

INTEGRATED CRIMINAL APPREHENSION PROGRAM

CRIME ANALYSIS EXECUTIVE MANUAL

(Preliminary Draft)

April 29, 1977



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CRIME ANALYSIS EXECUTIVE MANUAL
(Preliminary Draft)

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PREFACE**ACQUISITIONS**

This is one of a series of manuals prepared by the Law Enforcement Assistance Administration on behalf of the Integrated Criminal Apprehension Program. These documents are being published to facilitate the establishment and operation of crime analysis units in municipal police departments for the purpose of improving patrol deployment. The volumes comprising this series are:

- Crime Analysis Executive Manual -- An overview of crime analysis and its impact on departmental operations written for the police executive. The manual also addresses the considerations and decisions necessary for implementation of a crime analysis unit.
- Crime Analysis Systems Manual -- A comprehensive instruction manual on the total crime analysis process directed to both the beginning and the experienced crime analyst. The manual discusses, from the analyst's perspective, the establishment and operation of a crime analysis unit.
- Crime Analysis Operations Manual -- A comprehensive instruction manual on tactical decisionmaking directed to the patrol com-

mander. The manual addresses the use of crime analysis products in the patrol decisionmaking process and in the implementation of those decisions.

- Records Management Manual -- A manual describing a complete records and information system designed for manual operation in the small and medium police department. The system is so structured that it can be implemented, or enhanced incrementally, in many levels of comprehensiveness. An appendix presents a complete reporting manual with detailed instructions for all users of the system.

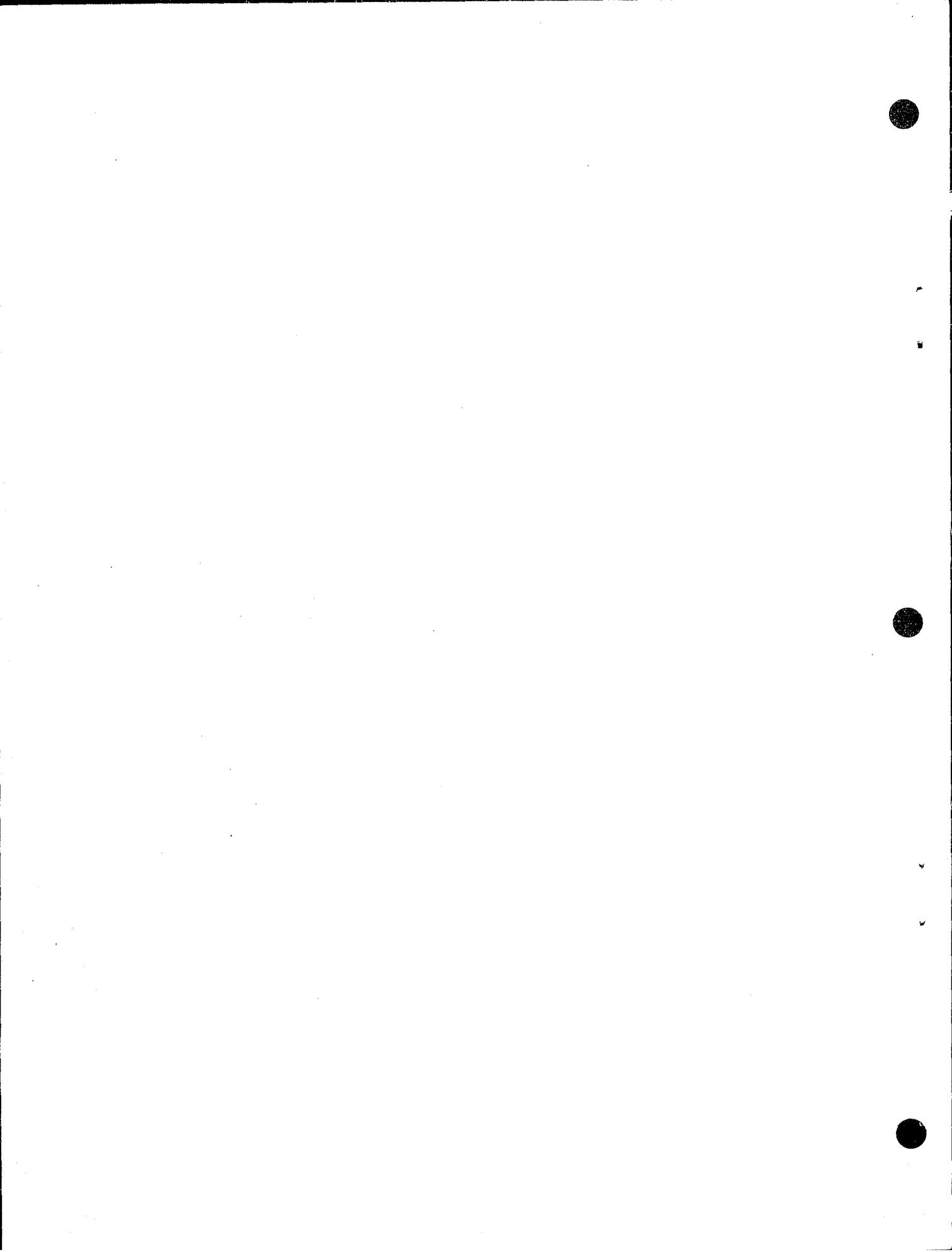
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1. INTRODUCTION

1.1 Purpose and Scope of the ICAP Program

The Integrated Criminal Apprehension Program (ICAP) was developed by the Law Enforcement Assistance Administration (LEAA) based on the results of a series of police projects that emphasized crime analysis and patrol deployment. Utilization of crime analysis in structuring police field activities was the key element of these projects and provides the backbone of the ICAP concept. The objective of the program is to increase the efficiency and effectiveness of field services by using crime analysis data in a systematic way for directing deployment and tactical operations.

ICAP is a method for integrating and directing field activities related to crime prevention, detection, and investigation based on systematic data collection and analysis. Crime analysis and structural planning are the basic elements of ICAP.

ICAP includes many elements and techniques that have been developed independently in other LEAA-funded projects. Moreover, it provides a structure and logic flow for approaching police service delivery that acts as a framework for arranging and understanding the previously fragmented and often competing methods and styles of policing. ICAP brings to police work a sound management approach that has proven successful in other fields.

1.2 Purpose and Scope of Crime Analysis

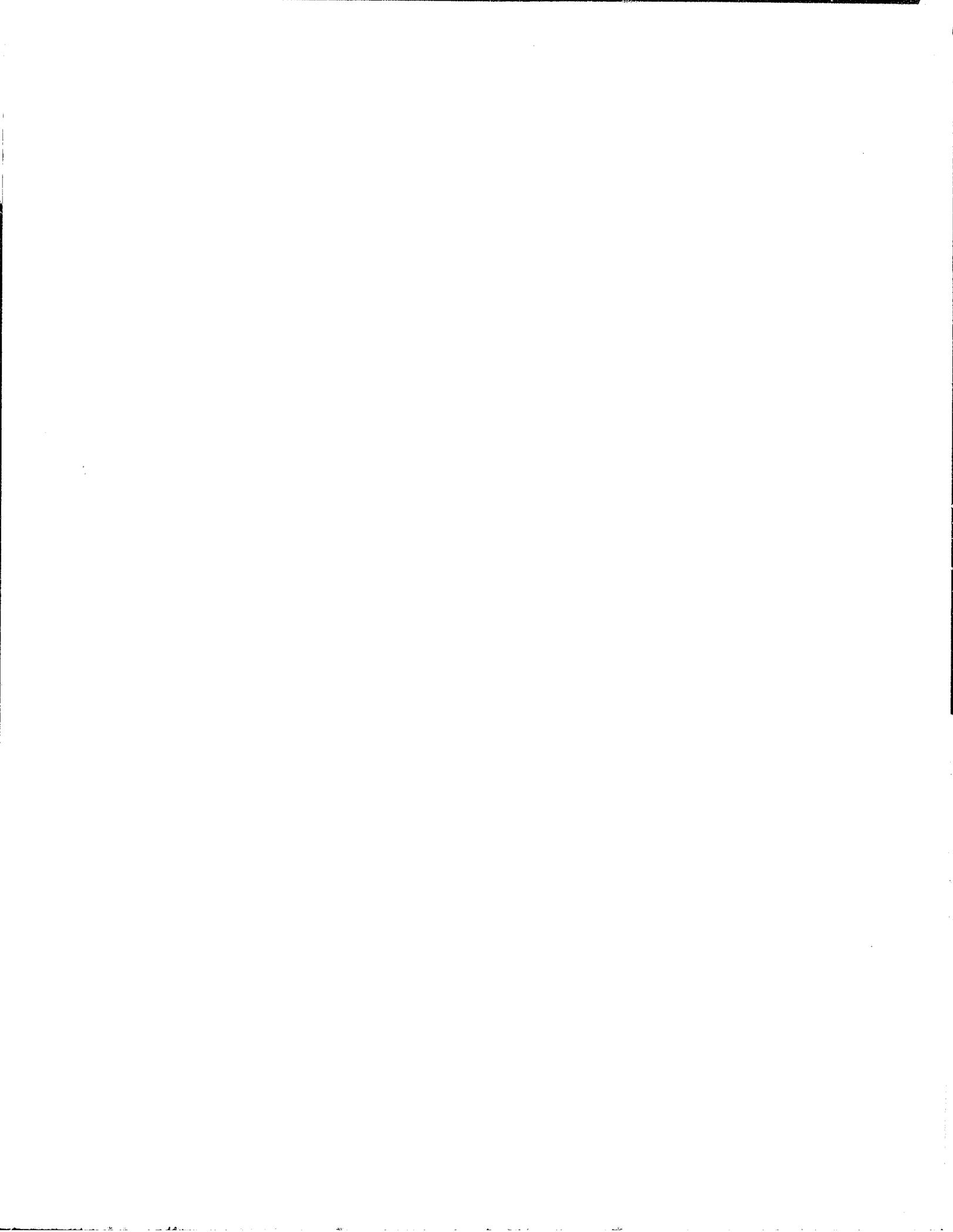
1.2.1 Overview

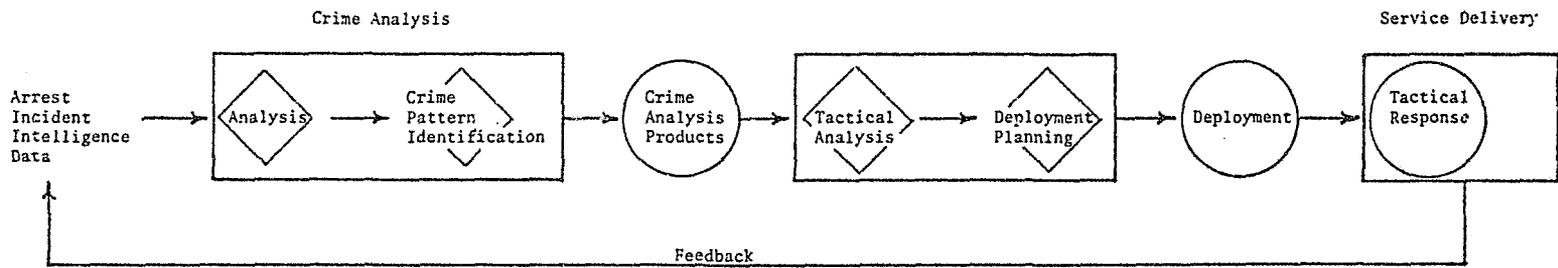
As part of its routine functions, the crime analysis unit gathers data and disseminates information. The only value of this information lies in its utility in the department's decisionmaking processes. Crime analysis information supports decisionmaking on two levels, tactical and strategic. Tactical decisions are action-oriented and are made close to the service delivery level. Strategic decisions are policy-oriented and are made at the highest command levels of the department. Whether formally or informally, these tactical and strategic decisions are made in all police departments.

Tactical Applications

Deployment is the management of allocated resources by location and activity in response to problems related to event or suspect patterns identified through the *timely* analysis of crime, arrest, and related information. Deployment decisions define the department's tactical response to short-term, crime-oriented problems. These decisions are usually executed at the line supervision level. Crime analysis supports the deployment of patrol, investigations, crime prevention, and special tactical units. The deployment decisions should be developed through a structured, integrated, planning and decision-making process. In this way, the tactical response can be focused and coordinated, and the effectiveness of resources maximized.

Figure 1-1 depicts the components of the deployment decision-making system. The system consists of:





1-5

Figure 1-1. Deployment Decisionmaking System

- Crime pattern and problem identification through crime analysis.
- The development of a tactical response through deployment planning.

The basic function of the crime analysis unit is to identify, describe, and disseminate information concerning crime patterns and problems. There are two types of crime patterns that the analyst identifies and brings to the attention of the line supervisors:

- Geographic patterns.
- Similar-offense patterns.

Geographic patterns are simply concentrations of offenses in a specific geographic area. This area may be within a single patrol beat, sector, or report area, or it may be spread over a number of contiguous areas. The crimes that comprise the pattern may share no identifiable relationship other than geographic proximity. Upon recognition of a geographic pattern (generally through inspection of a spot map), the analyst begins to search for other relationships between two or more component crimes.

Similar-offense patterns are comprised of offenses that appear to have been committed by the same suspect or group of suspects. The analyst discerns the similar-offense pattern by comparing a number of unique descriptors. These descriptors, or variables, include:

- Crime type.
- Object of attack.

- Suspect description.
- Suspect modus operandi.
- Suspect vehicle description.
- Physical evidence.
- Weapon description.

The existence of these crime patterns or problems is communicated to line supervisors and field personnel, both formally and informally. Informal dissemination results from the personal contact of the crime analyst with the users -- the line supervisors. Formal dissemination techniques involve the communication of information through written memoranda or reports. The crime pattern or problem information is generally transmitted in a Crime Specific Bulletin that identifies the pattern or problem and discusses the relationships or potential relationships between the crimes that comprise the pattern.

There are currently as many models and methods for using crime analysis information for deployment planning as there are police departments with crime analysis units. Many use the information only to support the operations of a special tactical unit targeting a specific crime (i.e., residential burglary). Other departments use the information to support proactive patrol deployment. It is not the intent here to promote a "correct" tactical use of crime analysis information. Rather, it is to outline the deployment planning process and discuss the potential uses of crime analysis information in support of this process.

The line supervisors of the patrol, investigative, crime prevention, and special tactical units are constantly faced with deployment decisions. Simply stated, the decision to be made is, What men should be where, doing what? Crime analysis provides timely, meaningful information on which to base those decisions by identifying situations (crime patterns or problems) that the department can impact. Deployment decisions are crime-oriented and are targeted at crime prevention, suppression, deterrence, and the apprehension of criminals.

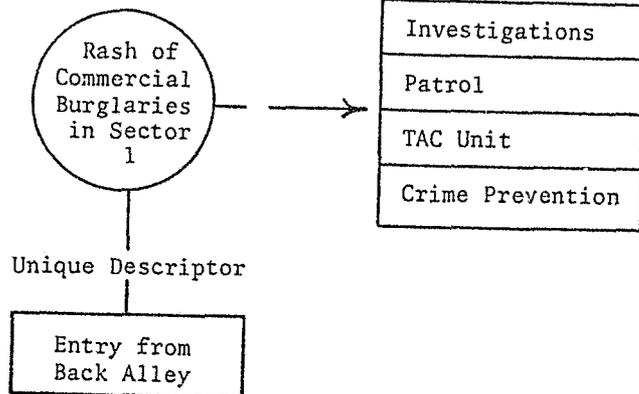
Deployment analysis is the process by which the department's tactical response is determined (i.e., the identification and selection of tactics to address the crime problem identified by crime analysis). For example, the crime analysis unit can identify a crime pattern of commercial burglaries in a given area of the city where most of the entries are made from back alleys (see Figure 1-2). The line supervisors in the patrol, investigations, special tactical, and crime prevention units analyze the available information, identifying a potentially effective tactical response, and plan for its implementation. Deployment analysis and planning takes place within the department's decisionmaking framework. Thus, it is constrained by political, geographic, and other situational considerations that vary from department to department.

Strategic Applications

Allocation is the strategic assignment of personnel by function, geography, and tour of duty to deal generally with crime and other



Crime Pattern
(Crime-Specific Bulletin)



Tactical Response

- Establish relationship between cases through common investigation
- Direct patrol units to drive down alleys
- Assign discretionary patrol to problem area
- Establish rooftop surveillance of alley or other stakeout tactics
- Work with local business people on target hardening and lighting alleys; inspect locks

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Figure 1-2. Deployment Analysis

police responsibilities. Allocation decisions define the department's strategic response to crime, its distribution, and long-term police service delivery problems. These decisions require the periodic analysis of the total police service delivery operation.

Allocation decisionmaking can be supported by crime analysis information in conjunction with more comprehensive operational analysis information. Crime analysis can support allocation through the identification of long-term trends in reported crime.

Allocation decisions deal with the entire staffing function and provide the structural framework for deployment decisionmaking. For example, deployment decisions may deal with the short-term focus, location, and activity of a special tactical unit. Allocation decisions are concerned with determining the necessity for such a unit, its objectives, its size, and its organizational placement -- parameters that provide the structural framework for the deployment decisions.

1.2.2 Historical Survey

The origin of the concept of crime analysis has been traced back to the early 1900's when August Vollmer first introduced into the United States the English technique of systematic classification of known-offender modus operandi (MO). In addition to introducing a systematic approach to MO analysis, Vollmer has also been cited as the originator of the modern police records system, beat analysis based upon the examination of recorded calls for service, and the concept of pin or spot mapping to visually identify areas where crime and service calls are

concentrated. In his essay entitled "The Police Beat," Vollmer offered the following statement regarding the use of crime analysis to support police operations:

"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."

It was also during Vollmer's period of considerable influence that the International Association of Chiefs of Police (IACP) first introduced the idea of nationwide standardized crime classification and reporting in the Uniform Crime Reporting program. During this same time, the principles of traffic analysis, incorporating Vollmer's spot map technique, were introduced at the Northwestern Traffic Institute.

Another forerunner of the concept of crime analysis was O. W. Wilson, who expanded Vollmer's beat analysis techniques to include hazard formulas or assignment of weighting factors to various categories of crimes and service calls in an effort to provide a systematic approach to the allocation of patrol resources. However, it was not until the second edition of Wilson's Police Administration in 1963 that he made first mention of the term *crime analysis*. Prior to that time, Wilson had placed considerable emphasis on the use of police records to ". . . reveal significant changes in criminal and other activities requiring police attention."

With the publication of his second edition, Wilson identified crime analysis as an essential police function and recommended that a crime analysis section be created within the planning and research divisions of large police departments. The crime analysis section was clearly envisioned as being responsible for the systematic examination of "daily reports of serious crimes in order to determine the location, time, special characteristics, similarities to other criminal events, and various significant facts that may help to identify either a criminal or the existence of a pattern of criminal activity."

It was not until the late 1960's that formal crime analysis units were established as an integral part of larger police department organizations. In one department, a formal crime analysis unit was recommended as a result of an extensive IACP survey. The unit was formed in 1968 and was attached to the planning and research division. The unit was primarily responsible for the detection of criminal modus operandi, discovery of crime patterns within geographical areas, and the association between known offenders and crimes.

By 1972, crime analysis as a formal process was gaining considerable recognition in the police field, as evidenced by Wilson's detailed assessment of organizational considerations in establishing a crime analysis unit, including activities and duties of personnel, together with a sample crime analysis bulletin. Since 1973, various national commission reports have recommended that police departments incorporate a crime analysis capability into the decisionmaking process for crime

control and patrol operations planning. The report of the National Advisory Commission on Criminal Justice Standards and Goals included Standard 4.2, entitled "Crime Analysis Capability," which states:

"Every police department should improve its crime analysis capability by utilizing information provided by its information system within the department. Crime analysis may include the utilization of the following:

1. Methods of operation of individual criminals;
2. Pattern recognition;
3. Field interrogation and arrest data;
4. Crime report data;
5. Incident report information;
6. Dispatch information; and,
7. Traffic reports, both accidents and citations.

The elements must be carefully screened for information that should be routinely recorded for crime analysis."

Among the most recent influences bearing upon the development of formal crime analysis capabilities in police departments has been the Law Enforcement Assistance Administration (LEAA). Through its various programs and emphasis upon crime reduction and criminal apprehension,

LEAA has required police agencies seeking Federal monies to develop the capability to systematically analyze the problem areas for which they are seeking support.

LEAA has also provided funding to local police agencies to support establishment or expansion of planning and research units. These units have assumed an increasingly vital role in police department planning efforts through the development of information gathering, retrieving, analysis, and dissemination capabilities. Finally, mention should be made concerning LEAA's role in promoting the advancement of modern management methods in police agencies. LEAA support in this area has encouraged participating departments to adopt program planning and budgeting methods, as well as a systems analysis approach to increasing organizational effectiveness. Adoption of modern approaches to problem-solving has served to increase police personnel sensitivity to, and appreciation of, the need for gathering operational information such as that developed through crime analysis.

1.2.3 Definition and Applications

Depending on agency goals, personnel training, and other factors, one might encounter as many definitions of the concept crime analysis as there are departments engaged in such a program. In its broadest sense, crime analysis has been interpreted as occupying an integral part of the decisionmaking process for allocation and deployment of police resources.

In this case, allocation signifies the strategic assignment of personnel by function, geography, and tour of duty to deal generally with crime and other police responsibilities. Crime analysis in support of allocation decisions involves the systematic examination of distributions of crime, hazard, and service problems, all of which are eventually synthesized into workloads or utilization factors to determine manpower needs.

Deployment refers to the systematic examination of crime data to form the basis for decisions regarding the tactical movement and actions of police personnel directed at specific crime problems. Crime analysis for deployment is, by design, oriented towards the identification of short-term crime problems. It includes the collection, collation, analysis, and dissemination of crime and suspect patterns in support of field operational elements.

For the purpose of this manual, the crime analysis function is defined as a set of systematic, analytical processes directed at providing timely and pertinent information relative to crime patterns and trend correlations to assist operational and administrative personnel in planning the deployment of resources for prevention and suppression of criminal activities, aiding the investigative process, and increasing apprehensions and clearance of cases. Within this context, crime analysis supports a number of department functions, including patrol deployment, special operations and tactical units, investigations,

planning and research, crime prevention, and administrative services (budgeting and program planning).

Thus, the basic applications of crime analysis are to:

- Identify evolving or existent crime patterns.
- Increase the number of cases cleared by arrest.
- Provide investigative leads for investigators.
- Establish operational data for patrol planning and deployment of special operations units.
- Furnish support data to crime prevention programs.
- Furnish trend data for overall department planning, targeting, and budgeting.

Although crime analysis can serve the police department in many ways, it is primarily oriented towards assisting the department in meeting the basic objectives of crime prevention and suppression, apprehension, and recovery of stolen property. The efforts of the crime analyst are systematically applied to those offenses that are amenable to analysis and have a high probability of recurrence.

Because of public concern and social costs involved, most departments select target crimes for application of the crime analysis process from the group of offenses known as the Part I (or Index) offenses. Within the Part I category, certain offenses lend themselves to analysis while others do not. Usually, Part I person-to-person crimes, such as

rape and robbery, are very amenable to analysis because these offender types have a tendency to repeat themselves according to specific patterns. In addition, because the offenses involve a victim/offender confrontation, there is usually a significant amount of useful information collected during the preliminary and followup investigation. Other Part I person-to-person crimes, such as murder and aggravated assault, are not usually susceptible to analysis because of sporadic occurrence patterns and the fact that they normally involve isolated acts of passion.

Part I property crimes, such as burglary and auto theft, are amenable to analysis, although to a lesser degree in comparison with the Part I person-to-person crimes of rape and robbery. These property crimes lend themselves to analysis due in large part to the existence of recurrence patterns and correlations with other offenses. For example, the analyst would be concerned with analyzing auto theft offenses to detect trends in certain geographic areas, while at the same time he would follow recovery patterns and descriptions of vehicles used in robberies in an attempt to link the two crimes together.

Larceny, the remaining Part I offense, is usually not amenable to analysis, except for larceny from autos. This crime occurs in large numbers and often is concentrated in selected areas, such as large parking lots or business centers. Other categories of larceny, such as shoplifting and petty larceny, frequently are not amenable to analysis even though they are high-volume offenses.

As a general rule, the crime analyst should direct his efforts to those offenses that occur in large volumes *with discernible patterns* and to those offenses that the police function has demonstrated an ability to prevent or suppress through patrol or tactical unit operations.

Regardless of the crimes targeted for analysis, the analyst should develop a systematic approach to the collection, collation, and analysis of crime data for dissemination to department users. He should be cognizant of the fact that crime analysis is not a records function and that a crime analysis unit is not a repository for raw crime data. Rather, the analyst should view crime analysis as an essential police department support function wherein raw crime data are converted into useful information for deployment and investigative purposes.

1.3 What Crime Analysis Can Do for the Executive

Contemporary management science holds that the police executive should be evaluated on the effectiveness with which he manages his department, using the resources available to him. This measure replaces the traditional evaluation of executive performance by rates of crime increase or decrease within the department's jurisdiction. Such a change does not diminish the importance of crime reduction. Rather, it realistically establishes a qualitative benchmark against which the executive's performance should be graded. Therefore, he must concern himself with a "benefits derived" attitude in his decisions to adopt departmental objectives and to implement the attendant programs.

Numerous benefits can be expected to accrue through the implementation of a crime analysis function. However, it must be understood that crime analysis is not a panacea for all of the possible problems of a department. Some areas of importance to the executive that have been identified as amenable to improvement by crime analysis follow.

Productivity

Where deployment plans are designed with productivity objectives, crime analysis provides guidance in the selections of targets for directed patrol activity. As priorities are established by identified patterns, informed decisions replace hit-or-miss operations. Within the ranks, a direct benefit is the development of a sense of worth-whileness when results achieved in the area of career criminal apprehension are developed as the result of identified patterns of criminal activity that are sufficiently consistent to expect positive results. Unproductive activities are more easily eliminated, thus releasing man-hours for the performance of activities of proven productivity.

Deployment Planning

Once objectives are determined, deployment strategies are selected as the individual problems are identified. Systematic planning analysis needs to be accomplished before the decisions are made on methods of deployment. Evaluations of the decisions based upon the results achieved are then used as input in the systematic planning analysis step for future decisions. The answer to "what worked best before" -- within specific cost limits -- is now available for future problems.

Decisions on whether a rooftop surveillance of identified target areas will produce greater results at a lower level of effort than the establishment of a store front fence operation designed to receive stolen property and identify criminal possession can reveal how best to accomplish the unit objectives. Questions of this type are as varied as the problems that prompt them, but crime analysis lends itself uniquely to the decisionmaking process of deployment problem solutions.

Tool for Decisionmaking

Since the police executive is most concerned with decisionmaking processes, it is helpful to have a decision model that can be identified with -- and contained in -- the operational components of the police department. The Decision-Based model shown in Figure 1-3 stresses formalization of objectives as a distinguishing feature of true incremental planning versus the practice of incremental opportunism. Incremental planning with formalized objectives encourages the organization and potential users to become accustomed to the planned commitments and future direction. It also provides a structure for continuing resource and policy decisions that is evaluable and that, more importantly, transcends staff changes and the resultant inconsistencies in staff priorities, attitude, and behavior. The actual distinctions between the Decision-Based model and the Evaluative-Feedback-Based model are primarily related to the perspective and the objectives or motivation for use. However, these distinctions are manifested by the identity and location of the analytic capacities in the organization.

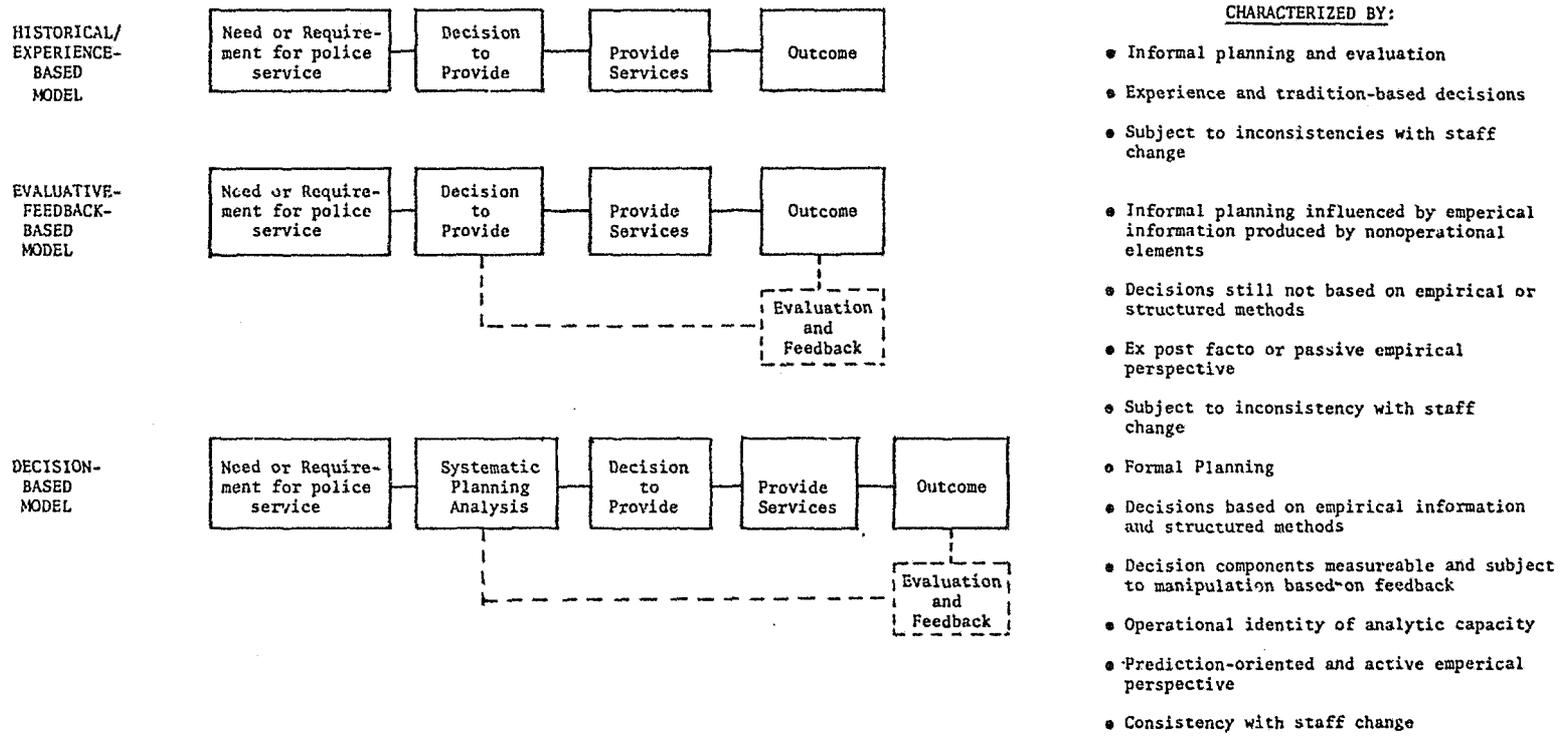


Figure 1-3. Distinctions Between Management Approaches to Service Delivery

Increased Case Clearance

Crime analysis can probably assist the investigative units as much as any operational unit in the department. Many man-hours can be saved by the crime analysis unit that correlates offenses and thus avoids duplication of effort on the part of two investigators. The crime analysis unit can certainly search through Offense Reports for additional information more cost effectively than an investigative unit. Manpower and equipment resources allocated to investigative units are more readily justified when the police executive can validate his commitment by increased case clearances. Questions concerning the wisdom of assignments are put to rest where results are positive.

Crime Prevention

The actual crime prevention techniques available to even enlightened police administrators are relatively few, and some are not fully tested. While many political leaders or editorialists push "root causes of crime" philosophies as crime prevention concepts, few police executives accept such ideas. Facing victims, sometimes brutally attacked by vicious criminals, with an explanation that we are making great strides towards the development of better housing, or are relieving conditions of impoverished areas, is not a reality that most police executives will chance. While such activity is rightfully a noble concern of political leaders, the misconceptions generated tend to develop indifference on the part of police executives towards crime prevention techniques that are within the bounds of reasonable police activity.

Security inspections, target hardening instructions, personal attack prevention techniques and saturation patrol -- all based upon timely information by crime analysis of developing patterns of relative criminal activity -- are within the realm of patrol activities that can prove more cost-effective than other deployment activities.

The greatest value of crime analysis to crime prevention lies in the ability of crime analysis to recognize newly emerging patterns of criminal activity before the public and press become sufficiently alarmed over perceived "crime waves."

Outside Interests

The presence of a crime analysis unit opens up new avenues to agencies outside the criminal justice field. The police executive can use such interest to his advantage by judicious policy decisions on the release of crime analysis information. Civic and professional groups, as well as business-oriented agencies, often contact the crime analysis unit regarding particular problems or areas. When time and conditions permit, the executive can provide the requested information himself to demonstrate his cooperation with such organizations since they often can be of some assistance to the executive in the furtherance of his objectives. Such demonstrated cooperation can provide excellent public relations for the executive and his department.

News Media

It will not take the media long to discover that the crime analysis unit is an excellent source of information about crime problems and

trends. The executive should establish clear-cut policies on the release of information to the news media that is relevant to departmental operations, especially sensitive activities. Usually, a policy that carefully delineates the responsibility for news releases already exists, and the implementation of a crime analysis unit need not alter existing policy.

At the onset of a new crime analysis operation, there will be questions regarding the structure of the unit itself, the way in which the unit will operate, and the kinds of information to be collected and disseminated. Responses to these inquiries should be handled in the same manner as information about any other newly formed unit. In some cases, the executive may find a formal news conference beneficial for public relations or to establish credibility for the new unit.

On occasion, special instructions may be necessary for limiting information in major cases of special importance to the news media. Often, the police executive may want to reserve the authority for information release in cases that command widespread coverage.

Increased Operational Data for Short- and Long-Term Planning

Even though planning and research units draw upon information banks from many varied locations, crime analysis information can provide reliable, operational data upon which the planning unit can devise both short- and long-term plans. Where coordination of varied departmental units is necessary to achieve the objectives of short-term

plans, the crime analysis information on tactical operations necessary for developing crime patterns can be invaluable to the success of such planning.

Changing patterns, either in categories of criminal activity or in geographic areas, can dictate amendments to existing long-term plans for the department. The continual updating of such information is necessary if long-term planning is to be effective in any case. For the executive to determine with any degree of accuracy where his department is going, reliable timely information must be available to ascertain where the department is at present. Crime analysis can provide such assistance.

1.4 Relationship to Other Department Functions

As is so frequently the case in any major new undertaking, the executive will initially find that his concern lies in the area of budgeting considerations for establishing a crime analysis unit. Like the patrol function, crime analysis is a labor-intensive effort that is primarily dependent upon personnel to perform the processes of data collection, collation, analysis, and dissemination of information to department users. Consequently, the initial commitment of department funds to create a crime analysis unit should not be high, with the bulk of the new unit's budget devoted to personnel costs.

Of particular importance to the executive in establishing a crime analysis unit in his department are the necessary interfaces between the unit and other departmental functions. The crime analysis

unit, as part of its routine function, gathers crime data and disseminates operational information to users. Because both of these functions require interaction with other departmental functions, the executive should be aware of the general nature of these interfaces and the special considerations appropriate to each.

Records

One of the prime requisites for effective crime analysis is the availability of copies of all crime reports generated in the field and routed to the records section. Before a crime analysis unit can begin operations, primary data sources such as the Offense, Supplementary, and Arrest Reports must be identified from the department's particular field reporting system, and arrangements must be made for the daily routing of copies of all source documents from the records section to the crime analysis unit. Consequently, it is important that the executive encourage good relations and open communications between the sections.

Patrol

The patrol division is both the chief user and principal supplier of crime analysis information. As a user group, the patrol division receives information from the crime analysis unit such as crime pattern bulletins, operations reports, or patrol area summaries of target crime activity. This information is then used by patrol commanders and supervisors to deploy their resources according to various tactics developed from the crime analysis data. As the principal supplier of

crime analysis information, the patrol division records the results of preliminary and follow-through investigations on the various field reporting forms. The crime analysis section receives these reports daily from the records section and uses the information contained therein to perform the analysis function.

Crime analysis interface with patrol should be a constant, ongoing process. It is mandatory that the crime analysis unit establish credibility with the patrol division. This is accomplished through the analysis unit's provision of timely and accurate crime bulletins to patrol users and through the unit's solicitation of feedback from users on the analysis unit's products. Generally, feedback is obtained through the establishment of direct, face-to-face communication between the analysis unit and patrol user personnel. The executive should be aware of this need and make it a prime consideration when determining the organizational placement of the crime analysis unit.

Investigative

Crime analysis is ideally suited to providing information support to the investigative process. In performing his function, the analyst attempts to correlate offenses and identify unique data elements of an offense that may tie one offense to another having similar characteristics. The analyst has the benefit of a broad perspective, as opposed to the investigator who may be restricted by a large caseload or geographical responsibilities. Many man-hours can be saved by the analyst who is able to correlate a series of offenses and, thus, avoid unnecessary

duplication of effort on the part of two investigators. The analyst is in a position to search through crime reports for additional information concerning a series of related offenses, as opposed to investigations unit personnel who would necessarily require a considerable amount of time and coordination of effort.

In spite of these advantages, the executive usually will find that the crime analysis unit experiences difficulty in establishing a working relationship with investigators. This initial reluctance to accept crime analysis information support is generated by a tendency on the part of the investigator to resist a system that is different from traditional methods. The analyst(s) should be encouraged to persist in his efforts to provide services for the investigators, and the investigation unit should also be encouraged to utilize the support services provided by crime analysis.

Tactical or Special Operations Units

In those departments that employ tactical units, there is a constant need for generation of operational information so the unit can identify problem areas and deploy personnel accordingly. By their very nature, tactical units are deployment-oriented and generally focus their attention on apprehension of the career criminal. The crime analysis unit should support the tactical unit through the early identification of crime patterns and trends, and by providing suggestions on various deployment problems. Information support of tactical

unit operations should be accomplished on a day-to-day basis, thereby requiring that the analyst and the tactical unit commander work very closely with each other.

It is important to recognize that the crime analysis unit should be acknowledged for its contribution to field arrests where credit is due.

Special Enforcement Units

The crime analysis unit often finds itself dealing with special enforcement units concerning particular problems. Units such as vice control and youth sections often have need of the crime analysis function to pinpoint certain problem areas. Likewise, it is not uncommon for the crime analyst to request assistance of special enforcement units on some problems, depending on the nature of the problem.

Traffic

While the crime analyst does not usually deal directly with traffic analysis, it is prudent for the analyst to send copies of his bulletins to the traffic unit because it too has officers on the street and often assists patrol and tactical units in dealing with problem areas.

Crime Prevention

Although crime analysis primarily serves in an information support capacity for field operations units, it can become a vitally important information source for crime prevention unit activities. Many crime problems are more effectively addressed through crime

prevention programs as opposed to deployment of costly field resources geared towards apprehension or suppression of criminal activity. Areas where crime analysis information can be of assistance to a crime prevention unit are:

- Identification of problem areas.
- Identification of crime-specific targets where target-hardening measures can be employed.
- Information support of commercial security programs, to include commercial security surveys.
- Information support of residential security or neighborhood watch programs.
- Provision of information concerning crime specific activity that can be used during oral presentations at a crime prevention seminar.

Communications

The crime analysis unit should maintain a working relationship with the communications unit since this section routinely receives or generates information of use in the analysis process. For instance, miscellaneous information such as calls about suspicious persons or activity noted in an area is usually received and can be recorded in

the communications area. The analyst uses this information to supplement information recorded on crime reports. The communications unit also receives many other items of information from concerned citizens, and the analyst can use this information to further the investigative process. Where such records are a part of the reporting system, the analysis unit needs to receive copies of Miscellaneous Information Reports from the communications unit on a regular basis.

Data Processing

If the police department or city has a data processing section, the crime analysis unit personnel should become familiar with its operation and arrange for personnel from data processing to become familiar with the crime analysis function and objectives. It is not necessary for the crime analyst to become a programmer, but it is necessary for the analyst to be able to articulate his needs to the programmer. The analyst must realize that, if his specific needs for data are not understood, the programmer will probably make his own determinations about those needs. The responsibility for determining the data needs of crime analysis lies with the crime analyst, and he will receive much greater cooperation if the programmer fully understands the functions, objectives, and plans of crime analysis.

Planning and Research

In many instances, the crime analysis unit is organizationally located in the planning and research unit. In that case, interfacing is no problem and occurs automatically. If the unit is located outside

of planning and research, an effort should be made to establish good relations inasmuch as both of the units occasionally need information from the other. It is usually not difficult to establish a mutually satisfactory working relationship with planning and research.

Other Considerations

There are numerous other considerations that the executive must take into account when planning for the establishment of a crime analysis unit. New units often receive more attention than is desirable for intradepartmental relationships to develop smoothly. This is especially true when such units are directly involved with crime activity rather than service delivery. To maintain a proper balance between the operational units and the support units, the police executive can formulate a policy of giving credit for exemplary arrests while properly acknowledging assisting support.

Neither crime analysts nor the crime analysis unit can make arrests for crimes. Investigators can use the information for case development or patrol officers can be deployed strategically because of the information. In all cases, the police officer makes the arrest, and credit for the arrest should be given to him. The executive can advise his unit commanders to feed back to the crime analysis unit the extent to which unit-supplied information assisted the arresting officer in such cases.

1.5 Relationship to Outside Criminal Justice Agencies

The crime analysis unit will deal with many outside agencies, such as the Federal Bureau of Investigation, corrections facilities, and other area law enforcement agencies. The criminal does not restrict his activities to a single jurisdiction, and patterns and trends spill over to and from other areas. It is to the advantage of the analysis unit and the department to exchange as much information as possible with such other agencies.



2. CONCEPTS AND PRODUCTS OF THE CRIME ANALYSIS PROCESS

The crime analysis process is generally considered to be comprised of the following steps:

- Collection -- Identification, receipt, and sorting of copies of all source documents in the department that contain information relevant to the crime analysis process.
- Collation:
 - Examination and extraction of crime element information from all source documents.
 - Arrangement of this information into a set format for subsequent retrieval and analysis.
- Analysis:
 - Identification of crime patterns for the purpose of prevention and suppression of crime.
 - Identification of the criminal perpetrator.
 - Early identification of crime trends for the purposes of patrol and administrative planning.
- Dissemination -- Communication of target crime information to user groups, especially the patrol and investigative divisions.

- Feedback and Evaluation:

- Assessment of the crime analysis products and activities from user groups.
- Self-evaluation of the unit's ability to satisfy ongoing user group needs.

Depending on the level of sophistication employed in collecting and analyzing data, a crime analysis unit can function in a manual, semiautomated, or fully automated mode. Regardless of the size of the department and computer availability, crime analysis units usually begin operations in the manual mode.

2.1 Manual Analysis System

By definition, a manual crime analysis system is one in which unit personnel manually collect, collate, and analyze crime data obtained from various department sources.

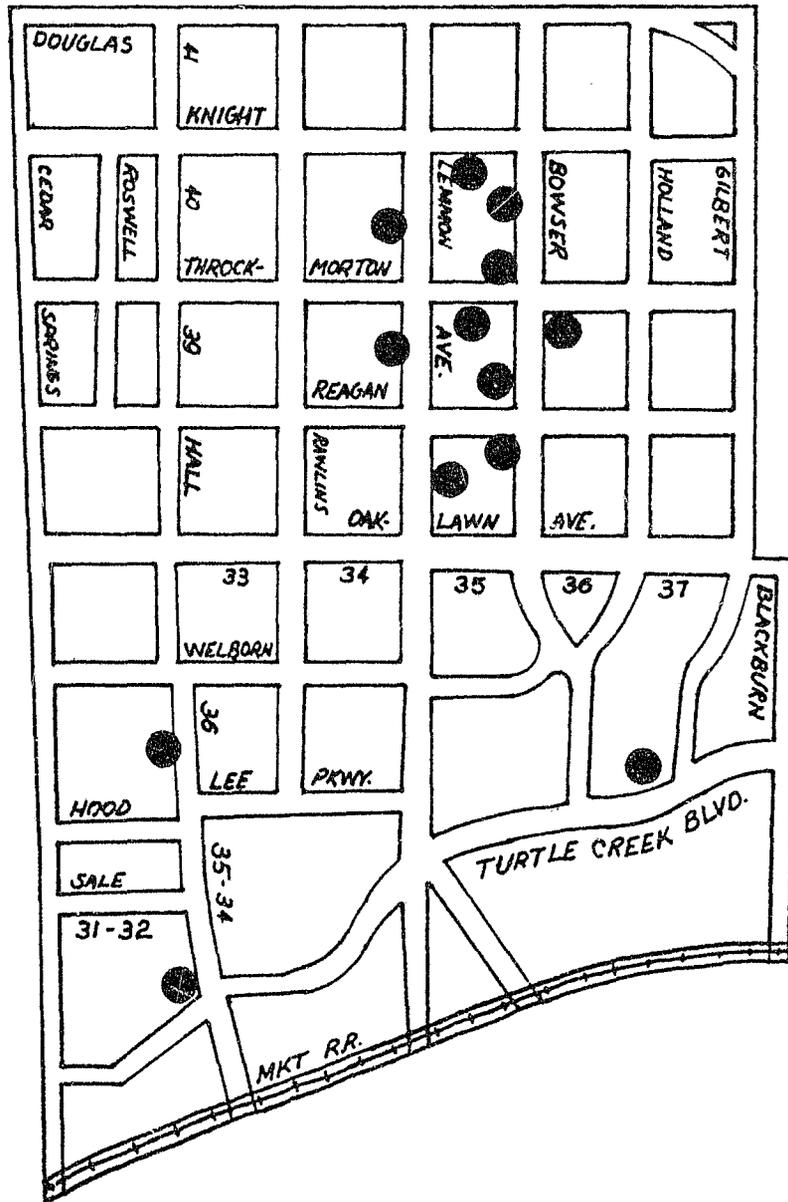
In a manual system, the crime analysis unit receives copies of all Offense/Incident Reports, Arrest Reports, and Supplementary crime and incident reports prepared by department personnel. Copies of all reports are usually routed to the crime analysis unit from the central records division at various intervals during regular working hours. The analyst(s) reads each report thoroughly, noting the time and location of each offense, particular crime type (e.g., residential or commercial burglary), modus operandi, suspect and/or suspect vehicle description(s), and extent of property loss or injury to the victim. The initial Offense Reports are used to plot with colored pins or spots the location

of each offense on a wall map according to crime type (see Figure 2-1). Tally sheets -- reflecting the time and beat location of each offense by crime type -- are also updated, using the Offense Reports.

Arrest Reports and pertinent Supplementary Reports are used to extract crime element information for inclusion in the following index card (or hand-sorted/hand-punched card) files:

- Suspect Name File.
- Suspect Vehicle File.
- Alias File.
- Nickname File.

Analysis of the day's activities is usually conducted using the wall maps that depict the type, locations, and occasionally the time frame of each offense. By reviewing the wall maps, the analyst is able to identify existing geographic concentrations of particular offense types. Once a problem area is isolated, the analyst refers back to the available files to obtain a composite picture of the individual offenses. By assembling and ordering the crime elements for each offense, the analyst attempts to establish correlations between offenses, such as common MOs, similar suspect descriptions, or any other relationship that might link two or more crimes together (see Figures 2-2 and 2-3). In the case of a suspect already in custody, the analyst uses the known elements of the crime for which the suspect was arrested to assemble a list of similar offenses.



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Figure 2-1. Geographic-Concentration Pattern

The victim stated that the suspect wore a stocking over his face. He pulled the telephone cord from the wall and used it to tie the victim's hands. The suspect then raped the victim after covering her face with the bed sheet.

Figure 2-2. Unique Descriptors in Rape Case No. 1

The suspect tied the victim with a length of telephone cord. He then covered her face with a pillow. The victim cannot identify the suspect as the light level was low and she believes he was wearing some type of mask.

Figure 2-3. Unique Descriptors in Rape Case No. 2

Dissemination of information obtained in a manual system is accomplished through the preparation of periodic crime recapitulations, crime summaries, and bulletins that are distributed through the chain-of-command to personnel at the lowest level having the authority to take necessary action. In addition, special reports focusing on a selected problem area are prepared upon request.

The products of analysis in a manual system are primarily dependent upon the individual analyst's skill and expertise in recalling information previously reviewed in a crime report. Although he has the benefit of operational files and wall maps to assist in the analysis process, the analyst must continuously rely on his ability to recall unique crime element descriptors when preparing a profile of offenses noted in a pattern or trend. The major disadvantages of a manual system are its limitation on capacity (dependent on the available manpower) and its reliance on manual (and memory) processes for extracting crime data elements and correlating information for a number of offenses.

The fundamental characteristic of the manual system is its reliance on people to perform all the work. Thus, a manual system is only capable of assuming additional duties and responsibilities when there is a corresponding increase in available unit personnel.

2.2 Semiautomated System

The semiautomated crime analysis system is one which crime data is printed by the computer, either in the batch processing or the on-line

mode.* In many instances, the semiautomated unit utilizes both batch processing and on-line retrieval to secure and sort crime data. In actuality, the semiautomated crime analysis system stores and sorts information in a computer rather than in manual files. However, the crime analysis unit generally retains some manual files to serve as a supplement and backup system to the automated files. In addition, unit personnel continue to read *each* crime report on a daily basis. The primary difference between a manual and a semiautomated system in this respect is that the Offense Reports may be printed by the computer in a format that lists only the crime elements recorded for an offense.

The analysis process is the same in both the manual and semiautomated systems. The greatest advantage of the semiautomated system over the manual is that clerical and filing time is greatly reduced, thus giving the unit personnel more time for the analysis process. Also, the computer can sort through and retrieve a greater amount of data. Another advantage of the semiautomated system is that the omission factor is reduced. When properly programmed, the computer does not overlook incidents or elements.

*Batch processing is the mode of computer operation in which inputs (such as source documents) are accumulated over time and run through the computer together (in a batch). Batch processing is normally performed at the computer center by data processing personnel. On-line processing permits input and retrieval by the user of data, essentially at any time and in any quantity, through a remote (on-line) terminal.

Despite its apparent advantages, a note of caution must be mentioned concerning automation of crime analysis data in regard to turn-around time. All advantages are lost if there is a great time lag between the real time of the incident and the time the information concerning the incident can be retrieved by the unit. Until turn-around time can be measured in hours rather than in days, the crime analysis unit can better utilize its manual files.

The most recent innovation in the semiautomated mode is employment of the small stand-alone or mini-computers. The mini-computer is highly adaptable to the crime analysis concept, especially in the area of Suspect Name, MO, and Suspect Vehicle Files. It can also be used for some of the more specialized files, such as single-fingerprint search systems or Accomplice Files. Generally, it is excellent for those files that may not be cost-effective in a larger system due to the sensitivity of data or limitations of use. The mini-computer can greatly advance the capabilities of a manual system, expand the effectiveness of a semiautomated system, and even enhance the automated system. The crime analyst whose manual system stands on the threshold of some degree of automation must give consideration to the mini-computer when planning the future of the unit.

2.3 Automated System

The automated crime analysis system differs from the semiautomated system in that the computer not only stores, sorts, and retrieves crime data but it also performs some of the actual analysis process. In an

automated system, the computer is programmed to make certain decisions regarding the data elements, perform correlations, and search for matches of offenses and suspects. By weighing all the elements of an offense and assigning solvability factors to each element according to a pre-determined weighting scheme, the automated system can greatly assist the commander in his assignment of cases to investigators. In addition, the automated system can have the capability of matching new and existing offenses, assigning the new cases to the same investigator handling similar cases.

Automation of crime analysis systems is not possible or cost-effective for any except the largest departments whose crime analysis units must handle a large volume of data and who have adequate computer facilities and programming capabilities available to them. Even in the largest departments, full automation of the entire crime analysis function will be slow to occur because of the varied associated services performed by each unit. However, it is possible to automate the chief functions of the unit to a degree that the role of the analyst in these systems becomes one of occasional nonroutine inquiry and dissemination.

2.4 Crime Analysis Products

2.4.1 Formatted Bulletins

Formatted bulletins are written products of the crime analysis unit that are prepared on a regular basis. They include such products as the Daily Information Bulletin, Crime Analysis Recap, Weekly Crime Report, and the Patrol Operations Bulletin (Monthly, Bimonthly).

- Daily Information Bulletin -- Usually contains summary information on wanted or missing persons, requests for information assistance, and listings of stolen autos and license tags. It is routinely distributed to individual patrol officers at rollcall.
- Crime Analysis Recap Bulletin -- Contains individual listings of selected crime types, together with summary information such as location and time of the offense, suspect descriptions, and MO used. It is routinely distributed to command staff, patrol commanders, supervisors, and line officers, as well as to tactical and investigative personnel. In the larger departments, the recaps are distributed to individual districts, since the experience of a heavy volume of activity restricts their preparation for all personnel.
- Weekly Crime Report -- Summarizes the target crime activity occurring throughout the city and is arranged according to patrol beats. Its content includes basic statistical analysis of crime rates, such as percentage increases or decreases, and provides crime rate breakdowns

by area and crime type. It is prepared for dissemination to command staff, patrol commanders and supervisors, and investigative personnel.

- Patrol Operations Bulletin -- Addresses trends in reported crime according to patrol area of responsibility and specific crime type. It is generally prepared on a monthly basis and disseminated to patrol commanders and supervisors.

2.4.2 Nonformatted Bulletins

Nonformatted bulletins are prepared -- usually in memorandum form -- as dissemination of pertinent information to specific individuals becomes appropriate. They are also prepared in response to specific requests for information.

- Crime-Specific Memorandum -- Is one of the most important dissemination mechanisms available to the crime analyst (see Figure 2-4). It is prepared to alert user groups to recognized crime patterns or trends, as they develop. The content is based on analysis of all available crime reports and summaries. A majority of the memoranda refer to a crime-specific pattern developed through analysis, noting special characteristics such as location, suspects, times, and MOs of the particular offenses. Depending on the type

MEMORANDUM
CITY OF ST. PETERSBURG

TO PARTOL & CDS

Date Thursday, 28 Oct 76 19

FROM Barbara Winfrey, Crime Analysis Division

RESIDENTIAL BURGLARY

ATTENTION: Zone 02, Day Shift

Off#'s: 97063

Area: 22-24 A/S from 5-8 A/S
Activity: 4 breaks since Monday (also 1 last Wednesday)
Time: 1300-1600
MO/POE: Pry front window
All unoccupied

98424
98560
98980
98986

Suspects: (O# 98986) -

- MB 14 - 854 24 A/S
- MB 17

ATTENTION: Zone 07

Off#'s: 98552

Area: 4 A/S-4 A/N from 59-69 St.
Activity: 4 breaks since Monday
Time: Undeterminable
(1 res. vacant, 1 for sale)
MO/POE: Pry rear garage door, then enter main residence
All unoccupied
Property: Unknown if any

98638
98740
99061

No suspects seen in area.

ATTENTION: Zone 08, Evening Shift

Off#'s: 96951

Area: 15-16 A/N from 67-70 S/N
Activity: 4 breaks in past week
3 of these at Brandywine Apts
Time: 1600-1800
MO/POE: Force rear window
Property: Cash, jewelry, food, handgun

97582
98772
98864

Suspects: (O# 96951) - #1-MW 20's, 5'8, brn hair to ears, lsw blu&wht l/s shirt w cloud
#2-MW, 6', brn hair to ears, mustache, red&blu l/s shirt
Veh: Gray, poss. Falcon, older model, bad paint job

ATTENTION: Zone 09, Midnight Shift

Off#'s: 98041

Area: 4-12 A/N along 34 S/N
Premise: All motel rooms
Activity: 3 such incidents since Sunday
Time: 0100-0600
MO/POE: Slip lock (or key), front door
Property: Cash

98285
98931

No suspects seen in area.

Figure 2-4. Crime-Specific Memorandum

of problem addressed by the memorandum, it is disseminated to a patrol supervisor, special unit, tactical unit, or an investigator. When appropriate, all available suspect information is included, as well as correlations of the specific crime type with area, other similar offenses, and MO. The memoranda are primarily used as a method of problem identification for eventual development of suppression and apprehension strategies, and for selective deployment of manpower. In the case of a bulletin addressed to an investigator, the analyst is concerned with providing information that correlates similarities of reported offenses to form a pattern for the investigator to target.

- Responses to Special Request -- On occasion, the crime analysis unit receives special requests for information from line officers, investigators, supervisors, or the executive. These special requests usually seek information concerning one or more suspects, isolated crime patterns, or trends in target crime activity within selected areas. Special requests allow the analyst an opportunity to provide additional

information that is not covered by one of the other crime analysis products. Also, special requests can be indicative of the efficiency and acceptability of a crime analysis unit since they reflect user acceptance of the crime analysis role in the department.

3. IMPLEMENTATION REQUIREMENTS

The most troublesome step in the initial establishment of a crime analysis unit is simply that of taking overt action to get the implementation process started. The executive can facilitate this process in two important ways.

First, he should become familiar with the crime analysis process and recognize that the crime analysis function will serve the department primarily as an information support resource for operational planning purposes. By acquainting himself with the crime analysis process, the executive will be in a better position to guide the implementation process, and he will find that he will be more sensitive to problem areas as they develop.

The companion Crime Analysis Systems Manual describes the crime analysis process in detail. The document is a comprehensive instruction manual written for the crime analyst, and it describes the establishment and operation of a crime analysis unit from his perspective. The companion Crime Analysis Operations Manual is a user manual for the patrol commander that describes in detail the role of crime analysis products in his tactical decisionmaking for patrol deployment. Together with the present volume, these manuals offer to the executive the opportunity to become totally familiar with crime analysis as a process, function, and decisionmaking tool.

Second, the executive can facilitate the implementation process by providing continued formal support of crime analysis unit operations.

He can demonstrate this support from the beginning by issuing a memorandum to all division commanders that sets forth the crime analysis unit's objectives and identifies the unit's placement in the organizational structure. He can also solicit cooperation from all interested personnel in a joint effort to make the crime analysis function a worthwhile effort. By providing this support from the beginning, the executive can dispel misapprehensions and greatly reduce the amount of time required for acceptance of the new unit into the organization.

There are a number of pertinent issues that the executive will face when implementing a crime analysis unit. These are addressed in this chapter and include such issues as delineation of unit objectives, recognition of crime analysis capabilities and limitations, organizational placement, operational requirements, and resources and training. Once these issues have been properly addressed, the executive or his designee can focus attention on the resources required.

3.1 Implementation Process

3.1.1 Delineation of Objectives

As the initial step in the implementation process, the new crime analysis unit should be given a set of goals and objectives. These should be clearly stated and should provide a basis for subsequent unit operations in support of department users. Eventually, they can be used to evaluate the impact of crime analysis on patrol and investigative activities.

In some instances, an executive may want to establish two sets of objectives. Individual system objectives are generic to the internal operation of the crime analysis unit and provide a standard by which the executive or crime analysis unit commander can periodically evaluate the work of the analysis unit. Some examples of system objectives are:

- Identify and collect copies of all available source documents on selected target crimes.
- Design a method for extraction of pertinent data elements from available source documents.
- Establish a set of operational files for rapid retrieval of crime element data, such as suspect descriptions, suspect vehicle descriptions, aliases and nicknames, and physical characteristics of offenders noted in Offense and Supplementary Reports.
- Develop techniques for identifying locations of target crime occurrences, using mapping techniques, and for correlating target crime locations and Offense Reports according to individual patrol beat.
- Design methods for the timely identification of crime patterns and trends, and for the dissemination of pertinent information to user personnel.

- Design a series of dissemination products for the transmission of crime pattern information and trend data to field operational units in a timely manner.
- Establish a system of feedback in which user evaluation of the accuracy, validity, and worthiness of crime analysis information can be effectively communicated to crime analysis unit personnel on a continuing basis. Consistent with this objective, establish an open channel of communication between the crime analysis unit and each user of crime analysis information.

The other set, called program objectives, identifies the specific goals to be achieved through analysis and dissemination of crime analysis information. These objectives identify the particular support role crime analysis will play in overall department operations. Moreover, they provide the unit with a framework for identifying potential users and uses of crime analysis information. The following is a list of general program objectives for crime analysis unit operations:

- Achieve more effective deployment of existing patrol resources through the early identification of crime patterns and trends, and the dissemination of information relating thereto.

- Assist the investigative process by correlating a series of offenses with a similar suspect, suspect vehicle description, or unique MO characteristic.
- Increase the number of cases cleared through arrest by matching offenses for which a suspect is held in custody to other offenses demonstrating similar characteristics.
- Enhance preventive patrol efforts by identifying persistent or unique crime problem areas for patrol emphasis.
- Provide information for the development of specific patrol strategies and tactics, and for the deployment of crime-specific patrols or special operations units.
- Assist crime prevention unit activities by identifying areas where target hardening and other crime prevention strategies can be concentrated.
- Provide a quantitative means for measuring the effectiveness of specific crime impact programs.
- Furnish trend data for overall department planning and targeting.

It should be recognized that the delineation of crime analysis objectives set forth in the two sets above are examples of individual system and program objectives that may or may not fit local needs. Each objective should be established in light of overall department goals, consistent with the particular needs and desires of the agency. The paramount consideration in the establishment of crime analysis unit objectives is that the unit should primarily be charged with an information support responsibility for immediate and short-term planning of department resources. The system is specifically designed to meet user needs on a day-to-day basis, and unit activities and user reactions should be monitored on a periodic basis to ensure that the system is operating as originally planned.

3.1.2 Capabilities and Limitations

To ensure orderly and progressive implementation of the crime analysis unit, the executive can familiarize himself with the overall crime analysis process. An awareness of the unit's capabilities and limitations will enable him to accurately evaluate the unit's potential for assisting overall department operations. Moreover, it will facilitate the implementation process by enabling the executive to identify specific unit needs and resources.

Operating Mode

Perhaps the first major issue to confront the executive will be a determination of the initial mode of operation for the unit -- manual or semiautomated.

It is generally recommended that crime analysis units begin operations in the manual mode because this mode affords the analyst the opportunity to develop a viable crime analysis system and identify overall unit needs and responsibilities. In addition, before the analyst can advance to a semiautomated system employing electronic data processing, he must first be able to articulate precisely the specific functions he expects the computer to perform. The factors that should be considered by a department contemplating manual or computer crime analysis are:

- Size of crime analysis unit.
- Size of department.
- Volume of crime.
- Level of analysis required.
- Problems addressed by crime analysis unit.

Machine processing, either in the semiautomated or fully automated mode, enhances the analyst's capability to store and retrieve large volumes of data in considerably less time than would be the case in the manual mode. Analysis using a computer is greatly facilitated through routine generation of detailed crime reports. In the semiautomated mode, these reports usually take the form of summaries of crime occurrences, MOs, suspect descriptors, and crime locations. Basic statistical analysis concerning crime patterns and trends is also provided as output. In the fully automated mode, reports are automatically generated by the computer as patterns or trends in crime develop. The

fully automated system identifies problem areas, analyzes the available information, and provides analytical results that the analyst must interpret.

Once a department has decided to automate any portion of its crime analysis system, there are several important factors that must be considered. The data fed into the system must be valid and uniform in terminology. The system should be tested manually, not only to ascertain if it is feasible but also to see if it is really applicable and usable in the real-world operations of the department. Finally, the analyst must be able to explain the system, process by process, to the programmer, so that the computer becomes the analyst's tool, rather than the analyst being forced to accept what the programmer thinks he needs. If these things are not provided for thoroughly and intelligently, automation becomes an experiment rather than a tool and is a luxury that no department or city can afford.

Operating Hours

It is probably best for the unit to begin by limiting activities to an 8-hour day/5-day workweek. Although the need for crime analysis information may not be restricted to such a limited schedule, establishing unit operations initially on a daily basis provides for ease in system development. Moreover, it allows unit personnel the opportunity to identify data sources and user needs through interaction with key department elements such as the records unit, planning and research unit, and the command staff. As the unit develops, it may be desirable

to have an analyst on call during weekends to handle the rare, genuine emergency.

Certainly, the initial limitation of operating hours to a regular 40-hour workweek requires fewer personnel than a round-the-clock operation. The benefits in terms of a centralized, coordinated unit effort in the beginning far outweigh the advantages obtained by establishing unit operations on an extended work schedule:

Target Crimes

One of the key factors that will dictate the level of unit operation will be the initial selection of crimes for eventual analysis. For departments beginning operations in a manual mode, the selection of target crimes will have a direct bearing on the level of effort required. Depending on volume of crime(s) targeted, even a single analyst can keep himself current on one or more categories of crime and produce timely and useful information. Indeed, in initially implementing an analysis capability, it may be well to start with one or a small number of analysts restricting themselves to a few target crimes of greatest local concern and operating essentially in a manual mode. As effective analysis and information flow procedures are developed, the unit can be expanded to include additional analysis and support personnel.

Unit Strength

The level of criminal activity varies from community to community, and the larger department will require considerably more personnel to

handle complete analysis of daily crime activity than the smaller department in which one or two analysts will be able to operate initially in a manual mode and target one or two crime types. The executive should weigh each factor individually. He can identify a list of crimes on which he wants the analysis unit to focus, with priorities indicated for each crime type.

Depending on the level of analysis required for each crime type, the executive can establish a rough estimate of the number of personnel needed to begin operations. In practice, the number of personnel assigned to crime analysis units varies widely and depends on individual departmental needs and circumstances. A large department's unit that is operating manually and has peaked just prior to advancing to semiautomation can have more than twice as many analysts as a larger department that is moving from semiautomation into full automation.

A survey of departments of varying sizes with ongoing crime analysis operations leads to the following general staffing guidelines:

- In a department with a total strength of 100 to 300, 1 to 2 crime analysts plus clerical support.
- In a department with a total strength of 800 to 1,200, 5 to 7 analysts plus keypunch and/or other clerical support.

From these guidelines, the executive can establish the parameters for his department's initial crime analysis unit staffing. He should be cognizant of the fact that initial operations by design are painfully slow in developing and that the progress of development of the unit thereafter will likely be consistent with the level of proficiency achieved by individual analysts.

3.1.3 Organizational Placement

Placement of the crime analysis unit within the organizational structure will be one of the more difficult issues faced by the executive in the implementation process. Initially, there may be a tendency to assign the unit directly to an existing planning and research unit, for no other reason than the planning similarities recognized between the two units. However, before making the decision to formally assign the unit within the organizational structure, the executive should weigh a number of important considerations.

Placement of the unit should be dictated by the degree of access required between the analysis unit and user groups. If the unit is to provide information support to the patrol, investigative, and special operations elements, and the field operations bureau contains all service delivery, it may well be desirable to place the unit under the direct operational control of the field operations commander.

Assignment to the planning and research unit may well enable the crime analysis unit to obtain direct administrative support of analysis operations. However, the planning and research unit may not

have the type of direct communication channel with patrol and investigative users that is essential for effective crime analysis operations. Moreover, the crime analysis unit can find it difficult to generate user interest in analysis products when it is assigned to a unit not normally involved in short-term tactical planning.

Assignment of the unit to an administrative unit such as the records center or the administration bureau commander will provide for strong administrative support of unit operations. However, the disadvantages of placing the new unit in the administrative services bureau can far outweigh the advantages, and access to user groups other than administrative users can be severely affected. Also, field operations units will have a tendency to consider the crime analysis effort an administrative function, and the new unit's credibility and usefulness in day-to-day operational planning will be harder to achieve.

Assignment of the new crime analysis unit to the field operations bureau can provide the organizational framework for successful implementation of unit operations. This placement will provide for greater participation of individual patrol officers and establish a direct communications link for receiving informal feedback concerning unit effectiveness. The single potential disadvantage is that it tends to separate the crime analysis unit from a major user group of its products if the investigative unit is separate from field operations. Nevertheless, placement in the field operations bureau will

give analysis unit personnel the opportunity to interact with all types and levels of operational personnel. For these reasons, it can be generally stated that crime analysis is more effectively located in an operational rather than administrative component. Moreover, it should be placed high enough in the department's organizational structure to permit ease in operational development and to facilitate interaction with users at all levels of the organization.

In locating the crime analysis unit, both organizationally and physically, the executive should consider not only the user implications discussed above but also the necessary interfaces with other internal and external resource systems:

- Internal Systems:
 - Records and files.
 - Data processing (police-controlled).
 - Intelligence activities.
- External Systems:
 - Data processing services provided by an outside agency.
 - Other police agency analysis, records, and intelligence units.
 - External demographic data resources (i.e., a city planning department).

While there will be need for tradeoffs and compromises, the analysis unit should be so located functionally as to facilitate access to and a two-way flow of communication with such resources. As an example, a crime analysis unit that must rely heavily upon data processing support is virtually doomed if, because of bureaucratic niceties combined with organizational separation by numerous levels of command, it is precluded from direct communication on a day-to-day basis with decisionmakers in the data processing organization. This situation, serious enough within the police department wherein all resources are ultimately subject to the control of the executive and all disputes theoretically resolvable by him, is particularly critical when dealing with external agencies. Organizations tend to expect each other to speak with a prompt, clear, and precise voice, and difficulty in developing the specifics of reciprocal needs or locating the person "who really knows" can make for indifference and insensitivity to problems of mutual concern.

3.1.4 Operational Requirements

Mutual Support

An essential element of the implementation process is the provision of support by the administrative staff for crime analysis unit operations. Support should begin at the command level, and the subject of crime analysis unit implementation should be included in daily or weekly staff meetings. During these meetings, the executive

can outline the new unit's objectives and identify the particular support role to be played by analysis unit personnel. Organizational considerations should be discussed and potential users of crime analysis information identified. Commanders of line units who are potential users of crime analysis information can be encouraged to discuss the impending implementation with line commanders and supervisors. Crime analysis units operate more effectively when face-to-face interaction with user personnel is possible. Supervisors should be instructed to encourage their personnel to continuously evaluate crime analysis products and provide direct feedback on the value of crime analysis information for operational planning purposes. Moreover, as the new unit begins operation, personnel at all levels can be encouraged to make use of the valuable resource and make contact with analysis personnel to determine the unit's capabilities in the area of operational information support.

Once all potential users have been identified, they can be advised that the new unit has been established to serve the department in an information support capacity. The executive can stress that the new unit will honor special requests for information from all users, although it should be pointed out that an unusually large amount of special requests will place an unnecessary drain on the resources of the analysis unit.

In the initial phases, the analyst will want to honor all requests to establish unit credibility. However, as unit activities become more complex and volume increases, it may be necessary to establish a screening process. Nevertheless, special requests for information from primary users such as investigators or patrol commanders will serve to build unit credibility and will allow analysis unit personnel the opportunity to tailor the unit's products to meet specific user needs.

Feedback Requirements

To aid in its functional development, the executive can stress the unit's need for feedback and evaluation of the unit's products and overall activities. The crime analyst needs to obtain feedback for two reasons. First, he must determine the validity and reliability of crime information contained in the various bulletins and reports disseminated to user groups. Is the information useful in formulating various intervention and suppression strategies? Do the bulletins address themselves to crime problems in such a manner that the user has little difficulty in understanding the content? Is the information valid and reliable?

Second, the analyst must be aware of the actions taken by user groups on the basis of information supplied by the crime analysis unit. If the analyst receives feedback from users on specific strategies or tactics employed as a result of crime analysis, he is in a better position to tailor the analysis products to meet user needs. Feedback

of this type affords the analyst an opportunity to monitor changes in offender patterns or trends in the area targeted.

Whether the crime analyst receives feedback is dependent upon the establishment of an open communication channel between the crime analysis unit and user group personnel. The analyst should strive to develop and maintain close personal contact with as many individual users as time and circumstances permit. This provides him with information regarding the use of analysis data, together with feedback on its utility in meeting user needs.

The executive can encourage analysis unit personnel to make an effort to personally contact each recipient of a crime analysis product prior to dissemination. This technique is especially useful in situations where a bulletin or memorandum is addressed to a specific individual or unit. The recipient of the analysis product should be alerted to the forthcoming document and apprised of its contents. This personal contact with the user prior to dissemination also allows the analyst an opportunity to provide any additional information concerning the problem area addressed in the bulletin.

Performance Evaluation

Evaluation of crime analysis unit operations should be based on the specific goals and objectives of the crime analysis program. For those units just beginning operations, criteria for evaluation should be broad-based and not too restrictive.

There is a tendency to evaluate crime analysis operations on such factors as clearance rates, crime rates, and arrest rates. The cause-and-effect relationship between these quantitative factors and crime analysis unit output is virtually impossible to isolate. Many factors support this statement. Crime analysis units routinely provide operational information to various users, yet they have virtually no control over how that information is actually used. The fact that a suspect was arrested using information supplied by the analysis unit is no indication of the overall value of the unit or its individual analyst's effectiveness.

The analysis process is not based on absolute factors but, rather, is developed from an information base that is generally incomplete and inconclusive. The analyst simply attempts to gather all available pieces of information concerning a group of offenses in an effort to obtain correlations among the crime elements of each offense. The analyst can never be absolutely sure that a single suspect is responsible for a series of offenses. He can only isolate similarities that increase the probability that the offenses are related.

Perhaps the most meaningful evaluation of crime analysis operations is one based upon the ability of the unit to produce worthy and timely products. This type of evaluation is concerned with measuring the use and acceptance of crime analysis information by user groups. Another basis for evaluation is a determination of

whether the crime analysis unit is making proper use of all available resources and is employing the appropriate analysis techniques to develop information.

Regardless of the evaluation tool used, a crime analysis unit should be encouraged to maintain a detailed record of all reports, bulletins, or informal communications provided to each user group. This record should be kept in the form of a log and should contain a detailed accounting of all products -- both informal and formal -- provided to various department users. Whenever possible, actions taken as a result of a product should also be noted.

Implementation and Operational Planning

Crime analysis units should be required to develop a standard operating procedures manual that defines the duties of each individual assigned to the unit, describes the analysis process employed, and contains samples of products routinely disseminated. The manual should be continuously updated as changes in operations occur, and it should provide a detailed basis for unit evaluation.

The executive can also require that the head of the analysis unit prepare a timetable or workplan for implementation of crime analysis operations. This workplan should be prepared in conjunction with the commander of the unit to which the analysis section is assigned (e.g., field operations) and should include specific milestones

in the implementation process, as well as expected dates for implementation.

In guiding the preparation of a workplan, the executive should be cognizant of the fact that initial implementation of crime analysis unit operations is usually quite slow, due primarily to the time required for system development and identification of users. However, if clearly defined objectives are set for the unit and users apprised of the unit's capabilities and limitations, scoping a workplan should not be a difficult task, and the executive will be assured that reasonable milestones in implementation can be achieved on schedule.

3.2 Resources

Since they comprise a major factor to be considered in the process of implementing a crime analysis unit, the executive must ensure that sufficient resources are made available to provide for effective and continuous unit operations. As noted in Section 3.1.2, there is no hard and fast guide as to the number of personnel that should be assigned to the crime analysis function. Nevertheless, the executive can extrapolate from the guidelines presented therein an approximate staffing level for his planning purposes. Another rough guideline is 1 analyst per 150 sworn personnel.

Apart from the total number of analysts required for effective operations, there are other issues that must be addressed, such as rank, class, and qualifications of personnel; facilities, equipment and supplies needed; and training and education.

3.2.1 Personnel

Of far more importance than the number of crime analysis personnel required is the quality and individual ability of the persons selected to perform the analysis function. Some basic attributes that have universal significance in the selection process are:

- Ability to read, retain, and correlate information.
- Knowledge of human behavior.
- Knowledge of police practices.

In addition to the universal attributes listed above, the potential candidate should demonstrate specific qualities and traits for selection

as a crime analyst. These are listed below and can be used during the personnel screening process as the selective criteria for evaluating prospective candidates for the crime analyst position:

- Analytical Skills -- This refers not so much to a person's ability to think logically as it does to his capacity to order and assemble vast amounts of operational data without the assistance of files or indices. The analyst must be able to review Offense Reports and identify unique characteristics that might result in an identification of similarities between offenses.
- Motivation -- The analyst should possess the ability to operate within a systematic environment where recognized analytical techniques are repeatedly applied to data on criminal activity. Despite this environment, the person should demonstrate an ability to look beyond obvious situations and identify similarities or relationships where appropriate.
- Thoroughness -- The analyst should possess the ability to grasp and retain detailed information when handling large amounts of data.
- Adaptability -- The analyst should be able to adapt to changing situations while questioning

the meaning of such changes. In addition, he should be able to respond quickly to new analytical techniques as they are developed.

Other attributes that should be present are:

- A good spirit of cooperation.
- The ability to work well with fellow employees as well as operational personnel.
- The ability to plan his own activities and suggest actions to be taken by others.
- The capacity to recognize his own limitations and admit mistakes when they occur.

The person selected for the crime analyst position should have a thorough understanding of police operations. This familiarity is especially important in those units for which the selection process is focused on civilian applicants from outside the department. If selected from within the department's ranks, the prospective analyst should not be bound by traditions assumed after a lengthy period of assignment within one division or section. This is a particularly important consideration in departments that might view the crime analysis function as essentially being a records effort. In such cases, the former records unit head can be a likely candidate, simply because of his professional background in that capacity. The important point to keep in mind is that the staff selection should be based upon a successful demonstration of the critically important personal attributes listed above.

An obvious question is whether the crime analyst should be a sworn officer or a civilian. An advantage to selecting a sworn officer, particularly one who has had field operations experience, is the credibility he can bring to the unit. Rapport established with patrol and investigative officers will facilitate acceptance and field use of crime analysis information. In addition, the crime analyst who has had recent field operations experience will provide the unit with a built-in capacity to obtain valuable feedback from users on the usefulness of crime analysis information. This innate knowledge of specific user needs will enable the unit to tailor the content and structure products to meet specific user desires and will serve to enhance the requisite support of the unit by operations personnel.

While certain advantages exist in the use of sworn personnel in the crime analysis unit, civilians with strong analytical or mathematical skills who demonstrate the essential attributes of a good crime analyst should receive equal consideration. Knowledge of basic police operations can be obtained on-the-job with the department, and a lack of knowledge concerning police practices can be ameliorated through enrollment in the introductory courses in criminal justice or police operations now given in many junior or community colleges. In a unit employing more than one analyst, the assignment of a sworn officer to one of the positions will also aid in the necessary orientation and familiarization.

If a crime analyst is being assigned from within the sworn officer ranks, it is particularly important that the individual be flexible.

He should be capable of accepting new concepts of policing, and his intuitive sense of field activity should not limit his own acceptance and use of crime analysis information.

Generally, the rank of sworn personnel assigned to the crime analysis unit has no direct bearing on the quality of a unit's work. However, rank can be of benefit in gaining the unit's initial acceptance from user groups and administrative support personnel. If a newly hired civilian or patrol officer is to head the unit, initially he will have to work very hard to obtain acceptance and make the necessary personal contacts with user personnel.

3.2.2 Equipment and Supplies

Materials necessary to begin crime analysis unit operations need not be excessive or extravagant. In fact, the following list of basic materials should suffice to begin operations, with additional supplies and equipment to be obtained later as the need arises. Obviously, the quantities in terms of space and furniture are dependent on the expected staffing.

- Office space.
- Office furniture.
- Telephone.
- Typewriters.
- Office calculator.
- File cabinets.
- Index cards and trays.

- Clerical consumables.
- Briefing and charting material.
- Office copier and supplies, budgeted for adequate usage.
- Travel budget (orientation and routine travel).
- Reference materials.

These materials represent the bare essentials and do not include data processing equipment or support required for operating in a semi-automated mode. It is reiterated here that the department should launch the crime analysis operations in the manual mode, except for making use of any computerized records system that may already be available.

Once the decision has been made to hire or reassign necessary personnel, the procurement of office furniture, equipment, and supplies should begin as soon as possible, so that unnecessary delays in startup can be avoided.

Finally, in preparing the unit budget, sufficient funds should be allocated for the duplicating of analysis products and reports. Depending of the type and frequency of reports prepared and disseminated by the unit, this ongoing expense will represent a significant portion of the unit's budget, apart from salaries.

3.3 Education and Training

Education and training is essential for both the crime analysis personnel and the user personnel. For the users, the training should be both at the supervisory and management levels and at the individual

field officer level. This is essential to enable the best possible use of crime analysis information and to provide the most effective feedback of information into the crime analysis process.

Generally, there are no courses directed specifically at the crime analysis process itself, with few other courses having any significant crime analysis content as part of the learning objectives. Thus, for crime analysis personnel, on-the-job training, orientation visits to other departments with a well-reputed crime analysis capability and enrollment in local academic courses having relevance (e.g., introduction to descriptive statistics, data processing fundamentals, charting and graphing) must suffice.

It is important to budget adequate funds and time for the fledgling unit to acquire and study background literature and to undertake field trips. These are necessary to plan meaningfully for the unit's future operations. Some literature should be on hand, and several orientation visits should be scheduled concurrently with formal establishment of the crime analysis unit and appointment or hiring of its personnel. However, there should be sufficient additional time and funds to enable the unit's personnel to acquire additional publications and to modify or add to their travel schedule as operational development and needs dictate.

User education should be planned for in conjunction with crime analysis unit personnel. To examine the need for and use being made of crime analysis in the departments visited, representative field commanders

and supervisory personnel should accompany the unit's analysts on their orientation field trips. These individuals (both field and crime analysis personnel) should then jointly plan a brief but comprehensive curriculum to orient the remainder of the department (stratified by appropriate functions and ranks) as to how it is planned that crime analysis will serve and be supported by the department. These sessions should occur prior to implementation of the crime analysis process, with refresher summaries incorporated in the annual in-service training curriculum. The department's analysis program should also be a topic of the recruit training program. For departments that already have a crime analysis program but have not indoctrinated field personnel in its purpose or functions, such a user orientation is nevertheless worthwhile *after* careful review of the unit's methods and procedures in the light of its desired goals and objectives.

Apart from making site visitations and conducting his own research, the new analyst should become thoroughly familiar with the Crime Analysis Systems Manual, which is a companion volume to this publication. Moreover, once the unit has been operational for a period of 3 to 6 months, a special departmentwide training session should be established and directed separately to all commanders and supervisors, to patrol personnel, and to investigative personnel. The program should outline the unique characteristics of the analysis system and should identify the types and potential uses of crime analysis products for field planning. Once this initial training program has been established and

presented, it should be incorporated into the department's overall in-service training curriculum. In addition, the training program should be integrated into the curriculum of the department's training academy for new recruits.



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