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LAW ENFORCEMENT INFORMATION SYSTEMS
A DISCUSSION OF MANAGEMENT RESPONSIBILITIES

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The management of criminal justice information systems is one of the more esoteric problems facing today's modern police agency. It is a problem of management control of computerized information systems with challenges originating both inside and outside of the law enforcement community. The purpose of this paper is to explore the role of the law enforcement executive as the management official responsible for an information system. The paper will review management standards for an automated information system and how these standards relate to management in a police agency. The objective is better information through more effective management with positive control over both resources and information. The principles of management will be developed specifically in relation to automated information systems in a police agency but the theory will be applicable universally, both inside and outside of the criminal justice community.

The techniques and technology of electronic data processing have been slow in making their entry into police work. There have been departments which started with the earliest models of punched card processing equipment and now there are many departments with the latest in computer equipment. In many cases the computer is the most recent piece of equipment added to the agency's technical services bureau. The entry of the computer into law enforcement has paralleled the lines of entry into business, industry or government.

It is a basically simple matter to automate a single function or a group of related functions. It is yet another matter to develop a centralized law enforcement information system. It becomes an even more complex problem if the system is to cross into other functional areas.

Advances in information technology over the past twenty years have been overwhelming. Automated information systems have become a competitive necessity in business and an operational necessity in government. The volume of information to be handled grows as the information systems increase in size and sophistication. Con-

trary to early predictions based on industrial automation, information automation seldom has reduced staff or saved money. Information technology brings to law enforcement a highly increased capability to carry out its mission with greater effectiveness.

The law enforcement executive who learns to manage and control his information system is the one who will achieve the maximum degree of effectiveness. This same law enforcement executive has become an expert long-range planner and resources management specialist, in addition to increasing constantly his responsibilities as an officer of the law. The achievement of success in these three functions can be affected greatly by the completeness of the information upon which the decision process is based. The quality and reliability of the information is affected directly by the completeness of the management guidance given to the development of information sources and systems.

The concern of the chief executive of a law enforcement agency using systematically developed information in the management decision process can turn the computer from a practical tool into a pertinent asset to management. Of course, it is not the computer that becomes the asset, but the information system in its entirety. The key element in the information system is the staff which develops and manages the system. The knowledge and interrelationship of this staff with the goals and objectives of management have a critical effect on whether the system becomes a true asset.

The development of a complete police information system capable of management support is not a simple project. It could not happen in a short period of time even if the department had the resources to accomplish the task. The resultant changes in discipline and procedures would be more than most organizations could accept in a short period of time. However, the development of functional parts of the system may fail to support the total management system. This failure occurs frequently when a detached management role is taken during the systems development phases. The end result is attributed to the failure of EDP to understand the problem. While this statement is true in part, the basic problem is the lack of management direction in the design process and the

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failure of the EDP systems staff to require this direction.

Pertinent examples of this might occur in the development of specific police applications. The data system could start with the officer's field report on the criminal event with supplemental reports being placed in a criminal history file or a stolen property application. The system is sophisticated by the use of automatic cross-indexing techniques. Such a system usually can be programmed to provide management statistics on crime and make a major contribution to the Uniform Crime Report. Having satisfied most of the records requirements, the system could provide information on where and when each type of crime was happening and the timeliness of patrol in answering the complaint or even patterns for preventing the crime from happening. Management reports, such as work effectiveness analysis, are a natural part of the next tier of reports.

In a parallel situation the same sequence of information events ca.. occur in a traffic case. A field report is filed by the officer. The pertinent information is dispersed to the record in the vehicle or operator file. Statistical data is accumulated for accident reports or highway safety reports. Information on location is made available to the traffic engineer. The system is capable of correlating data on where and when the traffic incidents occur with data arrays to support the assignment of patrol or traffic enforcement units. In each situation a common system with a single point of entry for the data is capable of providing the variety of services indicated.

In both examples a functional information system application has been expanded to provide useful information to other functions such as planning or patrol management. More data beyond the basic records application was required to provide the capability for additional support outside of the records system. Although this type of information is available in all agencies, the capability to capture and process the information does not exist in all systems. There are numerous reasons why such a capability might not exist; the first reason might be that it was not a requirement. Other reasons might be that the systems analyst held the scope of his design effort too narrow to perceive this capability and this narrow scope was approved in the management review of the design specifications.

The techniques of developing an information system involve many factors. No one person can be held totally responsible for a system except in a small and isolated case. This statement applies equally to successful and unsuccessful systems. The development of an information system or even a sub-system involves the effort of many personnel working as a team. The average team would consist of personnel to design the system, to write the computer programs, to provide the data to be processed, to operate the equipment and to use the information produced. Since it normally is easier to assemble this type of a team within a functional area, the scope of the information system becomes limited to that function. The responsibility for the effort is to meet the requirements of that function.

Before proceeding any further, it must be acknowledged that this may be all the management that is required. Assuming that an effective design effort has been done on the application and that the equipment was selected on the basis of the system designed, the job can be accomplished with little additional burden to management. It is entirely possible and often most economical to design a computer system to meet a specific problem and to install this system in a functional area. More often a larger general purpose computer is acquired to solve the problem, with the result that only part of the potential capability of the equipment is used. If the system as it is implemented satisfies all of the requirements for the functional area, the additional processing capabilities can be disregarded or made ava.'able to another functional unit. The latter option s the classic way many special purpose information systems become multiple purpose systems.

The development of a law enforcement information system must include all of the components that are required in solving any information problem. A development effort from a management point of view contains a number of phases. The detailed techniques are omitted here to emphasize the role of management interface. Each development project starts with a requirement for information. The person representing the information requirement presents the requirement to the level of man gement with the authority to expend resources. The user might employ the assistance of a systems analyst in defining his requirement, but the basic need for information is that of the user and not the systems personnel. If resources are available and approved to be expended, a systems analyst has completed a review of the requirement, he presents to the requestor and to management a proposed solution to the requirement. The proposed solution must include the recommended approach to satisfying the requirement, the estimated cost of the effort, assumptions and con-

straints affecting the effort and alternative solutions.

Using this approach to systems development, two decisions have been made at the command (management) level prior to the commitment of any extensive amount of technical resources on the project. The user has expressed his requirement and a professional study has been completed to present the facts. The management team reviews the facts and makes a decision that best serves the agency. The result is that the information system specialists design the system but management makes the critical decisions concerning the agency's information requirements. This same process is repeated at the end of the design phase and again after the implementation phase. The development specifications describe the best solution, the design describes how the solution is going to work and the review of the implementation determines that the system does work as directed.

This approach enables management to keep fully informed on the status of their information systems and ensures that the systems' effort will meet management objectives. It also permits the systems staff to expend the full force of their professional talent towards developing more effective and more reliable systems rather than diluting their effort in trying to guess what the true information requirements really are. The approach does not lessen the requirements for trained personnel but rather assumes fully qualified information systems personnel will be available. The law enforcement executive must have reliable information systems personnel if he is to have a reliable system. No longer is there a shortage of data processing personnel but *quality* data processing personnel, just as are *quality* law enforcement personnel, are difficult to find and to keep. The quality of the information system upon which your officers are to base their decisions, and possibly even their lives, can not be too high.

The ultimate responsibility for the integrity of the information system must rest with the chief executive law enforcement officer. One method of executing this top management role is to establish an EDP Steering Committee. The purpose of this group is to apply the policy and guidance of the chief executive to the requirement expressed by the user in establishing the agency's information plan. The group is composed of the command level officers of the units using information services plus the top planning and financial officer if he is not included already. The head of the information system support unit should be included even if this

support unit is external to the agency. The group meets to review information systems plans, requirements, proposals, designs, and evaluations. The information to be reviewed is presented by the systems analyst or the user in sufficient detail to support a management decision. The chairman of the EDP Steering Committee reports directly to the chief executive.

Problems related to information systems management can be made less complex if the agency has an information systems plan. The development of a complete information system is a long and expensive process. It is difficult and generally impossible to change directions in a poorly conceived development effort. Unplanned changes to a system or even a program are costly and sometimes disasterous. The plan is a management tool that ties together the policies and objectives of the agency as they relate to information requirements. The plan is developed by the planning and the systems staff. It is reviewed by the EDP Steering Committee and ultimately approved by the chief executive. The plan must be dynamic since it is the guideline for the management of the information system.

The concept and organizational status of automated information systems can vary with each criminal justice agency. It is up to management to determine what this role is to be and to place the system accordingly within the agency. No automated system can produce results that are better than the information on which the system is based.
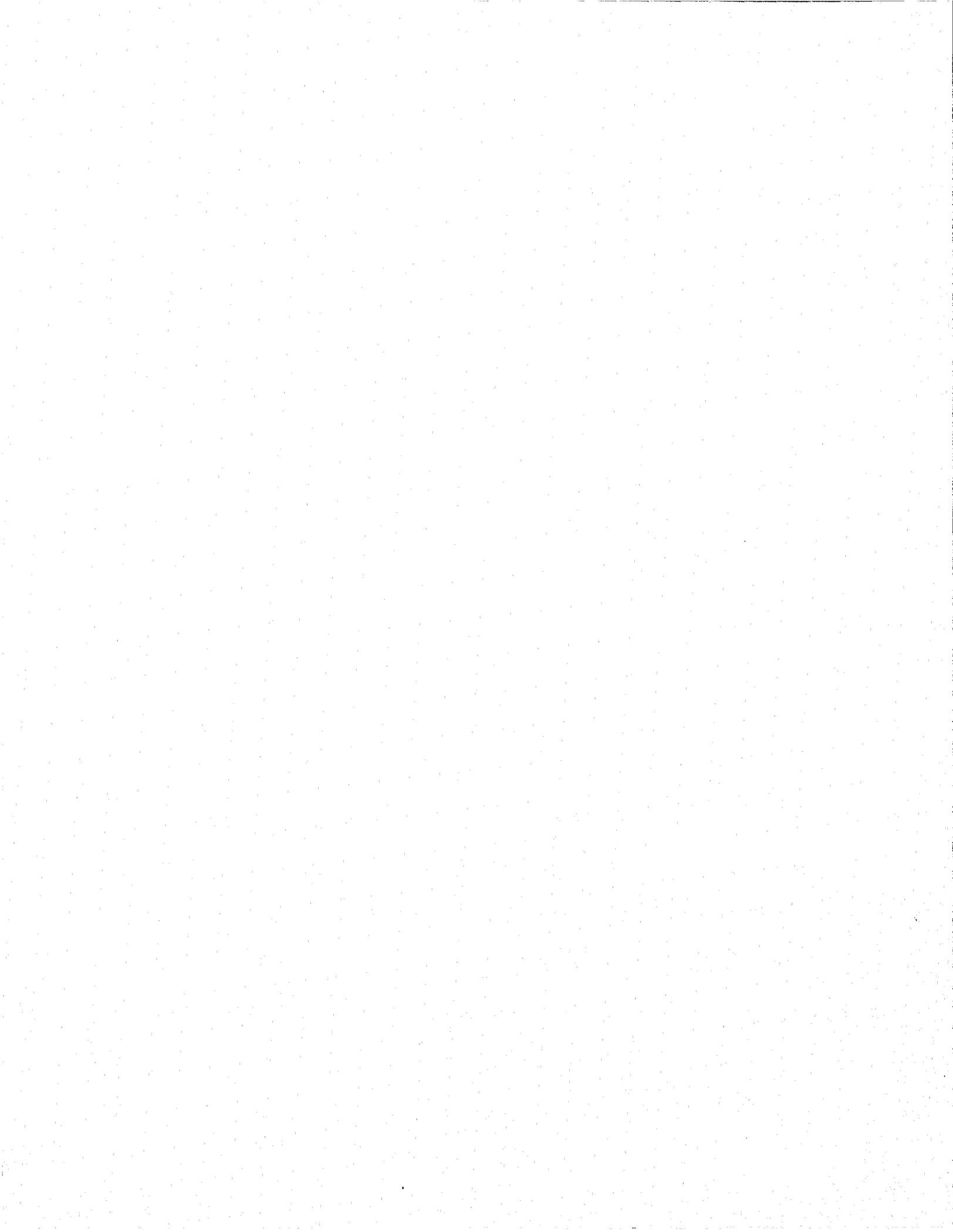
Neither computers nor the people who run them are decision makers in the complete sense of the word. Their capability to provide information upon which operational or management decisions can be made is virtually unlimited. This capability cannot be achieved in a vacuum. An information system that is subordinated to a technical or an administrative function will provide its most complete information to that function.

There is a challenge in developing an information system that will provide effective and reliable information. There is also a fear on the part of an executive with an improper management system that he might not be able to cope with quality information. With a well developed management system and a dynamic organization supported by a properly established information system, law enforcement can meet this challenge with assured results.

Only through effective control can the law enforcement executive be master of the system. Effective control is the essential ingredient in

responsible management of an information system. Management control must be developed, not inherited, if it is to be effective and withstand challenge. To this end, law enforcement has a choice. The ultimate gauge, however, is not management for management's sake but an information system with the quality and reliability necessary for good law enforcement.

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