:

- The distinctiveness of the individual data elements on each offense.

- The relative importance of a given data element to the offense as a whole.

- The closeness of the similarity between any two corresponding data elements on the offense pair being compared.

- The number of individual data element matches obtained in an offense pair comparison.

When certain data elements match on two or more offenses, the above criteria are disregarded by the system. For example, a match on suspect vehicle license numbers would be considered conclusive for all offense comparisons. In instances where a match is not conclusive, however, the RTPD System assigns values to each data element to determine the relative importance of all the elements present in any offense. Together, these values provide an overall score which allows the offenses to be ranked in terms of their degree and importance of match.

Figure 1-21, page 40, illustrates the basic steps in the operation of the RTPD System. When an Offense/Incident Record or Known Offender Record is inputted (Step A, Figure 1-21, page 40), it is first processed to determine its distinctiveness (Step B) then either rejected or compared against other offenses for similarity (Step C). The results are output in daily reports (Step D).

Before an Offense Record can become part of the system history file, it must be processed for distinction (i.e., its uniqueness). There would not be any point in having records providing only bland and generalized information in the history file since they would not provide any useful leads. For every data element present in an Offense Record, the RTPD System computes a distinction score based on the element's frequency of occurrence in the computerized Offense Record File. For example, if on an Offense Record being processed, a suspect's height was recorded as 5'9". Most suspects in the Offense Record File range in height from 5'7" to 6'. The distinction score for height in this instance would therefore be zero. However, if a suspect's height is unusual, less than 5'2" for instance, the distinction score would be higher (Figure 1-22, page 41).

(A)

(B)

(C)

(D)

Figure 1-21

New Offense Records

Known Offenders Records

DISTINCTION DETERMINATION AND CHECK

REJECTION REPORT

PATTERN DETECTION PROCESSING

DAILY OUTPUT REPORTS
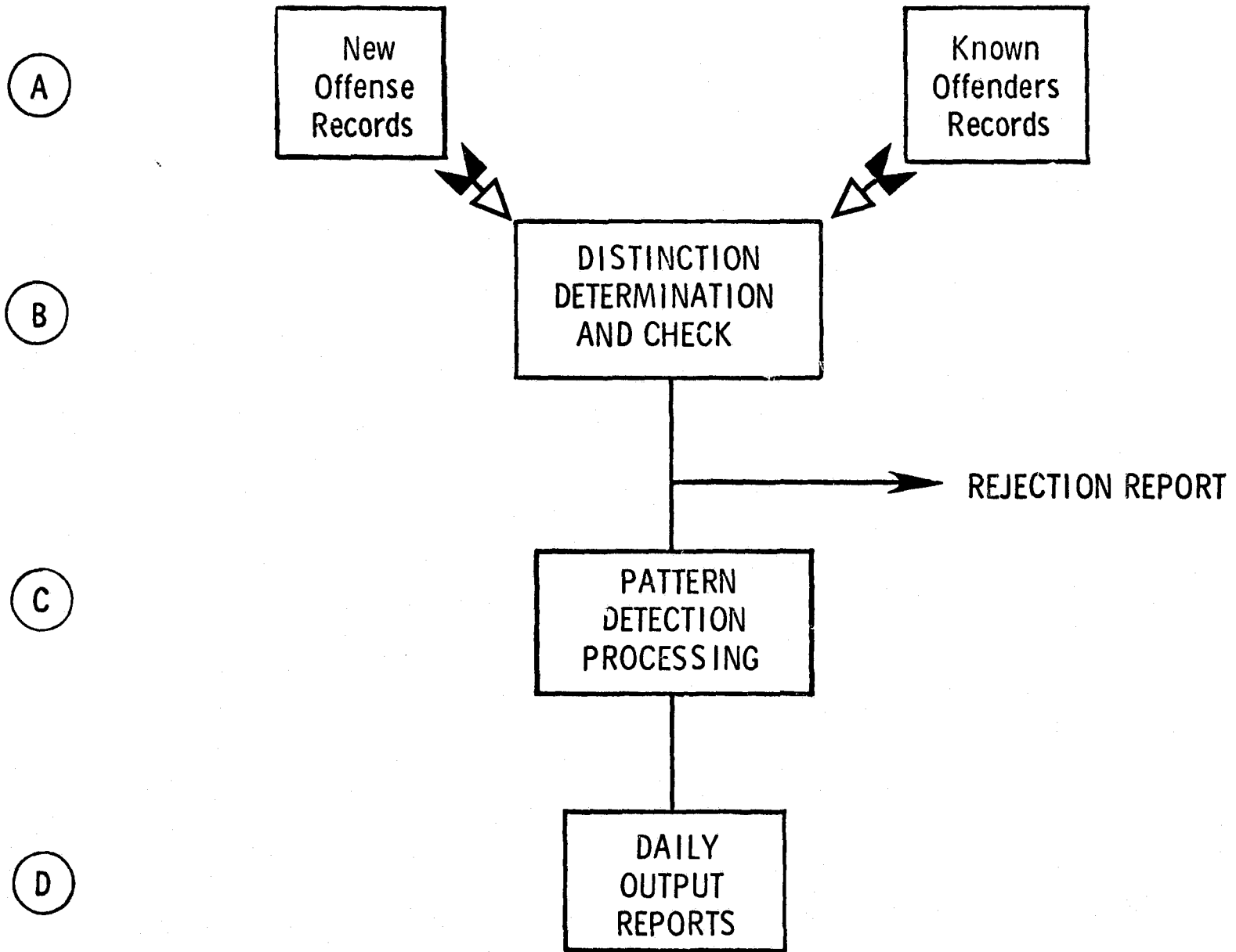
DATA ELEMENT DISTINCTION SCORING

Suspect Height	Distinction Score
4'0" - 5'2"	+ 2
5'2" - 5'6"	+ 1
5'7" - 6'0"	0
6'0" - 6'2"	+ 2

Figure 1-22

The next system consideration is how important is the data element. Is a suspect's height as important to case investigation as a tattoo? To resolve this question, the system assigns not only a distinctiveness score but a weighting factor to each data element considered. The weighting factor for a data element can range from zero to ten based upon that element's overall importance to the investigation of the offense. Suspect's hair color, for example, receives a weighting factor of six, but eye color, generally a less important factor in suspect identification, receives only a weighting factor of four. Race and suspect's sex, obvious but key factors in identifying a suspect, each receive a weighting factor of ten. (Figure 1-23, page 43.) Thus, for every data element present on an Offense Record, two distinction factors are considered:

(1) The actual distinction score, based on the element's uniqueness.

(2) A weight factor based on the element's importance.

These two factors are then combined for every data element present to yield the total distinction score for the offense being considered (Figure 1-24, page 44). If the total distinction score is high enough to suggest that a comparison between offenses would be meaningful, the offense is added to the RTPD history file. If not, the offense is rejected and is identified by service number in a daily Rejection Report.

Once a new offense has been entered into the history file, it is ready to be processed against the existing offenses in the file. The new offense or subject offense is compared, data element by data element, against all other offenses in its crime category (robbery, burglary, etc.). Like distinction, similarity is scored and weighted. The important difference, however, is:

> ...whereas distinction scores are computed for individual Offense Records, similarity scores reflect the relationship between pairs of Offense Records.

A similarity score can be positive, negative, or neutral depending on the degree of match or mismatch. For example, in the case of suspect's height, an exact match may be assigned a score of two, a fairly close match a score of one, and a mismatch a score of zero. In the case of suspect's sex, however, a mismatch would receive a negative score that would detract from other positive scores (Figure 1-25, page 45).

A similarity weighting factor is also considered in determining the total value of the comparison. A match or mismatch on suspect's race is certainly more important than a match or mismatch on eye color. The weighting factors are then combined with their appropriate similarity scores and added to compute an overall weighted similarity score for the offense pair (Figure 1-26, page 46). The weighted similarity score is then adjusted by adding a "confidence factor." Each close match contributing to the score contributes a bonus point to the score. More confidence can be placed in a match based on twenty similar data elements, for example, than in one based on three similar data elements.

The final score for an offense comparison is then a combination of the following:

- The overall distinction score of the first offense.

- The overall distinction score of the second offense.

- The weighted similarity score of the offense pair.

- The "confidence factor".

DATA ELEMENT DISTINCTION WEIGHTING

Figure 1-23

Data Element	Weight Factor
Suspect height	8
Hair color	6
Eye color	4
Suspect race	10
Suspect sex	10

TOTAL WEIGHTED DISTINCTION SCORING

Data Element	Distinction Score	Weight Factor	Total
Height	(Maximum score 2)	8	
Hair color	(Maximum score 1)	6	
Eye color	(Maximum score 2)	4	
Race	(Maximum score 2)	10	
Sex	(Maximum score 1)	10	
TOTAL FOR ALL DATA ELEMENTS CONSIDERED ⟶			

Figure 1-24

DATA ELEMENT SIMILARITY SCORING

Degree Of Match	Similarity Score
SUSPECT HEIGHT COMPARISON	
EQUAL	+2
1" – 3" Difference	+1
4" or more Difference	0
SUSPECT SEX COMPARISON	
EQUAL	0
Different	-1

Figure 1-25

The data requirements for a fully automated system such as RTPD are essentially the same as for the other automated systems previously described although considerably extended for the Dallas application.

The RTPD system produces many daily reports. The most important report, however, is the Criminal Investigation Division (CID) Report (Figure 1-27, page 48).

The CID Report is used to report possible similar offenses found by RTPD for a given "subject" offense. Normally the subject offense is an actual offense entered into DEFRS (the Direct Entry System) during the 24 hour period preceding the generation of the report. The subject offense could, however, be an older offense that was processed by special request or it could be a Known Offender Record created and run as part of the investigative process.

Each day the CID Report will contain one page for each subject offense found to have reportable similar offenses on the RTPD file. This usually represents one to ten offenses.

The circled letters refer to the following description of the information contained in the report (see Figure 1-27, page 48).

Items A-I describe the subject offense being reported:

A	Investigator	The badge number of the assigned investigator for the offense - not currently supplied hence the field will contain N/A
B	Subject offense	Service number of the offense for which possible similar offenses were found - usually an actual service number but can be 98nnnnnZ for hypothetical offenses entered by crime analysis
C	Dates	Date of the subject offenses. When only one date is given, the second date will appear as zero
D	Type offenses	The type of offense being reported can be murder, rape, robbery, assault, burglary, theft or auto theft
E	Status	Offense status not usually known at the time of RTPD is run so this field will often be blank
F	Post arrest	If the offense being reported is a "post arrest" search for similar offenses the words post arrest will appear here
G	Distinction score	A value between zero and one hundred which indicates the amount and uniqueness of the data contained in the Offense Report (this is the score used to decide whether or not to include an offense in RTPD)
H	Local hits	Results of local queries made on suspects or suspect vehicles are reported here

CONTINUED

1 OF 3

RPT-VV   DALLAS POLICE DEPARTMENT   DATE 01/01/78   PAGE   7

INVESTIGATOR N/A Ⓐ   C I D   R E P O R T

1. SUBJECT OFFENSE - 04920641 Ⓑ   2. DATE   12/31/77 Ⓒ   0   3. TYPE OFFENSE- ASSAULT Ⓓ   4. STATUS- Ⓔ   Ⓕ

5. DISTINCTION SCORE-   45 Ⓖ
6. LEAD GENERATION INFORMATION

6.1 TOTAL LOCAL HITS   NONE Ⓗ

6.2 TOTAL REMOTE QUERIES   0 Ⓘ
     ON NAME   0
     ON VEHICLE   0

7. OFFENSES SIMILAR TO THE SUBJECT OFFENSE

SERV NO	INV BADGE	DATE OF OFFENSE	STATUS	OFFENSE TYPE	-SCORES- DIS	SIM	LINKING SERV NO	OBJ Ⓡ	BT Ⓢ	UCR Ⓣ	NUM VEH	NUM SUS	-VEH 1- MAKE YR	SUSPECT R/S/A	HT/WT	HAIR/EYES
Ⓙ	Ⓚ	Ⓛ	Ⓜ	Ⓝ	Ⓞ	Ⓟ	Ⓠ	13	342	04222	0	1	Ⓦ Ⓧ	N/M/23	71/165	BLAC/ BR
04445511	N/A	11/25/77-	0	ASSAULT	51	92	04699661		121	04	0	1		N/M/24	74/180	BLAC/ BR
04446291	N/A	11/25/77-	0	ASSAULT	51	91	04660451		121	04	0	1		N/M/24	74/180	BLAC/ BR
04816151	N/A	12/23/77-	0	ASSAULT	52	92			116	04	0	1		N/M/25	71/170	BLAC/ BR

8. TOTAL OFFENSES CONSIDERED   ⒷⒷ 138   Ⓤ Ⓥ   Ⓨ   Ⓩ   ⒶⒶ

9. AVERAGE DISTINCTION SCORE   51 ⒸⒸ

10. AVERAGE SIMILARITY SCORE   ⒹⒹ 25

11. TOTAL SIMILAR OFFENSES OVER THRESHOLD   3 ⒺⒺ

Figure 1-27

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The RTPD system produces many daily reports. The most important report, however, is the Criminal Investigation Division (CID) Report (Figure 1-27, page 48).

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Each day the CID Report will contain one page for each subject offense found to have reportable similar offenses on the RTPD file. This usually represents one to ten offenses.

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B	Subject offense	Service number of the offense for which possible similar offenses were found - usually an actual service number but can be 98nnnnnZ for hypothetical offenses entered by crime analysis
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E	Status	Offense status not usually known at the time of RTPD is run so this field will often be blank
F	Post arrest	If the offense being reported is a "post arrest" search for similar offenses the words post arrest will appear here
G	Distinction score	A value between zero and one hundred which indicates the amount and uniqueness of the data contained in the Offense Report (this is the score used to decide whether or not to include an offense in RTPD)
H	Local hits	Results of local queries made on suspects or suspect vehicles are reported here

I   Remote queries   The number of possible remote queries based on data contained in the Offense Report is reported here (e.g., NCIC type queries).

J-Q describe each of the offenses found to be similar to the subject offense - one line for each similar offense:

J   Service number   Service number of the offense

K   Badge   Investigator badge number, not currently available

L   Date(s)   Date(s) of the offense, if only one date given, the second will be zero

M   Offense status   Status of the offense, not usually present. If the offense being reported as similar is a hypothetical offense entered for a known offender it will be identified here

N   Offense type   Type of offense - this is not always the same as the type of the subject offense (murders are compared to both murders and robberies for example)

O   Distinction score   The score (0-100) indicating the amount and uniqueness of data availability on the Offense Report (reported for the subject offense as Item G)

P   Similarity score   A score from 0-100 indicating how similar this offense is to the subject offense. It is the score used to determine if a similarity is reported

Q   Linking service   The service number of a related offense used to determine whether an old offense should be compared to the subject offense.

R-AA provide basic offense data for the subject offense (top line) and each of the reported similar offenses:

R   Object of attack   When available the three digit object of attack code

S   Beat   Beat in which the offense occurred

T   UCR code   The five character UCR classification for the offense. On offenses collected prior to January 1, 1978, only the first two characters of the UCR code are available

U   Number of vehicles   The number of suspect vehicles involved in the offense

V   Number of suspects   The number of suspects reported.

W-AA describe the <u>first</u> vehicle (if any) and the <u>first</u> suspect reported for the subject and similar offenses:

> NOTE: The vehicle/suspect information appearing on this report reflect only the first vehicle and/or suspect. If more than one vehicle/suspect (Items U and V) are reported on an offense they are not shown on this report even though they may be the actual data upon which the similarity was based.

W	Make	Vehicle make of the first suspect vehicle
X	Year	Vehicle model year of the first suspect vehicle
Y	R/S/A	Race/sex/age of the first suspect
Z	Height/weight	Height (in inches) and weight of the first suspect
AA	Hair/eyes	Hair color and eye color of the first suspect.

BB-EE provide statistical information about the pattern search conducted for this subject offense:

BB	Offenses considered	The total number of offenses examined in trying to find possible similar offenses
CC	Average distinction score	The average distinction score of all offenses considered when searching for similarities for the subject offense (see Items G and O)
DD	Average similarity score	The average similarity score for all offense comparisons made while processing this subject offense (see Item P)
EE	Offenses over threshold	The total number of offenses exceeding the minimum required score for reporting - the actual number printed on the report is limited. Usually this number is equal to the number of lines appearing under Items J-P, however, occasionally more reportable similarities are found than can be reported.

The CID Report is analyzed daily by the crime analysis staff and any significant offense matches or patterns are disseminated (via memoranda or informally over the telephone) to the investigators assigned to the offenses.

The limitations of the RTPD System fall primarily in two areas:

> (1) Performance

> (2) Output format.

At the present time, approximately 11 percent of the patterns identified by the RTPD System prove through further analysis to be actual patterns. Given the daily system reporting frequency of ten patterns identified per day, this represents either one new pattern per day or the updating of one already identified pattern (i.e., the addition of new offense(s) to an older previously detected pattern). While this

success ratio (i.e., approximately one out of ten) is by no means too low for such an application,[17] further tuning and optimization of the system should result in a significant improvement in the success ratio (two out of ten or twenty percent would be a realistic goal).

The current design of the CID Report (Figure 1-27, page 48) is not informative enough for an analyst to determine whether a listed pattern is a valid one or not. The analyst must therefore obtain and examine the Offense Reports for each possible pattern identified by the RTPD System. This generally requires approximately two hours per day of analyst time. Through output format redesign, however, it would be possible to display every data element contained in each offense of every identified pattern. If this were accomplished, the analyst could determine the validity of each listed pattern by simply comparing the data elements of every offense belonging to that pattern. All the necessary information would be contained on the output report thus making the need for reviewing the original Offense Reports unnecessary. Validity determinations for any given day could therefore be accomplished in a matter of a few minutes. Such a redesign of the system output format is being contemplated at the present time by the City of Dallas programming personnel.

Data Sources and Requirements

In developing Crime/Suspect Correlations or identifying similar offense crime patterns, an appropriate data collection form is essential. The data available from an Offense/Incident Report should be detailed enough and consistent enough to assure the repetition of similar suspect, vehicle, weapon, or M.O. descriptions whenever they occur. Ideally a similar suspect, M.O., etc., should be recorded in the same way by any police officer, if the complainants describe the details of each offense in the same manner. Unfortunately, with the narrative Offense/Incident Reports utilized in most police agencies (Figure 1-28, page 52), consistent and thorough reporting depends not only upon how much the complainant is able to recall, but also how the officer records the information.

In a narrative Offense/Incident Report, most of the key data elements that contain the unique descriptors required for similar offense detection or crime/suspect correlation are entered in the free-form narrative section in each reporting officer's own unique writing style. This permits different officers to emphasize or even record different aspects of similar events. One officer may emphasize more physical descriptors of the suspect while another may record more M.O. information. Thus, acts committed by the same suspect(s) in basically the same way, may not be similarly recorded by different officers on free-form narrative reports.

The lack of identified fields for specific kinds of data (data prompters) on such reports, places too much dependence on the reporting officer to obtain and record every pertinent detail about the offense. If the complainant fails to mention that the suspect wore glasses, for example, the reporting officer would not necessarily be expected to ask the complainant if the suspect wore glasses. Although the presence or absence of glasses may not seem to be important at the time of the offense, it could be a deciding factor in including or excluding the offense in a crime pattern at a later time.

To overcome the difficulties in data accuracy presented by a totally free-form narrative report, some departments have changed to a partial or complete forced choice structured crime report (see Chapter II, Figure 2-1, page 59). Such a report provides the appropriate format for the recording of specific crime elements through a series of forced choices among

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[17] Felony Investigation Decision Model. Stanford Research Institute, p. 111.

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DALLAS POLICE DEPARTMENT Offense/Incident Form 70-31-R

① Element	② Beat	③ Dist.	④ Watch	⑤ Comp. or Firm (Last Name First)			Race-Sex-Age	⑥
⑦ Address Dispatched to			⑧ Time Disp. AM PM	⑨ Comp's Address		City	Phone	
⑩ Descr. Location — Type Premises		⑪ Disp. As	⑫ Time Clear AM PM	⑬ Comp's Business - School Address		City	Phone	
⑭ Job Title - Occupation		⑮ Hours Worked		⑯ Reported By		Race-Sex-Age	Phone	

⑰ NO COMP ☐   WRONG ADDRESS ☐   CIVIL CASE ☐   NO VIO. ☐

⑱ CID - Name	⑲ PES ☐	㉑ M.E. ☐
Check Block If YES	㉒ NCIC ☐	㉓ RADIO ☐ ㉔ T. TYPE ☐
Date Cancelled		

⑰ Reportee's Address — City — Bus. Phone

㉕ Day(s) — Date(s) — Hour(s) — ㉖ Date of Report

㉗ Location of Offense (Mall Address or Block No. Only)

㉘ Offense — Incident — ㉙ Classification

NOTIFIED

WITNESS PARENT GUARDIAN

	Name	Age	Best Contact Address	Best Phone	Other Phone
⑳					
㉑					
㉒					

SUSPECT/S

㉛ Name and Address or Race-Sex-Age-Description	Arrest No.	Name and Address or Race-Sex-Age-Description	Arrest No.
①		②	
③		Veh. Color(s) Year Make Model Lic.-Year-State-No.	

STOLEN PROPERTY

㉝ Quan.	Description — (Size - Color - Model - Style - Material - Condition)	Serial No.	Where Located	Value, New	Age	Value, Now	Code

㉞ Veh. Color(s)	Year Make Model	Lic.-Year-State-No.	Owner	㉟ Tag No.	㊱ Total Loss $	㊲ Recovered $

VEHICLE THEFT

㊳ Lic. Year-State-No.	Veh. Color(s)	Year Make Model	Style	Vin.	Value $

㊴ Lien Holder	Address	㊵ Past Due	㊶ Premises Taken From (Name - Phone of Mgr. of Commercial Loc.)

㊷ Recovered — Where — When — By Whom	㊸ Owner Notf'd By Whom — When	㊹ Pound No.	㊺ Veh. Condition

INJ. PER.

㊻ Victim Taken To	㊼ Transported By	㊽ Describe Injuries	㊾ Condition

MISSING PERSONS

㊿ Ht.	Wt.	Hair	Eyes	Comp.	Hat	Coat	Jacket	Sweater	Blouse/Shirt	Skirt/Trousers	Shoes	Jewelry

Possible Cause of Absence		Competency: Physical		Past Record Other Data - ID Money Carried
Destination		Mental		

M/O

How Done — — Force Used — — At What Point — — With What Tool or Weapon — — Other Acts or Trademark

Narrative

Reporting Officer	I.D.	Other Officer	I.D.	Investigator Assigned	PAGE 1 of ___
Status ☐ OPEN ☐ SUSPENDED ☐ CLOSED	FOLLOW-UP	S.R. Code	SPECIAL REPORT ☐	Reviewed By:	UCR

Figure 1-28

a detailed list of data possibilities. This format has the advantages of not only assuring consistent data descriptions, but also of providing the data prompters required for thorough crime reporting. If most of the frequently used data possibilities can be found on the Offense/Incident Report, the officer will most likely use them if applicable. This can be further assured if the data element possibilities include the choices of unknown or not applicable.

Forced choice Offense/Incident Reports are particularly appropriate for utilization with automated crime analysis systems. If a computer is making data element comparisons, it is very important to obtain consistent and detailed data. A computer's decisions are only as good as the data that it bases those decisions upon and, therefore, the validity of any subsequent crime patterns identified or crime/suspect correlations made by a computer may often depend upon the value of an agency's Offense/Incident Report for automated applications.

SUMMARY

There are two basic conclusions about Crime Pattern Detection that can be drawn from both on-site visitations to representative Crime Analysis Units and a research survey of the available literature on this topic:

(1) Well staffed and efficiently operated primarily manual Crime Analysis Units can effectively support pattern detection activities.

(2) Although many police departments operate in a semi-automated crime analysis mode with a variety of stored computer information available, most lack any flexible method to search and retrieve that data in a manner suitable for Crime Pattern Detection applications.

Through the site visitations, the project staff did find examples of efficient and effective primarily manual approaches to the Crime Pattern Detection function. St. Petersburg, Florida, and New Orleans, Louisiana, in particular, stand out in this respect. In both cities, pattern detection activities result from the manual manipulation and study of the source Offense/Incident Reports (or teletype summaries of same in New Orleans). However, in both instances, any findings resulting from daily pattern detection activities are available in typed report form before 12:00 p.m., each day.

In many cities, however, adequate staff is not available to support user groups with current crime pattern information. In such environments, pattern detection information often takes several days to prepare and disseminate. Automation is, at this point, a reasonable solution to time lag problems. Frequently, however, vast amounts of computerized crime data is captured and stored but only very limited methods exist to search and retrieve this data. Information retrieval is either limited to a few administratively applicable summary reports (e.g., UCR or other such summary reports) or to requests for special programming that often have to be performed by another city department at its priority judgment. As a result, often no efficient method of accessing stored crime data in a manner suitable for every unique application exists. In almost every site visited by the project staff, an efficient and flexible method to access computerized crime information was named as a primary need. The development of a machine independent data management system should, therefore, be included as a high priority consideration during the second phase of this project.

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CHAPTER II

CRIME SUSPECT CORRELATIONS

Crime Suspect Correlations may be defined as the systematic capability of examining criminal offenses for the purpose of showing a relationship between the suspect and the offense utilizing historical data obtained through valid data sources. The correlations may be made by using any number of selected criteria in which unique and distinguishing characteristics, physical identifiers, M.O.'s, and various other common traits of offenders are known. For example, the suspect may be linked to the offense via a license plate of the vehicle used or by the identification of an outstanding scar, mark, tattoo, or deformity.

Crime Suspect Correlations are basically designed to provide information on possible suspects, correlate suspects to outstanding cases, and from that point, good old-fashioned police work has to be employed to bring about the apprehension and successful prosecution of the responsible perpetrator(s).

To deal with specific crime problems, target offenses should be identified prior to the establishment of a crime suspect component. After determining the target offenses and detecting any patterns, the question of "Who" should be addressed. It would be desirable to ask the computer who is responsible for the burglaries in the Southeast District, or who is the armed robber holding up the Safeway Stores throughout the city, and have it respond with the name, date of birth, and address of the perpetrator(s). Unfortunately, this is not feasible. However, the Crime Suspect Correlation component, if developed properly, can narrow down the possibilities and give field officers and investigators leads to follow for case closures. The primary purpose of Crime Suspect Correlations should be to provide field personnel with sufficient data to keep them apprised of known career criminals living and operating in their respective beats. The Crime Suspect Correlation component will provide officers with names and photographs of known offenders, in addition to vehicles used, establishments frequented, and criminal associates. The Crime Suspect Correlation component will also provide officers with information, such as a listing of all previous arrests and convictions. When establishing a crime suspect component, apprehension of suspects and convictions must be considered the primary end result desired.

Crime Suspect Correlations can be applied in a great number of ways. In addition to the hypothetical situations discussed, interfacing with other systems is another means of enhancing operations. By being linked to other systems, such as the National Crime Information Center (NCIC) and the State Department of Motor Vehicles, bits of information can be correlated about vehicles and drivers. In the State of California, many law enforcement agencies are linked to various information systems. A nine-county Police Information Network (PIN) system responds to inquiries about warrants and wanted persons. PIN is linked to the California Law Enforcement Telecommunications Systems (CLETS) in the Division of Law Enforcement, Department of Justice, State of California, and to NCIC. In addition to the inquiries on Wants and Warrants, information such as registration and ownership of vehicles, aircraft, boats, drivers license information, stolen autos,

and firearms may be obtained. Through the Department of Motor Vehicles, a listing of vehicles can be compiled by a multitude of parameters such as a listing of red sedans with the numbers 872 or a listing of all Ford coupes registered in a specific city and/or county. These systems are tools that enhance the investigative function and would be of more value to that function than patrol.

Other Crime Suspect Correlation applications include listings of subjects interrogated in the field, which investigators can utilize to place a possible suspect in or near the commission of an offense. Suspect Vehicle Files can be used to place a suspect vehicle on or near the scene of an offense in addition to any subjects identified in a specific geographical area in that vehicle. In developing the various modules for a Crime Suspect Component, keep in mind what type of retrievable information will be needed. The Crime Suspect Component may provide patrol officers with a listing of the top "100" career criminals in the city, which could be augmented with current photographs. One of the common problems patrol officers encounter is that often times they are provided the names of suspects and physical descriptions and very little else. When they make a stop for a field interview, they really don't have any reference other than a name and description and, if the subject stopped is a career criminal, the likelihood of him truthfully identifying himself is questionable. By providing the patrol officers with a 5-1/2" x 6" Crime Information Mug Book, officers have an invaluable tool that can keep them abreast of known career criminals in their respective beats. Listings of suspect vehicles, photographs of known career criminals, listings of known associates and their vehicles can also prevent an officer from taking on a subject cold" when in actuality the subject is "dirty" and "hot." These elements of this component should be updated as frequently as possible to keep patrol officers informed of who is living and operating in a specific beat.

The Dallas, Texas Police Department formerly used the following report forms to capture data, prior to establishing their direct entry reporting system. These reports are typical examples of the types of reports required in data capture for building a data base for Crime Suspect Correlations. (See Figures 2-1 through 2-3, pp. 59-62.)

The Crime Suspect Correlation component of a Crime Analysis Unit is essential to effective tactical operations. For law enforcement agencies that are involved in programs that emphasize crime reduction, this specific component acts as a nucleus. To effectively combat crime, the Crime Suspect Component of a Crime Analysis Unit must have a flexible, comprehensive data base. Crime Suspect Correlations is another name for Crime File. The Crime File is composed of six subfiles which are:

- Known or Career Criminal File

- Suspect Vehicle File

- M. O. File

- F. I. File

- AKA/Moniker File

- Arrest and Correction File.

Files may be designed so that searches can be made by any data element desired. Searches may also be made to correlate suspects in custody with outstanding cases using the data from their arrest to descriptions and other key data elements from Offense Reports of similar incidents. The process of searching for similarities of offenses in the past

OFFENSE/INCIDENT REPORT
DALLAS POLICE DEPARTMENT

(1) SERVICE NO.

(2) BEAT	(3) WATCH	(4) DATE OF REPORT	(5) DISP. AS	(6) COMPLAINANT OR FIRM (LAST NAME FIRST)	RACE - SEX - AGE

(7) OFFENSE/INCIDENT	(8) CLASSIFICATION	(9) COMPLAINANT'S ADDRESS	CITY	PHONE

(10) LOCATION OF OFFENSE - MAIL ADDRESS	(11) TYPE PREM.	(12) COMP'S BUS. / SCHOOL ADDRESS	CITY	BUS. PHONE

(13) DAY(s) OF OCCURRENCE	DATE(s) OF OCCURRENCE	HOUR(s) OF OCCURRENCE	(14) COMP'S. JOB TITLE/OCCUPATION	(15) HOURS WORKED	(16) RELATED REPORTS

(17) INVESTIGATIVE DIVISION(s) NOTIFIED	PERSON NOTIFIED	(18) WEATHER CONDITIONS AT TIME OF OFFENSE

(19) REPORTING OFFICER	I.D.	OTHER OFFICER	I.D.	(20) ELEMENT NO.	(21) INVESTIGATOR ASSIGNED

(22) STATUS ☐ OPEN ☐ SUSPENDED ☐ CLOSED	(23) FOLLOW UP	(24) S.R.	(25) SPEC.REP. ☐	(26) REVIEWED BY	(27) U.C.R. DISPOSITION

INJ. PER.

(28) VICTIM TAKEN TO	(29) TRANSPORTED BY	(30) DESCRIBE INJURIES	(31) CONDITION

(32) CODES: S—STOLEN PROPERTY   D—DAMAGED PROPERTY   L—LOST PROPERTY   F—FOUND PROPERTY

PROPERTY SECTION

CODE S-D-L-F	QTY.	DESCRIPTION (SIZE,COLOR,MODEL,STYLE,MATERIAL,CONDITION)	SERIAL NO.	WHERE PURCHASED	VALUE	CLASS CODE

(33) DISP.OF PROP.	(34) PROP TAG NO.	(35) COMP'S D.L.NO.	(36) SOC.SEC.NO.	(37) O.I.D. No.	(38) TOT.VALUE REC. PROP.	(39) TOT. STOLEN PROP.

VEHICLE INFORMATION

(40) ☐ STOLEN ☐ B.M.V. ☐ AUTO ACC. ☐ SUSPECT ☐ WANT TO LOC.	YEAR	MAKE	MODEL	BODY STYLE	LIC. YEAR STATE NO.	VALID TAG NO.	V.I.N. NO.

(01) COLOR 1 (SOLID OR TOP) _____ COLOR 2 _____	(02) SPECIAL VEHICLE FEATURES

1. BLACK	5. GREEN	8. TAN BEIGE	1. LEVEL ALTERED
2. BLUE AQUA TURQUOISE	LIME OLIVE 6. GRAY	9. WHITE CREAM	2. STICKER/DECAL ON BODY/BUMPER 3. STICKER/DECAL ON WINDOW
3. BROWN BRONZE COPPER	SILVER 7. RED PINK	10. YELLOW ORANGE GOLD	4. RUST OR PRIMER
4. PURPLE	MAROON	11. OTHER/UNK.	

5. PAINTED INSCRIPTION ON BODY
6. DECORATIVE PAINT
7. DAMAGE TO FRONT
8. DAMAGE TO REAR
9. DAMAGE TO SIDE

10. MISSING PARTS
11. WINDOW BROKEN
12. VINYL TOP
13. EXTRA ANTENNA(S),MIRRORS
14. SPECIAL RIMS, TIRES
15. LOUD MUFFLERS
16. OTHER

(41) FURTHER VEHICLE DESCRIPTION

(42) LIEN HOLDER	ADDRESS	(43) PAST DUE	(44) VALUE	(45) COMMERCIAL LOCATION (NAME,PHO.NO.OF MGR.OR ATT.)

(46) RECOVERED (WHERE,WHEN, BY WHOM)	(47) OWNER NOTIFIED (BY WHOM, WHEN)	(48) POUND NO.	(49) VEHICLE COND.

WEAPON DESC.

(50) (01) WEAPON	(02) WEAPON FEATURE

SUSP. NO. 1 2 3	SUSP. NO. 1 2 3	SUSP. NO. 1 2 3	SUSP. NO. 1 2 3	SUSP. NO. 1 2 3	SUSP. NO. 1 2 3
1 1 1 HANDGUN	9 9 9 BUTCHER KNIFE	15 15 15 BLACKJACK/CLUB	1 1 1 CHROME/NICKEL	7 7 7 SINGLE BARREL	13 13 13 WESTERN STYLE
2 2 2 SHOTGUN	10 10 10 OTH. CUTTING/	16 16 16 POISON/DRUGS	2 2 2 BLUE STEEL	8 8 8 SAWED OFF	14 14 14 LARGE BORE
3 3 3 RIFLE	STAB. INST.	LIQUOR	3 3 3 AUTOMATIC	9 9 9 PUMP	15 15 15 SMALL BORE
4 4 4 SIMULATED GUN	11 11 11 EXPLOSIVES	17 17 17 BURN/SCALD	4 4 4 REVOLVER	10 10 10 BOLT ACTION	16 16 16 OTHER
5 5 5 TOY GUN	12 12 12 VEHICLE	18 18 18 GAS/CARBON	5 5 5 SHORT BARREL	11 11 11 ALTERED STOCK	17 17 17 UNKNOWN
6 6 6 OTHER/UNK. GUN	13 13 13 STRANGULATION	MONOXIDE	6 6 6 DOUBLE BARREL	12 12 12 WHITE GRIPS	
7 7 7 MISSLE/ROCK	14 14 14 HANDS—FEET	19 19 19 THREATS	MAKE	MDL	CAL./GA.
8 8 8 POCKET KNIFE	BODILY FORCE	20 20 20 OTHER			

FORM 76-1   S/N 117-0100

Figure 2-1

Page _____ of _____

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OFFENSE/INCIDENT REPORT
DALLAS POLICE DEPARTMENT

PAGE 2

(6) COMPLAINANT	(7) OFFENSE/INCIDENT	(4) DATE OF REPORT	(1) SERVICE NO.

(51) CODE: W-WITNESS R.P.-REPORTING PERSON P-PARENT G-GUARDIAN   **ADDRESS**   **CITY**   **PHONE (X BEST NO) X**

CODE	NAME	RACE - SEX - AGE		
			RES.	
			BUS.	
			RES.	
			BUS.	
			RES.	
			BUS.	

(52) M/O   HOW DONE   FORCE USED   WITH WHAT TOOL OR WEAPON   OTHER ACTS OR TRADEMARKS

(53) SECURITY CHECK   O.I.D. MATERIAL FURNISHED   SECURITY CHECK MADE   IF NO SECURITY CHECK MADE, GIVE REASON
☐ YES ☐ NO   ☐ YES ☐ NO

(54) PHYSICAL EVIDENCE

1 GLOVE PRINTS	4. TOOL MARKS	7. TIRE TRACKS	10. WEAPON	14. GLASS FRAGS.	18. DRUGS/PARAPHA.
2 FOOT PRINTS	5. FINGERPRINTS	8. PHOTOGRAPHS	11. SHELL CS./BULLETS	15. DOCUMENTS	19. CLOTHING
3 STAINS - BLOOD/SEMEN	6. TOOLS - INSTRUMENTS	9. INSULATION - DUST	12. PAINT SAMPLES	16. MUD/SOIL	20. VEHICLE
			13. HAIR	17 CIGARETTE BUTTS	21 OTHER

(55) DISPOSITION OF EVIDENCE: PROPERTY TAG NO.   OFFICER MARKING EVIDENCE   I.D.   IDENT. MARK

(19) REPORTING OFFICER   I.D.   OTHER OFFICER   I.D   SUSPECT ARRESTED ☐   PATROL SUPPLEMENT ATTACHED ☐

ITEM	(56) NARRATIVE ☐ CONTINUATION ☐

Page____ of____

INVESTIGATIVE SUPPLEMENT REPORT
DALLAS POLICE DEPARTMENT

(1) COMPLAINANT (LAST NAME FIRST)	(2) LOCATION OF OFFENSE	(3) BEAT	(4) SERVICE NO.
(5) OFFENSE AS REPORTED AND DATE	(6) DATE OF THIS REPORT (7) PAGE ___ of ___	(8) CLASSIFICATION	(9) ARREST NO.

RECOVERED STOLEN VEHICLE

(10) YEAR	(11) MAKE	(12) STYLE	(13) MODEL	(14) LIC. YR. STATE NO	(15) VALID TAG NO.	(16) V.I.N.

(17) LOCATION RECOVERED	(18) DATE REC.	(19) BEAT REC.	(20) OFFICER MAKING RECOVERY

(25) STATUS RECOMMENDATION

☐ OPEN ☐ SUSPENDED ☐ CLOSED

(21) CONDITION OF VEH.
☐ DAMAGED ☐ WRECKED ☐ BURNED ☐ STRIPPED ☐ UNK.

LIST ITEMS STRIPPED IN NARRATIVE

☐ CLEARED BY ARREST
☐ CLEARED BY EXCEPTIONAL ARREST
☐ CLEARED BY JUVENILE ARREST
☐ UNFOUNDED
☐ CLASSIFICATION CHANGED

(22) METHOD USED:
☐ TOWED ☐ KEY IN VEH.
☐ HOT WIRED ☐ OTHER
☐ UNK.

(23) DESCRIBE LOC. OF RECOVERY

(24) DISPOSITION
☐ AUTO ☐ RELEASED
POUND TO OWNER

(26) **SHORT FORM SUPPLEMENT INFORMATION:**

☐ CONTACTED COMPLAINANT NO ADDITIONAL INFORMATION

☐ CONTACTED WITNESS/S LISTED NO ADDITIONAL INFORMATION

☐ UNABLE TO CONTACT COMPLAINANT AND/OR WITNESS/S LISTED

_____ DATE AND TIME

_____ DATE AND TIME

_____ DATE AND TIME

(27) NARRATIVE:

(28) TOTAL PROPERTY VALUE REPORTED TO DATE
STOLEN	RECOVERED

(29) REPORTING OFFICER I.D.	(30) SUPERVISOR APPROVING RANK I.D.	(31) SUSPECT DESCRIPTION ATTACHED ☐ YES ☐ NO
(32) STATUS ☐ OPEN ☐ SUSPENDED ☐ CLOSED	(33) REVIEWER	(34) U.C.R. DISPOSITION

Figure 2-2

PATROL SUPPLEMENT REPORT
DALLAS POLICE DEPARTMENT

(1) SERVICE NO

(6) COMPLAINANT	(7) OFFENSE/INCIDENT	(4) DATE OF REPORT	(19) REPORTING OFFICER	I.D.

(57) CODE: S - SUSPECT   MP - MISSING PERSON   A.P. - ARRESTED PERSON   DESCRIPTION

CODE	NAME	ADDRESS	ARREST NO.	NICKNAME OR ALIAS	RACE	SEX	AGE	D.O.B.	WT.	HT.	HAIR COL.	EYE COL.

(58) POSSIBLE CAUSE OF ABSENCE	(59) COMPETENCY (PHYSICAL)	(60) COMPETENCY (MENTAL)	(61) POSSIBLE DESTINATION

(62) SUBJECT'S PERSONAL DESCRIPTIONS

HAIR LENGTH (01) SUSP. NO. 1 2 3	HAIR STYLE (02) SUSP. NO. 1 2 3	FACIAL HAIR (03) SUSP. NO. 1 2 3	GLASSES (04) SUSP. NO. 1 2 3	TATTOO (05) SUSP. NO. 1 2 3	GEN'L APPEARANCE (06) SUSP. NO. 1 2 3	SPEECH (07) SUSP. NO. 1 2 3
1 1 1 LONG 2 2 2 MEDIUM 3 3 3 SHORT 4 4 4 BALD/ BALDING 5 5 5 OTHER 6 6 6 UNK	1 1 1 AFRO 2 2 2 WAVY 3 3 3 SHAG 4 4 4 STRAIGHT 5 5 5 BRAIDED 6 6 6 OTHER 7 7 7 UNK	1 1 1 FULL BEARD 2 2 2 GOATEE 3 3 3 MUSTACHE 4 4 4 SIDEBURNS (UNUSUAL) 5 5 5 OTHER/UNK. 6 6 6 NONE	1 1 1 SUNGLASSES 2 2 2 GLASSES (PLAIN) 3 3 3 OTHER/UNK. 4 4 4 NONE	1 1 1 EXTREMITY 2 2 2 BODY 3 3 3 FACE 4 4 4 PICTURES 5 5 5 NAME/ INITIALS 6 6 6 OTHER 7 7 7 UNK.	1 1 1 NEAT WELL DRESSED 2 2 2 DIRTY/RAGGED 3 3 3 UNIFORMED 4 4 4 MOD./UNUSUAL 5 5 5 UNUSUAL JEWELRY 6 6 6 OTHER 7 7 7 UNK.	1 1 1 PROFANE/ABUSIVE 2 2 2 SOFT/POLITE 3 3 3 APOLOGETIC 4 4 4 ACCENT 5 5 5 STUTTER 6 6 6 DEEP/RASPY 7 7 7 HIGH 8 8 8 EFFEMINATE 9 9 9 LISP 10 10 10 OTHER 11 11 11 UNK

TEETH (08) SUSP. NO. 1 2 3	COMPLEXION (09) SUSP. NO. 1 2 3	SCARS-BIRTHMARKS (10) SUSP. NO. 1 2 3	EYES (11) SUSP. NO. 1 2 3	SUSPECT WORE (12) SUSP. NO. 1 2 3	R-L HANDED (13) SUSP. NO. 1 2 3
1 1 1 GOLD 2 2 2 GOLD DESIGN 3 3 3 MISSING/GAPS 4 4 4 PROTRUDING 5 5 5 DECAYED/ DIRTY 6 6 6 BROKEN 7 7 7 VERY WHITE 8 8 8 OTHER 9 9 9 UNK.	1 1 1 LIGHT 2 2 2 MEDIUM 3 3 3 DARK 4 4 4 ACNE 5 5 5 FRECKLED 6 6 6 RUDDY 7 7 7 OTHER 8 8 8 UNK.	1 1 1 HEAD 2 2 2 NECK 3 3 3 HAND 4 4 4 ARM 5 5 5 BODY 6 6 6 OTHER 7 7 7 UNK	1 1 1 MISSING 2 2 2 CROSSED 3 3 3 BULGING 4 4 4 SQUINT 5 5 5 BLINK 6 6 6 AFFLICTED EYE 7 7 7 OTHER 8 8 8 UNK	1 1 1 SKI MASK 2 2 2 STOCKING MASK 3 3 3 CAP. HAT 4 4 4 COAT. JACKET 5 5 5 BAND-AIDS 6 6 6 WIG 7 7 7 GLOVES 8 8 8 OTHER 9 9 9 UNK	1 1 1 RIGHT 2 2 2 LEFT 3 3 3 UNK **BUILD (14) SUSP. NO. 1 2 3** 1 1 1 LIGHT 2 2 2 MEDIUM 3 3 3 HEAVY 4 4 4 UNK

(15) FURTHER SUBJECT DESCRIPTION

(63) RAPE - ATTEMPT RAPE M.O.

LOCATION OF COMPLAINANT (01) (12 HRS. PRIOR TO OFFENSE)	SOLICITED, OFFERED (02) (PRIOR TO OFFENSE)	TELEPHONE (03)	CHARACTERISTICS OF SUSPECT (04)
1. BAR 2. PARTY 3. PLACE OF ENTERTAINMENT (MOVIE, ETC.) 4. RESIDENCE (OWN, OTHER) 5. SHOPPING 6. SCHOOL 7. SPORTING EVENT 8. PARK/ RECREATION FAC. 9. OTHER 10. N.A.	1. FOOD, DRINK, CANDY 2. RIDE 3. ASSISTANCE, INFO 4. MONEY 5. DRUGS 6. OTHER 7. N.A.	1. PULLED, CUT CORD 2. USED CORD TO TIE COMP. 3. CALLED COMP. (BEFORE, AFT.) 4. OTHER 5. N.A.	1. UNUSUAL ODOR(BODY ODOR, SMELLS GOOD, etc.) 2. ABNORMAL GENITALS 3. EJACULATED 4. UNABLE TO ACHIEVE ERECTION 5. USED COMP'S NAME (OR OTH FAMILIAR NAME) 6. OTHER 7. N.A.

SUSPECT'S ACTIONS (05)	FORCE (06)	COMPLAINANT WAS (07)
1. RIPPED/CUT CLOTHING 2. TOOK COMP'S CLOTHING 3. USED LUBRICANT 4. RAPED MORE THAN ONCE 5. UNNATURAL SEX ACTS 6. OTHER 7. N.A.	1. BOUND COMPLAINANT 7. CUT, STABBED 2. BIT COMPLAINANT COMPLAINANT 3. HIT COMPLAINANT 8. OTHER 4. SHOT COMPLAINANT 9. N.A. 5. COVERED COMP'S FACE 6. CHOKED COMPLAINANT	1. ELDERLY 2. MENTALLY RETARDED 3. INTOXICATED 4. PHYSICALLY HANDICAPPED 5. JUVENILE 6. N.A.

(64) ROBBERY M.O.

SUSPECT'S ACTIONS (01)	SOLICITED/OFFERED (02)	FORCED COMP. TO: (03)	COMPLAINANT WAS (04)
1. ASSAULTED COMP 10. APOLOGETIC 2. BOUND COMP. 11. MADE GESTURES 3. USED NOTE 12. SEX ACTS INVOLVED 4. DEMANDED JEWELRY 13. USED STOLEN VEHICLE 5. ASKED FOR CIGARETTES/ 14. SHOTS FIRED MERCHANDISE 15. OTHER 6. SHOPLIFT, THEFT INVOLVED 16. N.A. 7. PURSE SNATCH 8. PROSTITUTION INVOLVED 9. USED LOOKOUT	1. AID FOR VEHICLE 7. SEX 2. RIDE 8. CON GAME 3. CIGARETTE/LIGHT 9. DRUGS 4. USE PHONE 10. OTHER 5. INFORMATION 11. N.A. 6. MONEY	1. LIE DOWN 2. OPEN SAFE 3. ENTER REST ROOM 4. REAR OF BLDG. 5. ENTER VEH. TRUNK 6. DISROBE 7. PLACE PROPERTY IN SACK 8. OTHER 9. N.A.	1. OPENING/CLOSING BUSINESS 2. MENTALLY/PHYSICALLY HANDICAPPED 3. FEMALE 4. ALONE 5. INTOXICATED 6. GAMBLING 7. ELDERLY 8. JUVENILE 9. N.A.

(65) BURGLARY - ATTEMPT BURGLARY M.O.

POINT OF ENTRY (01)	POINT OF EXIT (02)	METHOD OF BREAKING (03)	INSTRUMENT USED (04)	ALARM (05)
☐ FRONT ☐ REAR ☐ SIDE 1. DOOR 2. WINDOW 3. SLIDING GLASS 4. DUCT/VENT 5. ADJ. BLDG. 6. ROOF/FLOOR 7. WALL 8. OPEN GARAGE 9. OVERHEAD DOOR 10. OTHER/UNK	☐ FRONT ☐ REAR ☐ SIDE 1. DOOR 2. WINDOW 3. SLIDING GLASS 4. DUCT/VENT 5. ADJ. BLDG. 6. ROOF/FLOOR 7. WALL 8. OPEN GARAGE 9. OVERHEAD DOOR 10. OTHER/UNK	1. KEY 2. SMASH GLASS, GAIN MERCHANDISE 3. BROKE/CUT GLASS, GAIN ENTRY 4. PRIED/JIMMIED 5. REMOVED 6. CHOPPED/SMASHED 7. REMOVED A C./FAN 8. BROKE/ REMOVED DOOR PANEL 9. CUT/BROKE LOCK 10. UNLOCKED/NO FORCE 11. HID IN BLDG. 12. REMOVED WINDOW PANE 13. OTHER/UNK.	1. KEY 2. PRYING TOOL 3. SAW/DRILL 4. BOLT CUTTER 5. CHOPPING TOOL 6. HAMMER 7. BRICK/ROCK 8. CHAIN LOCKS/ V. GRIPS 9. TAPE 10. VEHICLE 11. BODILY FORCE 12. INCENDIARY DEV. 13. OTHER/UNK	**TYPE SYSTEM** 1 LOCAL 2 CENTRAL STA. 3 PROPRIETARY 4. POLICE 5. AUTO DIALER **TYPE PROTECTION** 6 BELL/SIREN 7 SILENT 8 AUDIO 9. MOTION 10 POINT 11. PERIMETER

BURGLARY ELEMENTS (06)	SUSPECT'S ACTIONS (07)	COMPLAINANT WAS: (08)

1. ALARM INOPERATIVE
2. BURGLARIZED DURING PAST 12 MOS.
3. ADMITTED STRANGER OR TRADESMAN DURING PAST 7 DAYS (RES. BURG. ONLY)
4. TELEPHONE SURVEY, UNUSUAL CALLS, HANGUPS, WRONG NO. PAST 7 DAYS (RES. BURG. ONLY)
5. HOUSE VACANT/UNDER CONST.
6. SAFE BREAK/ATTEMPT.
   METHOD _____   7 OTHER
                 8 N A
	1 MALICIOUS DESTRUCTION MACHINE
	2. REMOVED PRINTS 9. KNEW LOC. OF
	3. USED TOOLS FOUND HIDDEN CASH
	   AT SCENE 10. DEFEATED, ATTEMPTED
	4. BURGLARY NOT COMPLETED DEFEAT OF ALARM
	5. ATE/DRANK ON PREMISES 11. TRIPPED ALARM,
	6. TURNED LIGHTS ON-OFF RETURNED LATER
	7. DEFECATED 12. OTHER
	8. BROKE INTO COIN-OP, 13. N.A.
		1. PRESENT 9. OUT OF TOWN
		2. ABSENT 10 SHOPPING
		   (AD IN PAPER) 11 SPORTING EVENT
		3 AT FUNERAL 12 PLACE OF
		4 AT WEDDING ENTERTAINMENT
		5. AT CHURCH (MOVIE, ETC.)
		6. AT WORK 13. OTHER
		7. AT SCHOOL 14 UNK
		8. MOVING

FORM 76-2   S/N 117-0101

Figure 2-3

Page ____ of ____

has resulted in many cases being cleared by one arrest. With crime analysis and the Crime Suspect Correlation component or Crime File, the clearance procedure will become more systematic and clearance rates should increase substantially.

KNOWN OFFENDER FILE

To develop a Known Offender or Career Criminal File, it is necessary to establish criteria for a specific community. This subject is a controversial one, and prior to the establishment of that particular file, it would be advisable to consult the local District Attorney's office as to specific limitations required by law. In the New Orleans Police Department for a subject to be classified as a career criminal, that subject has to have two felony convictions and/or five felony arrests without any convictions. There may be jurisdictions that feel these requirements are too severe, and there may be communities that feel these requirements are not stringent enough. The citizenry and political atmosphere should be taken into consideration when classifying an individual as a career criminal.

The first step in the development of a Known Offender File should be to divide offenders by race, sex, and age. Secondly, offenders should be divided into the type of offenses for which they have a known propensity. In this manner, when attempting to develop investigative leads for an armed robbery, a search can be performed in the following manner: the query will ask the file to identify all white females in the data base that are armed robbers. From that point, the field can be narrowed down to all white female armed robbers in a particular age group. Thus, if an age group has a spread of approximately five years, the search can be made by seeking all white female robbers between the ages of 20-25, 35-40, or however old the suspect may appear to be. Height and weight are usually the most inconsistent descriptors of suspects given by witnesses, but unusually tall, short, heavy, and small builds are very distinguishing characteristics. So the establishment of a subfile with people that fit into those categories would be beneficial. Known offenders that have scars, marks, tattoos, amputations, deformities, and gold teeth should be placed in a Unique Physical Characteristics Subfile.

Unique Physical Characteristics Files should be developed for primary use by investigators. The determining factor on the type of information and where it should be disseminated should be predicated upon how much more corroborating information is needed to effectively bring about case closure. As an example, during the commission of an armed robbery of a liquor store, one of the witnesses observes a tattoo of an eagle on the right hand of the perpetrator; another witness notices that the suspect has two fingers amputated on the left hand, and another observes a scar on the chin. Officers respond to the call, take the report, and get the physical description of the suspect(s). The Unique Physical Characteristics File can then be searched and matched to a data base containing known criminals having those physical identifiers. If the file produces a list of possible suspects, investigative leads can then be further developed. After the suspect is tentatively identified, a case still has to be prepared so that it can be prosecuted in court. Crime analysis information from Suspect Correlation Files can be examined to investigate the potential relationships to tie the suspect with other open cases.

During the development of this and the other crime files, input from primary users will give additional ideas that will enhance a department's operations. When the primary users supply the data requirements, the information is more likely to be tailored to a community's unique problem(s).

Data sources for a Known Offender File should be from valid criminal justice agencies within the state. When starting in the development of a Known Offender File the following steps are required:

1. Establish criteria for known offenders being placed in the system.[1]

2. After determining criteria, those subjects meeting the requirements should have their criminal histories pulled and placed in the Crime Analysis Section, the Records Section, and the Identification Section.

3. The information placed in the data base should be verified by reviewing police reports, arrest and booking logs, court disposition logs and rap sheets.

4. All the physical descriptive information available from these sources should be utilized to maximize the Suspect File and to create a substantial data base.

The compiling of a comprehensive data base with physical information, as well as personal criminal histories, will enhance the probability of identifying the perpetrators of offenses through their own personal habits.

SUSPECT VEHICLE FILE

The Suspect Vehicle File is, in effect, a list of vehicles arranged in the following manner:

● Owned by known offenders

● Registered to known offenders

● Used by known offenders and their associates.

This file is particularly helpful in identifying the perpetrator(s) of an offense when there is a vehicle involved and a description of that vehicle is obtained by the investigating officer. This file should be augmented by interfacing it with the State Department of Motor Vehicle Registration Files. Interfacing will enhance capability of identifying the owner of a vehicle with perhaps as little as a partial license plate number, even if the vehicle is not in the file of vehicles associated with known offenders. The development of a Suspect Vehicle File not only provides a listing of vehicles registered and/or owned by known offenders, but also a listing of any parties that may have been linked to the vehicle through various other data sources. This file can be utilized to tentatively identify associates of known offenders when a principal subject has been arrested in connection with an offense and his crime partners have not been apprehended. Often times, relatives and friends of known offenders drive the vehicles while the subjects are incarcerated. Even though the vehicle description used in an offense may match that of the vehicle of a known offender, it is ruled out by investigators simply because the owner is known to be "locked down." During the data base development stage, the primary users should be consulted on the ways and means by which this information will be retrieved.

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[1] For crime analysis purposes, criteria should not be constrained by exterior legal definitions, i.e., prosecutor or state statutes.

For example, the year of a vehicle is not often correctly identified by a victim of a crime who is in a near state of shock, or even by witnesses. For this reason, although the year of the vehicle should be noted in the various files, emphasis should not be placed on attempting to search the file by this data element. The important thing is to design the file so that the investigating officer may search by using several methods of cross correlating a vehicle to a subject. For example, the officer may request all vehicles associated with "John Smith." From that listing the investigator may receive a reply that Smith is the registered owner of a blue Buick and a red Ford. The listing may also indicate that Smith was a passenger in a white Chevrolet that was registered to "John Jones" who was the subject of a field interrogation. The investigator may make an inquiry by asking for a listing of all white Chevrolets which would reveal the information that Jones was the registered owner of one and Smith was a passenger (in addition to any others in the data base). This capability of retrieving information, interfaced with Motor Vehicle Registration, permits the ownership and identity of a suspect to be correlated by using only a partial license plate number. This is especially helpful if the suspect vehicle is not in the data base, but is a car legally registered in the state. Investigators thus possess properly obtained and admissable evidence which assists in the closing of cases in an efficient manner.

Data sources for a Suspect Vehicle File should come from the following reports:

- Offense Reports

- Arrest Reports

- Supplementary Reports

- Field Interrogation Reports

- Traffic Citations.

In the development of a Suspect Vehicle File, the above listed sources should be the primary data sources. In establishing the file, the vehicles should be listed by using the following criteria coupled with the registered owners:

- Vehicle

- Year

- Make

- Model

- Color(s)

- Body Style

- License Number

- State

- Additional Vehicle Identifiers (i.e., scooped hood, chrome wheels).

In the file of listings of vehicles registered to "John Brown" the following information would be received:

- Brown, John A. WMA 01/01/32-1972, Ford, Mustang, Blk/Grn, two DR CPE, SAM 123 CALIF. Chrome wheels, louvered hood-registered owner.

- Brown, John A. WMA 01/01/32-1968, Buick, Skylark, Blue, four DR Sedan, Brown 1, CALIF. Exotic pinstriping--registered owner.

Using other formats, searches may be performed by making inquiries on all subjects stopped and/or detained and arrested in Brown's vehicles:

- Smith, John A. WMA 04/04/34, 1972, Ford Mustang, R/O (registered owner)

- Brown, John A. 01/01/32

    FI - 73rd & E. 14th, 10/10/78

    FI - 69th & E. 14th, 10/12/78

    ARR- 66th & E. 14th, 10/13/78.

- Jones, John WMA 07/04/33, 1972, Ford Mustang, R/O

    Brown, John A 01/01/32

    FI - 73rd & Eastlawn, 09/15/78 (78-0001)

    FI - 54th & E. 14th, 10/01/78 (78-1234)

    ARR- 66th & E. 14th, 10/13/78. (78-2222).

The preceding examples were given to illustrate the various ways in which the Suspect Vehicle File can be utilized. By coding and assigning report numbers to the various incidents, investigators can refer to the origin of the source of information. Using the preceding example, an investigator can tentatively link the suspect Jones to activity in the vicinity of E. 14th during the month of September and October by merely pulling those reports and reviewing the full details with clothing descriptions. (See section on F. I. Files, page 68.) Other source documents vary from department to department, but all should be designed to contain the above mentioned elements for vehicles.

MODUS OPERANDI (M.O.) FILE

The term Modus Operandi (M.O.) is derived from the Latin word meaning method of operation. Through the years, police have noted that some criminals have a tendency to perform criminal acts in their own idiosyncratic manner. These acts take on the characteristics of the individual's behavior patterns, like a trademark, and once developed, rarely vary. Before developing an M.O. File, it is important to make the distinction between M.O. and physical characteristics or appearance. M.O. and physical features are often times confused, and many law enforcement agencies include physical characteristics as part of an M.O. The M.O. should focus upon actions used as opposed to descriptions. These distinctions will be discussed later in this section.

In reviewing crime categories, we can see that by the very nature of a crime, the method of operation is different in each crime category. An armed robber does not commit his crime in the same manner as a rooftop burglar. By the same token, there are universal characteristics in each crime category that make identification of a suspect by M.O. alone, virtually impossible.

In the commission of an armed robbery, there are factors or elements that are so common that unless there is an extremely unique characteristic of the offense, identification of the perpetrator can not be made by using an M.O. without some other form of correlative evidence. In developing an M.O. File, it is strongly suggested that the data base be built using unique and distinguishing characteristics and M.O. traits of all known offenders. It is also suggested that this is done by crime category. By establishing an M.O. File in this manner, M.O. searches may be performed based on the uniqueness and distinguishing characteristics of each offender, rather than the common methods employed by "amateur" or novice offenders.

Human behavior being as it is, provides us with the knowledge that a great number of human beings in this world perform certain things in their daily lives almost out of instinct, especially if they are successful in those endeavors. Social scientists and sociologists might use the term "creatures of habit." If in keeping with this concept we analyze our behavior in the law enforcement community, we will see that we usually employ the methods of enforcing, that through the years have been the most successful. Criminals are no different. They employ methods that they know to be tried and true, and as a result, these methods are as significant as a signature.

In the development of the M.O. File, it is suggested that the file should be separated into the following basic categories:

- Burglaries

    A. Commercial

    B. Residential

- Robberies

- Sex Crimes.

For each category of offenses, the penal statutes usually delineate the elements required for those acts to be crimes, and thus spell out many of the common traits associated with these specific acts. For an example: in the State of California the taking of property from another person by force and/or fear constitutes robbery. (California Penal Code Section 211.)

Also in California, the entering of a building with the intent to commit a grand theft, a petit theft or any felony constitutes the crime of burglary. The point being made is that in the great majority of criminal acts the actions required to commit the crime are inherently a part of the M.O. What is necessary in the establishment of an M.O. File is to extract the idiosyncrasies of each specific crime that is reported. This can best be done by training responding officers to get more detailed information from the victims. Often patrol officers when responding to a crime scene do not interview the victims and witnesses for explicit details. The descriptions are general, as a result a robbery report or any other report may contain almost no data for use in case solution. Since the patrol officer is the initial contact which the victims and witnesses have with the police, it is extremely critical that they obtain as much detailed information on the suspects as possible. This can best be accomplished by designing

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reports for specific data capture in specific crime categories. Generally speaking, a great number of police reports are designed to capture information that gives general physical characteristics. Designing a report that captures general physical characteristics as well as the suspect(s) behavior and actions will aid in the development of a more comprehensive file. An example of the distinction between physical characteristics and M.O. is as follows:

Modus Operandi (M.O.)	Physical Characteristics
Convenience store robbery	Man
Armed, chrome revolver	White
Fires shots upon entering	Tall, muscular
Uses profanity	Wears dark clothing
Physically abusive	Ski Mask
Bills only, no coins	Limps when walking
Uses own canvas sack	

As you can see by the example, M.O. should focus upon the "actions" of the suspect. M.O. is simply how the person committed the act, and with what. It should be mentioned that a physical characteristic can occasionally be part of an M.O.; for example, a suspect uses theatrical makeup during the commission of the crime, then that characteristic is descriptive of him only in connection with the perpetration of that offense.

In viewing the crime analysis system, the Crime Suspect Correlation component is one of seven components and the M.O. File is a subunit of the component. It should be designed as an integral part of the Crime Suspect Correlation component along with the other subunits addressed in this chapter. In essence, the Crime Suspect Correlation component is comprised of a series of "mini" systems, and when all the pertinent data in a crime is searched, matched and correlated and all the information available indicates that a specific individual is likely to be the suspect, then the component serves the purpose for which it was designed and intended. It provides investigative leads and assists investigators in case closures. These subcomponents are tools that complement the human element.

F.I. FILE

Prior to the development of a Field Interrogration File, a consultation with the legal office and/or District Attorney would be advisable to determine the legal ramifications for the establishment, as well as, the maintenance of such a file. The criteria for subjects placed in the Field Interrogation File should be fairly consistent with that for the Known Offender File. Citizens who are driving in town and are stopped for any reason should not arbitrarily be placed in this file. A citizen who can properly identify himself and reasonably satisfy the patrol officer that he is not a criminal should not be placed in this file. This file should be primarily for "tracking" known offenders. Subjects of field interrogrations should be entered on a Daily Field Interrogation Summary Log. The Field Interrogation Summary Log should contain the following data elements:

- Subject's name

- Description

  Sex, Race, Age

- Subject's address

- Time of day

- Location of Stop (including grid designation)

- Type of Environment (industrial, residential, commercial)

- Reason for Stop

- In Company of.

The Field Interrogation Summary Log is another tool that, when designed properly, should provide a comprehensive account of persons stopped and interviewed by patrol officers in the field. This enhances the investigative function by identifying subjects as being in a specific geographical area at a specific time.

The F.I. File should be kept not to exceed six months due to the potential of becoming voluminous, and of becoming a public record. In regard to becoming a public record, field interrogation information kept on file may or may not be in violation of certain rights of privacy since they are records of contacts with field police officers on an involuntary basis. What must be kept in mind is that the purpose of this specific file is to assist investigators in developing leads, not to develop a record of activities of citizens in the community. (Emphasis should be placed on prevention and suppression of crime in areas where patterns are detected by patrol operations being highly visible, and patrol officers active in identifying the known offenders operating in these areas.)

The data source for the Field Interrogation Summary Log should be a field interrogation card that should contain the following data elements:

Date
Time:
Location:
Name:
Sex:
Race:
DOB:
AKA's:
Occupation:
Employer:
Auto: Year, Make, Model, Color, License, State
Driver's License No.:
In company of 1/2/3/4 (make card for each subject)
Type of I.D.:
Reason for Stop:

Address:
Complexion:
Hair:
Eyes:
Height:
Weight:
Scars, Marks, Tattoos:
Facial Hair:

The Field Interrogation File should be kept simple and, if automated, should produce a listing by grid zones, times, and type of area. For example, an investigator requests a printout of all subjects stopped between the hours of 2100-2300 in Section B-9, residential. The printout should list those subjects by name in addition to the data on the Field Interrogration Summary Log. The F.I. File complements the entire Crime Suspect Correlation component.

ALSO KNOWN AS (AKA)/MONIKER FILE

The Also Known As (AKA)/Moniker File is simply a file of names of known offenders who use names other than their legal names. These names may be aliases or they may be legally changed names, "street names," and nicknames. By maintaining such a file, leads may be provided as to the true identity when, during the commission of a crime, a name is used. Even on the street, an offender's true name may not be known by his associates.

On many occasions, investigations have been stymied simply because the true names of such characters as "Arab," "Red Baron," "Bird Legs" and "Convincing Slim" were not known to the police. On the street, every street hustler knows practically everything about these characters with the exception of their true names. They can provide investigators with descriptions, known hangouts, associates, and vehicles driven. It is extremely frustrating to constantly hear these names on the street and not be able to ascertain who the individuals are. When an arrest is made, "Arab" turns out to be someone who was known only by his true name. In cases where a suspect is known by a street name only, officers have generally found that they know the subject and the subject usually has a criminal history. Even though the subject is known by his true name, it does not mean an association is made between this street character and the subject in the Bureau of Identification. It is an extremely difficult task to arrest a person on the basis of a vague description and with a name like "Toe Man" or "Bucket." The hours spent in identifying these subjects can be reduced drastically by developing a file that lists them. Basic criminal investigations are inherently taxing and perplexing enough without adding any other complications. Through the utilization of an AKA/Moniker File, the many hours spent in putting the street name to a "Righteous Moniker" and a mug can be used in other apsects of the investigation.

The Dallas, Texas Police Department's Crime Analysis Unit has a Nickname and Alias Name File. Any nicknames or alias names appearing on any of the reports received by the Crime Analysis Unit are entered into the file using the following filing system:

File 1 - Alias Name File. Alias Names (AKA's) are filed alphabetically with:

- True Name

- Race

- Police Department I.D. Number

- Address

- Date of Arrest

- Age

- Height

- Weight

- D.O.B.

File 2 - Nickname File. Filed alphabetically with:

- True Name

- Race

- Police I.D. Number

- Address

- Date of Arrest

- Age

- Height

- Weight

- D.O.B.

File 3 - Nickname File. Filed alphabetically by nickname contains:

- True Name

- Race

File 4 - Nickname and Alias Name File. Filed alphabetically by alias or nickname, contains:

- True Names

- Race

- Address

- Date of Arrest

- Age

- Height

- Weight

- D.O.B.

File 3 contains information from field sources and intelligence reports. The information is not complete because the people whose names are listed are not arrestees. File 4 contains information on people who have been arrested, but have not been filed on. When and if they are filed on, the Identification Section assigns them an I.D. number. The I.D. number is recorded on the index card in File 4, and the card is moved to File 1 or File 2.

By developing an AKA/Moniker File in this manner, investigators and patrol officers can identify subjects brought to their attention in several different ways. This provides officers with a means of searching for suspects, when all they have is a street name and a vague description. By having the capability to perform a name search and be provided with lists of names and photographs as well as other information, officers can move more rapidly in bringing about apprehensions and case closures, in a less time consuming way.

ARREST AND CORRECTION FILE

A file that has had a great deal of success, particularly in the New Orleans Police Department, is the Arrest and Correction File. This file is a listing of subjects released from the Louisiana State Penal System. The names of those releasee's are received by the Crime Analysis Unit on a daily basis. The information received is logged, posted, and disseminated to district commanders, specialized units and a crime specific task force. Every two weeks the prison released information is collated by crime categories and disseminated by those crime types. Listings are released of all burglars and armed robbers. On a quarterly basis, information regarding the zones in which the releasee's reside and zones in which they have been known to have committed offenses are disseminated. When a discernible pattern is detected in any particular district in the city, suspect forms are sent out to both the district in which the pattern is detected, and the Investigative Unit charged with the responsibility of those specific crimes, to identify suspects. In addition to the State Penal Release Information, the New Orleans' Crime Analysis Unit receives a "Daily Roll Out Sheet," or a listing of prisoners released from sentences served in the county jail system. Another listing the Crime Analysis Unit receives is in the form of a "Bond Roll Out Sheet" which is received from the courts and disseminated primarily for the purpose of advising officers in various districts and investigators that subjects previously arrested are either out on bail or released on their own recognizance. This particular listing has been beneficial in cases where M.O.'s were detected and suspects that frequently used those M.O.'s were thought to have been in custody. By being able to check the "Bond Roll Out Sheets" and make M.O. comparisons, officers have been able to link suspects to additional offenses.

Quarterly reports on prison releases by crime categories are also prepared by the Crime Analysis Unit and listings are produced which reflect the names and other significant data on specific types of offenders. As an example, one listing will be for all armed robbers released during the first quarter of 1978.

The listings of county jail and state prison roll outs contain the following information:

- Name

- Race

- Sex

- D.O.B.

- Charge

- Bureau of Identification Number

- Release Date

- Release Conditions (parole, probation, modified sentence, good time)

- District of criminal operations

- Institute released from

- Address released to.

The release roll out sheets have proven useful in identifying suspects of various offenses. When there have been increases in specific crime types, they have used their Known Offender File coupled with the Roll Out Listings to correlate and actually link suspects to those crimes.

The arrest component of the Arrest and Correction File should be a combination of information from the three major Criminal Justice System components:

- Law enforcement

- Prosecution

- Courts.

In most jurisdictions throughout the country, there is a certain degree of fragmentation in the Criminal Justice System due to ineffective communication among those three components. For example, once a suspect has been booked and arraigned, the arresting agency often has difficulty in tracking the status of a particular case. Often, when cases are being adjudicated by the prosecutor's office and/or by the courts without the arresting agency's investigating officers or liaison being present, then there is no communication at all. What is needed in jurisdictions where this type of problem exists is a format that provides for the flow of information to the three major criminal justice components in a timely manner.

In addition to the Arrest/Correction File being useful for tactical operations, there are a number of administrative applications which may be used to make evaluations of the proficiency and effectiveness of personnel assigned to various cases. By having the mechanism to make random status checks, administrators can evaluate the progress of specific cases at any given point in the proceeding. When and if there is an abnormally large number of cases being rejected for prosecution, or if those cases are being dismissed by the court, this mechanism will provide the administrators with vital information about the specific reasons for those actions. The California State Department of Justice has such a mechanism. A report, which accompanies the defendant through the judicial processes, is prepared in quadruplicate. The distribution of the copies are:

- Two copies to the California State Department of Justice, Bureau of Identification

- One copy retained by the arresting agency

- One copy retained by the court of final jurisdiction.

For integration into a Crime Analysis System, a report form similar to the California JUS 8715 (see Figure 2-4, p. 75) should be developed for the purpose of data capture. The form is subdivided into three sections:

A. Law Enforcement Information

B. Prosecution

C. Court Information.

LAW ENFORCEMENT INFORMATION

The arresting law enforcement agency shall be responsible for capturing the following data elements:

- Arresting/Booking Agency   - Height

- Booking Number   - Weight

- Place of Birth   - Date of Birth

- Arrestee's Name   - Arrest Date

- Sex   - Warrant Number (if applicable)

- Race   - Type Warrant - (F) Felony, (M) Misdemeanor

- Arrest Charges   - FBI Number

- Reason for Release (if applicable)

- Release Date (if applicable)

- CII Number (California only)

- SS Number

PROSECUTION

The District Attorney or Prosecutor's Office shall be responsible for completion of prosecution data. When rejecting or referring any charge, an appropriate code should be used to state the reason(s):

4666167   DISPOSITION OF ARREST AND COURT ACTION

A. LAW ENFORCEMENT INFORMATION
ARRESTING/BOOKING AGENCY

REASON FOR RELEASE	RELEASE DATE	I.D. NUMBERS
○ 849B (3) PC		CII NO.

○ 849B (1) PC

BOOKING NO.	LOCAL NO. (OCA)	POB	If 849B (1) PC, please check one of the following:	FBI NO.

○ COMPL. REFUSES TO PROS.   ○ ADMISS. EVID. INSUFF.

NAME (LAST, FIRST, MIDDLE)

○ ARRESTEE EXON.   ○ ASCERT. EVID. INSUFF. | S.S. NO.

○ FURTHER INVEST.

SEX	DESCENT	HGT	WGT	EYES	HAIR	DATE OF BIRTH	○ RELEASED TO OTHER AGENCY _____	D.L. NO.

○ OTHER _____

ARREST DATE	WARRANT NO.	CHARGE 1 (SEC., CODE)	TYPE F M	CHARGE 2 (SEC., CODE)	TYPE F M

CHARGE 3 (SEC., CODE)	TYPE F M	CHARGE 4 (SEC., CODE)	TYPE F M	REMARKS:

B. PROSECUTION
DATE

○ 849.5 PC

	REASON FOR REJECTION			
	CHARGE 1	CHARGE 2	CHARGE 3	CHARGE 4

C. COURT INFORMATION

DATE FILED	FILE NO.	CONSOLIDATED FILE NO.	JUD. DIST. NO.
			S.C. JUD. DIST. NO.

TYPE OF FILING: ○ INFORMATION   ○ CERTIFICATION   ○ INDICTMENT

TYPE FILING		FIRST PLEA	FINAL PLEA	DISPOSITION								DATE	TYPE DISPO		CHARGES AT DISPOSITION		
F	M	NG	NG-1	G	NOLO	ACQ	DIS	CRT JUV	HTA	CRT SC	CONV		F	M	SECTION AND CODE	DEG	PRIOR
1.																	
2.																	
3.																	
4.																	

DATE OF SENTENCE	TRUE NAME	TYPE OF TRIAL: ○ JURY ○ COURT ○ TRANSCRIPT

○ FINDING/VERDICT OF NOT GUILTY-INSANE

SENTENCE	CHARGE 1	SUS	CHARGE 2	SUS	CHARGE 3	SUS	CHARGE 4	SUS
CYA								
JAIL								
FINE								
RESTITUTION								
OTHER								
PROBATION	17 PC		17 PC		17 PC		17 PC	
PRISON	SUS							
NOTES:								

REMARKS:

D. PROCEEDINGS SUSPENDED	DATE	○ BW ○ APPEAL ○ 1000 PC	○ CRC 3050 WIC ○ CRC 3051 WIC ○ NON-STAT DIVERSION	○ 1203.03 PC ○ MISTRIAL ○ OTHER	○ 1370 PC ○ 1026 PC ○ MDSO	○ ST. HOSP. ○ CO. MENTAL
E. REOPEN OR RETRIAL AFTER	DATE	○ BW ○ APPEAL ○ 1000 PC	○ CRC ○ 1170 PC ○ NON-STAT DIVERSION	○ 1203.03 PC ○ MISTRIAL ○ HUNG JURY	○ 1370 PC ○ 1026 PC ○ MDSO	○ CYA ○ JUV CRT ○ LOWER CRT ○ OTHER
F. SUBSEQUENT ACTION	DATE	PROBATION		○ VIOLATED ○ 1203.9 PC	○ REVOKED ○ 1203.3 PC	○ REINSTATED ○ EXPIRED
				MODIFIED TO:____MOS.____DS JAIL_____FINE		
	DATE	CONVICTION SET ASIDE/REDUCED/DISMISSED		○ 1203.4 PC ○ 3200 WIC	○ 1203.4a PC ○ REDUCED 17 PC	○ 1772 WIC ○ OTHER
	DATE	RECORD SEALED		○ 851.7 PC ○ 389 WIC	○ 851.8 PC ○ 781 WIC	○ 1203.45 PC ○ OTHER

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Figure 2-4

Code	Reason
1	Lack of corpus delecti
2	Lack of probable cause (includes lack of evidence)
3	Inadmissible search and seizure
4	Victim(s) unavailable/declines to prosecute
5	Witness(es) unavailable
6	Combined with other counts
7	Interest of justice
8	Referred to City Attorney
9	Referred to District Attorney
10	Prosecutor deferral program
11	Referred to juvenile court
12	Other (state reasons in "Remarks" section).

COURT INFORMATION

The court shall be responsible for completing the sections designated court information, and when a case is dismissed an appropriate code should be entered to indicate the reason for the dismissal:

Code	Reason
a.	Dismissal in furtherance of justice
b.	Case compromised/restitution or satisfaction made
c.	Court found insufficient cause
d.	Delay - action not brought to trial within time
e.	Accusation set aside
f.	Defective accusation
g.	Defendant became witness for the people (Prosecution's witness)
h.	Insufficient evidence - witness for codefendant
i.	Judgment arrested - defendant discharged
j.	Judgment arrested - defendant recommitted
k.	Mistrial - defendant discharged
l.	Mistrial - defendant recommitted
m.	Any dismissal other than for "a. through l."

By developing the arrest element of the Arrest/Correction File in this manner, several positive actions occur:

1.   A more cohesive relationship with other criminal justice components is formed.

2.   Case "tracking" becomes more systematic.

3.   Law enforcement administrators have a barometer for evaluating the quality of investigations.

As discussed in previous sections of the Crime Suspect Correlations chapter, user input should be instrumental in the design and development of the reports used for data capture and the formats used to disseminate the data. The various files discussed in this chapter should be used as models to establish the basic fundamental function of

Crime Suspect Correlations. By using this as a model, additions may be made to enhance specific aspects in combatting unique problems germane to certain communities. Integration of the crime files, so that they may be accessed by any number of parameters, should be of main concern when contemplating automation. These files should complement each other through cross indexing.

CHAPTER III

TARGET PROFILES

Target Profiles is the in-depth analysis of victimized persons and/or premises by specific geographic areas. Victim data is correlated with demographic information to assess the apparent uniqueness of crime targets. The primary purpose of this function is to provide this information for focusing tactical responses as well as crime prevention strategies in a given area.

Target Profiles have different meanings to different law enforcement agencies. The administrative and strategic applications of this function will be addressed in this chapter. In some law enforcement agencies, Target Profiles are composed of listings of the types of targets/victims. Included in those listings are:

- Day of Week

- Time of Day

- Type of Target

- Object of Attack.

Many law enforcement agencies develop tactical strategies to combat specific crime problems by utilizing Target Profiles and detailed suspect information. The only problem being, Target Profiles are merely a matter of semantics and terminology. (For law enforcement agencies that take an in-depth look at specific victims/targets for tactical deployment, it would be beneficial to review the chapters on Crime Pattern Detection and Forecast Crime Potentials.)

Since there are numerous interpretations of Target Profiles, for the purpose of this document the function will be defined as the description of attributes of crime incidents - victimized persons, premises, offenders, geographic areas, and M.O. information.

Prince George's County, Maryland Police Department uses specific victim and crime data to determine areas of high crime, prime time and prime day for utilizing various strategies designed to reduce specific crimes. For example, the Robbery Squad and Special Operations Division gathered information that was useful for victim profile development. After obtaining an in-depth profile of robbery victims, the members of those units set up decoys based on that information.

Victim/target information may be utilized to deploy men in a tactical response to armed robberies.[1] Target Profiles is the label attached to those activities that result in tactical deployment. (For further information on data related to the victim/target

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[1] New Orleans Police Department

for tactical deployment purposes, see the chapters on Crime Pattern Detection and Forecast Crime Potentials.)

Target Profiles will be addressed as a function that is performed on a day-to-day basis. It is not expected, however, that unique victim patterns will necessarily occur with that level of frequency. We would expect that, as has been found in previous studies of victimology, a generalized pattern would emerge indicating that specific life styles, activities, and victim actions can be shown to invite criminal attack in crimes against persons. This information should feedback into crime pattern analysis to further sharpen the decisions regarding strategies and/or tactics to combat the crimes involved.

In crimes against property, it has been suspected that individual locations (i.e., dwellings, businesses) vary widely in their likelihood of criminal attack, with a high probability that those with high potential share common attributes, and those with low potential exhibit common differences from those attributes. As with crimes against persons, identification and documentation of those physical differences can be fed back into pattern analysis and crime suspect correlations to enhance decisions made as to tactical and strategic responses.

At this point it should be admitted that this is an experimental concept not currently in significant use. Those efforts at victim profiling now in place tend to aim more at crime causation and community programs impacting those causes. While these are legitimate and necessary uses of this information, we suggest here that they are not the only productive use.

Obtaining useful information for this purpose will require changes in field reporting practices in most agencies, and will initially require some experimentation to identify those data elements most significant to this purpose. At a minimum it will be necessary to gather information, in crimes against persons, about the victim's age, mode of dress/general appearance, and generalized activities immediately preceding the crime. Where such information shows that females over 65 who are well-dressed, appear alert and stick to lighted streets with a high level of human activity are three times less likely to be victims of a purse snatch as those of the same age who appear confused and choose less active routes of travel, that information would surely evoke a different tactical response than simply that most of the victims are over 65.

In crimes against property, the documentation that residential burglary targets are 92% mid-block, face on an alley and have glass panels in rear doors (the point of attack) would focus both tactical and crime prevention efforts on residences displaying those attributes.

In addition to the tactical and strategic applications of this function, the department is armed with a data base to influence other community efforts.

The Dayton, Ohio Police Department heavily emphasizes the use of crime analysis as a management tool for non-tactical types of projects. Dayton's crime analysis team provides data for such projects as:

- Analyzed crime information for official city groups

- Convenience food store legislation

- Match street lighting priorities to projected high crime areas

- Evaluation of city criminal justice projects

- Identification of houses and businesses in trouble

- Children's crime prevention

- Burglar alarm legislation

- Crime prevention.

These are only a few of the projects in which the Dayton crime analysis team is involved. They are listed here to illustrate another philosophical approach to law enforcement. They are actually involved in, and a part of, the city's planning process. Although the National Advisory Commission did not mandate the law enforcement community to become involved with social programs, inferences may be drawn that by law enforcement partici- pating in "proactive" or crime prevention programs the best interest of the community may be served.

In performing an analysis of the communities served, the following demographic informa- tion should be considered:

- Population/area

- Ethnicity

- Economy

- Housing units

- Age of residents.

Since one of the major objectives of law enforcement is to prevent crime, this specific function also addresses that objective. By attempting to alleviate, remedy or eliminate entirely the cause of crime, this objective will be fulfilled.

One objective of this function is to integrate specific crime information with detailed demographic information to assist the appropriate agencies in the development of programs that will reduce the causation of crime. By being in this posture, the police can advise and coordinate the efforts of the various agencies in the development of their programs. This serves several purposes:

(1) Eliminates misconceptions and misinterpretations of the data. This is effective for when the data is to be presented to city as well as other governmental agency administrators for future planning.

(2) Provides for the police department to be involved in the city's decision-making process.

(3) Allows the police department to refer certain problems to appropriate agencies that, traditionally, citizens have called police to resolve.

(4) Allows the police to develop community oriented programs that will improve their image.

Traditionally, high evaluations of police performance by citizens have been associated with:

- Low crime rates

- High arrest rates

- Citizen perception of equity in enforcement.

Today, an emphasis on crime prevention and community service is the approach taken by many departments. The crime prevention community service dimension of police work has often been associated with the "social work" concept of the police role, not "real" police work. Through the Target Profiles function of crime analysis, a greater emphasis can be placed on community service as a legitimate goal of police organizations. Changing the emphasis, in many cases, will reflect the reality of community expectations and of what the police are actually doing most of the time. By increasing the "supportive services" aspect, law enforcement agencies can attain the same high level of evaluation commonly associated with:

- Low crime rates

- High arrest rates.

By advocating a more positive approach to customary non-enforcement or semi-enforcement services, such as the development of routine large scale services of a helping nature, and the development of a more generalized public safety or protection service, which are at the same time highly visible, the police then serve as a kind of ombudsman.

By taking an assertive or "proactive" stance in the community's problems, many factors which have the potential to become police problems can be referred to the appropriate agency. Although many factors leading to crime are beyond the control of the police, preventive policing must be based on those which the police can predict and influence. Field situations, when analyzed as to casual relationships from which origins of activity are located, can provide the information base for preventive policing and program development. The ability of the police to control physical and psychological environments can result in the reduction of predicted acts.

By placing an emphasis on community services, it is necessary to do an in-depth analysis of the environment, so that appropriate programs may be designed. Since the majority of factors deal with the human element, Target Profiles should provide human behavioral descriptions and classification of crimes, which will be more useful to the police than legal definitions.

The St. Petersburg, Florida Police Department produced a four year study of crime and the elderly in that city. In the report, the Crime Analysis Unit staff examined the incidence of personal crime, property crimes, and those offenses with qualities of each. In the document, one segment (PT1) covered correlated data accumulated over a four year period. A comprehensive review of crimes perpetrated against the elderly and by the elderly from 1974-1977 was discussed by category. Section "A" covered victimization, while "B" related suspect information.

Numerical tables provide an overview of total crime occurrence by type and the percentage representation of victims 60 years of age and older. A review of the four years studied and the pattern of change from year to year was also presented. A victim/suspect typology was included to depict the sex/race relationship between the two groups. The report also offered data on the type of person who preyed upon the elderly, as well as the high percentage who flee the scene of the crime completely unnoticed. Crime figures, by month of occurrence, are incorporated in the report to note any presence of seasonal variation. Part II of the St. Petersburg report followed the same organization as Part I, but used the data from the year 1977.

In developing a "Profile of Targets," St. Petersburg has identified the elderly as a "target" in that community. In compliance with the "social involvement" concept, the St. Petersburg Police Department has expressed a deep concern for the safety of its elderly populace and the protection of their property. The data compiled in their report is used to assist in planning by providing information for program development. Numerous programs are aimed at the needs of this group in St. Petersburg through a coordinated effort with agencies such as:

- The Office on Aging

- American Association of Retired Persons

- Office of Crime Prevention

- Project Concern.

The quality of life for this group has improved.

In addition to the Report on Crime and the Elderly, St. Petersburg produces a "Target Profile" of:

- Residential burglaries by neighborhood

- Crime and the apartment dweller

- Crime and mobile homes.

These reports are compiled annually and are disseminated to agencies that have the responsibility for developing and implementing programs that affect the "targets."

Although a great portion of the data reflects sociological trends, this function is not intended to place law enforcement in the sociology field, but what it does is enlighten law enforcement administrators as to what is current in behavioral attitudes due to specific external demographic factors. By having this information available, law enforcement administrators will be capable of responding to the citizens they serve in a manner that decreases a presumption that:

- There is a "crime wave"

- The police are negligent in controlling and reducing crime.

By being armed with the appropriate data and analysis, a police chief could respond to emotional or potentially emotional issues by presenting information which clearly supports a rational, objective position. A feature of this type of analysis is that it provides a detailed explanation of crimes and relationships between victims and offenders as well as where the crimes occurred.

Data sources for this particular function should come from:

- Offense Reports

- Census Bureau.

Information that would be useful in the compilation of such reports can be taken from Offense Reports that are designed for element data capture in which consistent information is provided. By using a report form that requires the officer to choose the specific crime elements, data descriptions become more consistent. Census Bureau information can provide the data on the demographics.

The San Jose, California Police Department organizes each profile by section and correlations are made by crime type. (See pages 85 - 87 for examples of the San Jose technique.)

This specific type of report is limited only by the imagination of the administrator who requests the data provided. This report should be disseminated to:

- Chiefs of Police

- Police Managers

- Elected and Appointed Officials

- Community Service Agencies.

The contents should pertain to potential sources of crime problems, or existing programs germane to specific geographical areas within the various communities. This type of report should be generated and disseminated at least semi-annually, and if the need exists, then it should be on an as needed basis.

SAN JOSE TECHNIQUES

The following District and Beat profiles represent a compilation of demographic data from the 1975 Special Census conducted in Santa Clara County and offenses reported to the San Jose Police Department in 1975. Since police geographic areas do not conform to census tract boundaries, this is the first time that demographic data has been summarized at the beat level.

The purpose of the report is to offer a quick overview of selected estimates of population characteristics as well as crime statistics for each area. It is hoped that the information will be useful to police administrators, planners and researchers as well as to police officers assigned to specific areas.

To facilitate comparisons among Districts or Beats, each measure is ranked, with rank 1 indicating the District or Beat with the highest value. For non-criminal data, ranks are based on the percentage column unless the percentage was not applicable and therefore not computed, as in the case of population density and median income; in those cases, the rank was based on the actual numbers. For crime data, all information was ranked both for actual numbers and for rates per 1000 population.

Each profile is organized in sections as follows:

- Population and area

- Ethnic composition of the population

- Economic indicators

- Housing descriptors

- Sex and age of residents

- Crime statistics.

Population characteristics were aggregated from census tracts into beats. Pockets of unincorporated county-jurisdiction areas were included in the population compilations in order to present a comprehensive picture of the area. When a census tract overlapped two or more beats, the data for the census tract was prorated among the various beats on the basis of estimates of populated area. The estimation procedure, while rough, was the only one available and is not expected to have introduced significant errors in the final estimates since the prorated figures were usually only a small part of the beat.

All terms in the profiles are self-explanatory with the possible exception of the following:

Pop. density/square miles: Total population divided by square miles

Unemployed: Number of persons aged 14 and older classified as unemployed

Median Income: 50% of households had less than this income while 50% of households had more than this income.

The entry in the percentage column for all items under Population/Area and for total units under Housing Units refers to percentage of the City total. All other percentages refer to percentages of the Beat or of the District.

POPULATION/AREA	#	%	Rank	AGE	#	%	Rank
City Population[1]	82338	16.0	3	Male Under 10	9261	10.3	3
Total Population[2]	92161	15.3	4	10-14	4778	5.3	4
Total Household Pop.	90232	15.0	4	15-19	3850	4.3	4
Square Miles	32.29	19.4	2	20-24	3399	3.8	4
Pop. Density/Sq.Mi.	2854	NA	4	25-39	12025	13.4	2
				40-59	7812	8.7	4
ETHNICITY				60 or over	3075	3.4	3
				Unknown	435	NA	NA
White	52265	59.3	5	Female under 10	9060	10.1	3
Mexican/Spanish	21019	23.9	3	10-14	4655	5.2	4
Oriental	5736	6.5	1	15-19	3893	4.3	5
Black	4380	5.0	2	20-24	4138	4.6	4
Other	4677	5.3	1	25-39	11904	13.3	2
Unknown	2094	NA	NA	40-59	7478	8.3	4
				60 or over	4378	4.9	3
ECONOMY				Unknown	519	NA	NA
Unemployed	4362	6.2	5	Total under 10	18321	20.4	3
Median Income	14801	NA	4	10-14	9433	10.5	4
				15-19	7743	8.6	5
HOUSING UNITS				20-24	7537	8.4	4
				25-39	23929	26.7	2
Total Units	30705	14.8	4	40-59	15290	17.0	4
Renters	9712	31.6	4	60 or over	7453	8.3	3
Vacant	1709	5.6	4	Unknown	954	NA	NA
Structure: Single	20573	68.0	4				
2-4 Units	2985	9.9	4				
5 or more	4736	15.6	4				
Mobilehomes	1976	6.5	2				
Unknown	365	NA	NA				

TYPE OF CRIME	#	Rank	Rate per 1000 Pop.	Rank	Boundaries
Homicide	14	1	.17	1	N: Trimble Rd., No. City Limits
Rape	54	1	.66	2	
Armed Robbery	133	1.	1.61	3	S: Santa Clara, Alum Rock
Strong-arm Robbery	45	3	.55	4	
Aggravated Assault	267	2	3.24	4	E: City Limits
Burglary	2501	1	30.37	4	
Auto Theft	653	2	7.93	4	
Total	3667	1	44.54	4	
Total Reported Crimes	10882	1	132.16	4	

[1] City population refers to population in San Jose jurisdiction.

[2] Total population includes unincorporated county pockets. All information is based on total population except for crime rates.

POPULATION/AREA	#	%	Rank	AGE	#	%	RANK
City Population[1]	21604	4.1	5	Male Under 10	2645	12.3	7
Total Population[2]	21996	3.6	7	10-14	1447	6.8	8
Total Household Pop.	21983	3.7	7	15-19	915	4.3	24
Square Miles	6.34	3.8	6	20-24	471	2.2	40
Pop. Density/Sq.Mi.	3469	NA	34	25-39	3296	15.4	6
				40-59	1714	8.0	30
ETHNICITY				60 or over	208	1.0	43
				Unknown	192	NA	2
White	16232	75.6	20				
Mexican/Spanish	2136	9.9	27	Female under 10	2514	11.7	9
Oriental	1270	5.9	6	10-14	1398	6.5	8
Black	1091	5.1	11	15-19	962	4.5	21
Other	746	3.5	18	20-24	692	3.2	35
Unknown	508	NA	23	25-39	3526	16.5	4
				40-59	1390	6.5	36
ECONOMY				60 or over	241	1.1	41
				Unknown	196	NA	2
Unemployed	721	5.1	26				
Median Income	17231	NA	6	Total under 10	5159	24.1	9
				10-14	2845	13.3	8
HOUSING UNITS				15-19	1877	8.8	23
				20-24	1163	5.4	38
Total Units	6206	3.0	12	25-39	6822	31.9	4
Renters	738	11.9	38	40-59	3104	14.5	32
Vacant	214	3.4	39	60 or over	449	2.1	43
				Unknown	388	NA	2
Structure: Single	5284	86.4	9				
2-4 Units	391	6.4	29				
5 or more	435	7.1	33				
Mobilehomes	7	.1	19				
Unknown	89	NA	13				

TYPE OF CRIME	#	Rank	Rate per 1000 Pop.	Rank	Boundaries
Homicide	3	2	.14	13	N: North City Limits
Rape	7	13	.32	29	
Armed Robbery	16	18	.74	30	E: East City Limits
Strong-arm Robbery	4	25	.19	33	
Aggravated Assault	51	5	2.36	21	S: Penitencia Creek Road
Burglary	549	2	25.41	26	
Auto Theft	65	29	3.01	34	W: Morrill Ave., &
Total	695	7	32.17	28	Berryessa Road
Total Reported Crimes	2144	2	99.24	27	

[1] City population refers to population in San Jose jurisdiction.

[2] Total population includes unincorporated county pockets. All information is based on total population except for crime rates.

CHAPTER IV

FORECAST CRIME POTENTIALS

The ability to predict the exact time and location of future crime events is one of the most desired crime analysis capabilities. The majority of the police administrators surveyed for this project named the prediction of crime potentials for specific targets as the ultimate goal of crime analysis. The current achievement of such predictions with any degree of accuracy, however, is often thought to be virtually impossible. Yet, many police departments engage in specific target forecasting with some success. The discrepancy in opinion about the present feasibility of this kind of forecast is due, in large part, to differing views of what such forecasts should constitute and when they may be applied.

The following guidelines from the Portsmouth, Virginia Police Department are helpful in defining the parameters for this function:

> Once a reasonably clear cut crime pattern has been defined the analyst may be able to define parameters of time and area for the next incident. In only a very small percentage of incidents will the perpetrator's pattern be so rigidly defined as to permit pinpointing exactly the time and location of the next incidents. The accuracy of forecasting depends on the quantity and consistency of information available to the pattern analysis. Forecasting cannot occur unless preceded by ongoing crime pattern analysis. It is an inferential step that proceeds from pattern analysis.[1]

From the above test, the primary characteristics of crime potential forecasting are therefore:

(1) A crime pattern must be identified.

(2) There must be sufficient quantity and consistency to the information about the crimes in the pattern.

(3) Seldom will the available information be specific enough to define the exact times and locations of future incidents in the pattern.

Thus, crime potential forecasts should result from daily crime pattern detection activities. Not every pattern identified, however, will yield the consistency of information required for crime potential forecasting. Even rarer still will be the kind of pattern whose characteristics are rigid enough to allow individual targets to be accurately forecast. There will be, nonetheless, patterns for which specific areal and temporal forecasts can be successfully developed. Such patterns will vary in their degree of consistency, thereby causing associated degrees of specificity in any corresponding

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[1] From correspondence on definitions of crime analysis functions, Chief E. Ronald Boone to IACP, June 8, 1978.

forecasts that may be derived. Thus, some crime potential forecasts will apply to individual locations and specific times while others will pertain to target types (e.g., a patrol beat or zone) and time ranges (e.g., 9:00 p.m., to 2:00 a.m., on weekends). This chapter will discuss techniques applicable to both very specific and more general crime potential forecasts.

The primary objective of crime potential forecasts is to stop the occurrence of identified crime patterns by determining where and when the next incidents in the patterns will occur. In establishing such forecasts, appropriate manpower can be deployed to counteract and hopefully halt the commission of further related incidents. Stakeout squads at specific target sites (e.g., in previously robbed drive-in grocery stores) or the tactical saturation of a high residence-burglary neighborhood are examples of such deployments. The specificity of the forecast (i.e., the nature and size of the potential target area) will often determine the kind of deployment employed.

Since the primary purpose of forecasting crime potentials is to deploy tactical forces to small areas during specific time periods (even to individual locations), purely statistical forecasting techniques are of limited value. This is due to the fact that the accuracy of statistical forecasting techniques is often related to the volume of occurrence of the incidents being forecasted. The crime occurrence levels in small areas or at individual locations is rarely large enough to support such forecasting techniques.

An "Incident Prediction Model for Police Placement"[2] used in Portland, Oregon, is based on a combination of probablistic (statistical) and deterministic (causal) approaches. In fact, most police departments that do forecast crime potentials utilize composite approaches. By obtaining the best possible information about current crime conditions (through crime pattern detection), and assuming that current problems will persist into the near future, influenced by historical perspective and the practical judgment of the crime analyst, many departments have been successful in deploying tactical forces to locations expected to incur crime incidents.[3]

Such forecasting approaches are, therefore, a combination of naive (historical) forecasting and persistence forecasting with a strong element of human judgment involved. The following example illustrates the general technique:

> Each Fall, Dallas experiences problems with convenience store robberies in the city. Through crime analysis (in this case through the DS/3 Data Management System - see Chapter I), a list of drive-in grocery stores in the city that had been recently robbed was obtained (Figure 4-1, page 91). The listing was sorted by location to group multiple robbery sites together. The listing also contains information on time, day of week, suspects, vehicles, etc. By utilizing the information on the printout, the grocery store on Ferguson Road in Beat 225 could be selected as a possible sit-in site to prevent further robberies. That particular site had been robbed four times in approximately six weeks. Three of the robberies occurred on weekends during the late afternoon to early evening hours.

[2]"Incident Prediction Model for Police Placement." James B. Richardson and Raymond K. Stout. The Police Chief. April, 1975.

[3]See, for instance, the technique used by the Miami, Florida Police Department. Prescriptive Package: Improving Patrol Productivity, Volume II, Specialized Patrol. National Institute of Law Enforcement and Criminal Justice, LEAA. U.S. Department of Justice , 1977, pp. 72-73.

BUSINESS ROBBERY SUMMARY
BY TYPE OF BUSINESS
SEPTEMBER 1978 TO DATE

BEAT	BLOCK NO	O I R	STREET	COMPLAINANT	DATE	TIME	TYPE PREMISES	SUSP VICT REL	WEAPON	R A C	S E X	HGT	AGE	WGT	MAKE	MOD	STYLE	COLORS	LICNO	S T	SERVICE NUMBER
146	0212		ABRAMSRD	*7-ELEVEN #	9/29	350	DRIVE-IN G		HANDGUN						OLDS	CUT	4DR	GRE/***		S	389276J
										L	M	510	20	150				***/***			
										L	M	508	20	170				***/***			
	0212		GREENVILLE	*STOP N GO	9/17	312			HANDGUN	W	M	507	20	155				***/***		C	371883J
										W	M	509	21	165				***/***			
	0530		ROSSAVE	*SOUTHLAND	9/17	646			KNIFE	N	M	510	20	140				***/***		S	372006J
211	0410		SKILLMANST	*7-11 STORE	9/17	325			HANDGUN	W	M	510	21	165				***/***		C	371943J
										W	M	0	21	0				***/***			
214	0723		GASTONAVE	*7-11 STORE	9/17	350			HANDGUN	W	M	506	22	150				***/***		C	371924J
										W	M	507	20	150				***/***			
223	0282	N BUCKNER BL		*SEVEN ELEV	10/13	500			OTHER	W	M	0		0				***/***		S	410490J
										W	M	0		0				***/***			
225	0291		CENTERVILL	*7-11 STORE	10/13	20			HANDGUN	W	M	506	16	130				***/***		S	410305J
	1174		FERGUSONRD	*MR N FOUR	10/31	1615			HANDGUN	W	M	510	25	130				***/***		S	437511J
				*MR N STORE	11/11	1953			HANDGUN											O	454429J
				*MR. N-STOR	11/12	2215			HANDGUN											O	456214J
	1174			*MR N STORE	9/04	1640			HANDGUN	W	M	505	15	130				***/***		S	352568J
										W	M	505		130				***/***			
231	1360		PRESTON RD	*7-11 #1221	9/22	140			HANDGUN									BLU/BLU	272	S	372257J
										N	M	601	27	215				***/***			
234	1322		MAHAM RD	*7-11 #1652	10/11	2345			HANDGUN						DATS		4DR	WHI/WHI		C	408791J
										W	M	600	18	175				***/***			
										W	N	600	18	175				***/***			
										W	M	509		175				***/***			
	1322		MAHAMRD	*SEVEN ELEV	10/01	700			HANDGUN	N	M	602	25	165				***/***		S	392841J
236	1564		COIT RD	*SOUTHLAND	10/19	230			HANDGUN						DATS		2DR	WHI/***	NZG407	C	418989J
										W	M	510	18	170				***/***			
										W	M	600	20	145				***/***			
242	PRES		ROYAL	*SOUTHLAND	10/15	330			HANDGUN	W	M	601	20	150				***/***		C	413865J
										W	M	508	20	145				***/***			
246	0573		ABRAMS RD	*MR N	11/05	1100			HANDGUN	W	M	510	20	155				***/***		S	445204J
										W	M	507	20	130				***/***			
251	0900		GARLANDRD	*STOP AND G	10/10	310			HANDGUN	W	M	506	20	125				***/***		S	406289J
253	0652		SKILLMANST	*7-11 #1211	10/28	340			HANDGUN	W	M	508	22	150				***/***		S	432484J
255	1290		JUPITERRD	*MR N STORE	11/03	1205			HANDGUN	W	M	601	25	160				***/***		O	441597J
326	0960		BRUTONRD	*FOWLERS GR	9/03	1845			SHOTGUN	W	M	510	25	175				***/***		S	351121J
										W	M	509		145				***/***			
335	0492		BONNIEVIEW	*GOLD STAR	9/18	2020			HANDGUN	N	M	0		0				***/***		C	374185J
356	0693	S LOOP 12		*7-11	11/11	145			HANDGUN											O	453214J
358	0020		BELTLINERD	*U TOTE EM	9/21	2300			HANDGUN	W	M	408	16	130				***/***		S	378516J
										W	M	0		0				***/***			
411	0064	E	COLORADO B	*STOP AND G	9/22	2055			HANDGUN	N	M	508	25	155				***/***		S	379793J
		E		*STOP & GO	10/13	520			HANDGUN						PONT			WHI/GRE		S	405033J
										N	M	509	21	140				***/***			
										N	M	601	40	240				***/***			
	0030	N	MARSALIS A	*SEVEN ELEV	11/06	2335			SHOTGUN											C	447660J
413	0025	S	MARSALIS A	*7-11 #11	9/26	53			HANDGUN	N	M	508	17	140				***/***		S	385004J
										N	M	511	17	140				***/***			
										N	M	511	17	150				***/***			

Figure 4-1

In the above example, it was assumed that the current crime problem would persist into the near future (the coming weekend) and that convenience store markets would continue to be the targets as they had in the recent past. Human judgment was used in selecting the best possible target sites. Decision factors included a mixture of probablistic and deterministic elements (e.g., number of times previously robbed, time of day, day of week, number of clerks in store, suitability of store for a sit-in location, co-operation of the store's proprietor). Thus, the site prediction contained the elements of persistence forecasting, naive forecasting and human judgment.[4]

The remainder of this chapter presents in detail, the methodologies involved with the Portland, Oregon model[5], and a more general technique utilized in New Orleans, Louisiana.

Portland, Oregon "Incident Prediction Model For Police Placement"

This model actually consists of a simple list of steps that explain how to select in-dividual sites for tactical resource deployment. In nature, it is very similar to (although more prescriptive than) the general technique described in the previous section. Essentially, the technique involves instructions on how to select the general area boundaries for a given crime problem, and then further guidelines on how to select the individual targets or sites for possible deployment within the general area.

Once a crime pattern has been identified (again, through various crime pattern detection techniques), the general area boundaries can be established by determining answers to the following questions:

- How large is the suspected problem area?

- What is the incident rate of the problem crime in the area?

- What is the number of possible victim establishments?

- What is the average period between crimes and how much does that vary?

- Are there establishments that have been victimized more than once?

- What are the most likely hours, days of the week, and days of the month for a crime to occur?

- How does time of day, week, and month vary with type of target establishment?

After the general area boundaries have been determined, individual sites to be con-sidered as possible deployment locations can be selected as follows:

(1) Determine how many possible victim establishments there are in the area.

(2) For each establishment, determine and tally all of the possible deter-ministic variables of interest (i.e., the possible factors that might cause a crime occurrence at that location, e.g., poor lighting, a lone proprietor).

---

[4] This particular example actually involved the selection of 11 sit-in sites in the city--8 of which were subsequently robbed.

[5] "Incident Prediction Model for Police Placement," pp. 38-40.

(3) Calculate a composite score for each establishment (of all the applicable causal factors).

(4) Rank the establishments according to the composite scores.

(5) Also rank the establishments according to probability based on past experience (i.e., on previous target crime occurrences at that site).

(6) Select the top ranked establishments from either list, or both, for tactical deployment.

The above model presents a very structured, yet, easy to follow method of forecasting crime potentials for specific site deployments. The most difficult step is number (2) where the deterministic or causal factors must be established for each potential target site. This step would be open to interpretation by anyone utilizing the model. Two different users may determine different causal factors for the same site. For this reason, someone with experience in evaluating victimization potentials (e.g., community services personnel) should be consulted to determine a consistent list of deterministic factors for various kinds of target crimes and business or victim types.

It is necessary to carefully enumerate step number (2) above, because it may be the determining factor in the selection between two or more sites for tactical deployment. It is not unusual, when dealing with specific sites, to find previous crime occurrence histories to be very minor, perhaps just one or two previous target crimes in the recent past (within one year). Thus, several possible target sites will have the same probablistic score (Step 5). In such instances, the deterministic composite score (i.e., the total of all the causal factors for that establishment) will determine which sites are selected. Once the deterministic factors have been enumerated and a standardized method of assigning the factors to target sites agreed upon, the Portland model should yield satisfactory results.

New Orleans, Louisiana "Crime Forecasting Wheel"

Another technique for forecasting crime potentials is the "Crime Forecasting Wheel" utilized by the New Orleans, Louisiana Police Department. This technique primarily addresses the establishment of area boundaries by defining patrol zones or beats where the incident rates of specific crime categories are above average. In this respect, the "Crime Forecasting Wheel" could be utilized in conjunction with, for example, the specific site determination rules of the Portland model (i.e., Steps 1 through 6) to form a powerful exhaustive method of forecasting the crime potentials of specific locations.

The New Orleans "Crime Forecasting Wheel" is really an ingenious, effective and easy to use manual technique for making simple "time-series-like" forecasts of crime occurrence by small geographic area (i.e., patrol zone, beat). The "Forecast Wheel" (Figure 4-2 page 94) consists of four concentric ovals each representing a week of the month. The ovals are portioned into seven major segments representing the days of the week which are then divided into 24 smaller segments signifying the hours of the day. It is, therefore, possible to locate in time the exact month, week, day, and hour of occurrence of any crime recorded on the "Forecast Wheel."

The "Forecast Wheels" are utilized to record selected crime occurrences by district and patrol zone. A separate wheel is used for each patrol district and the patrol zones are designated on the "Wheel" by the letters of the alphabet. The crime types posted to the "Wheels" are distinguished by color (the New Orleans Police Department utilizes color copy Xerox equipment). An attempted robbery, for example, that occurred at 7:10 a.m., Sunday, May 7, 1978, in Zone B of the Sixth District is shown by a check-marked B in Figure 4-2 page 94). (Note: The circled letters in Figure 4-2 represent

NEW ORLEAN'S "CRIME FORECAST WHEEL"

14:64 - RED (1) Armed Robbery

14:65 - BLACK (2) Simple Robbery

14:27-64 - YELLOW (3) Attempt Armed Robbery

14:27-65 - GREEN (4) Attempt Simple Robbery
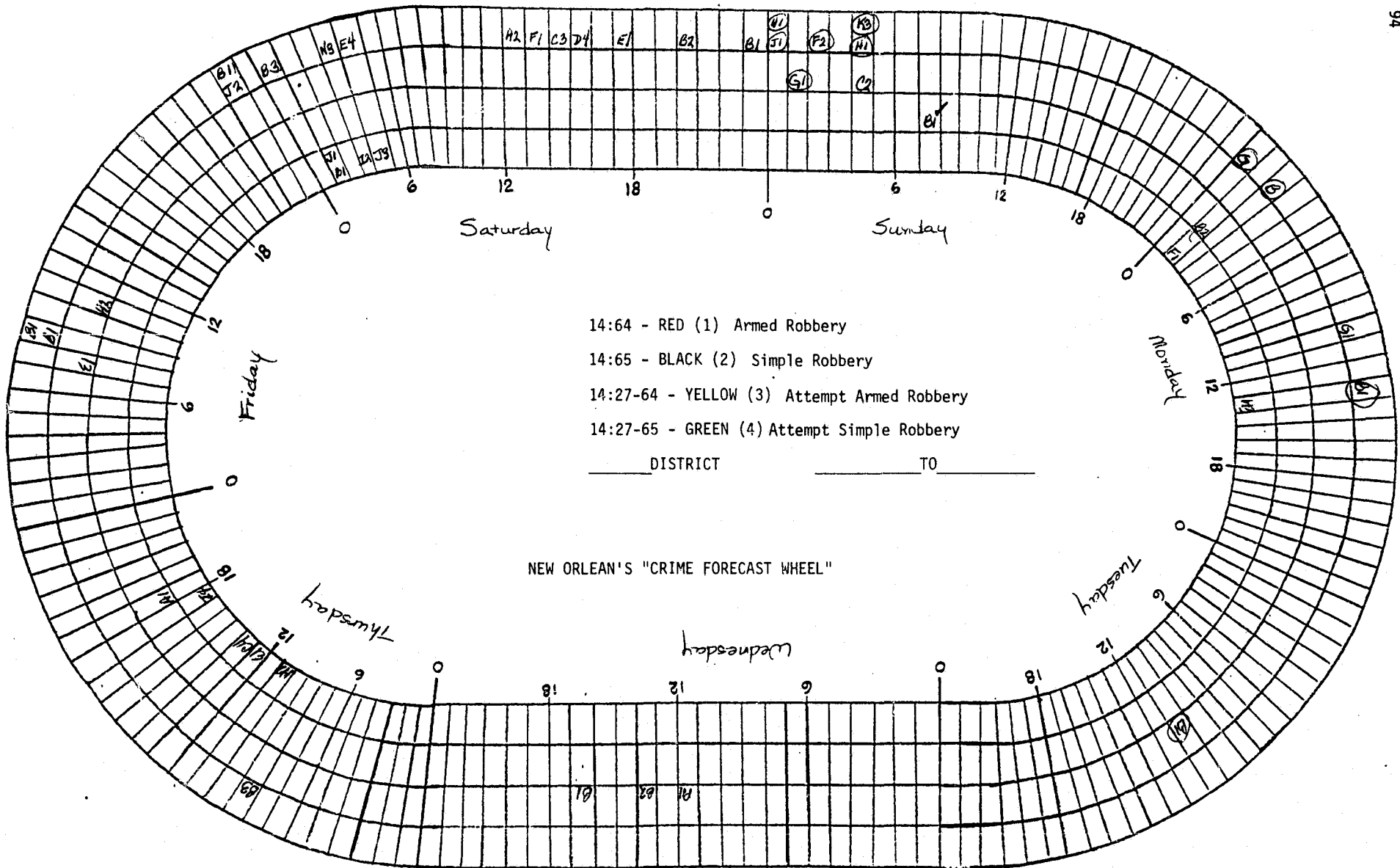
_____DISTRICT _____TO_____

Figure 4-2

crimes that occurred during the partial fifth week of May, 1978.)

In posting incident location data in this manner, crime occurrence information can be compared from hour of day to hour of day and day of week to day of week from month to month and year to year. Forecasts can be derived by patrol zone, day of week, and time of day by comparing the current month to the previous month and the corresponding months of the previous year(s). An example of a patrol zone forecast derived from a "Forecast Wheel" is illustrated in Figure 4-3 page 96).

New Orleans Police Department crime analysts also examine recently FIR'd career criminal identification cards and recent prison and parolee releases to determine if any such individuals have previously committed offenses in the predicted active zones during the same hours and days of the week. If any have, they are listed as possible suspects for the active zones. Such individuals are also examined for former activity by monitoring past "Forecast Wheels" just previous to the time of the last arrest of the recent releasee or the area of known activity of the recently FIR'd known offender. If past information indicates that a particular individual was responsible for previous crimes in the area, appropriate field elements are alerted to expect possible future activity from that individual.

Specific target types can also be determined for target areas as a result of monitoring known offenders in the above manner through the "Forecast Wheel." This is accomplished by noting the M.O.'s of these individuals through previous offense or arrest records. Like any other crime analysis technique, the "Forecast Wheel" only provides the initial insights to the possible solutions of crime problems. A host of other activities must then follow to successfully realize each solution. A greater than 70 percent accuracy is quoted, however, by New Orleans crime analysis personnel for the patrol zone forecasts made with the "Crime Wheel."

The major conclusions developed about crime potential forecasting can be summarized as follows:

- Such forecasts must be approached through composite methods that incorporate elements of probablistic techniques, deterministic techniques, and human judgment. This is due primarily to the apparently random behavior exhibited by crime occurrence data in small areal or specific target locations if such data is approached from a rigidly statistical viewpoint.

- Crime potential forecasting embodies both small area forecasts (i.e., beat, reporting area) as well as specific site forecasts. Seldom available is crime analysis information specific enough and consistent enough to make specific site forecasts feasible.

- Simple, easy to use models do exist, however, to make both area and specific site forecasts possible.

DEPARTMENT OF POLICE
INTEROFFICE CORRESPONDENCE

TO : Captain Harry Sempe
Commander, Second District   DATE July 11, 1978

FROM : Sgt. Paul S. Graffeo, Commander Crime Analysis

SUBJECT: Deployment strategies for July 1978.

Sir;

The following deployment recommendation is based on current and past trends. Utilization of this information should help us in our efforts. Kindly feel free to call me if we can be of further assistance.

	1st Platoon 7A.M.-3P.M.	2nd Platoon 3P.M.-11P.M.	3rd Platoon 11P.M.-7A.M.
Sunday	G,J,K,L,N,U,*T,W	C,E,*H,J,*V,*U,Q,*T	G,H,J,N,M,*Q,*T
Monday	E,H,N,*T,*Q,*U,W	E,*H,*L,N,U,T,*R	L,M,U,V,*R,T
Tuesday	C,*I,G,L,*U,*Q,*T,S	*E,H,K,*U,Q,R,T,*W	F,K,*M,N,V,*T,*W
Wednesday	C,*G,J,*L,*Q,*U,T	C,*H,*N,Q,W,R,U	L,*N,M,*Q,V,P
Thursday	J,L,N,*Q,V,*U,*T	*F,I,*H,J,Q,T,*S	H,I,C,M,S,L,*P,*Q
Friday	G,I,J,*U,V,Q,*T	E,F,G,*H,J,L,*N,*RT	B,P,*Q,*U,*T,W
Saturday	G,I,J,K,*Q,N,*T	*F,H,*Q,U,V,*P,*T	B,F,L,*N,*T,*Q,*V

Zones preceded by asteric indicate a need for particular attention and deployment into these zones should take precedent.

Respectfully,

Sgt. Paul S. Graffeo
Commander, Crime Analysis

PSG/RCB/hbf

Figure 4-3

CHAPTER V

EXCEPTION REPORTS

The crime analysis function, Exception Reports based on crime thresholds, is performed by periodically monitoring the occurrence of crime incidents (citywide or by geographic area) to identify "out of control" points. The designated areas and crimes are monitored at short intervals (daily, weekly, or monthly) and a report is generated to trigger operational planning when crimes exceed or fall below the established thresholds.

The main objectives of Exception Reports are:

(1) To alert police administrators and managers that the occurrence of crime incidents is out of control by specific crime types and/or geographic areas.

(2) To indicate whether or not the successful operation of a specific tactical or strategical operation was successful.

In establishing the criteria for Exception Reporting, the two aforementioned objectives should be included in agency goals for this function. This particular function serves as a "warning signal" for the crime analysis function, Pattern Detection. In various communities there may be increases in certain crime types throughout that community or there may be increases in a specific geographical area of a great number of crime types. In any case, by having the mechanism established to alert law enforcement administrators and managers that these problems exist, the problems whether geographical in nature or just marked increases in volume, can be examined in-depth and determinations may be made to implement strategies to combat these problems.

By establishing the upper threshold for geographical area, as well as specific crime types, the law enforcement agency has a "barometer" with which to gauge the incidence of crime before it gets to a stage of being "out of control" or a "crime wave." By monitoring the crime types and/or areas, determinations may be made as to the validity of these offenses. In looking at the incidents, the question that should be the most prominent in the mind of the police manager is, "Is this problem due to some type of seasonal influx requiring an immediate (tactical) response, or is this a problem becoming a trend that will require long range (strategic) planning?" Another question that should be addressed in this situation is, "Are these incidents random, isolated occurrences or are they a part of a pattern?"

In establishing the upper limit for crime thresholds, caution should be taken to allow for seasonal and cyclical changes. After an evaluation has been made as to the validity of the increases, the problem(s) would then lend themselves to an in-depth analysis for the purpose of developing appropriate strategies.

As stated previously, many of the crime analysis functions described in this document are not only interrelated but are overlapping. In the case of Exception Reporting, when crime frequencies exceed the normal range of the upper threshold, the incidences then become subjects of analysis in other crime analysis functions. As an example, when

burglaries in an area exceed the norm for that area, the analyst notifies the area commander that there is a problem, when asked for specifics the analyst then would have to look at the burglary problem in-depth to provide the area commander with that information.

In performing the analysis, the analyst may discover:

- Geographic patterns

- Similar offense patterns

- Crime trends

- Common M.O.'

- Common suspect descriptions .

In any of the cases mentioned, the analyst then would be involved in crime analysis function activities related to:

- Pattern detection

- Crime suspect correlations

- Forecasting crime trends.

If we take the example one step further, and hypothesize that the burglaries were pharmaceutical warehouses, then the analyst is in a position to perform an analysis to draw logical conclusions based upon certain facts. From this situation, it is ascertained that the:

- Incidents occurred during a specific time span

- Items taken had a high demand in the manufacture of illicit drugs

- Vehicles observed by witnesses had similar descriptions

- Entry was affected in the same manner.

With those facts, techniques commonly associated with the aforementioned crime analysis functions would then be employed to further an agency's goals of:

- Identifying crime problems

- Isolating patterns

- Provide investigative leads

- Respond with appropriate tactics and strategies in a timely manner.

By keeping the objectives of Exception Reporting relatively simple, the crime analysis function, Exception Reports based on crime thresholds, serves as a "warning signal" that there is a situation that requires attention. When the mechanism is triggered, a report should be generated, and from that point, a decision should be made as to the course of action that should be taken. In viewing the lower threshold, police administrators and managers may want to use this as a tool to evaluate the effectiveness of previous tactics

and strategies. This would be practical, particularly when there is a noticeable decrease in a specific geographical area and/or crime type. In evaluating the decreases, a deci- sion may be made to redeploy the resources to areas that require a police response. In making the decision to reallocate resources, the administrator can base that decision upon a sound systematic process (see Chapter VII, Resource Allocation, page 119) and be reasonably assured that the decision is based upon concrete evidence which, if made by another administrator, the same logical conclusion could be drawn.

The basic objective of Exception Reports based on crime thresholds is simply a report generated to trigger operational planning. In viewing the planning effort, if it is deemed necessary that a situation requires further analysis, then the appropriate crime analysis function should be applied to the specific situation.

As previously stated, the objective of Exception Reporting based on crime thresholds is to generate a report of changes in crime occurrence which exceed or fall below established thresholds, thus triggering operational planning. The next step that should be taken is the establishment of the thresholds (upper and lower).

Thresholds should be established by:

- Specific geographic areas

- Specific crime types

- Specific crime types in specific geographic areas.

Specific crimes germane to specific areas can be monitored and the appropriate actions initiated by setting up the Exception Reporting mechanism in this manner. Often times police executives are only concerned with the end result of some type of analysis, such as a 10% increase in armed robberies in a particular district, or a 17% decrease in resi- dential burglaries, but it would behoove an executive to know the basic fundamentals of the techniques used to arrive at these figures. In Exception Reporting there are certain methods used to set the thresholds, which are statistical techniques. These techniques, like any other science, have commonly used terminologies. It is not imperative that the police executive have a proficient knowledge of algebra and statistics, but by being familiar with the vernacular of the science, it enables the executive to have a broader perspective of the entire process, in addition to understanding what the "academicians" are talking about.

One principle to which the law enforcement community generally adheres rigidly is "never assume anything." In following that train of thought, it is not assumed that all readers are versed in statistical concepts, procedures and terminologies. The following are a few of the terms used quite frequently in "The World of Statistics":

Measures of Central Tendency - Points which represent all of the scores made by the group, commonly called averages. These measures include:

- The Mean

- The Median

- The Mode

Mean - The average score calculated by adding all scores and dividing by the number of scores $\frac{\Sigma X}{N}$

Median - The score point below which 50% of the scores fall.

Mode - The score in a distribution which occurs with the greatest frequency.

Measures of Variability - Express quantitatively the extent to which the scores in a distribution cluster together. They provide a summary description of the spread of scores.

Range - The minimum difference required to encompass all the scores in a distribution.

Minimum/Maximum Score - The lowest and highest scores in a distribution.

Variance - The mean of the square of the difference scores.

Difference Scores (Deviation Scores) - A score found by subtracting the mean of a distribution from each score.

Standard Deviation - The square root of the variance.

These terms are provided to acquaint the law enforcement executive with a basic glossary of words frequently used by personnel involved in the day-to-day compilation of criminal statistics. This glossary should also prove beneficial in discussing methods for establishing crime thresholds.

There are several methods employed in establishing crime thresholds. One method is using standard deviation. The San Jose, California Police Department uses the following formula in establishing the thresholds:

Upper Threshold - 1.5 multiplied by standard deviation plus the average

Lower Threshold - 1.5 multiplied by standard deviation, subtracted from the average

The following illustration is a hypothesis of establishing limits:

During last week there were 49 reported armed robberies in Division III --

Sunday	7
Monday	6
Tuesday	8
Wednesday	9
Thursday	5
Friday	5
Saturday	9
Sum	$\Sigma X = 49$

The first step in computing this problem is to add the number of reported robberies and divide the total by number of days in the reporting period, in this case $\frac{\Sigma X}{N}$ translated

ΣX = 49: Total of reported robberies

N = 7: Number of days in reporting period.

The mean, $\overline{X}$, in this case is also 7, $\frac{\Sigma X}{N} = \frac{49}{7} = 7$.

The next thing is to compute the variance and standard deviation. The mathematical formula is variance, $S^2 = \frac{\Sigma(X-\overline{X})^2}{N}$. The first step is to subtract the mean from the

number of each measure:

(X)		(Mean)		$(X-\overline{X})$	$(X-\overline{X})^2$
7	-	7	=	0	0
6	-	7	=	-1	1
8	-	7	=	1	1
9	-	7	=	2	4
5	-	7	=	-2	4
5	-	7	=	-2	4
9	-	7	=	2	4

The next step is to sum the square of the measure minus the mean. In this example $\Sigma(X-\overline{X})^2 = 18$, which is the sum of $(X-\overline{X})^2$, then divided by 7, the number of observations (days), therefore, $\frac{\Sigma(X-\overline{X})^2}{N} = \frac{18}{7} = 2.5$ and the figure 2.5 becomes the variance. Standard

deviation is the square root of the variance, $S = \sqrt{S^2}$, so in this example the standard deviation is 1.58, mathematically standard deviation = $\sqrt{2.5}$ = 1.58.

The upper limit is then established by computing the figures as follows:

Mathematically, the upper limit = $\overline{X}$ + 1.5(S)

= 7 + 1.5 x (1.58)

= 7 + 2.37

= 9.37

To compute the lower limit, use the mathematical formula on page 100.

The lower limit = $\overline{X}$ - 1.5(S)

= 7 - 1.5 x (1.58)

= 7 - 2.37

= 4.63

The preceding problem was presented as an oversimplification merely to illustrate the process used in establishing thresholds. Being realistic, one would not use data for a one-week period to establish thresholds. Thresholds may be established by using the data for the same time period for the previous three to five years.

Example: January

		$\frac{X}{}$
	1977	49
	1976	35
Number of	1975	38
Observations	1974	32
	1973	28
	N = 5	$\Sigma X = 182$

The mean, $\overline{X} = \frac{182}{5} = 36.4$

X	- Mean =	$(X-\overline{X})$	$(X-\overline{X})^2$
49	- 36.4 =	12.6	158.76
35	- 36.4 =	1.4	1.96
38	- 36.4 =	1.6	2.56
32	- 36.4 =	4.4	19.36
28	- 36.4 =	-8.4	70.56

$$\Sigma(X-\overline{X})^2 = 253.2$$

$$S = \text{Standard Deviation} = \sqrt{\frac{\Sigma(X-\overline{X})^2}{N}} = \sqrt{\frac{253.2}{5}} = \sqrt{50.6} = 7.1$$

Therefore, the upper threshold $= \overline{X} + (1.5 \times S)$

$$= 36.4 + 1.5 \times 7.1$$

$$= 36.4 + 10.65$$

$$= 47.05$$

The lower threshold $= \overline{X} - (1.5 \times S)$

$$= 36.4 - (1.5 \times 7.1)$$

$$= 36.4 - 10.65$$

$$= 25.75$$

The basic concept presented may be applied in establishing thresholds in a number of manners. Thresholds may be established by:

● The month of the year for a five-year period (as illustrated)

- The week of the year for a five-year period (i.e., 16th week, 20th week, 30th week)

- Days of the week, using data for the same day from the present calendar year (i.e., all Fridays up to the present)

- Hours of the day, by specific days (i.e, 4 to 12 on Wednesdays).

The preceding examples were presented to familiarize the law enforcement executive with the ways in which thresholds are established. There are other methods of establishing them, but in attempting to eliminate seasonal and cyclical fluctuations, data from the same time span going back, is generally more accurate and reflects the true volume of crime. Historically speaking, the range of the volume of crime during a specific month is usually consistent through the years, unless there is some external demographic force that causes a significant fluctuation. Comparisons should be made in this manner because, generally speaking, January's crime statistics by crime type will usually remain consistent through the years. July's crime statistics will differ from January's, but if comparisons of previous Julys are made, the statistical differences will be fairly insignificant (comparison of days for a five-year period).

Staying with the January and July scenario, a jurisdiction may have 12 reported sexual assaults during January and from January to July the rate increases at 25% a month to 35 reported cases in July. Establishing a threshold using and comparing data from January to February and February to March will not provide an accurate "barometer", but if data from January for the last five years were computed and data from February is for the last five years likewise, in all probability the figure of 35 in July will be a norm for that month.

The point is, one should not try to make comparisons of criminal statistics from one month to another (January-February, February-March) but compare Decembers to Decembers (77, 76, 75, 74, 73), Julys to Julys (77, 76, 75, 74, 73), in establishing thresholds.

The primary data sources for Exception Reports should come from:

- Offense Reports

- Dispatch Cards

To insure the integrity of the historical data base for Exception Reports, the reporting system should be verified to ascertain that the same system for the periods covered was intact. As an example, if a department changed reporting systems during midyear, then the accuracy of the data may be questionable. To eliminate that problem, use only the data from the same reporting systems. Another minimum requirement is that the data used for computing the monthly and weekly thresholds should date back three to five years. The San Jose Police Department makes comparisons of beats that are exceptionally high on a weekly basis. If the reader desires to perform the analysis in this manner, then it is recommended that the data for the same time periods be analyzed and percentage changes noted. For example: If establishing a threshold for the week of December 10th, then analysis of that week for five years should be made, in addition to analysis of the week of December 3rd, for the previous five year period. The method incorporated by the San Jose Police Department shows weekly percentage changes in the current year, where by using a data base for a five-year period, the changes in percentages may be noted and these weekly changes may or may not be unusual for that time period.

To take the example one step further, Beat 9 may be experiencing a 20% increase in residential burglaries the week of December 10th over the week of December 3rd, but if

the historical data of that beat is analyzed, it may reveal that Beat 9 has been experiencing 20% increases during that same time frame for the last five years. In this case it is not "unusually high," but if comparisons and percentage changes for the current year are made, it may be "unusually high."

The Exception Report should contain the following elements:

- Title of report (i.e., Robbery Highlights Division III, December 3-10)

- Type (Armed Commercial, Strong Arm Pedestrian)

- Total by category

- Total number

- Percent changes from same time period, last calendar year

- Percent change from previous month

- Percent reporting area

- Year-to-Date totals

- Year-to-Date weekly averages.

(See Figure 5-1, page 105, Burglary Highlights.)

The San Jose Police Department disseminates Exception Reports on a weekly basis. We recommend that Exception Reports be generated when the levels of crime exceed the thresholds. They should be disseminated to the police manager that is responsible for the policing of that specific geographic area, as well as the police manager responsible for investigations for the specific offenses (i.e., the commanding officer of the Robbery Detail).

The dissemination process should occur only when the mechanism is "triggered," and a report generated. After the mechanism has initiated the report process, the managers that are affected should then evaluate the situation and request the appropriate analysis that will assist in problem solution.

BURGLARY HIGHLIGHTS: March 12, 1978 - March 18, 1978

Type	Total	% Change from Previous Week	YTD	YTD av./wk.
Residential	214	+1%	2360	215
Business	49	-20%	675	61

High Burglary Beats[a]

Residential			Business	
Beat	Burgs		Beat	Burgs
16	⑪		11	②
21	⑧		12	③
23	⑧		66	②
36	⑫		75	④
42	④			
52	⑧			
62	⑪			
67	⑥			
75	⑧			

[a]Higher than normal for that beat or 10 or more burglaries for current week.

◯ Higher than normal for that beat.

Figure 5-1

CHAPTER VI

FORECAST CRIME TRENDS

Forecasting Crime Trends may be defined as the statistical analysis of crime incidents by type, area, and/or time to identify trends in support of long-term police action. One does not forecast crime trends through the use of a crystal ball in an attempt to know the future as a fortune teller does. Forecasting is a process which is a projection based on historical information and analysis, to understand what happened in the past before it predicts the future. Therefore, forecasting, in a technical sense, is obtained by using statistical methods to build mathematical models to represent the characteristics of historical data. These models can be studied to extrapolate behavior and analyze the data history based on the assumption that it is analogous to the future. Forecasting extends this historical analogy to future trends.

Forecast Crime Trends differs from the function, Forecast Crime Potentials, in that it is primarily for strategic, administrative and long-range applications in crime analysis.

The primary objective of this function is to predict the crime volume in time domain (e.g., forecast by day of week) for strategic, administrative and long-range applications. This function is mainly to estimate, predict, and establish the crime volume and the police workload which can be represented by the number of calls-for-service (CFS).

The primary application of Forecasting Crime Trends is to support Function 7, Resource Allocation, by providing the department staff with the necessary information to:

- Identify the operational work needs for the department

- Provide information for manpower allocation and deployment for various commanders in a law enforcement agency to deter crimes

- Provide information for budgetary purposes.

It is necessary for the analyst to first define the forecasting needs of the department. After which, he would then proceed to (1) collect the required data; (2) arrange or pre-process the data into a specific format so that the data base will fit the requirments of the specific statistical technique which will be used for the prediction and (3) perform the forecasting task by using various statistical methods which are discussed in the analysis section.

The Santa Cruz, California Police Department generates the following reports to determine the manpower needs at the end of every 28-day period:

(1) A master schedule requirement report for all concerned personnel such as watch commanders, and the Chief of Police, and

(2) A set of tables showing the forecasted workload or number of calls-
for-service broken down by each small geographical area (quarter
zone[1]) for each shift for each day of the week. Specifically,
twenty-one (21) tables, one for each day of the week, and for each
third shift, are provided for geographical manpower deployment
decisions. These tables show the predicted calls-for-service by
quarter zone (Figures 6-1, page 109 and 6-2, page 110).

In order to forecast the calls-for-service by quarter zone, the data base should be
comprised of the number of calls-for-service by quarter zone. To forecast crime volume,
the data base should consist of the number of crimes by each geographical area (car beat,
district, or citywide).

By incorporating the statistical processes to predict the crime trend, the crime analyst
will learn more about the underlying true relationship between two variables (e.g., time
intervals and certain characteristics of crimes). Therefore, the by-product of the fore-
casting process would be to allow the crime analysts to learn and describe the character-
istics of the crime data base so as to produce special reports and recommendations for
police administrators. Of course, this type of information can also be generated through
the function, "Exception Reports." (See Chapter V, page 97.)

Analysis:

It is not the intent of this report to duplicate the technical description and discussion
of those various statistical methods which are contained and discussed in other textbooks
and papers, but rather to impart the basic concept and application of these methods to
crime analysis. In general, the following two categories of statistical approaches are
used to perform the forecasting task:

(1) Regression analysis [2,3]
(2) Time series analysis. [4,5]

Based on the contacts the project staff has, it appears that regression analysis is the
most commonly used method to forecast crime volume, and calls-for-service, if the agency
requires forecasted figures.

Regression analysis is expressed in general statistical techniques which can be used to
analyze the relationship between a dependent variable and an independent variable (or a
set of independent variables). The examples for dependent variables can be the crime
volume or the number of calls-for-service (CFS). The independent variable can be popu-
lation, race, age, or any other factors which may be related to the occurrence of crimes.
This statistical technique is used as a descriptive tool to find the best prediction

[1]The Santa Cruz, California Police Department uses a geocoding system wherein the city is
  divided into 49 grids called zones and quarter zones.
[2]Draper, Norman and Harry Smith, Applied Regression Analysis, John Wiley & Sons, Inc.,
  New York, 1966.
[3]Stein, Donald P., Jan-Louise Crawshaw and James C. Herron, "Crime Prediction by Computer--
  Does It Work and Is It Useful?" Law Enforcement Science and Technology II, edited by
  S. I. Cohn. Proceedings of the Second National Symposium on Law Enforcement Science and
  Technology, 1968: IIT Research Institute.
[4]Box, E. P. George and Gwilym M. Jenkins, Time Series Analysis Forecasting and Control,
  Holden-Day, Inc., San Francisco, 1970.
[5]Nelson, Charles R., Applied Time Series Analysis for Managerial Forecasting, Holden-Day,
  Inc., San Francisco, 1973.

Figure 6-1

0	0	3	11	9	32	9	15	24
0.0%	0.0%	0.1%	0.5%	0.4%	1.4%	0.4%	0.7%	1.1%
	8	15	40	117	30	70	40	21
	0.4%	0.7%	1.8%	5.3%	1.3%	3.1%	1.8%	0.9%
15	6	14	135	166	64	57	21	
0.7%	0.3%	0.6%	6.1%	7.5%	2.9%	2.6%	0.9%	
11	15	62	61	304	101	28	6	
0.5%	0.7%	2.8%	2.7%	13.7%	4.5%	1.3%	0.3%	
13	22	39	30	172	104	98	45	
0.6%	1.0%	1.8%	1.3%	7.7%	4.7%	4.4%	2.0%	
23	46	17	15					
1.0%	2.1%	0.8%	0.7%					
21	31	20	21					
0.9%	1.4%	0.9%	0.9%					

TOTAL EXPECTED CALLS   2227

TOTAL MAY DIFFER FROM SUM OF
QUARTER ZONES DUE TO ROUNDING

EXPECTED CALLS FOR SERVICE — NUMBER   PERIOD 11   DAY SU   SHIFT 1   **POSSE PREDICTION REPORTS**
  & EXPECTED CALLS FOR SERVICE — PERCENT   FOR PERIOD 11/78

Figure 6-2

0	0	0	1	0	0	1	0	0
0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	1.3%	0.0%	0.0%

0	2	1	2	1	2	2	2
0.0%	2.6%	1.3%	2.6%	1.3%	2.6%	2.6%	2.6%

0	0	0	2	3	3	3	0
0.0%	0.0%	0.0%	2.6%	3.9%	3.9%	3.9%	0.0%

1	0	2	2	12	4	0	0
1.3%	0.0%	2.6%	2.6%	15.6%	5.2%	0.0%	0.0%

0	0	1	2	6	10	7	1
0.0%	0.0%	1.3%	2.6%	7.8%	13.0%	9.1%	1.3%

1	2	0	1
1.3%	2.6%	0.0%	1.3%

0	0	0	0
0.0%	0.0%	0.0%	0.0%

TOTAL EXPECTED CALLS   77

TOTAL MAY DIFFER FROM SUM OF
QUARTER ZONES DUE TO ROUNDING

equation. It will allow the crime analyst to evaluate and measure the overall dependence of crime volume from a set of possible related factors.

A time series is a set of data (or observations) taken at equally spaced time intervals. Time series analysis forecasting encompasses a wide range of statistical techniques from the very simple to the moderately complex. Some typical approaches are:

(1) Moving average [6]
(2) Exponential smoothing [7]
(3) Trend projection with/without seasonal adjustment [8,9]
(4) The U. S. Bureau of the Census Methods-X11 [10]

Time series analysis is a process of breaking down time series data into component parts involving a regular pattern. The most common patterns in a time series are:

(1) Trend: An overall pattern within the time series, be it a straight line, a simple curve, or a complex curve

(2) Cycle: A pattern of rising and falling data with an identifiable regular interval between peaks and valleys

(3) Seasonality: A cyclical pattern with a yearly interval

(4) Adjustment: A pattern due to identifiable differences in the time period of the data base

(5) Extreme: A distortion in the data base due to a known cause.

Historically, the well-known computer program, "Law Enforcement Manpower Resource Allocation System (LEMRAS) [11,12] was developed by IBM in the early 1960's for the St. Louis, Missouri Police Department. LEMRAS was based on the exponential smoothing technique to estimate and predict future CFS rates and service times from past data. It also calculated the probability that calls with different priority would be queued depending on the number of units on duty. The applications of the forecasted results were primarily for Resource Allocation. [13,14] As discussed in the chapter on, Resource Allocation, once the police department has set up the operational objectives, criminal incident prediction will be a milestone step to assist and increase police operation effectiveness.[15]

[6] Winters, P. R., Forecasting Sales by Exponentially Weighted Moving Averages, Management Science, Vol. 6, No. 3, 1960.

[7] Brown, R. G., Smoothing, Forecasting and Prediction of Discrete Time Series, Prentice Hall, New Jersey, 1963.

[8] Ezekiel, Mordecai, and Karl A. Fox, Methods of Correlation and Regression Analysis.

[9] Neter, J. and W. Wasserman, Fundamental Statistics for Business and Economics, 2nd ed. (1961), Chapters 15-17.

[10] The X-11 Variant of the Census Method II Seasonal Adjustment Program. Technical paper, No. 15 (1967 revision).

[11] IBM, "LEMRAS Application Description Manual," Document H20-0629.

[12] McEwen, J. Thomas, "A Mathematical Model for Prediction of Police Patrol Workload," paper presented at TIMS/ORSA Joint National Meeting, May, 1968.

[13] Cox, Lyle A., Jr., and William B. Kolender, Charles F. Bender, and John A. McQueeney, Crime Analysis and Manpower Allocation through Computer Pattern Recognition, The Police Chief, Oct. 1977.

[14] Richardson, James B. and Raymond K. Stout, Incident Prediction Model for Police Placement, The Police Chief, April, 1975.

[15] Issues in Crime Analysis in Support of Patrol: A Review and Assessment of the Literature, Foundation for Research & Development in Law Enforcement and Criminal Justice, Inc. Dec. 1975.

In the early 70's, the Seaside, California Police Department had a Seaside Crime Prevention Program and Anti-Burglary Project.[16] One of the project tasks was to forecast the occurrence of burglary by time, census tract, probable targets and the items that were most likely to be stolen.[17] Through a contact with the department, it was discovered that the system is no longer operational. However, these programs are used by the Concord, California Police Department to predict burglaries. According to the Data Processing Director of the City of Concord, it is apparent that the prediction model is based on the regression analysis technique.

In 1974-75, The Seattle, Washington Police Department performed forecasting burglary crime by sectors in the Burglary Reduction Program by using the Box Jenkins Technique.[18] At the same time,[19] the department was also experimenting to predict calls-for-service for budgetary purposes[19] (Figure 6-3, page 113). Mainly, time series analysis was employed as the forecasting method.

In the Santa Cruz, California Police Department, POSSE[20] generates maps which show the distribution of the forecasted number of calls-for-service for all three shifts on each day of the week by quarter zones (grids). The commanders can place a plastic overlay map of the City over the computer printout. The appropriate number of beat boundaries are then drawn (see Figure 6-4, page 114). These 21 maps are usually reproduced and handed to each patrol officer during the roll call to assist the officers in conducting their routine patrol by 49 quarter zones.

The forecast of calls-for-service is based on recent, actual experience in each quarter zone (for each day and shift) and modified to reflect the seasonal trends from previous years' actual experience. The computational procedure is straightforward.

POSSE also prints out the discrepancy between the actual calls-for-service and the predicted numbers in a map format for each day of the week and each shift (a total of 21 maps). (See Figure 6-5, page 115.) These printouts show the difference (+ or -) between the total and the forecasted number of calls-for-service for each 49 quarter zones (grids).

- Let X_t be the actual number of calls for service recorded in the tth reporting period. (There are values for each quarter zone, each day and each shift.)

- Let X_{t+1} be the forecast of calls for service for the next ($t+1$) reporting period.

- Then $X_{t+1} = X_t \cdot R_{t+1}$, where R_{t+1} is the average ratio of X_{t+1} to X_t over the past five years data.

---

[16] Seaside, California Police Department, Seaside Crime Prevention Program, Final Report for the Robbery Control Project (undated).
[17] Ibid., pp. 3,9.
[18] Final Evaluation for Burglary Reduction Program (LEAA Grant #1161), unpublished report, Seattle, Washington Police Department.
[19] Chiu, John S.Y., and Samson K. Chang, Forecasting Calls for Service in Seattle, Journal of Police Science and Administration, Vol. 6, No. 1, 1978.
[20] POSSE stands for "Police On Spot System on Enforcement," an automated manpower allocation system which is operational in Santa Cruz, CA Police Department. Details are discussed in Chapter VII, REsource Allocation.

Figure 6-3

FORECASTING POLICE SERVICE CALLS
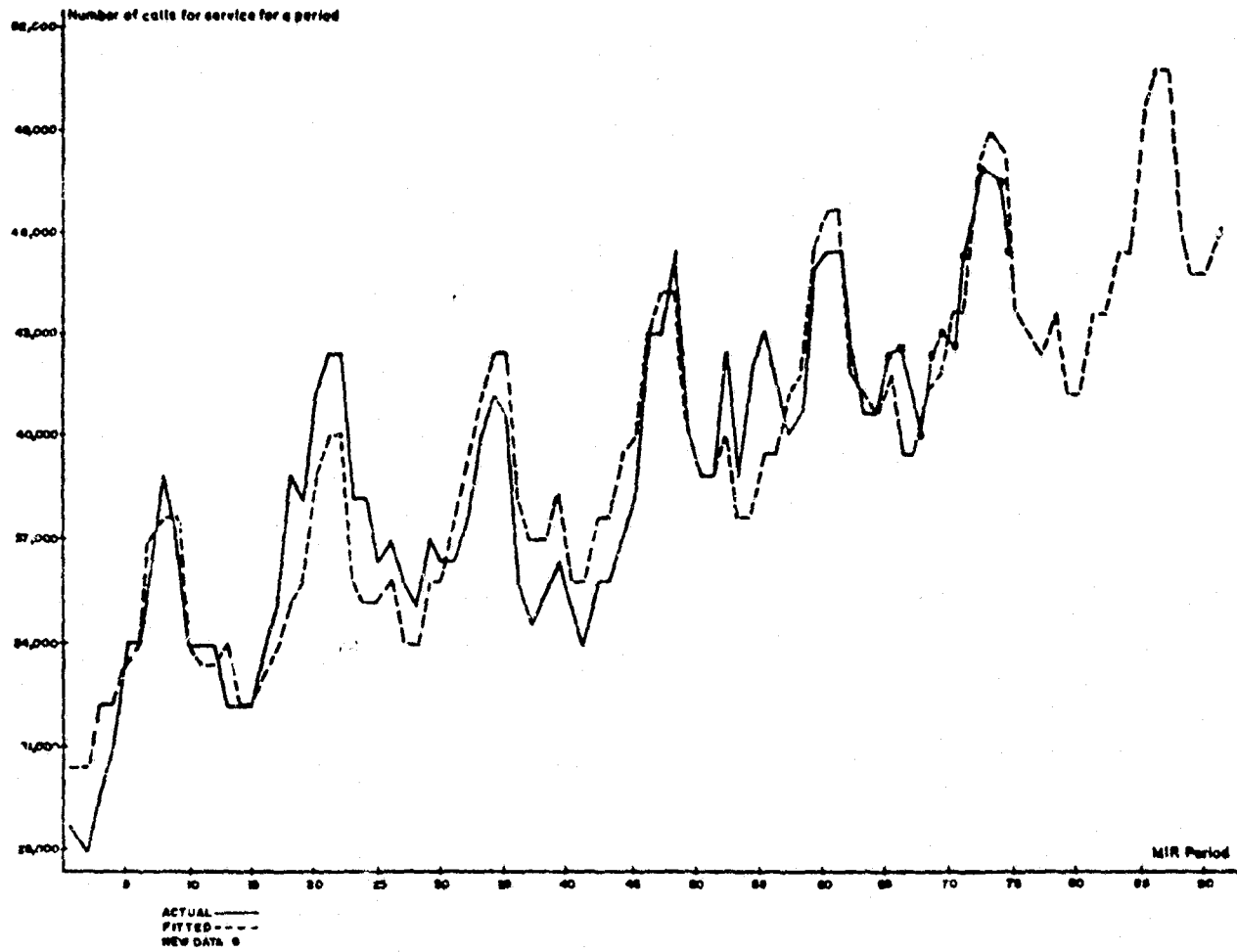
ACTUAL ———
FITTED ----
NEW DATA ●

Forecasting calls for police services by trend projection with seasonal adjustments

Grid Map of the City of Santa Cruz

UNIVERSITY
OF
CALIFORNIA

Hwy 1

②   0.0 / 0.0   0.0 / 0.0   ③   0.0 / 0.0   0.0 / 0.0   ④   1 / 0.7   1.0 / 1.0   ⑤   0.0 / 0.0   ⑥   2 / 1.3

0.0 / 0.0   2 / 5.3   U St   4 / 3.1   1 / 0.6   8 / 5.9   4 / 2.7   1 / 0.8

0.0 / 0.0   ⑦   0.5 / 0.5   0.0 / 0.0   ⑧   6 / 6.3   5.4 / 5.4   ⑨ Soquel Ave   8 / 5.8   ⑩   6 / 4.6   3 / 1.9

1 / 0.5   0.0 / 0.0   Mission   1 / 0.8   8 / 5.5   14 / 9.9   8 / 5.7   5 / 3.2   0.0 / 0.0

Period 2
Monday
Shift 2

1 / 1.0   ⑪   1 / 0.6   4 / 2.7   ⑫   1 / 0.8   9 / 6.3   ⑬   7 / 4.7   7 / 4.8   ⑭

3 / 0.8   1 / 0.7   Bay St   0 / 0.0   0 / 0.0

MONTEREY BAY

1 / 0.8   ⑮   3.0   1 / 0.6   ⑯

1 / 0.5

EXPECTED CALLS FOR SERVICE   number / percent

Total Expected Calls: 141   (total may differ
from sum of quarter zones due to rounding)

Figure 6-4

Grid Map of the City of Santa Cruz

UNIVERSITY
OF
CALIFORNIA
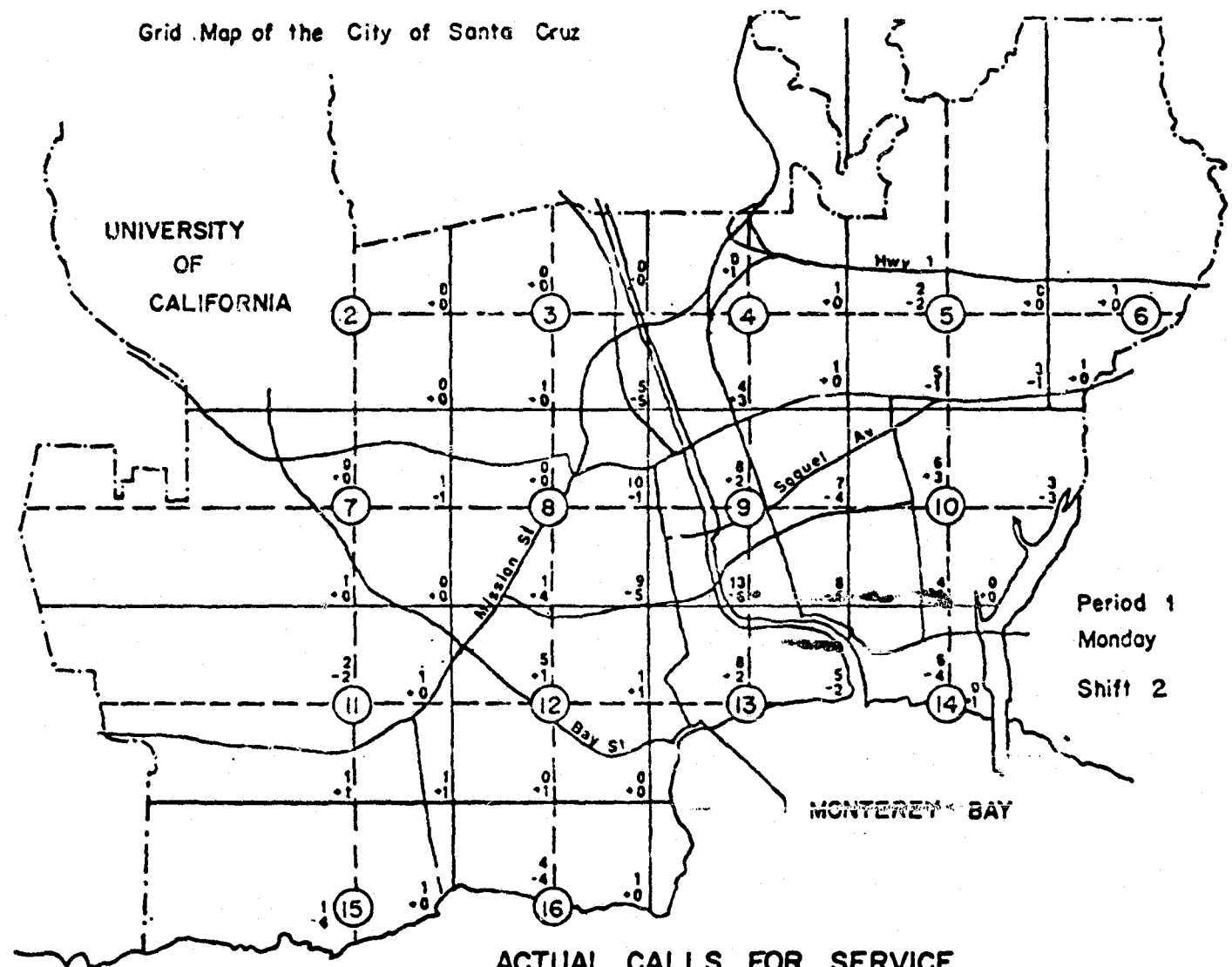
Period 1
Monday

Shift 2

ACTUAL CALLS FOR SERVICE

8 discrepancy from predicted number
(- indicates estimate was under by amount stated;
+ indicates estimate was over by amount stated).

Figure 6-5

- The forecast calls for service are summed for each map and converted to percentages. These results forecast the expected percentage of calls for service in each quarter zone for that shift and day of week.

- These computations result in the printout Figure 6-4, page 114 which identifies number of forecasted calls for each quarter zone and its percentage to the total forecasted calls for service for the city.

- The top number is the actual number of calls-for-service received during the preceding report period in that particular quarter zone.

- The bottom number (+ or -) is the difference between the forecasted number of calls-for-service and the actual calls-for-service in that particular quarter zone.

    -- For example, "+0" means the actual number of calls-for-service equaled the forecasted number of calls.

        0
        +0 means there are actually no calls and POSSE forecasted no calls.

        2
        +0 means there are actually two calls and POSSE forecasted two calls.

    -- For example, +1 means the forecasted calls-for-service predicted one call more than actually occurred.

        4
        +1 means there were actually four calls and POSSE forecasted five calls.

    -- For example, -2 means the forecasted calls-for-service predicted two calls less than actually occurred.

        3
        -2 means there were actually three calls and POSSE forecasted one call-for-service.

This map gives the patrol commanders a timely look at how well the POSSE forecasting model is doing.

The Kansas City, Missouri Police Department has developed a computerized information system, Kansas City Police Resource Allocation System (KCPRAS), which is a manpower utilization analysis and forecasting system. In essence, the system report is a forecasting package.[21] It uses a weighted exponential smoothing technique to forecast (1) manhours of workload and (2) man events (at the option of the user) for a one week projection period (see Figure 6-6, page 117).

The forecasting reports can be expressed by census tracts and blocks or patrol beats, whichever is desired. The system does not forecast crime. It does forecast the number of calls-for-service, and the number of self-initiated activities (on-view events).

It serves as an administrative tool which provides information regarding the availability of patrol units, where they are needed, the time of need and why. This information assists police administrators in defining workload prior to the occurrence of crime or CFS by showing the distribution and volume of patrol service requirements with respect to:

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[21] KCPRAS, Computerized Police Resource Allocation System, Kansas City, Missouri Police Department, undated system report.

CI806LI

KANSAS CITY MISSOURI POLICE DEPARTMENT MANPOWER UTILIZATION FORECAST
TITLE: PROJECTED PATROL MAN EVENTS, SECTOR 330
DATE PREPARED: 04/24/78, DATA DATE: 04/08/78, EVENT CLASSES: 1 2 3 4 5 6 7

— HOUR —	SUN. 04/30/78 EVENTS	DEV	MON. 05/01/78 EVENTS	DEV	TUE. 05/02/78 EVENTS	DEV	WED. 05/03/78 EVENTS	DEV	THU. 05/04/78 EVENTS	DEV	FRI. 05/05/78 EVENTS	DEV	SAT. 05/06/78 EVENTS	DEV	SUN THRU SAT EVENTS	DEV
0000 - 0100	5.02	67%	3.14	85%	3.58	79%	3.07	85%	3.53	80%	4.01	75%	5.81	62%	28.16	28%
0100 - 0200	5.44	64%	2.24	100%	2.80	89%	2.80	89%	2.95	87%	3.16	84%	5.63	63%	25.02	30%
0200 - 0300	4.15	73%	1.54	100%	2.01	100%	2.01	100%	2.00	100%	2.46	96%	4.55	70%	18.72	35%
0300 - 0400	2.73	91%	.95	100%	1.47	100%	1.3?	100%	1.41	100%	1.41	100%	3.04	86%	12.38	43%
0400 - 0500	2.10	100%	.82	100%	.95	100%	.52	100%	1.06	100%	1.21	100%	1.92	100%	8.98	50%
0500 - 0600	1.37	100%	.77	100%	.92	130%	.74	100%	1.09	100%	1.01	100%	1.42	100%	7.29	55%
0600 - 0700	.90	100%	1.08	100%	1.25	100%	1.17	100%	1.20	100%	1.14	100%	1.30	100%	8.04	53%
0700 - 0800	1.14	100%	1.63	100%	1.76	100%	1.89	100%	1.79	100%	1.68	100%	1.27	100%	11.16	45%
WATCH TOTAL	22.85	3?%	12.17	43%	14.74	39%	13.94	40%	15.03	39%	16.08	37%	24.94	30%	119.75	14%
0800 - 0900	1.73	100%	2.28	99%	1.95	100%	2.31	99%	2.16	100%	2.14	100%	1.95	100%	14.52	39%
0900 - 1000	1.85	100%	2.21	100%	1.93	100%	2.24	100%	2.05	100%	2.36	97%	2.24	100%	14.88	39%
1000 - 1100	2.18	100%	2.14	100%	2.21	100%	2.24	100%	2.48	95%	2.46	96%	2.43	96%	16.14	37%
1100 - 1200	2.50	95%	2.43	96%	2.44	96%	2.35	98%	2.61	93%	2.63	92%	2.60	93%	17.56	36%
1200 - 1300	2.92	88%	2.77	90%	2.76	90%	2.75	90%	2.79	90%	2.91	88%	3.09	85%	19.99	33%
1300 - 1400	2.07	88%	2.63	92%	2.90	88%	2.84	89%	3.01	86%	2.86	89%	3.31	82%	20.42	33%
1400 - 1500	2.85	89%	2.93	88%	2.74	90%	2.68	91%	2.76	90%	3.11	85%	3.13	85%	20.20	33%
1500 - 1600	3.14	85%	3.44	81%	3.40	81%	3.43	81%	3.49	80%	3.53	80%	3.50	80%	23.93	31%
WATCH TOTAL	20.04	33%	20.83	33%	20.33	33%	20.84	33%	21.35	32%	22.00	32%	22.25	32%	147.64	12%
1600 - 1700	3.25	83%	4.03	75%	3.75	77%	3.81	77%	3.93	76%	4.23	73%	4.29	72%	27.29	29%
1700 - 1800	3.24	83%	4.19	73%	4.17	73%	4.20	73%	4.12	74%	4.03	75%	4.46	71%	28.41	28%
1800 - 1900	3.31	82%	3.93	76%	3.94	75%	4.09	74%	4.16	73%	4.26	73%	4.51	71%	28.20	28%
1900 - 2000	3.17	84%	3.96	75%	3.88	76%	3.75	77%	4.34	72%	4.49	71%	4.27	72%	27.86	28%
2000 - 2100	3.63	79%	4.12	74%	4.28	72%	4.32	72%	4.40	71%	4.56	70%	4.75	69%	30.06	27%
2100 - 2200	3.77	77%	4.35	72%	4.46	71%	4.32	72%	4.55	70%	5.10	66%	4.95	67%	31.50	27%
2200 - 2300	3.66	78%	4.19	73%	4.11	74%	4.51	71%	4.46	71%	5.31	65%	5.74	63%	31.98	26%
2300 - 2400	3.34	82%	3.92	76%	3.66	78%	3.82	77%	4.22	73%	5.47	64%	5.46	64%	29.89	27%
WATCH TOTAL	27.37	29%	32.69	26%	32.25	26%	32.82	26%	34.18	26%	37.45	24%	38.43	24%	235.19	10%
DAY TOTAL	70.26	18%	65.69	18%	67.32	18%	67.60	18%	70.56	18%	75.53	17%	85.62	16%	502.58	7%

TITLE: PROJECTED PATROL MAN HOURS, SECTOR 330
DATE PREPARED: 04/24/78, DATA DATE: 04/08/78, EVENT CLASSES: 1 2 3 4 5 6 7

— HOUR —	SUN. 04/30/78 HRS:MINS	DEV	MON. 05/01/78 HRS:MINS	DEV	TUE. 05/02/78 HRS:MINS	DEV	WED. 05/03/78 HRS:MINS	DEV	THU. 05/04/78 HRS:MINS	DEV	FRI. 05/05/78 HRS:MINS	DEV	SAT. 05/06/78 HRS:MINS	DEV	SUN THRU SAT HRS:MINS	DEV
0000 - 0100	2:59	97%	1:51	100%	2:02	100%	1:46	100%	2:05	100%	2:21	100%	3:28	90%	16:32	41%
0100 - 0200	3:12	94%	1:18	100%	1:37	100%	1:37	100%	1:47	100%	1:50	100%	3:25	91%	14:46	44%
0200 - 0300	2:27	100%	:55	100%	1:09	100%	1:09	100%	1:09	100%	1:24	100%	2:41	100%	10:54	51%
0300 - 0400	1:35	100%	:34	100%	:52	100%	:47	100%	:48	100%	:49	100%	1:47	100%	7:12	62%
0400 - 0500	1:16	100%	:27	100%	:35	100%	:32	100%	:37	100%	:42	100%	1:09	100%	5:18	73%
0500 - 0600	:50	100%	:27	100%	:33	100%	:25	100%	:39	100%	:36	100%	:52	100%	4:22	80%
0600 - 0700	:31	100%	:45	100%	:49	100%	:43	100%	:48	100%	:46	100%	:50	100%	5:12	74%
0700 - 0800	:41	100%	1:10	100%	1:16	100%	1:26	100%	1:23	100%	1:18	100%	:50	100%	8:04	59%
WATCH TOTAL	13:31	46%	7:27	61%	8:53	56%	8:25	58%	9:16	55%	9:46	54%	15:02	43%	72:20	20%
0800 - 0900	1:09	100%	1:38	100%	1:27	100%	1:42	100%	1:33	100%	1:33	100%	1:18	100%	10:20	52%
0900 - 1000	1:14	100%	1:35	100%	1:19	100%	1:35	100%	1:27	100%	1:39	100%	1:34	100%	10:23	52%
1000 - 1100	1:29	100%	1:28	100%	1:33	100%	1:35	100%	1:41	100%	1:41	100%	1:41	100%	11:08	50%
1100 - 1200	1:39	100%	1:44	100%	1:40	100%	1:34	100%	1:48	100%	1:51	100%	1:51	100%	12:07	48%
1200 - 1300	2:00	100%	1:54	100%	1:51	100%	1:55	100%	1:59	100%	2:02	100%	2:05	100%	13:46	45%
1300 - 1400	1:55	100%	1:48	100%	1:57	100%	1:54	100%	1:54	100%	1:57	100%	2:12	100%	13:45	45%
1400 - 1500	1:52	100%	2:01	100%	1:51	100%	1:51	100%	2:02	100%	2:08	100%	2:06	100%	13:44	45%
1500 - 1600	2:00	100%	2:24	100%	2:19	100%	2:34	100%	1:55	100%	2:31	100%	2:22	100%	16:22	41%
WATCH TOTAL	13:18	46%	14:32	44%	13:57	45%	14:30	44%	14:47	44%	15:22	43%	15:09	43%	101:35	17%
1600 - 1700	2:06	100%	2:49	100%	2:38	100%	2:45	100%	2:45	100%	2:59	97%	2:52	99%	18:54	39%
1700 - 1800	2:05	100%	2:48	100%	2:49	100%	2:54	98%	2:47	100%	2:48	100%	2:55	98%	19:06	38%
1800 - 1900	2:02	100%	2:32	100%	2:30	100%	2:34	100%	2:43	100%	2:42	100%	2:56	98%	17:59	40%
1900 - 2000	1:58	100%	2:29	100%	2:22	100%	2:25	100%	2:44	100%	2:49	100%	2:44	100%	17:31	40%
2000 - 2100	2:12	100%	2:30	100%	2:39	100%	2:39	100%	2:44	100%	2:50	100%	2:55	98%	18:29	39%
2100 - 2200	2:15	100%	2:40	100%	2:44	100%	2:39	100%	2:51	99%	3:09	94%	3:00	97%	19:18	39%
2200 - 2300	2:14	100%	2:29	100%	2:30	100%	2:38	100%	2:39	100%	3:13	94%	3:22	91%	19:05	38%
2300 - 2400	1:56	100%	2:14	100%	2:09	100%	2:13	100%	2:29	100%	3:17	93%	3:12	94%	17:30	40%
WATCH TOTAL	16:48	41%	20:31	37%	20:21	37%	20:47	37%	21:42	36%	23:47	34%	23:56	34%	147:52	14%
DAY TOTAL	43:37	25%	42:30	26%	43:11	26%	43:42	25%	45:45	25%	48:55	24%	54:07	23%	321:47	9%

Figure 6-6

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- Hour of day

- Day of week

- Geographic area

- Week of year

- Class of activity.

The data resource is from the dispatch cards and the data base has one full year's supply of these patrol dispatch-workload records. The data base is composed of three types of records:

(1) Week of year records in sets of 52 records, one for each full week of the year;

(2) Hour of week records in sets of 168, one for each hour of the week, and

(3) Geographic area records in a set of records which contain current estimates of the minutes of workload and number of man events that will occur in a week.

As a result of our visit with the department staff, we have concluded that the system is not fully operational nor is it being utilized to its full capacity, because only the East Patrol Division of the department is using the weekly workload forecasting in support of the Directed Patrol operation. It should be noted that radical changes in the population or demographics of a community will have an impact upon the reliability of this forecasting model.

CHAPTER VII

RESOURCE ALLOCATION

Resource Allocation, by definition, is the process by which the most optimal use and allocation of available manpower for patrol operation and criminal investigation are periodically determined. This function addresses operational questions dealing with administrative, legal, and political constraints. Although Resource Allocation is performed and assigned in the "Research and Planning" Divisions in most law enforcement agencies, it is felt that this function is one of the key crime analysis functions.

In general, Resource Allocation, deals with the following issues:

- Number of specific units[1] on duty at any one time
- Mode of patrol and number of men assigned to each unit
- Location or geographic area of each unit
- Case priority structure and queuing discipline
- Number of units assigned to each case
- Particular units which are dispatched and assigned
- Manpower scheduling.

A key objective of allocating resources is a utilization of existing resources, the apprehension of criminal suspects and the decrease of injuries to victims and property loss, within contractual, legal, and political constraints.

The allocation of resources is one of the most basic and routine decisions made by police administrators. Whether the choice is aided by advanced deployment models and management science techniques, or it is made with a "rule-of-thumb" formula which has been in use for several years, some decision regarding the deployment of law enforcement personnel is required each day. In 1967, the President's Commission on Law Enforcement and the Administration of Justice noted the labor-intensive nature of police work and called for experimentation and modern technology to help improve deployment procedures. Since that time, there has been considerable research regarding Resource Allocation in the development and implementation of new methodologies for police patrol resource allocation.[2] The development and implementation of some systematic methodology for investigations, however, is still in the infant stage. During the course of the project three studies relative to investigative allocation were found.[3,4,5] Therefore, recognizing the importance of this issue, a Subcommittee study of Investigations Resource Allocation is included. (See Appendix I.)

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[1] A unit refers to either a patrol car unit (which includes one or two officers), or a detective/investigator.

[2] Chaiken, J., T. Crabhill, L. Holliday, D. Jaquette, M. Lawless, and E. Quade, "Criminal Justice Models: An Overview." The Rand Corporation, R-1859-DOS, 1975.

[3] Gray, Paul and William R. Heitzman, A Detective Allocation Model, Journal of Criminal Justice, Vol. 4, pp. 341-346, (1976), Pergamon Press.

[4] Osterburg, James W., "The Investigative Process," Journal of Criminal Law, Criminology and Police Science, Vol. 59, No. 1, (1968) Northwestern University School of Law, pp. 150-158.

[5] Lee, Donald and Floyd A. Bowman, "Criminal Investigation: A Productivity Evaluation Model," The Police Chief, May 1977, IACP.

Basically, there are nine steps undertaken in a resource allocation study:

(1) Define/identify any existing problems
(2) Specify objectives
(3) Define criteria (examining, monitoring, or measuring indexes) relating to the objectives
(4) Specify alternatives
(5) Analyze alternatives
(6) Compare alternatives
(7) Present study results
(8) Implement recommendations
(9) Monitor and evaluate the implementation results.

Based on previous experience and the findings of the site visits, the research staff concludes that each department has different operational philosophies and goals. (Some examples will be presented later in this chapter.) Once administrators have identified the problem area(s) and/or defined the operational objectives and constraints (including budget cost and public relations), then performance measures can be evaluated and considerations given to the allocation of patrol resources.

The following are some typical performance measures related to police resource allocation:

- Workload imbalances
- Response time
- Frequency of preventive patrol
- Apprehension probability
- Nature of geographical area (street mileage, area, impediments to travel, obtainable travel speeds)
- Population density and land use patterns
- Spatial and temporal distribution of calls-for-service
- Number and type of units required to service calls
- Service times.

Police Patrol Manpower Allocation. The police patrol operation has long been recognized as the backbone of the police department. In many law enforcement agencies, patrol operation consumes more than one-third of the annual budget. Therefore, from the perspective of cost effectiveness and criminal apprehension, patrol resource allocation is of serious concern to police administrators.

It has been recognized for a number of years that patrol resources should not be allocated based on any single criteria. As early as 1971, Kakalik and Wildhorn illustrated this point.

"Because of the complexity and multiplicity of functions which the police patrol performs, no single criterion appears adequate for evaluation purposes. Rather, it would be preferable for police planners to employ a set of criteria, with each criterion receiving individual attention." [6]

Kakalik and Wildhorn go on to suggest a set of criteria for evaluating performance including patrol arrest rates, charging rates, victimization rates, reported crime, citizen satisfaction, response time, preventive patrol frequency and resources expended. [7]

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[6] Kakalik, James S. and Sorrel Wildhorn, "Aids to Decisionmaking In Police Patrol: An Overview of Study Findings," The Rand Corporation, 1971, p. 3.
[7] Ibid., p. 4.

During the last decade, we have seen considerable work regarding Resource Allocation in the development and implementation of new methodologies. In a recent book,[8] Colton examines the efforts to implement resource allocation models in three police departments: St. Louis, Boston, and Los Angeles. In St. Louis, for example, none of the district commanders are currently requesting the computer-generated resource allocation reports, and the Board of Police Commissioners and command staff are doing little to encourage the system's use. In Boston, the patrol force simulation model was abandoned several years ago and serious questions have been raised regarding the validity of the less complicated manual Resource Allocation procedures which were implemented on an experimental basis following a more sophisticated effort. Only the system in Los Angeles is in operation, but even there the objectives of the project have been substantially modified over the past eight years, and the system which is now utilized is primarily a historical reporting system providing police administrators with a data base for manual Resource Allocation calculations. Further, the implementation problems encountered in these three departments do not appear to be isolated instances. Rather, there is evidence that such difficulties have occurred elsewhere. A report by the Rand Corporation which examined a number of attempts to implement computer models in the criminal justice area states that: "Through a series of interviews with model-builders and personnel and agencies that attempted to implement models, a picture of the implementation process was obtained. In general, criminal justice models failed to achieve a notable level of use for policy decisions."[9] Routine computer applications are relatively straightforward to implement, since they generally involved automating an activity which was already being performed manually. However, implementing nonroutine uses of technology such as the more sophisticated Resource Allocation program, is far more complex and value laden.

In fairness, it is important to note that most of the case studies that have been documented in the past on Resource Allocation technologies focus on methods that were available several years ago and do not evaluate efforts to implement more recent methods. Most notably, the Patrol Car Allocation Model (PCAM)[10] and the Hypercube model[11] allow the user to identify a wide range of performance measures, and based on the relative importance of these various measures, alternative deployment strategies are provided. As a consequence, many of the problems that were encountered in St. Louis, Boston, and Los Angeles have been overcome. However, the actual results of these efforts must still be evaluated.

As anticipated, each agency visited by the research team had different operational goals and objectives. The Dayton, Ohio, Police Department, for example, strongly emphasizes the need to optimize police response time,[12] which serves as an important indicator of police effectiveness to citizens in the city. Therefore, the objective of the department's patrol manpower allocation is to optimize/minimize the police response time.

[8]Colton, K., Police Computer Technology: Implementation and Impact, Lexington Books, Lexington, Massachusetts, 1978.

[9]Chaiken, "Criminal Justice Models: An Overview."
[10]Chaiken, J., Patrol Car Allocation Model: Executive Summary, The Rand Corporation, Sept. 1975.
[11]Chaiken, J., Hypercube Queuing Model: Executive Summary, The Rand Corporation, July 1975.
[12]Response time here is defined as the measured interval between the time when the telephone operator transfers the call to the appropriate dispatcher until the officer in the responding patrol unit announces that he/she has arrived and the dispatcher logs this time.

A monthly manpower report is produced which analyzes the previous month's manpower deployment to determine future deployment based on offenses and dispatch workload. This report is usually generated within three (3) weeks from the end of the previous month. The information for the data base is taken mainly from the dispatch cards. The key data elements are:

- Number and type of one/two-man dispatches
- Time of day of these calls-for-service
- Marked patrol unit availability
- Personnel strength.

The monthly computer printout shows:

- Percentage of one/two man units
- Average number of crews on duty
- Average dispatches per crew
- Average response time
- Average number of supervisors on duty.

Then these reports (categorized by car beats) are presented in monthly (or even weekly) meetings with command staff of the Operations Division in the police department. Based on these reports, the Operations Division makes allocation decisions at their staff meetings.

The Santa Cruz, California, Police Department allocates patrol forces based on the recommendation of an automated manpower allocation system, Police On Spot System of Enforcement (POSSE). POSSE is an automated system designed to assist police administrators in the allocation of field personnel which will further enhance:

- Suppression and prevention of crime
- Safety of citizens
- Apprehension of offenders.

POSSE is designed to:

1. Provide integration of an automated system into the police department's operating procedures which will supply management with reports that will better equip the patrol commander to make accurate and objective decisions concerning police deployment.

2. Provide the field commanders with an information/decision matrix to enable manpower deployment decisions, specifically when and where to deploy the available resources.

3. Provide the police administrators and the city executives with information to make decisions regarding the manpower allocation to support existing and projected workload needs, particularly determining the numbers of persons required to service the police needs of Santa Cruz.

4. Provide a feedback capability for evaluating what effect, if any, these decisions had on calls for police service.

5. Provide a model, information-supported decision matrix designed to be adapted and used by other police agencies.[13]

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[13]First year final report on Police On Spot System of Enforcement, prepared for Santa Cruz, California Police Department by Public Management Service, Inc., October 1974.

As described in Chapter VI, "Forecast Crime Trends," POSSE forecasts the police workload based on calls-for-service volume. This information is provided to watch commanders prior to each report period, which is a 28 day period and 13 periods in a year, for manpower scheduling purposes. The results of previous scheduling and beat assignments are fed back to the commanders to allow them to evaluate their effectiveness.

POSSE provides manpower scheduling recommendations based on the anticipated consumed time and the severity of forecasted calls-for-service. The watch commanders interact and develop the master manpower schedule for the 28 day report period. The following two POSSE printouts provide the data for the scheduling decisions.

(1) POSSE Manpower Scheduling Recommendations (based on time)

This printout identifies the number of officers needed by each day of the week and shift, based on the total consumed time required for all forecasted calls:

- The consumed time, of the primary patrol officer and any backup police units, for each call is multiplied by a "forecast factor" and summed for each day and shift. (This forecast is based on known annual cyclical variations.)

- The required total consumed time for each day and shift is divided by 480 (minutes in a man-day) times 4 (number of weeks in a report period). This results in the average number of required man-days to handle the forecasted calls-for-service for each day and shift.

- This computation results in the printout below which presents a recommended schedule of the available man-days to best handle the forecasted calls-for-service.

MANPOWER SCHEDULING RECOMMENDATIONS (BASED ON TIME) FOR PERIOD 2

	Su	Mo	Tu	DAY We	Th	Fr	Sa
Shift 1	5	3	2	2	3	2	4
Shift 2	8	10	7	6	7	9	7
Shift 3	6	5	6	7	9	11	9
TOTAL	19	18	15	15	19	22	20

Total reported man-days available   128
Computed percentage of time on service calls   17%

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(2) POSSE Manpower Scheduling Recommendations (based on severity)

This printout identifies the number of officers needed by each day of the week and shift, based on the severity of the forecasted calls:

- A severity index is computed for each forecasted call for service. The severity index is calculated by multiplying a weighting factor (1 to 5) for the type of incident times a weighting factor (1 to 5) for the status of the call (in progress, recent, etc.).

- All forecasted calls for service with their respective severity index are totaled for each group (day and shift).

- These totals are divided by the total number of calls for that specific group, resulting in the relative severity for each group. The sum of these is 1.

- Each group is then multiplied by the number of available man-days. The available man-days are established by the patrol commander after reviewing vacation, training and special assignment schedules for the next report period.

- This computation results in the printout below which provides a recommended assignment of available man-days to handle the forecasted calls for service optimally with respect to severity.

MANPOWER SCHEDULING RECOMMENDATIONS (BASED ON SEVERITY) FOR PERIOD 2

	Su	Mo	Tu	• DAY We	Th	Fr	Sa
Shift 1	5	4	2	2	3	4	4
Shift 2	9	9	6	5	7	7	7
Shift 3	6	7	8	8	8	10	9
TOTAL	20	20	16	15	18	21	20

Total reported man-days available   128

For manpower allocation purposes, POSSE prints out and compares, on an hourly basis, the percentage of officers working to the percentage of actual calls-for-service.

A printout (as illustrated in Figure 7-1, page 125) is prepared for each day of the week.

The total number of actual calls-for-service for each hour o; the day for each day of the week is divided by the total number of actual calls for the entire report period. This produces the percentage of actual calls-for-service which is plotted as a bar chart.

The total number of actual officers on duty for each hour of the day for each day of the week is divided by the total number of actual officers on duty for the entire report period. This produces the percentage of men working which is plotted as a line on the calls-for-service bar chart.
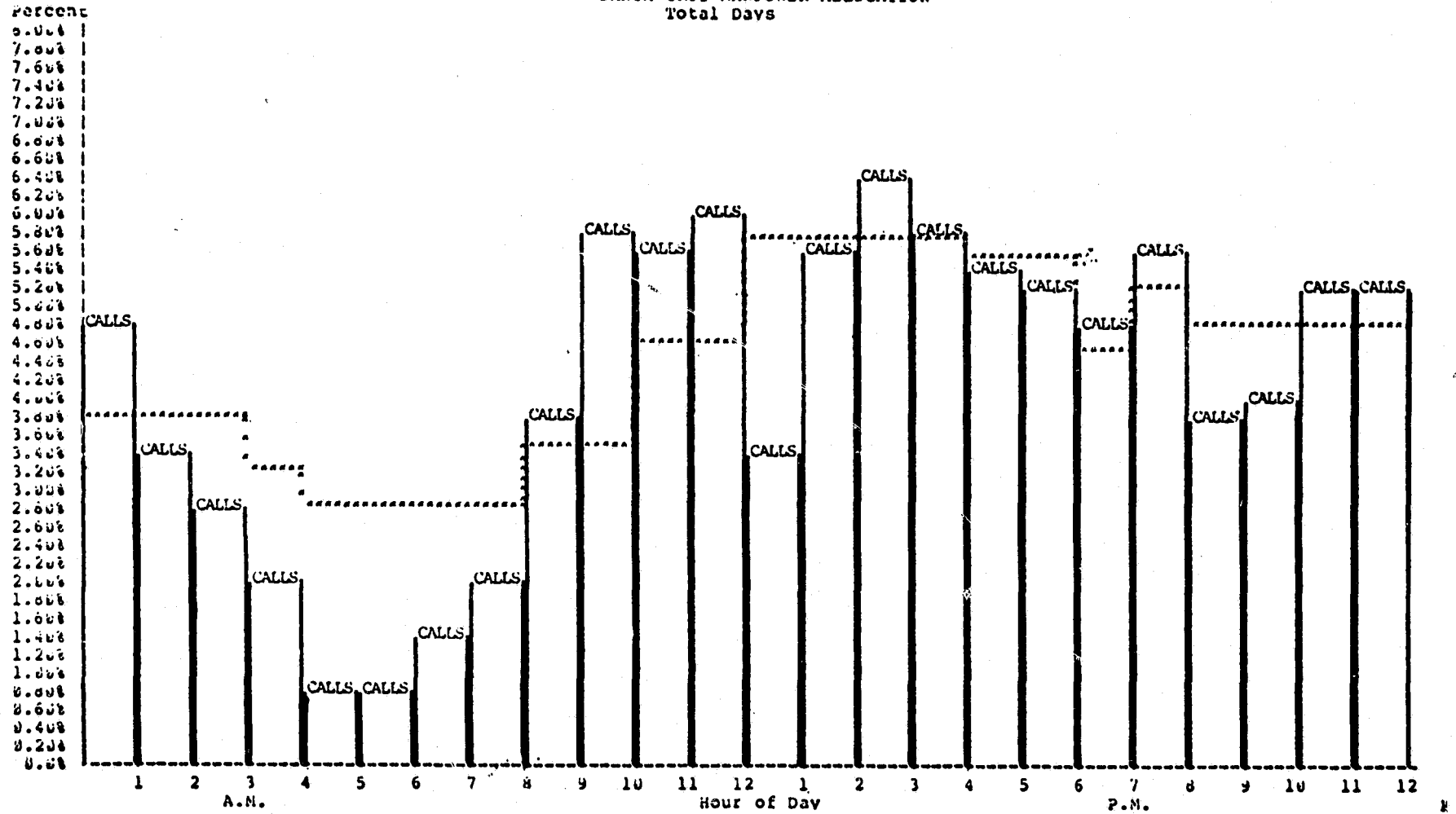
SANTA CRUZ MANPOWER ALLOCATION
Total Days

The '••••••' line is percentage of men working.

Figure 7-1

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The final aspect of POSSE is that the system generates feedback information to the decisionmakers. Two feedback reports are generated. The first report graphically displays the percent of patrolmen available by hour against the percent of actual calls-for-service by hour for the preceding report period. The report is produced for each day of the week. The patrol commander can get an immediate assessment on how well he allocated his personnel and if they were under or over staffed during their particular shifts.

The second feedback report shows how well the POSSE system forecasted calls-for-service.[14]

The East Patrol Division of the Kansas City, Missouri, Police Department allocates manpower based on the "Directed Patrol" concept. That operation and system is fully documented in Chapter 6 of "Review of Patrol Operations Analysis: Selected Reading from ICAP Cities."[15] As stated in the article: "The intent of the Kansas City Directed Patrol Program is to use uncommitted patrol time to address identified problems through the implementation of a planned sequence of activities developed by officers in whose area a particular problem(s) exists."

As mentioned in Chapter VI, Forecast Crime Trends, the Kansas City, Missouri, Police Department has also implemented the Kansas City Police Resource Allocation System (KCPRAS).[16] As described in the system document:

> "The purpose of this system is to provide information to those responsible for the allocation and utilization of police patrol manpower. The objective in manpower allocation and the principal consideration in manpower utilization is to determine patrol unit assignments and patrol area responsibilities which result in the availability of patrol units where they are needed and when they are needed."

The functions of KCPRAS are to provide:

(1) Capability to realign beat boundaries based on equitable distribution of workload

(2) Availability of manpower to its greatest need in crime prevention

(3) Schedule administrative activities during lower level of patrol activities.

Basically, the system forecasts the future requirements for patrol manpower by using the weighted exponential smoothing technique which was mentioned in Chapter VI, Forecast Crime Trends. During our project site visit, we were informed that the system is not fully utilized in the sense that only the forecasting function is used in support of East Patrol Division for Directed Patrol Operation.

It is important to recognize that the problems encountered in implementing modern technologies in law enforcement are not isolated instances. Rather, resistance to the implementation and utilization of computer technologies and modern management science techniques has often been a common phenomenon found in both the private and the public sector. In a study sponsored by the National Science Foundation, and carried out at

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[14]Final Report on Police On Spot System of Enforcement prepared for the Santa Cruz, California, Police Department by Public Management Service, Inc.

[15]Review of Patrol Operations Analysis: Selected Reading from ICAP Cities, published by LEAA, June 13, 1978.

[16]KCPRAS, Computerized Police Resource Allocation System, Kansas City, MO, Police Department, Undated.

CONTINUED

2 OF 3

the University of California at Irvine, regarding the use of computers and technology in local government, it was found that expectations often exceeded results and successful innovations were often limited to rountine areas where the benefits were primarily bureaucratic as opposed to service oriented, and that the EDP managers were interested in implementing the state of the art technology as opposed to serving user needs.[17] In a further study performed by Thomas Whisler in the private sector, he concluded that "in many organizations, it is very easy to find people aware of potential computer applications that are both technologically feasible and economically desirable, but are stalled by organizational resistance.[18]

Realizing the experience that we have gained over the past decade, coupled with the existence of new methodologies, we are now at an important crossroad regarding the application and evaluation of Resource Allocation technologies. Improvements can and should be made in the quality of law enforcement computer applications. For example, in the modeling area we must build better models. Over the last decade, significant progress has been made. The Hypercube and PCAM Models offer far better options to police users than those available six or seven years ago. However, any claim about the impact on performance of advanced deployment models will remain largely speculative until more careful evaluation research is carried out. Currently, there is a study sponsored by the National Institute of Law Enforcement and Criminal Justice, LEAA, called, "Managing Patrol Operations Program Test Design."[19] In the preface of the program document, it is stated:

> "The National Institute of Law Enforcement and Criminal Justice, the research arm of the Law Enforcement Assistance Administration, is sponsoring a field test of a set of analytic techniques and management strategies which is intended to better utilize patrol resources. The basis for the field test is a Program Test Design, a document with detailed specification of selected program elements. The goals of each field test effort are to determine the effectiveness of these elements or program strategies in multiple settings and to examine their transferability to other jurisdictions."

> "A number of police departments have experimented with one or more of the elements of this patrol management program. In response to this experimentation, the National Institute has created a composite of the "best" approaches in the field which will be implemented in three departments in cities in the 200,000 to 450,000 population range. Both the process of implementation and its outcomes will be evaluated by the Institute. There are two underlying objectives of the field test:

> ● To assess the impact of this configuration of techniqes and strategies on patrol efficiency

> ● To determine if the program merits widespread replication."

[17] Kraemer, K., "Local government, information systems, and technology transfer." Public Administration Review, 37 (July-August, 1977), pp. 368-382.

[18] Whisler, T., The Impact of Computers on Organizations. New York: Praeger, 1970.

[19] "Managing Patrol Operations Program Test Design," project document, National Institute of Law Enforcement & Criminal Justice, LEAA, U.S. J/0/J.

In conclusion, for Patrol Resource Allocation, it is the time to develop a systematic program of evaluation, and such an experiment should be designed to test alternative Resource Allocation strategies and to examine the potential and problems regarding implementation. Although there are few case studies [20,21] available which can be characterized as definitive in the issue of the computer models implementation experience, it is safe to conclude that little of the potential of the models as an ongoing decision-aiding tool has been realized.

[20]"Field Evaluation of the NSF-MIT Hypercube Patrol Sector Design Methods," the Institute for Public Program Analysis, 1976.

[21]Tien, M. James, James W. Simon and Richard C. Larson, "An Evaluation Report of An Alternative Approach in Police Patrol: The Wilmington Split-Force Experiment," Public Systems Evaluation, Inc., March 1977.

APPENDIX I

ADVISORY COMMITTEE ON
CRIME ANALYSIS SYSTEM SUPPORT

REPORT OF THE SUBCOMMITTEE
ON
INVESTIGATIONS RESOURCE ALLOCATION

George W. Sicaras, Chairman
Deputy Chief of Police
Hartford, Connecticut Police Department

Major C. R. Connery
Seattle Police Department
Seattle, Washington

Mr. Fred Newton
Colorado Springs Police Department
Colorado Springs, Colorado

CRIME ANALYSIS SUPPORT TO MANAGEMENT OF THE
INVESTIGATIVE FUNCTION

Of significant concern to police executives in recent years is the management of a department's investigative function. Since publication of "The Criminal Investigation Process" by the Rand Corportion in 1975, chiefs of police have begun a review of their respective department's investigative functions to determine their utility/viability. By and large, efforts to learn precisely what an investigations division does and how they do it have been perplexing. Investigative related data, in forms usable by top management, have been largely unavailable. Investigative commanders, in some cases, have perpetuated the "Detective Mystique" by not collecting data deemed to be fundamental to the management of any police department function. The lack of data obviously frustrates any serious effort to assess the utility or viability of the investigative function.

The subcommittee, during its deliberations, concluded that the entire area of investigative management has not yet been fully and completely explored. Extensive research on resource allocation and deployment, optimal caseloads, time management, predictability of the resolution of crimes and several other areas of concern to the police executive as identified in this report, is urged and to that end, the subcommittee strongly recommends that such an effort be undertaken either as a continuation of the CASS project or separately. The subcommittee further recommends that if such a research effort is undertaken, an advisory committee consisting of management-oriented investigative practitioners and other law enforcement professionals be considered to guide and direct research undertakings.

This report, it should be noted, attempts to deal with the fundamental management issues in the area of Investigations Resource Allocation. It is by no means comprehensive or complete in terms of providing police executives with formulae on the number of investigators they should or should not have in investigative divisions, precise measurements of productivity and the like. Indeed, this report is intended to identify those data elements most police executives should expect of investigative managers routinely thereby giving the executive information he needs to make informed management decisions. The level of organizational complexity of the department concerned will obviously affect data element requirements. Chiefs of small to medium size departments may find the data requirements identified herein particularly useful.

The Crime Analysis Function (though not necessarily the Crime Analysis Unit) can provide valuable support to criminal investigations in three principal ways. These are:

1. Pattern analysis; inactive-uncleared crimes and the correlation between suspect information and known offenders. This would also be useful for new or ongoing investigations.

2. Investigations Resource Allocation/Management Information.

3. Special studies; social and political crime concerns.

We will concentrate here on Investigations Resource Allocation/Management issues.

Managing the Investigations Function involves the optimization of return on resources expended. Obviously, one cannot optimize return until a conscious decision has been made as to the mission, objectives and priorities of the enterprise. Without that, one cannot define what the return should be, let alone optimize it.

We believe a cogent mission statement for divisions charged with the investigation of crime to be: "Identify, Apprehend, and Assist in the Prosecution of Crime Perpetrators." This, of course, may be amended or expanded to meet the needs of individual departments.

OBJECTIVE:

Identify and/or apprehend (x) percent of offenders by crime type.

PROCESS:

In person to person crimes, the investigative process, in decreasing order of effectiveness is:

1. Interview (victim, witness, informant, suspect).

2. Physical evidence.

3. Pattern analysis (M.O.).

In crimes of stealth, the investigative process in decreasing order of effectiveness is:

1. Physical evidence (something left at scene or something taken from scene found in or out of the possession of a suspect).

2. Pattern analysis.

3. Interview.

For the manager to make decisions about the appropriate mix and distribution of resources to perform the described process leading toward the objectives flowing from that mission, he will require specific information. The following administrative issues, raised by Deputy Chief George W. Sicaras of the Hartford, Connecticut Police Department and circulated widely among a number of police agencies, were intended to stimulate discussion and research among police executives as well as investigative managers. They are re-iterated here since they are questions, which once researched or otherwise answered and explained, will provide the police executive with an opportunity to critically assess an investigative division and ultimately make informed decisions concerning that function. This report does not address basically proactive investigations, i.e., vice, narcotics, intelligence, and special units such as anti-fencing squads.

ADMINISTRATIVE ISSUES:

- How do police administrators decide the number of personnel they need in criminal investigation divisions?

- How should team or individual investigator case loads be determined? What is the optimum?

- Of cases assigned for active follow-up investigation, what percentage can an administrator reasonably expect to be cleared?

- What measures can be employed to ascertain productivity/performance of investigators?

- Can we reasonably predict how long certain types of crimes will require an investigator's time for successful conclusion?

- How extensively should time management techniques be employed in reviewing/ monitoring how investigator's spend their time?

To begin to respond to such questions, we must further delineate specific information requirements. It would appear reasonable to assume that effective management of the investigative function, and resource allocation therein, would require statistically supported answers to the following questions:

- What percentage of reported crime, given a reasonable amount of investigative effort, is solvable?

- How long should an assigned case remain active?

- What is an optimum case load? How is this determined?

- Of all cases previously solved, what was the median time of assignment?

- What percentage of total investigator time is available for crime investigation?

- What are the activities (fixed demand) diminishing investigator time? How much time is involved? Can these be managed?

- Over the past two or three years, is investigative productivity increasing or decreasing? How much?

- How do individual investigators compare in productivity? What standards or measures do you use to determine levels of productivity?

- What indicators/standards tell you how well supervisors perform case control, quality control and investigator training functions?

- Are cases being assigned which have the highest probability of solution?

- What percentage of unassigned cases could have been productively assigned:

  a. Had manpower been available?
  b. With adjustments in case assignment criteria?
  c. To other department components (patrol, special units, etc.)?

- What percentage of <u>assigned</u> cases are solved?

- Quantify the impact on case clearance/apprehension with specific changes in:

  a. Total resources available.
  b. Resource utilization (one man or two men assignments).

- What are investigative training needs (for investigators, supervisors, and managers)?

- What percentage of cases offered for prosecution are accepted for charging by a prosecutor? If not accepted, why not?

- What percentage of cases accepted by a prosecutor result in conviction? If not successful, why not?

- Can you quantify the relationship between investigative man-days available and case assignments?

The preceding questions should demonstrate a need for information which is generally not being collected or used in most police departments. The basic information necessary to answer all of the questions can be made available from:

1. A structured method of evaluating case solvability (such as solvability factors) in a form that can be aggregated.

2. A method of tracking case status over time.

3. A method of capturing historical data on investigator workload and aggregate success ratio.

Data elements needed appear to fall into four activity categories:

1. Initial receipt at the investigator's unit.

2. Assignment.

3. During the investigation.

4. Case termination.

The following are listings of data which should be collected under each category:

1. <u>INITIAL RECEIPT</u>

   - Date and time of occurrence.
   - Date and time reported to police.
   - Date and time of assignment review.

- Crime type solvability factors.
- Crime type without solvability factors (supervisory judgment in heinous crimes or those where community interest has been aroused).
- Location of occurrence.

2. ASSIGNMENT

- Case report number.
- Reviewer for assignment.
- What was the decision for each case (status codes).
- What was the rationale for each decision.
- To whom was the case assigned.
- Priority of case assignment based on administrative decision.
- Date of acceptance and assignment by investigator.
- Acceptance and assignment of cases transferred by other department units.
- Reopening of inactive cases.
- Case reassignment between investigators.

3. DURING INVESTIGATION

- Case reassignment.
- Automatic review data and reviewer.
- Decision on status as a result of review: continue, terminate, suspend, or inactivate.
- Increase or decrease investigative resources assigned.
- Reclassification.

4. CASE TERMINATION

- Date closed.
- Closure status:
  - Temporarily suspended.
  - Inactive/not cleared.
  - Administratively cleared.
  - Exceptionally cleared.
  - Arrest.
  - Unfounded.
- Charge filed: felony, misdemeanor. (Optional.)
- Grand Jury: true bill, no true bill. (Optional.)

These data elements can be captured in a number of different ways. Solvability information can be indicated on a case-by-case basis using the Rochester model of report forms generating case solvability factors. Some variations of this are illustrated in Attachment (A). Departments should feel free to experiment with alterations to these designs.

Examples of case tracking data capture instruments are case logs or case assignment/ control records as exemplified in Attachments (B) and (C). Any of these examples could be converted to computer input, which obviously simplified data aggregation and analysis. Each agency could choose from among (or alter) the examples shown to best suit the needs and circumstances reflected in that agency. By way of illustration, Hartford is modifying its Case Assignment Log and other collection instruments for the third time in just more than a year to accommodate new levels of organizational sophistication.

SPECIAL MANAGEMENT CONSIDERATIONS ASSOCIATED WITH DATA CAPTURE

One of the more pressing problems inherent in establishing new data capture instruments is that of misplaced responsibility. The actual responsibility for entering information on the case assignment instrument is clearly best placed with that supervisor charged with case assignment/monitoring/quality control functions. It must not be allowed to gravitate downward to the investigator since that would eventually destroy management control of the case assignment process.

Another issue for careful consideration is that new instruments are best accepted when each level required to process or work with the instrument can get information and assistance helpful to them from the form(s) developed and implemented. More often than not, the advantages offered will have to be pointed out in the beginning. Although the advantages of gathering this information may be immediately apparent to the manager, the new procedure can easily become a threat to those required to process it. Inasmuch as data collection for management purposes is relatively new, the threat implied in collecting such data, as it relates to the "Detective Mystique" may intensify unless organizational development planning is considered.

Whenever data capture instruments are selected/designed, it is imperative that these be routinely reviewed (at least annually) for accuracy, effectiveness and maximum simplicity to assure that data utility exceeds the effort required to capture it.

DATA UTILIZATION

1. Universal Utility.

   From the data capture mechanisms described, one should be able to assemble periodic reports on manpower availability, investigator productivity, case load demand, average investigator case load, and other indicators reacting to the questions posed under "Administrative Issues."

   Logic leads us to believe that before we can effectively manage an activity we must gain a clear understanding of how that activity functions and the degree of "success" possible. We would further suggest that understanding can be gained from relatively straightforward and uncomplicated compilations of basic facts represented by collected data. We are appending a representative report reflecting these principles currently in use by the Hartford Police Department in Attachment (D). While extremely comprehensive, once introduced in incremental stages, police investigative managers will come to depend upon the various data elements as an important part of the total information required to more effectively and efficiently assess the "successes" (or failures) of their commands. (The Hartford Investigative Management Information System, it should be noted, was and continues to be collected in a manual mode although plans are underway to "automate" certain elements.)

2. Advanced Applications.

   Some of the elements of an advanced system under a formula developed by Deputy Chief Sicaras, but not yet tested, would include the identification of investigative variables (tasks), quantification of investigative variables (tasks), their relationship to:

     a. Stranger-to-stranger crimes.
     b. Crimes involving friends, relatives, or associates.
     c. Crimes of personal violence.
     d. Crimes of stealth.

     (Note: This implies valid quantification of man-hours available for
     "pure" investigative assignment and man-hours expended historically
     for certain crime types and their specific relationship to a. through
     d., above.

A consideration of these factors, among others, could lead an administrator to reasonably
predict approximately how much investigative time would be required to resolve an
investigation of these crime types. Additionally, it may assist him in determining
optimum case loads, optimal case clearances, productivity thresholds and, where possible,
arrests resulting in conviction and imprisonment. While we recognize prosecutorial
constraints in many jurisdictions, we do suggest that to the extent that it is possible,
arrests with convictions and incarceration (particularly in habitual offenders) provide
one of the most desirable measures of investigative effort and therefore effectiveness.
Concurrent with the above is the expectation that an extensive time-management system
(and to document dispositions, a fairly sophisticated case tracking scheme) be developed
and implemented for all investigative activities. Not only would this data aid managers
with existing resources but may well assist in planning future resource needs.

This report and its several attachments represent a very fundamental approach to the
management of the investigative function, and, as stated previously, may be modified
to meet the needs of any agency. The examples offered in this report reflect the
efforts of two departments to come to grips with the long neglected need to fully
understand the investigative management function. Through extensive data collection
the Hartford and Seattle Police Departments have been able to begin a microscopic
assessment of investigative functions. As we have recommended, substantially more
research is needed to fully and properly examine the criminal investigation process
as well as its management.

We conclude this report by suggesting that the MCI (Management of Criminal Investi-
gations) effort heretofore has been of extreme value to police executives and investi-
gative managers. We also conclude that management of the criminal investigation
function is, or should be, an integral major part of any MCI undertaking. The distinc-
tion between the two, as has been attempted herein, is important and requires a
comprehensive systems approach, including close examination of the roles of investigative
supervisors and commanding officers - as they are now and as they should be in a structured
management environment.

Attachment (E) of this report contains several procedures used in the assignment and
control of criminal investigations. They are included for informational purposes.
Also included are data collection instruments being considered for implementation
for the Hartford Police Department.

GLOSSARY

SOLVABILITY FACTORS:

Data element(s) or circumstance(s) which indicate a potential for case solution, based upon the agency's past case experience.

PRODUCTIVITY:

A quantifiable measurement of expected or anticipated work performance goals. The performance goals of each investigator should have an apparent relationship to the goal statement of the investigations division.

MAN-DAYS:

Generally refers to that time assigned for duty that a manager could utilize to investigate crime. To determine man-day availability simply calculate total time on duty and subtract activities performed other than the investigation of crime. Example: Assuming a forty-hour work week per investigator, multiply forty hours by the number of investigators and multiply that total by 52.

Subtract from that total:

- Average vacation days taken (during the prior calendar or fiscal year).
- Average sick/injury days (same period).
- Holiday leave.
- Compensatory time that is taken at a rate larger than expended to earn.
- Special assignments of a non-investigatory nature.
- Military leave.
- Court time while on duty.
- Training.
- Assisting other agencies.
- Administrative duties.

CASE STATUS CODES (As suggested by the Hartford Police Department)

ACTIVE FOLLOW-UP:

Assigned to an investigator for follow-up where solution of the offense appears likely or promising given the presence of certain facts, e.g., identification of the perpetrator, physical evidence which may lead to the identification and arrest of the perpetrator, witnesses, a suspect's name, etc. It is logged and charged to a specific investigator or team of investigators. It requires frequent and persistent action by the investigator(s) which must be documented on an investigative supplement as the case progresses. Active cases require supervisory review at specified times during a reporting period. Where one PRIMARY or two SECONDARY "solvability factors" are checked on the crime report, a case must be assigned for follow-up, unless unusual circumstances are present and noted by the reviewing supervisor. A case may also be assigned for follow-up

in instances where there may not be sufficient leads or information but the seriousness or nature of the crime is such that immediate investigation which is clearly in the public's interest or where community interest is aroused may also be assigned for active folow-up.

<u>INACTIVE</u>:

No follow-up is required due to insufficient information, leads exhausted, etc. Where a preliminary crime report is devoid of sufficient information to permit follow-up and/ or the incident is minor to the extent that other cases, by their degree of severity require immediate follow-up, such cases may be rendered inactive. In addition, where the crime report "solvability factors" contain no primary elements or one or less secondary elements or the information indicates that solution is unlikely or impossible, the supervisor may exercise his discretion in not assigning the case for active follow-up. CASES IN THIS CATEGORY WILL REMAIN OPEN, THOUGH DESIGNATED INACTIVE. The supervisor retains the prerogative to activate a case previously designated inactive when circumstances require such action.

(<u>Warrant denied.</u>) Additionally, when an investigator requests that a warrant be issued for the arrest of a person or persons he/she believes committed an offence, and the warrant is denied by the Prosecutor or Court, this case status designation is utilized. When a warrant is denied, the case generally becomes inactive. No follow-up is usually required unless the investigator and/or his supervisor believe that further investigation will yield additional evidence to support the issuance of a warrant.

<u>SUSPEND</u>:

This may be used when a case demonstrates probable likelihood of solution (or the possibility of it) if certain key or required fundamental information is not included or not fully described in the initial crime report. The case may be suspended for a brief period of time or until the information required is provided by the uniformed officer who conducted the preliminary investigation or some other means. Supervisors and Commanding Officers are given the discretion to suspend an investigation provided that they document a specific reason or otherwise justify such action in writing. This case status designation may also be used when there are cases referred which <u>should</u> or could be followed-up, but there are insufficient resources available at the time of receipt of such cases. In addition, a case may be suspended if cases of higher priority are received or if excessive resources have been expended on a case given increased case loads and other factors. The suspension of a case is temporary and implies that solution is probable but other circumstances of a short term nature prevail thus preventing continued active follow-up. No case may be suspended for more than 30 days without the written permission of the investigative division/unit commanding officer. In all cases, the status of any case referred to, or initiated by an investigative division or unit must be reflected on appropriate documents.

<u>CLOSED BY ARREST OR REFERRAL</u>:

A case, or offense, is cleared by arrest when at least one person is:

    a. Arrested; or referred to juvenile authorities, social agencies or other diversion programs if such person is a juvenile as defined by applicable state statutes.

    b. Charged with the commission of the offense <u>directly related</u> to the case.

    c. Turned over to the Courts for prosecution.

Keep in mind that offenses and not arrests are being counted. For purposes of the FBI's Uniform Crime Report (UCR), it makes no difference as to how many are arrested. There can be no more offenses cleared than offenses which occurred.

If several persons commit one crime and only one is arrested and charged, list the crime as cleared by arrest. When other offenders are arrested (assume in the next month) do not list a clearance by arrest a second time for the one offense. Several crimes or offenses may be cleared by the arrest of one person.

Examples:

1. A man commits murder. He is arrested, charged, and turned over to the Court.

2. Five thieves break into a warehouse. You arrest and charge one of them. You may clear one offense of burglary and one such offense cleared by arrest. Later, the other four thieves are arrested and charged. The one offense (warehouse burglary) has already been listed as cleared by arrest.

3. You identify a suspect whom you know committed five burglaries. You arrest him and charge him with the five offenses. These five offenses are cleared by the arrest of one person.

ADMINISTRATIVE CLEARANCE:

After a warrant(s) has been secured from the Court and the department or other jurisdiction is immediately unable to locate the accused, or other circumstances preclude the service of the warrant, an "administrative clearance" may be claimed and reflected as such - separately and distinctly - on internal reporting documents ONLY. An administrative clearance is not recognized as an official clearance by the FBI's Uniform Crime Reporting system. Commanding officers and supervisors are cautioned that if an administrative clearance is claimed, this in no way relieves them or their subordinates from continuing their active efforts to apprehend the individual for whom the warrant was issued. You may not, under any circumstances, take credit twice for the same clearance (UCR and administrative). The administrative clearance is to be reported within investigations commands only. When the warrant is ultimately served and the individual(s) arrested, the department's Crime Reporting Section will properly report the clearance to the FBI. This in no way will affect statistical accounting of cases since administrative clearances and UCR clearances will be shown separately in various internal management reports. Control and integrity of reporting various types of clearances are the responsibilities of commanding officers and supervisors, and are subject to routine inspection and audit.

EXCEPTIONAL CLEARANCE:

In certain very practical situations, the police are unable to follow the three steps outlined above for clearance by arrest. Yet, everything possible has been done in order to clear the case. IF ALL OF THE FOLLOWING QUESTIONS CAN BE ANSWERED "YES", then the offense may be listed as cleared. This conforms strictly to the FBI's UCR guidelines.

1. Has the investigation definitely established the identity of the offender?

2. Is there enough information (probable cause) to support an arrest, charge, and turning over to the Court for prosecution?

3. Do you know the exact location of the offender so that you could take him into custody now?

4. Is there some reason outside police control that stops you from arresting, charging, and prosecuting the offender?

An offense can be <u>exceptionally cleared</u> when it falls into one of the following categories:

1. Suicide of the offender (the person responsible is dead).

2. Double murder (two persons kill each other).

3. Deathbed confession (the person responsible dies after making the confession).

4. The offender is killed by the police.

5. Confession by an offender already in your custody or serving a sentence (this is actually a variation of a true clearance by arrest - you would not "apprehend" the offender but in most situations like this the offender would be prosecuted on a new charge).

6. An offender prosecuted in another city for a different offense (you attempt to return him for prosecution, but the other jurisdiction will not release him to you).

7. Extradition is denied.

8. The victim refuses to cooperate in the prosecution (this does not "unfound" the offense and the answer must still be "yes" to the first three questions listed above in this section).

9. For some reason outside your control, an offender is prosecuted for a less serious charge than that for which you arrested him (such as reckless driving for negligent manslaughter offense - the offense remains the same).

10. The handling of a juvenile offender either orally or by written notice to parents in instances involving minor offenses such as petty larceny. This may include a verbal warning or referral to a social agency as well. No referral is made to juvenile court as a matter of publicly accepted police policy.

   <u>NOTE</u>: The recovery of property does not clear a case.

ATTACHMENT   A

rochester police department crime investigation report

PAGE OF

| 1. OFFENSE OR CHARGE (INCLUDE DEGREE) | 2. CLASSIFICATION OF OFFENSE (SUPERVISORY REVIEW) | 3. C.R. NO. (ORIGINAL ONLY) |

| 4. TIME OF OCCURENCE | M....J....Y....T.... | 5. WHEN AND WHERE REPORTED | M D Y T | 6. LOCATION OF OFFENSE (HOUSE NO, STREET NAME) |

| 7. VICTIMS NAME (LAST, FIRST, MIDDLE) OR FIRM NAME IF BUSINESS | 8. VICTIMS ADDRESS (HOUSE NUMBER, STREET NAME) | 9. RESIDENCE PHONE DAY NIGHT |

| 10. VICTIMS PLACE OF EMPLOY. OR SCHOOL NAME | 11. BUSINESS PHONE DAY NIGHT | 12. SEX/RACE/AGE VICTIMS | 13. PERSON REPORTING - SIGNATURE - DATE |

14. IF ARREST IS MADE; NAME ARRESTEES IN NARRATIVE. PLACE THE NUMBER OF ARRESTEES IN BOX A. IF NONE PLACE AN X IN BOX A → 14.

15. INDICATE WITH PROPER CODE IN BOXES PROVIDED PERSONS RELATIONSHIP TO INVESTIGATION W-1 WITNESS #1, W-2 WITNESS #2, R- REPORTING PERSON, P/+ PERSON WITH KNOWLEDGE INCLUDING REPORTING PERSONS NAME IF DIFFERENT FROM VICTIMS' IF CITIZEN INFORMATION FORM R.P.D. 1148 IS LEFT WITH ANY OF THESE PERSONS INDICATE BY CIRCLING PERSONS DESIGNATED.

ADDRESS CHECKED	APT.#	PERSON INTERVIEWED	INFORMATION PROVIDED - USE NARRATIVE IF NEEDED
ADDRESS CHECKED		PERSON INTERVIEWED	
ADDRESS CHECKED		PERSON INTERVIEWED	
ADDRESS CHECKED		PERSON INTERVIEWED	
ADDRESS CHECKED		PERSON INTERVIEWED	
ADDRESS CHECKED		PERSON INTERVIEWED	

16. WAS THERE A WITNESS TO THE CRIME? IF NO PLACE AN X IN BOX B → 16.

17. CAN A SUSPECT BE NAMED? IF NO PLACE AN X IN BOX C → 17.

| SUSPECT #1 (NAME INCLUDE ANY A-K-A INFO) | SUSPECT #2 (NAME INCLUDE ANY A-K-A INFO) | SUSPECT #3 (NAME INCLUDE ANY A-K-A INFO) |

18. CAN A SUSPECT BE LOCATED? IF NO PLACE AN X IN BOX D → 18.

| SUSPECT #1 MAY BE LOCATED AT | SUSPECT #2 MAY BE LOCATED AT | SUSPECT #3 MAY BE LOCATED AT |

19. CAN A SUSPECT BE DESCRIBED? IF NO PLACE AN X IN BOX E → 19.

| SUSPECT #1 DESCRIPTION | SUSPECT #2 DESCRIPTION | SUSPECT #3 DESCRIPTION |

DESCRIBE EACH SUSPECT - USING AGE, SEX, RACE, HEIGHT, WEIGHT, ANY IDENTIFYING SCARS, MARKS AND CLOTHING DESCRIPTION

20. CAN A SUSPECT BE IDENTIFIED? IF NO PLACE AN X IN BOX F → 20.

← IF SUSPECT INFORMATION HAS BEEN GIVEN

21. OUT VIA RADIO COMM. PLACE AN X IN BOX 21. | USING APPROPRIATE CODE IN THE BOXES PROVIDED-INDICATE WHO CAN IDENTIFY SUSPECT

| 22. FILL IN LICENSE PLATE INFORMATION IF IT IS AVAILABLE. | MODEL/MAKE | YEAR | TYPE | COLOR TOP/BOTTOM | IDENTIFYING CHARACTERISTICS |

23. CAN THE SUSPECT VEHICLE BE IDENTIFIED? IF NO PLACE AN X IN BOX G → 23.

24. ← IF SUSPECT VEHICLE INFORMATION WAS GIVEN VIA RADIO COMMUNICATION PLACE AN X IN BOX 24.

25. IF THE STOLEN PROPERTY IS TRACEABLE INDICATE IN THE SPACE PROVIDED BELOW IF NO PLACE AN X IN BOX H → 25.

26. DESCRIBE PROPERTY TAKEN/DAMAGED	27. WHERE PROPERTY WAS REMOVED FROM	28. PROPERTY IDENTIFICATION INFORMATION	29. PROP. VAL.

| 30. WHERE HOSPITALIZED | 31. ATTENDING PHYSICIAN | 32. DATE/TIME PRONOUNCED | 33. PRONOUNCING PHYSICIAN - WHERE | 34. MEDICAL EXAMINER NOTIFIED NAME | TOTAL VALUE |

35. IS THERE A SIGNIFICANT M.O. PRESENT? IF YES DESCRIBE IN NARRATIVE IF NO PLACE AN X IN BOX I → 35.

| 36. PROPERTY INV. NO. | 37. NATURE OF INJURY | 38. POINT OF CRIME | 39. TYPE OF WEAPON, INSTRUMENT OR FORCE USED |

40. IS THERE SIGNIFICANT PHYSICAL EVIDENCE PRESENT? IF YES DESCRIBE IN NARRATIVE IF NO PLACE AN X IN BOX J → 40.

41. TECH WORK DONE BY | HAS AN EVIDENCE TECHNICIAN BEEN CALLED? IS EVIDENCE TECHNICIAN REPORT POSITIVE? | IF NO PLACE AN X IN BOX K PLACE AN X IN BOX K → 41.

42. IS THERE A SIGNIFICANT REASON TO BELIEVE THAT THE CRIME MAY BE SOLVED WITH A REASONABLE AMOUNT OF INVESTIGATIVE EFFORT? IF NO PLACE AN X IN BOX L → 42.

43. WAS THERE A DEFINITE LIMITED OPPORTUNITY FOR ANYONE EXCEPT THE SUSPECT TO COMMIT THE CRIME? IF NO PLACE AN X IN BOX M → 43.

44. NARRATIVE: SUMMARIZE DETAILS OF CRIME INCLUDING A DESCRIPTION OF EVENTS; ANY ADDITIONAL INFORMATION WHICH IS AN EXTENSION OF ANY OF THE ABOVE BOXES; NAMES OF ARRESTED; NAMES OF OTHER OFFICERS OR UNITS ASSISTING.

ARREST

ARREST

ARREST

ARREST

ARREST

| 45. IS ONE OR MORE OF THE SOLVABILITY FACTORS PRESENT IN THIS REPORT? ☐ YES (FIELD FOLLOWUP) ☐ NO (OFFICE REVIEW) | 46. REPORTING OFFICERS ASSIGNED BEAT # | 51. |

FIELD SUPERVISORS REVIEW
47 ☐ COMPLETE _____ ☐ CONCUR _____ RECOMMEND _____
C.I.D. / SECTION COMMAND REVIEW
48 ☐ CONCUR / RECOMMEND _____ REVIEWER _____

49. ☐ OPEN ☐ ARREST ☐ NO ARREST

50. STATUS FOR REVIEW CENTER
☐ UNFOUNDED
☐ NO PROSECUTION
☐ WARRANT ADVISED

SOLVABILITY FACTORS (ROCHESTER FORM)

1. ARREST

2. WITNESS

3. SUSPECT NAME

4. SUSPECT LOCATION

5. SUSPECT DESCRIPTION

6. SUSPECT IDENTIFICATION

7. SUSPECT VEHICLE

8. TRACEABLE STOLEN PROPERTY

9. SIGNIFICANT M.O.

10. PHYSICAL EVIDENCE

11. EVIDENCE TECHNICIAN

12. JUDGMENT ABOUT SOLVABILITY

13. LIMITED OPPORTUNITY JUDGMENT

SOLVABILITY FACTORS

CATEGORIES OF INVESTIGATIVE INFORMATION
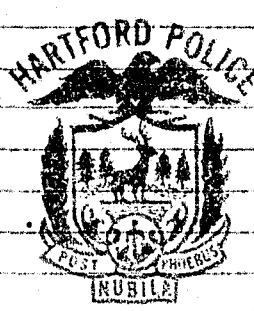
WHICH PREDICTABLY LEAD TO

CASE SOLUTION

HARTFORD POLICE DEPARTMENT

☐ **PROSECUTOR REPORT** ☐ **SUPPLEMENT** ☐ **JUVENILE REFERRAL** **INCIDENT REPORT** **CASE #**

RADIO SIGNAL	DATE OF INCIDENT	TIME OF INCIDENT	DATE REPORTED	TIME REPORTED	DISTRICT	UNIT	TYPE OF INCIDENT	UCC CODE	STATUS	UCC CODE 2
10	/ /	—	/ /							

| LOCATION OF INCIDENT | NUMBER | STREET NAME | | APT. | FLOOR | 0 - ☐ NOT APPLICABLE 1 - ☐ ON STREET | 2 - ☐ RESIDENT SINGLE 3 - ☐ NON RESIDENT | 4 - ☐ RESIDENT MULTI 5 - ☐ CITY PROPERTY | 6 - ☐ ALLEY OR LOT | RELATED CASE 1 |

| DATE AND TIME OF RECOVERY | LOCATION OF RECOVERY | CONTRIBUTING FACTORS • 0 - ☐ NOT APPLICABLE 1 - ☐ ALCOHOL 2 - ☐ DRUGS 3 - ☐ MENTAL PROBLEM 4 - ☐ CONTINUAL DOMESTIC | WEATHER CONDITIONS • 0 - ☐ NOT APPLICABLE 1 - ☐ CLEAR 2 - ☐ DRY 3 - ☐ RAIN 4 - ☐ SNOW 5 - ☐ ICE 6 - ☐ FOG | RELATED CASE 2 |

STATUS CODE: A-ACCUSED C-COMPLAINANT J-JUVENILE S-SUSPECT M-MISSING V-VICTIM W-WITNESS I-INTERVIEWED X-ALIAS O-OTHER L-LOCATED B-BUSINESS R-REFERRED JUVENILE
P-PEDESTRIAN K-OWNER of M/V N-PASSENGER in M/V T-TICKETED Z-OPERATOR M/V

RACE CODE: W-WHITE B-BLACK H-HISPANIC O-OTHER

PERSONS / BUSINESS

STATUS	LAST NAME	FIRST NAME	M.I.	SEX	RACE	DATE OF BIRTH	AGE	ADDRESS	APT.—FLOOR	TELEPHONE

ARRESTS AND REFERRALS

DATE OF ARREST	TIME OF ARREST	LOCATION OF ARREST • •	NUMBER	STREET NAME	IF JUVENILE PARENTS NOTIFIED ☐ YES ☐ NO
/ /					

ARREST 1.					
CHARGE 1.	STATUTE	CHARGE 2.	STATUTE	CHARGE 3.	STATUTE

ARREST 2.					
CHARGE 1.	STATUTE	CHARGE 2.	STATUTE	CHARGE 3.	STATUTE

SUSPECT

	SEX	RACE	AGE	HEIGHT	WEIGHT	HAIR COLOR	HAIR TYPE	COMPLEXION	DESCRIPTION/COMMENTS
#1					LBS.				
#2					LBS.				

PROPERTY CODE: A-ABANDONED E-EVIDENCE F-FOUND L-LOST R-RECOVERED S-STOLEN T-TOWED V-VEHICLE O-OTHER D-DAMAGED W-SUSPECT VEHICLE ☐ FORM 200 COMPLETED

PROPERTY

CODE	QTY.	YEAR	ITEM	(BRAND-MODEL)	STATE	REGISTRATION	COLOR	CHARACTERISTICS/CONDITION — SERIAL OR VIN.	EST. VALUE	CLASS
									$	
									$	
									$	
									$	

M.O.	POINT OF ENTRY	TYPE OF WEAPON — TOOLS

INCIDENT DETAILS

SOLVABILITY FACTORS	YES	NO	UNK
PRIMARY SUSPECT LOCATION			
SUSPECT NAME			
SUSPECT IDENTIFICATION			
WITNESS TO CRIME			
SECONDARY SUSPECT DESCRIPTION			
WEAPONS DESCRIPTION			
EVIDENCE COLLECTED			
VEHICLE INFORMATION			
PROPERTY I.D.'D/LOCATED			
M.O. INFORMATION			

HARTFORD POLICE
POST · PHOEBUS
NUBILA

PAGE____ OF____ PAGES

MICROFILM #

INVESTIGATING OFFICER •	CODE
ASSISTING OFFICER •	CODE
AFFIDAVIT STATEMENT: Subscribed and sworn to before me this day (date) (signed)	SUPERVISOR	CODE

HPD FORM # 76 REV. 9/77

149

PORTSMOUTH POLICE DEPARTMENT
INVESTIGATIVE CHECKLIST

OFFICER REVIEW:

A. WAS THERE A WITNESS TO THE CRIME? IF NO PLACE X IN BOX $\boxed{A}$

B. CAN A SUSPECT BE NAMED? IF NO PLACE X IN BOX $\boxed{B}$

C. CAN A SUSPECT BE LOCATED? IF NO PLACE X IN BOX $\boxed{C}$

D. CAN A SUSPECT BE DESCRIBED? IF NO PLACE X IN BOX $\boxed{D}$

E. CAN A SUSPECT BE IDENTIFIED? IF NO PLACE X IN BOX $\boxed{E}$

F. CAN SUSPECT'S VEHICLE BE IDENTIFIED? IF NO PLACE X IN BOX $\boxed{F}$

G. IS THE STOLEN PROPERTY TRACEABLE? IF NO PLACE X IN BOX $\boxed{G}$

H. IS THERE A DISTINCTIVE M.O. PRESENT? IF NO PLACE X IN BOX $\boxed{H}$

I. IS THERE SIGNIFICANT PHYSICAL EVIDENCE PRESENT? IF NO PLACE X IN BOX $\boxed{I}$

J. WAS EVIDENCE TECHNICIAN CALLED? IF NO PLACE X IN BOX
    OR IF EVIDENCE TECHNICIAN REPORT NEGATIVE, PLACE X IN BOX $\boxed{J}$

K. WAS THERE A DEFINITE LIMITED OPPORTUNITY FOR
    ANYONE EXCEPT THE SUSPECT TO COMMIT THE CRIME? IF NO PLACE X IN BOX $\boxed{K}$

SUPERVISOR REVIEW:

L. ARE ANY SOLVABILITY FACTORS PRESENT? IF NO PLACE X IN BOX $\boxed{L}$

M. IS THERE A SIGNIFICANT REASON TO BELIEVE THAT THE CRIME MAY
    BE SOLVED WITH A REASONABLE AMOUNT OF INVESTIGATIVE EFFORT?
    IF NO PLACE X IN BOX $\boxed{M}$

N. DOES THIS REPORT REQUIRE PRIORITY PROCESSING? IF YES PLACE ✓ IN BOX $\boxed{N}$

SHORT FORM INSTRUCTIONS FOR COMPLETING OFFENSE REPORT

1. Indicate type of crime or incident.

2. Crime or incident reclassification **by Supervisor.**

3. Specific type of premise or location where incident occurred. (e.g., bedroom in residence, bar, garage, car.)

4. Date and time incident occurred. If exact date and time is unknown, make closest possible determination and then state time as between specific hours and dates.

5. Date and time incident was reported.

6. Street address where incident occurred.

7. Zone number of incident location.

8. Census tract and block number of incident location. **Supervisor complete this item.**

9. Total number of victims or subjects of incident.

10. Insert LAST name, FIRST name and MIDDLE initial of victim or subject. If business, FIRM name and TYPE.

    Victim—person, firm or establishment suffering harm.

    Subject—suspected violator in crimes which do not involve harm to another or missing, injured, deceased or sick person, etc. in non-criminal event.

11. Home address of person victims. Exact address of business.

12. Victim's age and date of birth.

13. Victim's race (W—White; N—Negro; I—Indian; C—Chinese; J—Japanese; O—all others)

14. Victim's sex.

15. Victim's place of employment or school of attendance.

16. Victim's home phone number. For business victims, home number of person to be contacted.

17. Victim's business phone. Include extension numbers.

18. Insert proper descriptive code in column provided after name of each person interviewed to describe their relation to preliminary investigation.

19. Name of **all** persons interviewed or canvassed.

20. Address for each person listed in Item 19. and for **all** locations canvassed.

21. Daytime phone number for persons listed in Item 19.

22. Type of information interviewee provided.

23. Using proper code indicate who can identify each suspect.

24. Suspect's name, nickname and or aliases.

25. Suspect's home address and/or known hangouts.

26. Suspect's description include age, D.O.B., race, sex, height, weight, complexion, hair color and style, eye color, clothing, scars tatoos and peculiarities.

27. Check whether or not each suspect arrested.

28. Check appropriate box(es) indicating status of vehicle being described.

29. Make and model of motor vehicle or bicycles.

30. Year of vehicle's production.

31. Vehicle's body type.

32. Vehicle's colors. List top color first.

33. Unusual characteristics, markings, or damage.

34. Vehicle license/registration number. List state of license for motor vehicles. List city for bicycle.

35. Vehicle identification number for motor vehicles. Frame serial number for bicycles.

36. Leave blank—records use only.

37. Value of stolen vehicle or items of stolen property.

38. Value of recovered stolen vehicle or items of recovered stolen property.

39. Description and quantity of stolen items.

40. Identifying facts for stolen items, include manufacturer, serial number, color, size, model design, condition, etc.

41. Calculate value of stolen property.

42. Calculate value of recovered property.

43. Means of attack or point of entry—detail in narrative.

44. Weapons or instruments used to commit crime.

45. Person(s) physically injured.

46. Hospital providing **any** treatment to injured party.

47. Physician providing first medical treatment.

48. Describe injuries.

49. Date and time death pronounced.

50. Physician pronouncing death.

51. Medical examiner notified of death.

52. **NARRATIVE:** Clearly label and complete any additional information requested in the structured portion of the form.

    Describe how became aware of event.

    Describe details of offense/incident. Describe precisely preliminary investigation include steps taken, evidence recovered, officer assisting etc. Include all statements and admissions.

53. Dispatch message number.

54. Action taken or recommendations.

55. Name and employee number of person preparing report.

56. Name, employee number, concurrence or alternative recommendation of reviewing supervisor.

Insert total number of pages in report.

ATTACHMENT B

HARTFORD POLICE DEPARTMENT
INVESTIGATIVE SERVICES

CASE ASSIGNMENT LOG

INVESTIGATOR: _____

DIVISION:

MONTH:

	ASSIGNMENTS		REVIEW						EXTENSION AUTH.	DATE OF STATUS CHANGE	CLEARED			INACTIVATED		SUSPENDED		SUPVR.
	CASE #	CRIME	T Y P E								ARREST/	EXCEP.	ADM.	LEADS	WRT	OTHER	EXCESS	
DATE	YEAR:	CATEGORY	NEW	CF	RA	2	5	30			REF.			EXH'D	REF	PRIOR	RES/EX	

ISB PROPOSED TEMP. FORM B (CM) 12/78   CF: Carried Forward   RA: Reassigned

INVESTIGATIVE SERVICES BUREAU
CASE ASSIGNMENT   INVESTIGATOR: _____   DIVISION: _____ MONTH: _____

DATE CASE ASSIGNED	CASE NUMBER	CATEGORY OF CRIME	REVIEW DECISION DATES							CLOSED OR INACTIVE DATE	REASON FOR CONCLUSION	CLOSED WITH RESULTS Briefly Describe	INV/SUPPL. FORWARDED RECORDS/DATE	SUPVR.
			2	5	10	20	30	40	50					

ISB TEMP. FORM A (CM) 4/78   HARTFORD POLICE DEPARTMENT

CASE ASSIGNMENT RECORD--INDIVIDUAL INVESTIGATOR

(EXTRACTED FROM: MANAGING CRIMINAL INVES-
TIGATIONS MANUAL, UNIVERSITY RESEARCH
CORPORATION - 1977)

NAME OF INVESTIGATOR _____

Date Case Assigned	Case #	Category of Crime	Review Decision Dates				Closed on Date	Closed with Results (Briefly Describe)	Reason for Close or Continuation
			10	20	30	40			

ATTACHMENT C

SEATTLE, WASHINGTON POLICE DEPT.

| Incident No. | Name | | ☐ Suspect |
| | | | ☐ Victim |

| Date Occurred | Crime | Unit Assigned |

| File No. | Location | |

ASSIGNED

Date		**TERMINATE** Date	**OUTCOME**	**ARREST**
To		Reason		☐ Adult Juvenile ☐
By				☐ CID BY Other ☐
Reason	Priority	Re-assigned		☐ CHARGED FELONY
				☐ CHARGED MISD.

Remarks:

☐ I & R
Reason
☐ FELONY PROSECUTION REFUSED

PROPERTY RECOVERED
☐ ALL ☐ PART ☐ NONE

Case Assignment Control Record   Form 9.61 CS 21.561 1-77

SEATTLE, WASHINGTON POLICE DEPT.

INCIDENT NUMBER

UNIT FILE NUMBER

DATE OF OCCURRENCE

DATE RECEIVED

SERGEANTS SERIAL NO.

○ VICTIM
○ SUSPECT

SERGEANT HANDLED:

○ INACTIVE
○ UNFOUNDED
○ REFERRED TO COURT UNIT
○ REASSIGNED TO_____UNIT

○ RAPE
○ AGG. ASSAULT
○ NON AGG. ASSAULT
○ COMM. ROBBERY
○ NON COMM. ROBBERY

○ RESID. BURGLARY
○ NON-RESID. BURGLARY
○ LARCENY
○ AUTO THEFT
○ _____

ASSIGNED	TERMINATED	PROSECUTOR/COURT

DATE: _____ DET. SERIAL NO. _____

REASON:

○ FOLLOW-UP

○ ARREST (AT TIME OF ASSIGNMENT)

○ FOUND PROPERTY

DATE: _____

RESULTS:

○ INACTIVE
○ REASSIGNED TO_____
○ UNFOUNDED
○ EXCEPTIONAL CLEARANCE
○ REFERRED TO COURT UNIT
○ ARREST/WARRANT BY DETECTIVE

○ NOT PRESENTED
○ DECLINED
○ CHARGED

CHARGES _____

CAUSE NO. _____

○ MUNICIPAL   ○ JUSTICE
○ SUPERIOR   ○ OTHER

COMMENTS:

C.A.C.R.

CASE ASSIGNMENT AND CONTROL RECORD

1. **GENERAL**

   A. The CACR is intended to fulfill or provide the following:

      (1) An index which can be used to locate a detective given the responsibility of investigating a particular case. In the instance of unassigned cases, to determine actions by the Det. Sgt. responsible.

      (2) Documented control and accountability for all cases received.

      (3) A stable information base against which procedural changes may be examined for effect.

      (4) Limited amount of budget information.

      (5) Evaluation information needed by personnel employed in the Managing Criminal Investigations Grant.

   B. The CACR is not intended to and cannot do many things:

      (1) Inequities in workload between personnel, squads, units or sections cannot be determined from CACR information. Each investigation and its workload impact is unique. While thirty of one case may be equal to one other case, there will be similar findings between units, squads and sections.

      (2) Total budget or workload information cannot be provided by the CACR. Many activities are performed which are not on the CACR. The CACR will provide an information base from which the results of increases or decreases in manpower can be projected.

      (3) Providing credit where credit is due cannot generally be determined from CACR information. Individual accomplishments must be examined on an individual basis; however, workload over an extended period can be comparatively measured within Sections.

      (4) Detective's use of time is an individual matter between supervisor and detective. That matter is best addressed on a case by case basis as with any performance evaluation.

      (5) Man days per case standards cannot be established with CACR information. Man days per cases can only be used on a larger combined scale such as by unit or section to examine the effect of operational changes such as a change in case assignment procedures.

2. ROUTING AND FILING

   A. The revised CACR will come in a three-part, chemically treated packet.

      (1) One copy will be filed numerically by incident number.

      (2) One copy will be filed alphabetically by name.

      (3) One copy will be the responsible Detective Sergeant's working copy.

   B. Alpha and numeric copies will be separated by calendar year.

   C. Detective Sergeant's copies, when the case is completed, will be used to update the alpha file with termination results and will then be filed by working month.

      (1) At the end of each month, filed Sergeant's copies will be used to produce monthly reports and will then be forwarded to the M.C.I. Grant for further use.

3. COMPLETION

   A. A CACR will be completed for every case received in the Unit regardless of assignment action. This requirement includes cases which are immediately reassigned to other Units. This action is necessary in order to establish accountability and responsibility.

      (1) EXCEPTIONS

         (a) If a juvenile is named in the case, and "juv" is circled in distribution, a CACR is not needed to transfer case responsibility.

         (b) A CACR is not needed for direct misdemeanor bookings.

   B. Specific personnel responsible to complete the CACR's and methods for routing will be established within each Section based on specific needs.

      (1) Prior to filing the alpha and numeric copies, information must be complete on the CACR's as follows:

         (a) In cases not assigned for investigation, items 1 through 3 must be complete before filing soft copies. *

         (b) In cases assigned for investigation, items 1 through 9 (except 7) must be complete.

* See attached CACR sample for numbered sections.

C. In cases assigned for work, the responsible Det. Sgt. will maintain his copy of the CACR in a visa-file sorted by assigned Detective until the case is completed.

    (1) After the assigned case has been completed and the investigation approved, the responsible Det. Sgt. will record results on his copy and place it in a monthly file.

    (2) The Det. Sgt's. copies for cases not assigned and those handled by the Det. Sgt. will also be filed by month for later use.

4. **GUIDELINES AND COMMENTS**

A. A follow-up report is required for the termination of any assigned case. Cases handled administratively by the Det. Sgt. are not considered to be assigned cases. The CACR and information recorded thereon is not intended to take the place of information normally recorded on a follow-up report.

B. Each assigned investigation should be reviewed by a Det. Sgt. in order to assure that full and complete investigative techniques, procedures and resources have been employed by the assigned Detective - before the case is completed.

C. Periodically, Det. Sgt's. should review all pending cases (based on the visa-files) and review progress with the assigned Detective. The Det. Sgt. should determine if the investigation should proceed or terminate and should so indicate on the follow-up report. Cases assigned will not continue longer than 30 days unless this determination is made.

D. Cases should not generally be assigned which do not have investigative leads to pursue or which at the outset will obviously not produce fruitful results such as a clearance, arrest or recovery. Some of these cases (unfruitful) must be assigned because of their nature, publicity or anticipated pressure; however, those should be kept to a minimum and terminated rapidly if investigative progress is not made.

E. Det. Sgt's. should attempt to create working loads for Detectives which are comprised of cases they know from experience will produce tangible results. Det. Sgt's. should strive to attain small case loads with intensive investigative resources employed. This statement is not intended to cause major changes in case assignment methods <u>at this time</u>; however, is an objective we should be working toward.

F. Incident number and name files (CACR's) should be located within Sections in such a manner as to facilitate rapid identification of Detectives assigned to the case and dispositions of terminated cases.

G. <u>Name</u> files shall be updated with termination results.

H. The Business Office will assure distribution of cases only to the "prime" investigative unit unless other distribution is so noted on the case report.

    (1) If "other" distribution is so noted, the "prime" investigative unit retains responsibility to complete the initial CACR.

    (2) In every instance where investigative responsibility is transferred, there shall be some type of acknowledging contact between supervisors. In other words, don't drop the case in the mail and assume the other unit has received and accepted it.

5. GLOSSARY AND INSTRUCTIONS TO COMPLETE SPECIFIC ITEMS ON THE CACR.

A. The following items coincide with numbered sections on the attached sample CACR:

    (1) Incident number: Self explanatory.

    (2) Name: Generally, victim or suspect.

    (3) Sgt's. serial number: Use serial number. (Name or initials may be used only in addition.)

    (4) Unit file number: Based on individual Section requirements.

    (5) Date of occurrence: First date of occurrence, not the date reported.

    (6) Date received: The first day the case is received in the unit, not the day received by the Det. Sgt. and not the day assigned.

    (7) Sergeant handled: This section is completed only if the Det. Sgt. handles the case administratively. Assigned, Terminated and Prosecutor/Court sections are not completed. Administratively handling would be an immediate termination, or action which does not involve a substantial investigative action. If the Det. Sgt. investigates the case himself, he should complete item 9 and subsequent sections rather than section 7.

    (8) Crime type: Try to score by UCR standards, but do not become overly concerned. MCI Grant personnel will validate scoring. Robbery will continue to use current methods for determining commercial/non-commercial and are not to change methods between 10-1-78 through 10-1-79 without consulting MCI Grant personnel.

    (9) Assigned section: To be completed only if the case is assigned to a Detective or Det. Sgt. for work.

    ☑ Follow-up: When the investigation has been completed, the terminated section must be completed by entering Date:_____ and checking one of the six results.

        If one of the results is ☑ Arrest/Warrant by Det., the Prosecutor/Court section must be completed in addition.

    ☑ Arrest (at time of assignment):

        When this investigation has been completed, only the Date:_____ is entered in the terminated section. None of the terminated results are checked <u>unless</u> there has been an additional arrest or a warrant issued against a different person by the Detective. Then only ☑ Arrest/Warrant may be checked. If the reason for assignment was ☑ Arrest (at time of assignment) or if ☑ Arrest/Warrant by Det. has been checked, the Prosecutor/Court section must be completed.

    ☑ Found Property: When the investigation has been completed, only the date terminated is entered. No other entries are made.

(10) <u>Terminated</u>: The Date:_____ is entered at the time the investigation is closed.

A result <u>must</u> be checked if the reason for assignment was ☑ Follow-up.

A result <u>cannot</u> be checked if the reason for assignment was ☑ Arrest (at time of assignment) unless an additional arrest or warrant was obtained by the Detective.

(11) <u>Prosecutor/Court</u>: This section must be completed if the reason for assignment at the time of assignment was ☑ Arrest.

This section must be completed if the case was terminated by checking ☑ Arrest/Warrant by Detective.

This section can be completed only if the above Reason/Result is checked.

3. Cause number is the same as warrant number.

6. <u>MISCELLANEOUS</u>

A. An offense report is received on a misdemeanor assault. The case is not assigned for follow-up. The Det. Sgt. writes comments on the report (does not complete a follow-up) and sends it to the Court Unit. In this case, section 7 is completed by checking ☑ Referred to Court Unit.

SECTION			SQUAD			MONTH			
				WORKLOAD			**TYPE COMPLETED**		**CRIME INVESTIGATION RESULTS**

NAME	MAN-DAYS WORKED	CASES ASSIGNED	CASES COMPLETED	CASES PENDING	FILE CASES	PROPERTY DISPOSITION	CRIME INVESTIGATED	REASSIGNED & UNFOUNDED	INACTIVE TERM	CLEARED COMP	ARRESTS & WARRANTS

COMMENTS:

SEATTLE, WASHINGTON POLICE DEPARTMENT

SUPERVISOR'S SIGNATURE

SEATTLE POLICE DEPARTMENT MEMORANDUM

TO   All Section Commanders   DATE July 14, 1977
        Criminal Investigation Division

FROM   C. R. Connery, Major
        Criminal Investigation Division

SUBJECT RULES FOR COMPLETING MONTHLY REPORT, DETECTIVE PRODUCTIVITY

Rules for completing monthly report, Detective Productivity:

Column #1 - MDW - man days worked, minus days spent in court.

Column #2 - Cases Assigned
            Total number of cases, including 'open' bookings,
            assigned for follow-up this month.

Column #3 - Cases Completed
            Total number of cases, including open bookings,
            completed this month regardless of when assigned.

Column #4 - Cases Pending
            Total number of cases of all types outstanding
            as of month end.

The following columns relate to cases completed:

Column #5 - File Cases
            Cases assigned for reason ARREST
               (Open bookings handled)

Column #6 - Property Cases
            Cases assigned to determine appropriate disposition
            of found/recovered property.

Column #7 - CRIME INV.
            These are the balance of the cases completed.

The following entries describe results obtained, and relate only to
those cases in the Crime Inv. category:

Column #8 - REASSIGNED & UNFOUNDED
            For REASSIGNED, this assumes that some work was done,
            and from that a determination to REASSIGN was made.
            Unfoundeds are included on the theory that roughly
            the same amount of work is involved,

Column #9 - INACTIVE/TERM
            No results obtained.

Column #10 - CLEARED/COMP.
             Meets the criteria for an exceptional clearance.

SEATTLE POLICE DEPARTMENT MEMORANDUM

TO   DATE July 14, 1977

FROM

SUBJECT RULES FOR COMPLETING MONTHLY REPORT, DETECTIVE PRODUCTIVITY

Column #11 - ARR & WARR

ARRESTS - do not count: (a) those that began as an OPEN arrest, (b) arrests made by someone else not related to information developed by us, (c) more than one arrest per case. Where 5 subjects are arrested for involvement in one case, count 1 case cleared by arrest. Even where these same subjects are shown to also be involved in other cases, count one arrest per case charged. (The other cases, not charged, may be counted cleared/comp if they meet the criteria for exceptional clearances).

We will count the arrest if: (a) our detectives make it, (b) it was made on probable cause (by anyone) based on information developed in detective investigation, (c) a warrant for arrest has been issued, or (d) it has been forwarded to Court Unit with enough information to cause a warrant to issue, whether one does or not.

REPORT A (Monthly report)

General

As specified in Operational Order 78-6, Detective Sergeants are to maintain Case Assignment and Control Records (C.A.C.R.'s), for all cases by monthly periods, and at the end of the month to use those documents to prepare the monthly report.

All cases received will be reflected on the monthly report.

On the last working day of each month, Detective Sergeants will prepare to complete monthly reports by (a) isolating terminated CACR's for the month, (b) taking a current count of pending cases, and (c) recording Man Days Worked on assigned cases in accordance with previously issued instructions.

Steps:

1. Record names of detectives and clerk(s) on the report.

2. Enter Man Days Worked on Assigned Cases for each detective. Although Homicide/Assault and Robbery will score by squad, Man Days Worked will be scored by detective.

3. Sort CACR's into the following groups:

(a) By detective assigned this month

(b) By detective assigned previous months

(c) By Detective Sergeant assigned this month

(d) By Detective Sergeant assigned previous months

(d) By Detective Sergeant handled this month

(f) By clerk assigned this month

(g) By clerk assigned previous months

There are not any other options for sorting. Cases assigned in previous months must be separated and scored differently, in order to assure a balanced count.

4. For all CACR's assigned in previous months, enter only the termination results by proper person onto the monthly report. (The assigned reason has already been scored in previous months)

5. For the remainder of the CACR's (assigned and terminated this month), enter both the assigned reason and terminated reason on the monthly report. For cases "handled" by Detective Sergeant, only one of three terminated results is scored. For cases assigned, the same scoring is used as with detectives. For clerks, only found property cases assigned are scored, no termination results are entered.

6. Enter cases pending from last month's report.

7. Enter cases pending this month. (Count must be made the last working day of each month)

8. In the right hand column (no heading) across from Squad/Unit total, enter the assignment ratio.

    Number of cases assigned <u>for follow-up to detectives</u>

    _____(over) _____

    Total number of cases assigned for follow-up to Detectives and Sergeants, plus Sergeant "handled" inactive cases.

    These figures are obtained by making a final count of all CACR's ASSIGNED AND HANDLED FROM THE CURRENT MONTH ONLY. The figure INCLUDES PENDING CASES WHICH WERE ASSIGNED THIS MONTH (included in the VISA file), and TERMINATED CASES WHICH WERE ASSIGNED THIS MONTH.

9. The monthly report is now complete, and is to be forwarded for approval through the chain of command.

10. All CACR's (except pending) which we have used to substantiate figures on the report will be kept separate by reporting element and forwarded with the monthly report.

MONTHLY REPORT _____, 19 ___ NAME	M.D.W. ON ASSIGNED CASES	FOLLOW-UP	ASSIGNED		PENDING		TERMINATED					
			ARREST	FOUND PROPERTY	END OF LAST MONTH	END OF THIS MONTH	INACTIVE	REASSIGNED / UNFOUNDED	REFER. TO COURT UNIT / EXECPTIONAL	ARREST / WARRANT		
Det.												
Det.												
Det.												
Det.												
Det.												
Det.			(SEATTLE, WASHINGTON POLICE DEPARTMENT)									
Det.												
Det.												
Detectives total												
Clerk	★	★	★				★	★	★	★		
Det. Sgt. Handled	★	★	★	★	★	★				★		
Det. Sgt. Assigned	★											
Squad/Unit total	★											

171

ATTACHMENT D

CITY OF HARTFORD

INTERDEPARTMENTAL MEMORANDUM

TO: INVESTIGATIVE COMMANDERS AND SUPERVISORS

FROM: GEORGE W. SICARAS, DEPUTY CHIEF

SUBJECT: INVESTIGATIVE MANAGEMENT INFORMATION

DATE JANUARY 2, 1978

COPY TO:

For the past several months, monthly divisional reports have been required in varying forms to acquaint you with data collection requirements for what will be an Investigative Management Information System. Your reports have exceeded expectations and I am delighted that each of you recognize the urgent need to collect the data in precise and meaningful ways.

Commencing with your monthly reports for January, I ask that they follow the format presented below. During the next several months I will be seeking your input in the development of data collection instruments which obviously will make your task considerably easier. It is important, as we have discussed previously, that data not be collected solely for the purpose of collecting it. All of the data elements identified heretofore and those contained below will permit each of us to gain a much better understanding of what it is we are doing, how we are doing it, etc. For the first time we will be in an ideal position to evaluate the quality and quantity of investigative activities.

If you experience difficulties in implementing the new data collection requirements, please contact me immediately or feel free to bring up any problems at any one of our scheduled staff meetings.

One last note. Please insure that each of you explain in detail the various aspects of this reporting system to your respective subordinates. It is to our collective benefit that all members of investigative divisions and units fully understand the need for such extensive data collection and the benefits we are very likely to derive from this effort. I will gladly respond to any questions the men have at our open monthly meeting.

Your cooperation is appreciated.

GWS:jms

See attached for reporting format

HARTFORD POLICE DEPARTMENT

MONTHLY INVESTIGATIVE MANAGEMENT REPORT

TO: G. W. Sicaras, Deputy Chief

DIVISION: MONTH:

Paragraph I. Brief overview of things I should know, e.g., __major__ in-
vestigations; problems identified/solved; staffing deployment patterns;
investigations requiring unusual number of man-hours; frequency of staff-
ing schedule changes; special investigations; extraneous assignments, etc.

Paragraph II. OVERALL DATA COMPOSITE

A. Total Part I and Part II crimes reported to department last month
    (distinguish between both).
B. Total Part I crimes (and those others you are responsible for) re-
    ferred to your division for follow-up decision (distinguish between
    Part I crimes and all others).
C. Number and percentage increase/decrease from previous reporting period.
D. Number and percentage of cases "inactivated" at time of initial re-
    view and thus not requiring any attention or follow-up whatsoever.
E. Number and percentage of cases assigned for follow-up.
F. Number and percentage of cases "suspended" due to lack of information
    and therefore returned to field commands for appropriate action.
G. Number and percentage of cases "inactivated" during reporting period
    (exclude data from D above).
H. Number and percentage of cases "suspended" during reporting period
    (exclude data from F above).
I. Number and percentage of cases carried forward from last reporting
    period.
J. Total cases assigned during month __plus__ those carried forward.
K. Number and percentage of cases initiated.
L. Total number of man-hours committed to follow-ups exclusively.
M. Total number of man-hours committed to all other tasks.
N. Number and percentage of cases assigned with PRIMARY solvability
    factors present.
O. Number and percentage of cases assigned with SECONDARY solvability
    factors present.
P. Number and percentage of cases assigned where supervisory decision
    was criterion.
Q. Number and percentage of cases reopened, classification changed or
    deemed unfounded. Give data on each.

Paragraph III. CRIME SPECIFIC CASE ASSIGNMENTS

Offense	Cases Ref. For FU #/% Total	Increase/Decrease from Prev. Month # %	Cases Assigned for FU # & %	Cases Inactive at Initial Review # & %
Murder				
Robbery				
Sexual Aslt. I				
Larceny(P/S)				
Kidnapping				
Fraud/Forgery				
Burglary				
Auto Theft				
Auto Theft/Att.				
Arson/Bomb				
Other				

Paragraph IV.   DIVISIONAL CASE CLEARANCE

A.   Overall divisional clearance for month - Part I crimes only - (arrests, referrals, to juvenile authorities, administrative and exceptional clearances. Include number and percentage. Also, synthesize how clearances were achieved, e.g., one apprehension clearing X number of cases, several apprehensions clearing an equal number of cases, etc.
B.   Crime specific clearances for division. Include number and percentage for arrests/referrals, administrative and exceptional clearances.

(Note: When reporting the above, show clearance category separately for each crime type.)

Paragraph V.   CLEARANCE AND CASE LOAD BY TEAM/INVESTIGATOR

A.   Number and percentage of cases assigned to each investigator/team for follow-up.
B.   Number and percentage of cases cleared.
C.   Number and percentage of cases inactivated.
D.   Number and percentage of cases suspended.
E.   Number and percentage of cases carried forward.
F.   Explain variances of 10% upward or downward in case loads and clearances.

Paragraph VI.   EXTRANEOUS DUTY/ACTIVITY

A.   Special Investigations (number and man-hours).
B.   Inside Detail (specify); man-hours and days.
C.   Court Appearance (hours).
D.   Special Assignments to other units/commands (days/hours).
E.   Report preparation/completion (hours).
F.   Warrant preparation/issuance (hours).
G.   Warrant execution (hours).
H.   Public speaking assignments (hours).
I.   Training (in-service, outside, etc.) Specify type/hours/days.
J.   Surveillance (hours/days).

Paragraph VII.   OTHER DATA

A.   Total property recovered; total dollar value.
B.   Total search warrants secured/executed.
C.   Total arrest warrants secured/executed.
D.   Total warrants denied by prosecutor.
E.   Roll call visits (frequency and number of personnel attending).
F.   Total number of occasions "Alerts/Conditions" used or special crime bulletins issued and distributed.
G.   New informants registered/discontinued.

Paragraph VIII.   COMPUTERIZED MANAGEMENT REPORTS USED

A.   Type, Frequency, Use, and Decisions/Strategies resulting from such use.

Paragraph IX.   INTRA-DIVISIONAL INSPECTIONS

A.   Frequency, inspectional items, level of command, times, level of compliance, etc.

Paragraph X.   MISCELLANEOUS DATA

A. Targets identified (who/offense) last month and results.
B. Targets identified (who/offense) for current month.
C. Conviction data, if available.
D. Contacts with other divisions and outside agencies. Specify dates and purpose of contact.
E. Total targets identified and arrested this year to date.
F. Overall crime analysis by specific offense. If offenses have increased, compared to last month and this time last year, indicate number and percentage variance for each. Similarly, provide comparisons for crime reductions.
G. Changes in staffing patterns/deployment.
H. Prolonged illnesses/injuries.
I. Anticipated retirements/resignations
J. Disciplinary actions initiated/Commendations recommended.

Note: In your analysis of case assignments and investigator workloads, be sure to include the number of cases (GIVEN CASE PRIORITIZATION CRITERIA) you could have assigned for follow-up if resources were available. Additionally, if absences impact on case loads, this information on variances should be specifically reported. For example, if one team was not available for case assignment during a given period, you should explain whether their cases were assigned to another team thus increasing the caseload of the second team, or if the cases were suspended pending the return of the primary team, indicate the decrease (number and percentage) in case follow-ups which could have not been pursued due to the temporary loss of resources.

You should also indicate those cases you would have assigned for follow-up had additional resources been available. These may include cases containing primary or secondary solvability factors, but workloads of existing resources prevents such assignment.

_____
Commanding Officer

ATTACHMENT E

HARTFORD POLICE DEPARTMENT

INVESTIGATIVE SERVICES BUREAU

DIRECTIVE

DATE: MAY 30, 1978   ISB-D # 7-78

SUBJECT: MONTHLY CASE ASSIGNMENT CONTROL LOGS

I.   PURPOSE:

The purpose of this Directive is to establish a uniform method
of recording, monitoring and controlling all criminal cases
referred to, or initiated by, any specialized division of this
Command for investigation.

II.   POLICY:

To greatly facilitate the management of criminal investigations
and effective use of resources, it shall be the responsibility
of Investigative Service Bureau Commanding Officers, Supervi-
sors, and, when necessary, Duty Officers, to assure that time-
ly review of all cases referred to or initiated by divisions
of this command occurs in a systematic fashion. After initial
supervisory review of all such cases (See ISB-D 6-78), those
cases selected for ACTIVE-FOLLOW-UP investigation shall be en-
tered on ISB Temporary Form A (CM) 4/78 indicating to whom such
investigations were assigned. This form shall be maintained
monthly for each investigator and will require frequent reviews
by supervisors and/or commanding officers as prescribed herein.

III. PROCEDURES:

1.   Each ISB division has been provided with a three-ring binder,
together with color-coded copies of ISB Temporary Form A and
pre-punched plastic sheets. One copy of the form must be
completed for each investigator and inserted in a separate
three-ring plastic sheet. Where investigators are assigned
as teams, separate Case Assignment Control Logs must be
maintained for each investigator to allow for variations
in assignment, etc.

2.   Upon receipt of all cases referred to, or initiated by a
division of this Bureau, the supervisor, commanding officer
or duty officer, as the case may be, shall perform a review
of all cases and render decisions consistent with ISB-D 6-78.

3.   After such review, those cases marked ACTIVE FOLLOW-UP shall
be assigned to such investigators as may be determined and
immediately entered on the Case Assignment Control Log, ISB
Temporary Form A. The supervisor shall complete the first
three columns of the form initially. This form will now
serve as the division's principal control mechanism for the
management of cases to be followed-up.

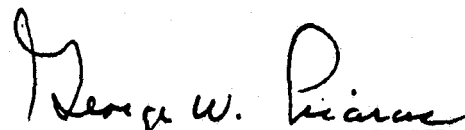4.   The supervisor shall monitor the progress of each investi-

gation as required in column 4 "REVIEW DECISION DATES."
As indicated on the Case Assignment form, reviews by the
supervisor are mandatory at 2, 5, 10, 20, 30, 40 and 50
day intervals. *(This means that after initial assignment, the super-*
visor must review the progress of the case two (2) days later, then
five days subsequent to the initial assignment, etc.)

5. Each investigative activity performed on any follow-up
   investigation requires that an Investigative Supplement be
   completed indicating the progress, or lack of it, made on
   the case. The investigator must indicate on each such re-
   port that the case remains open and is actively being follow-
   ed up. Copies of the investigative Supplement must then be
   forwarded to the Records Division and/or Data Analysis for
   appropriate action.

6. The mandatory review dates by the supervisor requires that
   he/she analyze the progress made to that date and insure
   that all proper investigative leads have been pursued to
   the extent possible. A supervisor may give new direction
   to an investigator to pursue other aspects of the case not
   previously considered. The supervisor may, after complete
   review of the case, decide that the case be rendered INACTIVE
   or he may SUSPEND it if he feels that too many man-hours
   have been expended given the nature of the offense; he may
   reduce resources committed to the investigation given diminish-
   ed leads or other information; he may relieve all resources
   and assign them to other cases if the culprit has been iden-
   tified but there is insufficient probable cause for an arrest
   or warrant; he may relieve all resources if other priority
   cases are received requiring immediate attention of inves-
   tigators, etc. This is discretionary, however, the super-
   visor or commanding officer must indicate the specific rea-
   son(s) as to why a case was suspended or rendered inactive
   (See ISB-D 6-78).

7. Column 5 (CLOSED OR INACTIVE - DATE) must indicate simply
   whether a case was CLOSED, rendered INACTIVE or SUSPENDED
   during the reporting month. Depending on why the case was
   concluded, one of these three classifications must appear
   as well as the date (reference ISB-D 6-78).

8. Column 6 (REASON FOR CONCLUSION) must give the specific
   reason as to why a case was either CLOSED, SUSPENDED or
   rendered INACTIVE. *(Example: If a case was SUSPENDED and the*
   reason was that leads were exhausted, you need only indicate "leads
   exhausted" or if a case was CLOSED, indicate "arrest" or referral
   to juvenile authorities.)

9. Column 7 (CLOSED WITH RESULTS - BRIEFLY DESCRIBE) must be
   completed only if there is an arrest or referral, an "Ad-
   ministrative Clearance" or an "Exceptional Clearance" as
   provided for in ISB-D 6-78. This column should concisely
   indicate why/how the case was CLOSED.

10. Column 8 (INVESTIGATIVE SUPPLEMENT FORWARDED TO RECORDS AND
    DATE) as required above, mandates that an Investigative

Supplement be forwarded to the Records Division reflecting
any investigative efforts expended on the case. At a min-
imum, Investigative Supplement checks by the supervisor
must coincide with his review date. This does not mean that
Investigative Supplements are only required on the date the
supervisors performs his mandatory review; it does, however,
mean that the supervisor can be assured that such supplements
are routed to the Records Division prior to his official re-
view. The dates reflected in this column need only be those
those shown in Column 4.

11. Column 9 (SUPERVISOR) should bear the initials of the super-
    visor who has reviewed and/or updated entries on the Case
    Assignment Control Log.

12. Case Assignment Logs shall be initiated at the beginning of
    each calendar month. Cases still active shall be carried
    over to the new month's form and reflected individually on
    the same. Original Case Assignment Logs will be maintained
    by each ISB Division Commanding Officer for all investiga-
    tors assigned to his division. Copies of such logs shall
    be routed to the Deputy Chief of Investigative Services
    together with the Monthly Management Report.

13. Commanding Officers are responsible for the accurate and
    timely completion of Case Assignment Logs. They should
    use the information contained on the Logs to assist them
    in preparing certain parts of the Monthly Management Re-
    ports.

14. Case Assignment Control Logs shall be accessible for period-
    ic audit and inspection.

BY AUTHORITY OF:

                                        GEORGE W. SICARAS
                                        Deputy Chief
                                        Investigative Services

DISTRIBUTION   ACTIVE UNTIL:
Chief of Police   Rescinded
Chief of Operations
Deputy Chiefs
ISB Commanding Officers/Supervisors
Duty Officer Manual
Duty Chief
GID (INFO ONLY)
YSD (INFO ONLY)

ATTACHMENT: Example of Completed Form A

INVESTIGATIVE SERVICES BUREAU
CASE ASSIGNMENT

INVESTIGATOR: _____ DIVISION: _____ MONTH: _____

DATE CASE ASSIGNED	CASE NUMBER	CATEGORY OF CRIME	REVIEW DECISION DATES							CLOSED OR INACTIVE DATE	REASON FOR CONCLUSION	CLOSED WITH RESULTS Briefly Describe	INV/SUPPL. FORWARDED RECORDS/DATE	SUPVR.
			2	5	10	20	30	40	50					

ISB TEMP. FORM A (CM) 4/78

HARTFORD POLICE.
INVESTIGATIVE SERVICES

WORKLOAD REPORT
SUMMARY ANALYSIS

FOR:
YEAR:

DESCRIPTION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NUMBER OF CASES ASSIGNED												
% CHANGE FROM PRIOR MONTH												
REGULAR SHIFTS WORKED												
OVERTIME SHIFTS WORKED												
TOTAL SHIFTS WORKED												
CASES ASSIGNED PER SHIFT												
% CHANGE FROM PRIOR MONTH												
% OF CASES CLEARED BY ARR./REF.												
% OF CASES WITH EXC. CLEARANCE												
% OF CASES CLEARED ADMIN'TIVELY												
TOTAL % CLEARED												
% CHANGE FROM PRIOR MONTH												
% OF CASES INACTIVATED												
% OF CASES SUSPENDED												
% OF CASES TRANSFERRED												
TOTAL %												
% CHANGE FROM PRIOR MONTH												
DATE REVIEWED												
REVIEWED WITH (INITIALS)												
REVIEWED BY (INITIALS)												

HARTFORD POLICE
INVESTIGATIVE SERVICES

WORKLOAD REPORT
BY CATEGORY

FOR:

MONTH OF:

CRIME CATEGORY	ASSIGNMENTS					CLEARANCES			INACTIVES		SUSPENSIONS			TRANS. OUT TO OTHER DET.	CARRY OVER TO NEXT MONTH
	CARRY OVER	NEW CASES	RE-ACTIVATED	TRANS. IN FROM OTHER DETECTIVE	TOTAL ASSIGNED	UCR		HPD	LEADS EXHTD.	WRT. REFUSED	OTHER PRIOR.	EXCESS RESOUR. EXPN'D	INS. MAN-POWER		
						ARR./ RFRL.	EXC.	ADM.							
HOMICIDE															
ATTEMPTED HOMICIDE															
SEXUAL ASSAULT - I															
ASSAULT - I															
KIDNAPPING															
FRAUD															
FORGERY															
LARCENY - PURSE SNATCH															
ROBBERY															
BURGLARY															
LARCENY															
AUTO THEFT															
ATTEMPTED AUTO THEFT															
ARSON / SUSPICIOUS FIRES															
OTHER															
TOTAL															
% OF TOTAL ASSGN'D					100.0										

HARTFORD POLICE DEPARTMENT

INVESTIGATIVE SERVICES BUREAU

DIRECTIVE

DATE: <u>MAY 30, 1978</u>   ISB-D #   6-78

SUBJECT: CASE STATUS CODE GUIDELINES

I.   PURPOSE:

The purpose of this Directive is to establish a uniform system
of classifying criminal cases referred to or initiated by any
division of this Command. The Case Status codes, hereafter de-
fined, shall serve as a supervisory tool in determining what
action has or will be taken in all criminal investigations re-
ferred to specialized divisions of the Investigative Services
Bureau. Case Status codes will indicate any supervisory judge-
ment on such cases and will indicate investigative efforts on
any given case.

II. POLICY:

The Case Status Code system is a supervisory and management
control device which will assure that (a) mandatory review is
accomplished on all criminal cases referred to this Command by
a supervisor of the specialized division responsible for partic-
ular cases (b) the supervisor be given discretion, according to
the guidelines established herein, to make decisions on how or
whether or not criminal cases are assigned for follow-up inves-
tigation (c) supervisors deploy resources in an intelligent
and responsible fashion by determining which cases demonstrate
the best likelihood of being solved and (d) resources are util-
ized in the most efficient   and productive manner.

III. PROCEDURES:
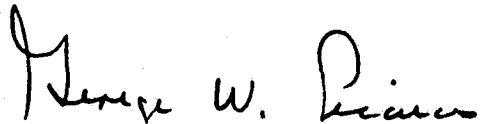
A. Supervisory Responsibility

    1.   All Case Incident Reports (CIRs) referred to any special-
         ized division of this Bureau shall be individually review-
         ed by the shift supervisor forthwith after delivery to
         such divisions.

    2.   After complete review of the CIR, the supervisor shall
         decide whether an investigation shall be continued/comm-
         enced or whether a case shall be rendered INACTIVE OR
         SUSPENDED according to the guidlines prescribed herein.

    3.   Each CIR reviewed shall be stamped on its face with a
         rubber stamp entitled "CASE REFERRAL - SUPERVISORY RE-
         VIEW." The appropriate case status code shall be checked
         indicating the supervisor's decision concerning that case
         and reasons as to why a particular code was selected.
         Note: This requirement is mandatory for the last status
         code "SUSPEND/INACTIVE".

ISB-D # ___6-78___.

4. Where an investigation is assigned for follow-up, it will not be necessary to immediately forward an Investigative Supplement to the Records Division and/or the Data Analysis Unit. However, when a case is assigned a status other than ACTIVE FOLLOW-UP, an Investigative Supplement must be completed with only the basic information required, e.g., case number, date of offense, etc. and routed to Records and/or Data Analysis. The Investigative Supplement shall be stamped and the case status indicated. *(Note: This is required to assure that the Records Division copy is accurate and reflects the status of that case insofar as the specialized division is concerned. The INVESTIGATIVE SUPPLEMENT need not be typewritten.)*

5. This procedure deals with Hartford Police Department cases only. No attempt should be made to count as a clearance an arrest made for another agency on a Part I crime. If arrests are made for non-criminal cases, arrests for other departments or misdemeanors, they should be reflected separately and distinctly on each division's monthly data management reports.

6. When clearances are taken for Part I offenses and they fall within the guidelines of an "Administrative Clearance," that is, where a warrant is on file but not served, extreme care should be taken not to reflect such clearances as part of divisional or investigator overall arrest/referral clearances. Administrative clearances must be reported separately on monthly data reports and may not be counted twice for the same offense. *(Example: If investigators secure warrants for persons in connection with certain offenses, you may claim an ADMINISTRATIVE CLEARANCE on your records. It may be counted as a clearance within this Command only, however, officially, insofar as UCR is concerned, the case may not be cleared unless an arrest has been made or the criteria for an Exceptional Clearance, as defined by the FBI, have been met.)*

7. The integrity of case status is vital to the management of the divisions of this Bureau, therefore, intentional misrepresentation, reporting, etc. will not be condoned or tolerated. Commanding Officers will resolve any problems in the administration of this Directive. APPENDIX A SHALL BE AN OFFICIAL PART OF THIS DIRECTIVE.

BY AUTHORITY OF:

_____
GEORGE W. SICARAS
Deputy Chief
Investigative Services

Distribution:
Chief of Police
All Bureau Deputy Chiefs
All Division Commanders
ISB Supervisors
ISB Duty Officer Manual
GID (INFO ONLY)

Active Until:
Rescinded

INVESTIGATIVE SERVICES BUREAU
DIRECTIVE #:   6-78

CASE STATUS CODES

A.   ACTIVE FOLLOW-UP: Assigned to an investigator for follow-up where solution of the offense appears likely or promising given the presence of certain facts, e.g., identification of the perpetrator, distinctive MO, witnesses, physical evidence which may lead to the identification and arrest of the perpetrator, etc. It is logged on ISB Temporary Form A and charged to a specific investigator or team of investigators. It requires frequent and persistent action by that investigator which must be documented as the case progresses on the Investigative Supplement. Active cases require supervisory review, as prescribed in ISB Directive 7-78. Where "Solvability Factors" on the Data Supplement, HPD Form 132, indicate that leads/information should be pursued, a case should be assigned for follow-up. A case may also be assigned for follow-up in instances where there may not be sufficient leads or information but the seriousness or nature of the crime is such that immediate investigation is required. In addition, those cases lacking leads or information which are clearly in the public's interest may also be assigned for active follow-up.

B.   INACTIVE: (No follow-up; insufficient leads) Where a preliminary CIR is devoid of sufficient information to permit follow-up and/or the incident is minor to the extent that other cases, by their degree of severity require immediate follow-up, cases may be rendered INACTIVE. In addition, where the CIR or Data Supplement "Solvability Factors" indicate that solution is unlikely or impossible, the supervisor may exercise his discretion in not assigning the case for active follow-up. Cases in this category will remain open, though INACTIVE.

C.   SUSPEND: (Requires additional information from the officer in the field conducting the preliminary investigation) This may be checked when a case demonstrates probable likelihood of solution, or the possibility of it, if certain key or required fundamental information is not included or not fully described in the initial CIR or Data Supplement. SINCE THE MECHANICS OF A PROCEDURE TO RETURN THESE REPORTS TO THE OFFICER AND HIS SUPERVISOR FOR COMPLETED INFORMATION IS NOT YET IN PLACE, ISB SUPERVISORS, AS AN INTERIM MEASURE, SHOULD IDENTIFY SUCH REPORTS, THE WEAKNESSES, IF POSSIBLE, AND THE TOTAL NUMBER RECEIVED DURING EACH MONTH. DEFICIENT REPORTS WILL NOT BE RETURNED UNTIL THE PROCEDURE IS FULLY DEVELOPED.

D.   CLOSED BY ARREST/REFERRAL: A Hartford case, or offense, is cleared by arrest when at least one person is (a) arrested, or referred to juvenile court authorities, social agency or other diversion program, is such person is juvenile as defined by the General Statutes of Connecticut; (b) charged with the commission of the offense directly related to the case and (c) turned over to the Courts for prosecution. KEEP IN MIND THAT OFFENSES AND NOT ARRESTS ARE BEING COUNTED. For purposes of the FBI's Uniform Crime Report, it makes no difference how many are arrested. There can be no more offenses cleared than offenses that occurred. If several persons commit one (1) crime and only one (1) is arrested and charged, list the crime as cleared by arrest. When the other offenders are arrested (assume in the next month) do not list a clearance by arrest a second time for the one offense. SEVERAL CRIMES, OR OFFENSES, MAY BE CLEARED BY THE ARREST OF ONE PERSON.

Examples:
1.   A man commits murder. He is arrested, charged and turned over to the Court.
2.   Five thieves break into a warehouse. You arrest and charge one of them. You may clear one (1) offense of burglary and one (1) such offense cleared by arrest.

Later, the other four thieves are arrested and charged. The one offense (the warehouse burglary) has already been listed as cleared by arrest.
3. You identify a suspect whom you know committed five burglaries. You arrest him and charge him with the five offenses. These five offenses are cleared by the arrest of one person.

E. CLOSED: (Warrant secured - on file) After a warrant(s) has been secured from the Court and the Department or other jurisdiction is immediately unable to locate an accused, or other circumstances preclude the service of the warrant, this category may be checked. This is considered an "ADMINISTRATIVE CLEARANCE" and reflected as such - separately and distinctly - on INTERNAL reporting documents. An "administrative clearance" IS NOT recognized as an official clearance by the FBI's Uniform Crime Reporting system. Commanding Officers and Supervisors are cautioned that if an "administrative clearance" is claimed, this in no way relieves them or their subordinates from continuing their active efforts to apprehend the individual for whom the warrant was issued. You may not, under any circumstances, take credit twice for the same clearance. The "administrative clearance" is to be reported on ISB management and other reports generated within this command ONLY. To maintain control and assure integrity, this type of clearance must be identified separately together with the case number, date and type of offense on ISB reporting documents. When an arrest is made, that arrest will serve as the official clearance. Divisional controls must be established to preclude any possibility of duplication.

F. INACTIVE: (Warrant denied - no additional follow-up) When an investigator requests that a warrant be issued for the arrest of a person or persons he/she believes committed an offense, and the warrant is denied by the Prosecutor or Court, this category is checked. When a warrant is denied, the case generally becomes INACTIVE. No follow-up is usually required unless the investigator and his supervisor believe that further investigation will yield additional evidence for the issuance of a warrant.

G. EXCEPTIONAL CLEARANCE: In certain very practical situations, the police are unable to follow the three steps outlined above (D.) for a clearance by arrest. Yet, everything possible has been done in order to clear the case. IF ALL OF THE FOLLOWING QUESTIONS CAN BE ANSWERED "YES", THEN THE OFFENSE MAY BE LISTED AS CLEARED. THIS CONFORMS TO THE FBI'S UCR GUIDELINES.

1. Has the investigation definitely established the identity of the offender?
2. Is there enough information (probable cause) to support an arrest, charge and turning over to the Court for prosecution?
3. Do you know the exact location of the offender so that you could take him into custody now?
4. Is there some reason outside police control that stops you from arresting, charging and prosecuting the offender?

An offense can be exceptionally cleared when it falls into one of the following categories:

1. Suicide of the offender (the person responsible is dead).
2. Double murder (two persons kill each other).
3. Deathbed confession (the person responsible dies after making the confession).
4. The offender is killed by the police.
5. Confession by an offender already in your custody or serving a sentence (this

is actually a variation of a true clearance by arrest - you would not "apprehend"
the offender but in most situations like this the offender would be prosecuted on
a new charge).
6. An offender prosecuted in another city for a different offense (you attempt
to return him for prosecution, but the other jurisdiction will not release him
to you.
7. Extradition is denied.
8. The victim refuses to cooperate in the prosecution (this does not "Unfound"
the offense and the answer must still be "yes" to the three questions listed
above first).
9. For some reason outside your control, an offender is prosecuted for a less
serious charge than that for which you arrested him (such as a charge of reckless
driving for a negligent manslaughter offense - the offense remains the same).

10. The handling of a juvenile offender either orally or by written notice to
parents in instances involving minor offenses such as petty larceny. This may
include a verbal warning or referral to a social agency as well. No referral
is made to juvenile court as a matter of publicly accepted police policy.

NOTE: The recovery of property does not clear a case.

H. SUSPEND/INACTIVE: Supervisors and Commanding Officers are given the discre-
   tion of rendering a case INACTIVE or, when circumstances require, SUSPEND an
   investigation. Whatever the reason, the reviewing supervisor must circle one
   of the specific reasons indicated or justify such action in the COMMENT/REASON
   portion. Please note: The supervisor must place a line through whichever
   case status does not apply - Suspend or Inactive.

   This box must also be checked when there are cases referred which should or could
   be followed-up, but there is insufficient resources available to assign such cases
   to. This must be indicated in the COMMENT/REASON section and reflected routine-
   ly in monthly ISB management reports as a separate reporting element.

   IN ALL CASES, THE STATUS OF ANY AND ALL CASES REFERRED TO, OR INITIA-
   TED BY INVESTIGATIVE SERVICES BUREAU DIVISIONS, MUST BE REFLECTED BY
   EITHER CHECKING THE APPROPRIATE BOX AND/OR GIVING AN EXPLANATION OF
   THE STATUS OF A CASE.

CASE REFERRAL
SUPERVISORY REVIEW

BY: _____ DATE: _____ DIVISION: _____

☐ **ASSIGNED FOR ACTIVE FOLLOW-UP**

☐ **INACTIVE** (No follow-up, Insufficient leads)

☐ **SUSPEND** (Requires additional info from FSB; Referred

to _____ on _____)

☐ **CLOSED BY ARREST/REFERRAL** (No follow-up required)

☐ **CLOSED** (Warrant secured — on file)

☐ **INACTIVE** (Warrant denied — no follow-up)

☐ **EXCEPTIONAL CLEARANCE**

☐ **SUSPEND/INACTIVE** (Culprit identified but no PC for arrest; leads exhausted; excessive hours expended; priority lessened (circle one or indicate reason)

COMMENT/REASON:

HARTFORD POLICE DEPARTMENT

INVESTIGATIVE SERVICES BUREAU

DIRECTIVE

DATE: FEBRUARY 7, 1978   ISB-D # 2-78

SUBJECT: INTRODUCTION OF INTERIM "MAJOR CRIME INVESTIGATIVE
            PLAN" CHECKLIST

I.   PURPOSE:

      Consistent with our goal to implement a useful and meaning-
      ful system for the effective management of criminal and re-
      lated investigations, this Directive introduces an interim
      investigative plan, in the form of a checklist, to facilitate
      the thorough and complete investigation of a Part I (felony)
      crime referred to, or initiated by specialized divisions of
      this Bureau. While the checklist is essentially designed
      for homicide investigations, it may, to the extent possible,
      serve as a guide for other types of investigations.

II.   POLICY:

      The interim "Major Crime Investigative Plan" shall be used
      in all cases of reported homicide, serious assaults likely
      to result in death, and other cases where deaths of a suspic-
      ious nature are referred to, or initiated by divisions of
      this Bureau. Commanding Officers and Supervisors shall, in
      cases not specifically related to a homicide, etc., shall
      attempt to utilize the form as a means of insuring that an
      investigation is planned in a logical manner and tasks to be
      assigned are identified and completed. This "checklist"
      will be temporary, pending development of a more simplified
      plan which, where possible, will be uniform and thus meet
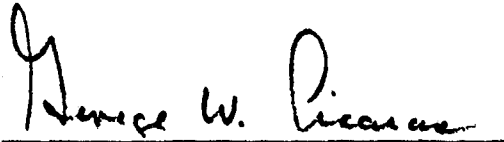   the needs of all specialized divisions.

III. RESPONSIBILITIES:

      A. The "Major Crime Investigative Plan" shall be utilized
          and fully completed in (1) all homicides, (2) serious
          assaults likely to result in death (3) possible felony
          murder cases and (4) any other case where death is of
          a suspicious nature and is referred to, or initiated by
          a division of the Investigative Services Bureau.

      B. Upon notification or referral of any case identified in
          III, A, (1) - (4) above, the Commanding Officer of the
          Crimes Against Persons Division, or in his absence, the
          on-duty Supervisor, shall immediately initiate use of the
          "plan." During non-business hours, the Bureau Duty Off-
          icer shall assume this responsibility.

      C. Inasmuch as the "plan" is designed for coordination and
          control of an investigation, there are occasions where
          entries may not be made by a supervisor from within the
          Headquarters building. In such cases an additional "plan"
          may be initiated by the supervisor in charge at a crime

ISB DIRECTIVE 2-78

scene.(Crimes Against Persons or the ISB Duty Officer).
The use of a second "plan" will be used to document tasks
assigned at such scenes, to whom and when. Example: In-
vestigator assigned to a hospital with a victim, neighbor-
hood canvas, recording pertinent information on GID and
FSB personnel at scene, location of witnesses and by whom,
etc.

D.   In all instances, however, only one "plan" will serve as
     an official record, hence, if a second copy of the "plan"
     is initiated at a crime scene, information contained there-
     in will be transferred to the single official file as ex-
     peditiously as possible. The second plan may be used as
     a guide in follow-up tasks.

E.   The "Major Crime Investigation Plan" will be made an in-
     tegral part of the case itself.

BY AUTHORITY OF:

_____
GEORGE W. SICARAS
DEPUTY CHIEF
Investigative Services

DISTRIBUTION:
Chief of Police
Chief of Operations
Deputy Chiefs
Duty Chiefs
ISB Commanding Officers,
Supervisors
Post

ACTIVE UNTIL:

Incorporated in the Rules
and Procedures of the De-
partment.

END