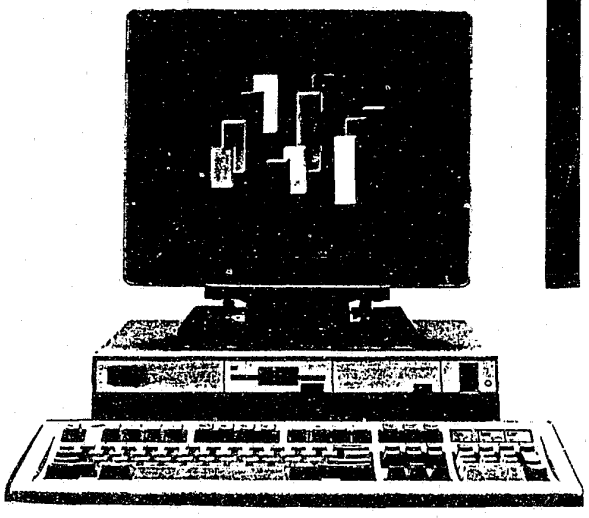
STATE OF CALIFORNIA
BOARD OF CORRECTIONS

A JAIL MANAGER'S GUIDE TO UNDERSTANDING THE AUTOMATION PROCESS



ATKISSON AND ASSOCIATES, INC.

CALIFORNIA STATE BOARD OF CORRECTIONS

Presents

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May 1987

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INTRODUCTION

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As jail managers, you are faced with the task of managing the daily collection of huge amounts of data from booking information to prisoner management through release. This manual is designed to help you understand the decisions and effort which go into the automation of a jail information system.

This handbook will assist you if you are a jail manager who fits into any one of the following categories:

- Your jail is **not automated** and you wish to develop a jail management information system.
- Your jail has an **outdated automation** system and you wish to replace it.
- Your jail is **only partially automated** and you wish to expand it.
- You are **in the process of automating your jail** and you wish to obtain an overview of the steps involved in pursuing automation.

There are, of course, other people in your county who might benefit from the information in this handbook. For example, you may want to use it as a reference for educating certain people in your department about the benefits of automation or about the effort involved in undertaking an automation project. You may want to provide it to your county data processing staff who may be unfamiliar with jail operations and the issues involved in automating a jail. It may be useful as a tool in your discussions with the county administrative staff about automating your jail.

The size of this handbook may at first be overwhelming, and you may be groaning at the thought that you are expected to sit down and read it from cover to cover. But don't panic! It's a resource manual and is set up so that you can simply refer to the particular section of immediate interest to you.

Each "book" is separated by a divider and is clearly marked. The book is divided into chapters with various subheadings which are detailed in the Table of Contents so that you can easily select the section that is of interest to you.

The following explanation of each book and its intended audience may be helpful for easy reference:

Book I - Significant Components of an Automated Corrections Information System

Book I demonstrates some tools that will allow the jail manager to communicate automation needs in a form that will help insure that the data processing personnel are designing a system that meets the jail's need. It provides a description of a basic, generic jail system as an example of the kind of narrative the jail manager will need to provide to data processing staff so that they understand the way the existing system works and how the new automated system should work.

The benefits and requirements for sharing information are also discussed. Some sample checklists are provided to aid in determining how much jail staff time is required to conduct each task.

Book I Audience

Jail managers are the primary audience for this portion of the handbook. While it may appear to be very basic, it is intended to get the manager thinking about how his or her daily operations occur so that the unique characteristics of each jail are translated properly to the system designers.

Data processing personnel who are unfamiliar with jails and criminal justice may also find this book helpful in increasing their understanding of the flow of information through the jail and other components of the criminal justice system. The staff from the **county administrator's office** will also benefit from this book.

Book II - Operating Within the Technological and Organizational Maze

Book II is designed to provide easy reference to a number of common questions which arise whenever automation is considered. These questions are addressed in a practical "how to" fashion that lets the jail manager know when and where in the automation process these issues need to be dealt with. Examples of the issues included in this book are:

Who Will Access the System?
How to Enlist the Support of Upper Management?
Where/When Do Micros, Minis and Mainframes Fit?
How to Determine What to Automate?

Book II Audience

Jail managers are the primary target for this book because these questions will automatically become part of the basic concerns when deciding whether to automate. The **project manager,** if different from the jail manager, may want to read this book for the same reasons, especially if automation is a new field for you. And it may be that those **data processing personnel** who are not familiar with jails and criminal justice may want to review this portion of the manual. **County administrative staff** will also benefit from this book.

Book III - The Information System Life Cycle

Book III provides an overview of all the processes involved in the development, implementation and maintenance of a jail automation system. A jail manager can only know when all the bases are covered if he or she knows all the steps and stages and processes included in the life cycle. This book explains the purpose of each process and provides an understanding of the products to be expected from each.

Book III Audience

The project manager is the primary focus of this book since it provides the entire overview of the life cycle. However, the **jail manager** will learn a great deal

from this section, particularly if he/she is going to be heavily involved in the daily development of the system. This overview may also be helpful for **county administrative staff** so that the jail manager is sure that everyone understands the scope of the tasks ahead.

The success of your automation effort is dependent upon your ability to relate your needs and wants to the technical staff. The more you know, the more likely your jail automation system will suit your needs. Use this handbook to educate yourself and others. We hope it will assist you with the important decisions ahead.

Appendices

For your reference and assistance, the Appendices contain the following practical tools which you may wish to utilize:

A. The "Glossary of Terms" will be helpful for familiarizing the reader with automation terms not used every day.

B. The "Data Flow Diagrams" are included as examples of the kind of documents commonly used by system designers.

C. The results of a statewide survey of all county detention systems are provided. Jail managers can use this information to identify counties with similar characteristics.

D. A list of jail automation contacts is provided so that jail managers can talk directly to the most knowledgeable people in each county.

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BOOK I - SIGNIFICANT COMPONENTS OF AN AUTOMATED CORRECTIONS INFORMATION SYSTEM

Introduction

The use of computers in today's correctional facilities is growing much faster than all but the most far-sighted individuals believed possible a few years ago. As the use of computers grows in other areas, jail managers throughout the state are beginning to see how this technology can help them. However, few professionals in the field of corrections are truly knowledgeable in the area of automated information processing. Some are even fearful of the computer's potential.

We have probably all heard horror stories about automation of the "jail information system". Many systems have not met expectations and some were so ineffective they were totally abandoned. Perhaps you have even been involved in one of these systems. This war story scenario creates a dilemma for the jail manager who wants either to upgrade a computer system or design a new one. With the pressure to do more with less being a constant in local government today, jail managers must insure that the funds spent on computerization truly improve the efficiency of the operation, and no one wants to be responsible for the wastefulness of a system that doesn't work.

The responsibility for preventing such wastefulness ultimately rests with the jail manager. It doesn't matter whether you hire a private consultant or use your county's data processing department, **you are the one who will have to live with a system that doesn't work.** Because you don't have the time to become a computer expert, you must rely on someone else to design your system. That "someone" will hopefully have the expertise needed from the data processing field but, generally, will have no knowledge of the field of corrections.

Your primary job is to provide the catalyst to bridge the communications gap between the data processing professional and the corrections professional. In this book we will demonstrate some tools that will allow you to communicate your needs in a form that will help insure that the information needed to design a system is understandable to members of both professions.

The first chapter will walk you through a "basic" jail system in narrative form. We will identify and discuss some of the main functions and processes common to most jails and, hopefully, start you thinking about your own facility and how you operate. The next chapter will introduce you to a method of communicating your needs to the technical people who will design your system. This chapter also contains a sample checklist that will aid you in determining the amount of staff time you require to conduct the different processes within your facility. This information can then be used to determine the benefits of automating the various processes in your jail. The final chapter will discuss the requirement for sharing information with other agencies and the benefits of including those agencies in the design process.

A. DESCRIPTION OF A BASIC JAIL SYSTEM

Introduction

The staffing and organization of local detention facilities vary greatly from county to county throughout the state. Tasks performed by a peace officer in one facility may be performed by a custodial officer in another or by a civilian clerk in another. Tasks that are assigned to separate divisions in large facilities may be grouped together and assigned to one individual in a smaller facility; regardless of the internal structure or who performs the duties, the tasks are basically the same.

1. Intake

The first major set of tasks is grouped into the intake function and includes the processes of receiving, booking, medical pre-screening and the identification of an inmate.

The **receiving process** involves the collection of information on an arrest, including identification of the arresting officer and agency, date and time of arrest, and charges. Also, during this process, the determination is made as to whether the arrest falls under one of the categories listed in Penal Code Section 4000.

The **booking process** includes: recording of the arrest, as required by Penal Code Section 7(21); initiating the inmate record, as described in California Administrative Code Title 15, Section 1041; generating the receipt for inmate property, as required by Penal Code Section 4003; and initiating the information gathering process for the identification of the inmate.

The **medical pre-screening** process usually consists of a series of questions and observations designed to determine if the prisoner has any medical or mental problems which may require care prior to the prisoner being housed in the facility or special handling in such cases as contagious diseases or potential suicides. The process also alerts the facility medical staff of any potential need for medical service the prisoner might have while in custody, such as medication or continuation of a medical regime begun prior to the prisoner's arrest. Finally, documentation of a

prisoner's medical pre-screening should take place which may lessen a department's liability in case of a civil action alleging inadequate medical attention.

The **identification** process in all jail facilities begins with data received from the arresting officer which was obtained while in the field. Prior to arriving at the facility with a prisoner, the arresting officer typically has gathered such identifiers as name, DOB, race, sex, social security number, and driver's license number. Beyond this point, the extent to which an agency builds upon this information, and where the identification process occurs in the sequence of events, varies between agencies. Most agencies maintain a Local Arrest Record (LAR) on all individuals arrested which contains identification information, records of previous arrests and bookings, CII/FBI rap sheets and identification numbers, fingerprints and photographs. The formal identification process usually begins with a search of these records based on the prisoner's name and other identifiers collected in the arrest and booking process. A match on these identifiers is then confirmed by fingerprint comparisons. With this process completed, the agency has either positive identification of the inmate or has determined that positive identification is not possible at this level. (As the State of California expands the automation of the CII criminal history records and continues with the implementation of CAL-ID, agencies will be able to expand their records search and positive identification process to include the records maintained by CII.)

At this point in the identification process, warrant checks are made based on the best identification information available. The final steps in this process include taking fingerprints for reporting arrests on detainable offenses to CII and the FBI and updating the information contained in the LAR.

2. Pretrial Release

In response to the severe overcrowding found in most local detention facilities, agencies statewide are developing new and innovative programs that allow pretrial inmates to be released prior to court appearances and without requiring the posting of bail. These programs may include increased use of pretrial releases or an O.R. or diversion program operated in conjunction with the probation department. With any of these programs, criteria are established which the inmate must meet to be eligible for release, and information must be available to determine the inmate's eligibility.

This information is taken from the booking record and the LAR and frequently is added to information gained during an interview with the prisoner. Typical criteria may include severity of current charges, past criminal record, the prisoner's place of residence, and the status of his stability in the community. As information is gathered, it is determined if the prisoner meets the established criteria, and, if eligible, he is released prior to housing.

3. Pretrial Inmate Classification

An inmate deemed ineligible for release and unable to bail, must be housed. Prior to housing, the inmate must be classified. The level of sophistication needed in the classification process depends on the size and physical design of the facility, but all facilities classify their inmates prior to housing. This classification process may be limited only to separating male from female and sentenced and pretrial from civil prisoners. A larger facility, with many different housing areas, may use a process with a wide variety of classifications that allows for a much finer breakdown of its population.

Any classification system has its roots in Penal Code Section 4002. This section of the Penal Code outlines the mandatory separation of male from female and pretrial and sentenced from civil inmates. Most facilities add the categories listed in California Administrative Code Title 15, Section 1050, which include sex, age, criminal sophistication, seriousness of crime charged, assaultive or non-assaultive conduct, and any information supplied by the inmate. To these categories, facilities often add such things as gang affiliation, conduct of the inmate during past periods of incarceration, and any other information which may fill the needs of a particular jail facility. Added to the regular classifications are such special concerns as communicable diseases, as discussed in California Administrative Code Title 15, Section 1051, and mental disorders, as outlined in California Administrative Code Title 15, Section 1052.

Once the inmate has been classified, a housing assignment is made based upon that classification. This classification and the resultant housing assignment does not always remain static. It may change as the inmate moves through the court system,

through the actions of the inmate in the facility, or based on an appeal by the inmate. This monitoring and reclassification process will continue throughout the time the inmate remains incarcerated.

4. Pretrial Prisoner Management

Once the pretrial inmate has been housed, the process of prisoner management begins. This process is primarily that of tracking an inmate while in custody. It starts with information gathered during the intake process and allows for periodic updating of that information in order to keep it current. It should insure that the inmate is scheduled for court appointments in a timely manner and that those appointments are kept. It must also contain some method of population accounting as well as the ability to maintain all of the records gathered on an inmate while in custody.

Many facilities have found that as their inmate population grows, so do the problems associated with taking the inmate before a magistrate in compliance with the time limits established by Penal Code Sections 825 and 849. Any increase in the number of inmates is reflected in a similarly increased workload in both the district attorney's office and the courts. A system must be able to identify any inmate who is in danger of not meeting the time limits.

While an inmate is in custody, charges may change often. The arresting agency may add, delete, or change the original charges during the investigation; the District Attorney may change the charges at the time a complaint is issued, and, finally, the charges may change as the inmate moves through the courts. These changes should be reflected in the inmate's jail record and may require additional processes. A reduction in charges from felony to misdemeanor requires that the inmate be reclassified and may mean that the inmate is eligible for a pretrial release program. Any change in charges usually causes a change in bail amount, and if the bail is reduced sufficiently, the inmate may be able to obtain release with a simple phone call. A jail system must ensure that the charge information is kept current and should trigger any additional process mandated by the change. Along with changes to the original charges, inmates may have additional charges filed against them once warrants have been located and confirmed or additional cases filed. These additional charges must also be reflected in the inmate's jail record, and they may trigger a repeat of the processes discussed above.

During the pretrial incarceration period, the inmate will have various appointments scheduled (usually court or medical appointments). Jail personnel are responsible for seeing to it that those appointments are kept. A jail system should allow for the tracking of appointments while monitoring such things as double scheduling, wherein an inmate has been scheduled in two places at one time. The system should provide the facility with a list of all appointments for a given day. More sophisticated systems will also provide statistics for use in staffing projections. Regardless of how sophisticated the system, the primary reason for the system is to allow corrections personnel to have the right inmate at the right place at the right time.

Basic to the management of any jail facility is an inmate population accounting system. The primary component of the system is the jail count; that is, how many inmates are assigned to each housing unit. Added to this are the requirements of California Administrative Code Title 15, Section 1040, which requires a monthly average daily population of sentenced and unsentenced inmates by categories of male, female and juvenile.

At the time an inmate is booked, a property record is created. Many facilities allow inmates to release property and/or receive property while in custody, and, if allowed, the system must record those transactions. Most facilities have a commissary program, and the system must also record those transactions.

The remaining elements of prisoner management vary greatly from facility to facility. Large facilities may have a wide variety of programs available while smaller ones may only have the minimum, such as visiting and exercise. Whatever the individual needs are can only be determined on a case-by-case basis. Simply stated, prisoner management includes all records maintained by a facility on the inmates in that facility.

5. Sentenced Inmate Classification

Once an inmate is sentenced, many changes occur, the first being classification. The classification of a pretrial inmate is designed primarily to cover security concerns and to protect the inmate and staff. Once a sentenced inmate is classified, there are

many additional factors to consider. The first and simplest is the inmate who has been sentenced to state prison. Among the concerns in this case are security and safety needs, already addressed in the pretrial process, and the change of status from pretrial to sentenced. Basically, the facility's only requirement is to house the sentenced inmate until arrangements can be made for transfer to the State.

If, however, the inmate is sentenced to county jail time, there are many other considerations that must be addressed in the Sentenced Inmate Classification Plan. The typical Sentenced Inmate Classification Plan uses all of the data collected in the pretrial classification process and then builds on that information. The two major additions include information on the sentence and any jail incident reports on the inmate if he has been in custody. With this information, the inmate must be assigned to a housing location which may mean a transfer to another facility, if the department maintains a Type III facility such as an industrial farm, or it may simply mean a cell change to a housing unit for a sentenced inmate. The decisions on which these transfers are made are based on much of the data collected during the pretrial classification process.

6. Sentenced Inmate Management

Usually, the Sentenced Inmate Classification Plan will also include inmate eligibility for programs such as educational offerings and work assignments. Additionally, the plan should allow for changes in classification while the inmate serves his sentence.

As in the classification process, sentenced inmate management is built on the pretrial process. It is, however, expanded by the scope of programs available, the addition of good and work time credits, sentence information, and the determination of an out date. It should also allow for the addition of charges if warrants are discovered or new charges are filed on the inmate.

The management of sentenced inmate programs is the same as for pretrial inmates, only broader in scope: the longer the sentence, the more programs available. Also, the longer the stay, the greater the need is to track the frequency that an inmate has access to such things as medical/dental and educational/vocational programs.

The disciplinary records for sentenced inmates may be more extensive as they also contain information on the loss of good time and work time credits. The tracking of jail incident reports and the resultant record of disciplinary actions is not only required by CAC Title 15, Section 1084, but becomes critical if an agency's disciplinary practices are challenged in court.

7. Inmate Release

The final process in any jail system is the release of inmates. During this process, all charges must be checked, and it must be confirmed that they have been cleared. For pretrial inmates, this clearance may be due to the posting of bail, an O.R. release, a citation, or clearance by a decision not to file a complaint. For sentenced inmates, the clearance will be through county parole or the completion of the sentence. Once it is confirmed that all charges are cleared and the inmate is due for release, many agencies run a final warrants check to confirm that no new charges have been filed. Prior to release, verification of the inmate's identity must be made. Once this verification is made, the inmate's property is returned, and the release information forwarded to the LAR for use on the disposition form.

8. Management Information

As you read through this chapter, you probably found yourself disagreeing with some sections, wondering why some items were included and noticing that processes that are important to you were omitted. If so, then the chapter has been successful. It was designed to start you thinking about your own operation and the information that is processed in it. No one else totally understands your system, not the authors of this manual nor any data processing expert that you may bring in to design a computer system for you. You will have to tell that person what you do, how you do it and what your needs are. The next chapter will show you how to put your system on paper so that you will be able to ensure that both you and the person who will design your system have the same understanding of your needs.

B. INFORMATION FLOW WITHIN THE BASIC JAIL SYSTEM

Introduction

Having walked through a basic jail system in the preceding chapter, it is apparent that the numerous tasks that are performed will generate a great deal of information (data). The jail manager is the most knowledgeable person regarding the information that is created as a result of the various activities occurring within the jail and the "flow" or direction this information must take in order to process an inmate through the system.

The ability to identify and understand the source of this information, where it is distributed and how it is utilized is critical in evaluating the potential for automation. Therefore, effective communication between the jail manager and the system designer is essential.

There are several communication tools available to describe or document the flow of information through a jail system including: narratives, data flow diagrams, and task/element check lists. These tools, when utilized properly, can effectively communicate to the data processing professional not only what exists but what you want the new system to look like.

1. Narrative

A comprehensive narrative description of the current jail system is extremely helpful to enable the data processor to understand what you do now and what you would like the computer system to do for you. The narrative should describe the activities that take place within the jail in the order that they occur and the information that is captured and disseminated as a result of these activities.

The narrative should be in sufficient detail to enable the system designer to understand where the information originates as well as its ultimate destination in order to identify the flow of information as it relates internally and externally to the jail organization.

The description of the basic jail system in the preceding chapter is an example of the narrative the jail manager should provide to the system designer. Your description will not be generic but instead will reflect the unique processes and sequences within your jail and your criminal justice system. This narrative is one of the best tools you can use to describe how your system works. It also provides the basis for deciding how you want the new automated system to work. (If an integrated criminal justice information system is being installed then there would be a similar description for each involved agency which would describe their daily exchanges of information and all points of duplication.)

Recognizing that the jail is one of several components of the criminal justice system, it is extremely important to document interagency relationships with regard to the flow of information. Chapter C discusses these relationships in much greater detail. Suffice to say at this time that the effectiveness of the jail operation can be positively impacted through the sharing of information with interrelated agencies such as the courts, district attorney, public defender and probation. When the capture, storage, dissemination and retrieval of the information can be automated, the impact of data sharing is even more dramatic.

2. Data Flow Diagram

The logical data flow diagram is another communication tool which has proven extremely effective in enabling jail managers to convey their needs to the data processing professional who will ultimately design the automated system. The old saying "one picture is worth a thousand words" is very appropriate in this context as the data flow diagram becomes the picture that is used to document the information flow within a jail system as well as to identify the external entities that provide and receive information vital to the process.

It is not essential that the jail manager become proficient at creating data flow diagrams in order to pursue the automation of the jail system. However, the use of data flow diagrams is becoming so commonplace in the data processing industry as an effective means of communicating the generation and distribution of information, it may be helpful for the jail manager to at least understand the meaning of the four basic symbols that are utilized when creating and discussing a logical data flow

diagram. Appendix B contains a description of the basic symbols and provides an example of two actual data flow diagrams.

3. Task and Activities Checklist

Another means of communicating your system requirement is to identify those tasks that you need to automate and the potential benefits of the automation. The attached checklist is an example that can help you in the process.

To use the form, simply enter the number of times per day that you perform the task, the amount of time it takes to perform the task and then multiply the two to find out the amount of time spent per day on each task. Your system will dictate which tasks are listed on your checklist.

When you have completed your checklist, you will have a document that will allow you to explain in detail how much time your staff spends gathering, entering and disseminating information. The usefulness of this information is not limited to automation; it can also be used for manpower justifications in budget proposals and staffing patterns.

If you do continue with a plan to automate, have your system designer complete the same form with estimates of how long the same tasks will take in the proposed automated system. Don't fall into the trap of basing your entire justification on manpower savings. Computerization has several other benefits that are much harder to quantify including the speed of access to this information, the accuracy of the information, the elimination of redundant data, etc.

3. Checklist of Tasks and Activities for Jail Automation

TASK	TIMES/ DAY	TIME	TOTAL
BOOKING			
Collect Personal Data	_____	_____	_____
Inventory Property	_____	_____	_____

3. Checklist of Tasks and Activities for Jail Automation (continued)

Collect Arrest Information	_____	_____	_____
Generate Forms/Jail Record Jacket	_____	_____	_____
Medical Pre-screening	_____	_____	_____
HOUSING			
Classify Inmate	_____	_____	_____
Re-classify Inmate	_____	_____	_____
Jail Count	_____	_____	_____
Prepare Population Reports	_____	_____	_____
Change Housing Assignments	_____	_____	_____
TRANSPORTATION			
Prepare Court List	_____	_____	_____
Prepare Medical Appointment List	_____	_____	_____
Transport Inmate to Different Facility	_____	_____	_____
PRISONER MANAGEMENT			
Update Charges	_____	_____	_____
Add Additional Charges	_____	_____	_____

3. Checklist of Tasks and Activities for Jail Automation (continued)

Add/Change Sentence Information	_____	_____	_____
Add/Change Release Date	_____	_____	_____
Inmate Visiting Schedules	_____	_____	_____
Inmate Recreation Schedules	_____	_____	_____
Receive Inmate Funds	_____	_____	_____
Release Inmate Funds	_____	_____	_____
Sell Inmate Commissary	_____	_____	_____
Answer Phone Inquiries-Public	_____	_____	_____
Answer Phone Inquiries-Official	_____	_____	_____
Answer In-person Inquiries-Public	_____	_____	_____
Add/Change Medical Appointments	_____	_____	_____
Release Inmates	_____	_____	_____
Contract Billing	_____	_____	_____
Monthly Statistical Reports	_____	_____	_____

C. SHARING INFORMATION WITH OTHER ORGANIZATIONAL UNITS AND AGENCIES

Introduction

How often do you suppose an arrestee's name is typed or written in your facility, on average, from the time he is booked until he is released? And how often do you suppose it was recorded before he was booked? And during the progress of his criminal case through the district attorney's office, the courts, the public defender's office, and the probation department, how often? All together, the name of a defendant in a very long case may be typed and written scores of times before it's all over. Now multiply all that effort by the total number of data items on a defendant that have to be collected, recorded, filed, retrieved, and passed along as his case progresses.

Now picture a computer entering the scenario, and consider how nice it would be if the defendant's name were entered into it just one time, but usable by all of the agencies comprising the criminal justice system. And consider how the advantages would grow if the same were true of all or at least most of the information about the defendant, his charges, etc.

It is this kind of data sharing we will consider in this section. As we do so, it will be helpful if we bear in mind that data is not stationary: it flows. (They don't call them "data flow diagrams" for nothing, after all.) It flows throughout the entire law and justice community as cases move along the way toward disposition. And it doesn't just move within your own county, but ends up going out to the state via the JUS8715 and, of course, onto CLETS and possibly even NCIC.

In manual systems, data is often interrupted in its flow. A lost or late document is a virtual dam, halting the stream in its tracks. And the tedious and repetitive stopping to collect information that some other office has already collected slows the stream and often muddies it - as when two agencies collect the same information, but one of them collects it wrong, requiring clerical time to resolve disparities.

A "system" can be defined as an entity comprised of two or more elements, all of which work together for the good of the total entity. So it is with the criminal justice system, made up of many agencies and departments each of which is independent of the others, yet all working together in a cooperative, symbiotic and orchestrated way for the good of the system en toto. This law and justice system is extremely vital to the health and welfare of our society, and any way we can improve its efficiency is worth our most serious consideration. One of these ways is to eliminate all or much of this duplicative effort invested in collecting, storing, and retrieving the same information throughout the system.

1. Information Interface Points With Other Organizational Units

One good example of the information sharing process is your records division, and specifically the arrest records section. As you know, the recidivism rate in most local detention facilities is very high, and, in fact, a 75% rate is not uncommon. Obviously, this means that out of every hundred people booked, you have to collect the same information on seventy-five of them that you had already collected and recorded at least once before.

An obvious solution is to computerize the booking process in such a way that data on booked persons remains available for recall when the same person is arrested and booked again. Think of all the information that your booking officers would no longer have to retype (or in the case of an automated system, rekey).

In order for your booking system to be able to recall information based on some entry such as a person's name or social security number (or operator's license number or whatever), all of the data on a specific person has to be filed in the computer's disk files under one or more keys. Then, every booking for a particular individual would be stored together on the computer's data base. It doesn't take much thought to recognize that what we just described is a local arrest record, and in designing a way for your automated system to save work for your staff and to organize its data in a way that maintains each person's bookings together, you have - whether intentionally or accidentally - created a set of files which would be of phenomenal value to your arrest records section.

That example didn't take us far from your own organization, so let's move out to some entities which, though still part of the criminal justice system, are organizationally external.

When a court issues an arrest warrant, which will probably end up causing a booking, that warrant has on its face much information about the person to be arrested. If your automated information system extended to include the district attorney and the courts, it could include an automated wants/warrants system, in which event all of that personal data on the person to be arrested would be on the computer, available for use by your booking officers when the person is brought in. Your staff would need only to retrieve it and verify it, making changes to any item in error.

So far, we have only discussed your staff making use of information filed on the computer by other agencies or filed by your staff during earlier bookings of repeat offenders. There are also organizations which, though they may not provide information into your system, will need information from it. Daily Resumes of Bookings furnished to detectives, to the probation department, etc., are good examples. With an automated information system, you could have the computer print these out on your own local printer and then distribute them by hand as in the past. But a more efficient way would be to let those agencies have their own terminals and printers and allow them to display and/or print them out in their own offices.

Often, these agencies and other members of the law and justice community call your facility to determine whether a person is still in custody, his status, and where he is housed. Giving these agencies the authority to look up this information themselves, by inquiring into your data files on the computer, would relieve your staff of responding to such inquiries.

If your system includes prisoner management, it could easily produce in-custody arraignment calendars which would not only serve your staff well for transportation scheduling, but would also be very much appreciated by the courts and probably the public defender, district attorney, and the probation department.

The concept of information sharing is a beautiful one in principle. To put it into practice, however, every agency participating in a shared system will have to learn a

less provincial attitude toward "their" data and realize it is hereafter to be considered "our" data. Going back to our example of creating an LAR from data collected in the booking system, if you were to go to your records supervisor and explain that you are designing a computer system which will automatically create the LAR's, you would probably not be met with the enthusiastic response you expected. The records supervisor would probably explain that the information your people collect does not meet the needs of "their" arrest records. They will talk about BCS hierarchy numbers, exact code subsections on violations, and the need for positive identification of all inmates. Obviously, it is time to discuss the various needs of the users who will share the system, so that all essential needs are met and each user contributes what they can to the other's files.

Once this kind of discussion gets started, it is usually surprising how many ideas come pouring forth. Ask the records supervisor what kind of information they are typing on fingerprint cards, and then ask why you can't have the computer print the data on the cards based on information gathered in the booking process - provided that the information collected is thoroughly reliable.

Now suppose you gave access to your system to the detective division. The detectives could at any time - and without bothering your staff - determine whether an individual is in custody and would also have available to them all of the information residing in the LAR file. This means the detectives don't have to make all those trips to records, saving them time as well as the people in records.

Now consider an information system shared by law enforcement, jail, district attorney, public defender, courts, probation department, and county clerk. In such a system, the few examples of the benefits of sharing data discussed above would multiply over and over. Now we are talking about an automated system capable of generating the JUS8715 reports on magnetic tape. We're talking about the possibility of a paperless warrant management system, in which warrants are stored and transmitted electronically, and printed on demand. We're talking about a system which would flag a warrant as recalled the instant this information is keyed in by a member of the court. We're talking about one that can generate commitments or remand orders, print calendars for anyone who uses the system and has a remote printer, can store docket information and even perform certain functions on the basis

of docket entries (e.g., update the bail/bond management system, notify probation department when pre-sentence investigation and recommendation is ordered, etc.). The list goes on and on, but the point is that the more agencies sharing information in an automated system, the more the benefits that accrue to each one.

It may not seem feasible for your county to consider a system of so broad a scope; nevertheless, the benefits of such a system are so great that in our opinion no county should dismiss the prospect out of hand, as being too costly or too involved and complex. However, if after serious consideration, it proves indeed to be out of the question, then you can narrow your scope and consider all of the aspects of your department that might benefit by sharing certain data fed into the system by your department and vice-versa. Even a little data sharing is better than no sharing at all.

BOOK II

BOOK II - OPERATING WITHIN THE TECHNOLOGICAL AND ORGANIZATIONAL MAZE

Introduction

A variety of organizational, policy and technical issues will determine the quality of your automation system. These issues must be addressed and understood early in the needs assessment and planning stages. Book II is designed to provide easy reference to a number of common questions which are a result of the issues encountered by county departments trying to automate.

Organizational and policy issues are discussed under such rubrics as "Who Will Access the System" and "How to Enlist the Support of Upper Management".

Technical issues are discussed under categories such as "Liability", "Security", and "Where/When Do Micros, Minis and Mainframes Fit?"

The issues identified in these two chapters are as important as any step in the needs assessment process or in the systems design. However, these issues are not easily handled in a step-by-step, linear fashion the way the system life cycle occurs. These questions and issues arise throughout the project. However, whenever possible, we have tried to address them in a way that lets the jail manager know when and where in the automation project that the issues need to be dealt with.

A. ORGANIZATION AND POLICY ISSUES

Introduction

This chapter will discuss those issues having either organizational impact or requiring organizational cooperation when considering the alternative approaches for the acquisition of an automated correctional information system.

There are a number of organizational and policy matters which will determine the quality of your automation system and, therefore, must be identified and addressed early in the project planning and development process. These issues include: who will access the system; the pros and cons of integration with other components of the criminal justice information system; how to use an advisory committee effectively; how to enlist the support of upper management; how and when to involve Central Data Processing; the pros and cons of internal development and operation; when and how to use consultants; and the pros and cons of working with vendors.

Throughout this chapter, reference will be made to the **project team.** The project team should be comprised of a mix of operational level personnel from the corrections division as well as systems analysts and other information processing technicians responsible for the acquisition or development and implementation of the automated information system. The team should have a **project manager** who is responsible for planning, monitoring and reporting project status. This position could be filled from the administrative, operational or technical ranks, but the key is to select an individual who will provide leadership and supervision of the project at the operational level.

Now, let us proceed into the organizational maze and address some of those issues that will no doubt play an important part in the direction your information system will ultimately take.

1. Commitment: Staff, Time, Money

The commitment necessary to develop and implement an automated jail information system is tremendous, and it must come from a variety of sources. Throughout this manual, we have offered suggestions as to how you can obtain commitment for the project by convincing your own administration, using a steering committee for support and preparing well documented presentations to county management.

The jail manager will be constantly aware of the level of commitment necessary as the project begins to build momentum. Some counties that have already automated recommend in retrospect that a full-time jail administrative staff member be dedicated to the automation system. This person would provide the daily liaison with data processing and line users to insure that the ongoing staff work on systems analysis and review, user training, user manual updating, and other important tasks are accomplished.

The best way that you can understand the level of commitment necessary is to talk with other jail managers and/or automation project managers who can describe their first-hand experiences. (See Appendix D for County Contacts.) They will be able to identify those peak periods when staffing will be intensive. For example, when some staff are in training, others must be filling daily jail operational positions. Your counterpart from another county can describe the staffing patterns that worked best for them and no doubt recommend additional ways to do it better.

This project cannot be viewed as a "part-time" commitment by the sheriff's department. Instead, it must be viewed as a major effort. Full consideration for staffing and other costs must be given throughout the project and must be monitored regularly to respond to the changes and progress within the project.

The jail manager must assume the responsibility to keep the sheriff's administration aware of the level of commitment necessary to conduct each phase of your automation project. Work closely with data processing personnel to identify tasks and to understand the amount of effort required. It is impossible to provide a rule of thumb which identifies the level of commitment throughout the project given the uniqueness of each county. However, the key is in understanding the amount of work

to be done and the resources that will be necessary to successfully accomplish the project.

2. Who Will Access the System?

This question is one of the most important for criminal justice officials who are responsible for the quality, confidentiality, and security of the information being processed and stored within an automated information system. The answer is relatively simple: only those personnel who are **authorized** to use the system will have access.

There is no automated system which is foolproof or immune to abuse. However, access is effectively controlled in highly confidential systems every day. Access is controlled in four major ways: design, policy, authorization, and physical security.

Design refers to the fact that the system can be set up through software controls so that access into the system is limited to specific users. For example, the sheriff's department and the district attorney's office may share virtually all original case data regarding a defendant. Most of this information will also be available to the public defender's office, which is also part of the system. However, the system will be designed to limit access to the public defender for certain types of data which isn't usually provided to them.

Policy refers to the fact that **each jurisdiction sets formal policies** regarding the number and types of operators within the system. **The policies must be in writing, and all personnel should be formally notified of the contents of the policies.** Department heads and division supervisors must regularly enforce the policies, and exceptions should be reviewed with the advisory group, users group, or some other authority over the system. Such a policy limits access by informal, untrained users if properly enforced.

Authorization refers to the ability to assign an "access code" or "password" to those authorized to operate a terminal within the system. By definition, this code defines the amount or type of data to be accessed by the individual assigned to the code. Therefore, if the individual requests the system to display data that is not within the

authorized code of the operator, there will be an automatic rejection of the request. Codes must be maintained and changed regularly if they are to work properly. Employees must be made aware of the security reasons for using codes and should be instructed as to the penalties for passing their access code to any unauthorized person.

Physical security can be arranged so that terminals are controlled by their physical location or "address". Physical security can be influenced by the physical location of the terminal (i.e., is it in an office location which is always supervised, and can this office be locked when unattended?) Access to the address or location of terminals and other equipment can be controlled by policy.

3. Pros and Cons of Integration with other Components of the Criminal Justice Information System

Criminal justice departments have only recently begun to take advantage of automation, even though most of them have been saddled with a paper processing burden which can be traced back through hundreds of years of ever-changing record keeping.

The manual systems which have driven our criminal justice processes have required that each department collect and store its own needed information. This feature has resulted in significant duplication within the entire system since the same basic information about a single case is captured originally by each involved department. It is not uncommon in some criminal cases that the same basic data regarding a defendant may be retyped or manually recorded scores of times. Manual systems cannot instantly recall information for re-use, cannot allow multi-access into a single data base of information, and are for the most part not date nor event driven.

Automated systems provide effective solutions to these problems. They allow for multiple access of the same data, by different departments, thereby eliminating costly and time-consuming duplication.

Suppose each major component of the human body had its own memory in its own little brain. Each hand would have one, but your feet would have another pair. Still

another would control your digestive processes, while another handled your breathing, and so on. How much more efficient it is that we have one central brain able to handle all these parts and all these functions, and to store the memories of all in our data bank!

Yet the storage and retrieval of information in the various departments of an organization have always had to be done like that hypothetical, multiple-memoried body. Today's computers provide us the power to centralize into our brain the memories (files) of all of an organization's component parts. Now, at last, the right hand can know what the left hand is doing.

Since the mid-1960's, national, state and local jurisdictions have been applying the principles of automated information processing to the criminal justice system. In those efforts, one paramount issue has repeatedly surfaced - the processes interrelate, and the data is duplicative. Criminal justice processes usually involve monumental amounts of duplication, costing both time and money. Anything less than a system viewpoint ignores the fact that every department (and sometimes even units within a department) deals with the same cases and needs to "talk" with one another for a variety of reasons. One department's actions almost invariably affect other departments, causing a chain reaction of events throughout the system.

The advantages of an integrated automated information system can be outlined as follows:

- Integration of information avoids costly and time-consuming duplication of data by each department.

- Workload can be distributed more equitably among the various criminal justice agencies.

- Departments can communicate with one another without having to wait for paperwork. This results in considerable time savings for staff and can also result in other efficiencies (For example, quick transfer of release authorizations from the courts to the jails may result in a savings of bed space days.)

- System automation results in personnel cost-avoidance by reducing the rate of increase in clerical staff.

- Integration of the components of the system not only avoids the problem of duplication, but it simultaneously addresses internal, departmental case management needs and record keeping requirements while enhancing each department's communications with the other.

- Special requirements can easily be handled in an integrated system. For example, the state form, JUS8715, which must be processed by several agencies from arrest through disposition, can be built into the design of the integrated system by including automatic generation of the report. This eliminates the JUS8715 problems experienced by most counties.

- An integrated information system requires that all departments define cases, terms, common data and all terminology in the same way. Counting common cases and unifying the terminology results in meaningful management statistics. Such statistics can be important for budgeting, projecting staffing needs and managing caseload.

- Long-term cost savings or cost avoidance are more probable with an integrated system than with individual standalone systems, since data and format inconsistencies are eliminated.

- Systemization creates new efficiencies and avoids delays. Changes and updates can be made within the system in a way that ensures that all departments automatically and immediately receive and use the change.

- The practitioner in the system will benefit significantly. The patrol officer, the probation officer, the attorney, the judge and the booking officer, for example, will be able to retrieve complete and comprehensive information regarding a case.

- An integrated system allows for the automatic production of forms and notices common to several departments.

Automating an Individual Department: A Standalone System

As the criminal justice workload has increased over the years, individual departments have begun to look for ways to handle the burgeoning caseloads. County administrators have been reluctant to approve the costs for the integrated system approach since the initial development and design expenditures are usually high and because cost savings cannot be measured in short-term (one to two years) intervals. But, the pressure exerted by an individual department, based upon its existing and projected workloads, often convinces a county that individual, departmental automation is in order. Eagerness to address the big payoff areas with the greatest cost benefit may be one reason why some counties look at the systems on an application-by-application basis.

There are numerous departments throughout the country which have standalone systems. In particular, many district attorneys and some jails have automated without integrating with the rest of the law and justice system. Units or divisions within departments have successfully automated certain tasks, such as jails or warrants in a sheriff's department or traffic processing in a municipal court. Obviously, these are not integrated systems but do serve a specific function for a particular unit or division.

The advantages of a standalone system are summarized below:

- The most significant result of a standalone system is that a department can achieve some internal case management efficiency. Caseloads can be analyzed quickly and easily. The workload can be distributed more equitably among staff members.

- Within the department, certain processes, such as logging cases, case assignment and case classification, should be faster than in the manual system.

- Information retrieval should be faster than in a manual system.

- Clerical efficiency should increase within the department for such things as data entry, quality control, file maintenance control, job schedule coordination and

general data processing. More efficient clerical staff should result in better "turnaround" time for case processing for professional staff.

- Duplication of records within the department should be minimized.

- Space requirements for paper file storage should be reduced significantly.

- The department may be able to improve its "turnaround" time for providing information to other departments even though they may still be dependent upon physical paper transfers between departments.

- A single department system gives the department better control over its automation since it will have the complete say in how the system will operate.

- The development effort for a single department system requires significantly less time than that of an integrated system.

Disadvantages of Integrated and Standalone Automation Systems

Integrated:

-The system is more complex, more difficult to understand and coordinate.

-Significant up-front costs.

-Considerable up-front development time before the full benefits of the system can be realized.

-There is an important requirement for each department to cooperate. Considerable consensus and compromise are essential to a system which universally addresses the users' needs.

Standalone:

-Inability to share data and forms with other departments.

-Continued costly duplication of basic case data.

-Inability to interface with other departments.

-No system-wide improvements.

-Extremely costly to automate one department at a time.

-Continued heavy reliance on paper processing within the total system.

-The real issues of system-wide information consistency will have not been addressed.

Internal Versus External Integration

It is possible, of course, to create an integrated system which involves some or all of the units or sections within an organization, but involves no external department or agency.

The sheriff's department could, for example, develop a system which would include booking, arrest records, mug room and prisoner management. The data flow would begin with on-line booking. Data collected at this point would be fed into (or be accessible to) the LAR file maintained by the arrest records people in the records division. The mug room people would access the data and would be authorized to update some of it as positive I.D.'s are made on prisoners, and, of course, they would add CII and FBI numbers, fingerprint indexes, scars/marks/tattoos, and so forth. Within the prisoner management subsystem, data on inmates could be updated by jail staff, including court, medical, dental, and psychiatric appointments, medical or psychiatric problems, medicine being taken, behavioral problems, sentence information including credit for time served, good and work time, and calculated release data. The system could include a bail/bond management subsystem as well as wants/warrants management subsystem, with automated checking for open warrants or holds on every booking, plus updating of the wants/warrants subsystem when a wanted person is booked.

All of this involves integration, obviously, yet it is a "closed" system, meaning that no one outside the sheriff's office has any input into the data filed by the system. Even if non-sheriff's office agencies were given access to some of the data, but were denied the authority to input or update information, it would still be a closed system.

The main point is that integration can be done at various levels and is not an all-or-nothing kind of thing. And integration of systems within a department has a little of the best of both worlds - the standalone world and the open, integrated system world.

4. How to Use a Steering Committee (Advisory Group) Effectively

Why Set Up a Steering Committee?

There are three main reasons for setting up a steering committee:

- Building **support** for your automation project requires that key officials (such as the sheriff and district attorney) be involved in the automation process from the feasibility study through implementation. These are the people who have influence with the county administrator and the board of supervisors. They can keep the project on track, can fight for fiscal support and can see to it that the proper personnel are allocated to the project.

- A steering committee provides **direction and guidance** to the overall project. **The members work closely with the administrative, operational and technical representatives to see that everyone participating in the project is contributing appropriately.** This group meets directly with the data processing department and any outside consultants to help translate departmental needs into a realistic development plan.

- **Communication** between and among all of the departments, agencies and operational units is critical to the success of automation. A steering committee acts as the essential conduit for information exchange, policy development and for the resolution of disagreements.

These three ingredients (system support, internal direction and guidance, and communication among interested parties) are essential for the development of an automated system and should increase the efficiency of the project team.

Who Should Be Included on the Steering Committee?

Members of the steering committee should include: any decision maker whose department or operational unit will be a user of the automated system; the administrative officer who has the responsibility for recommending funding for the project; and the data processing manager who is responsible for the development, implementation and maintenance of the system.

Integrated Systems Approach

If your jail facility will be automated as part of a fully integrated criminal justice information system, the advisory group could be comprised of the following:

- Sheriff
- District Attorney
- Public Defender
- Municipal Court Administrator
- Superior Court Administrator
- County Clerk
- Probation Chief
- Presiding Judge of each Court
- Chief Administrative Officer
- Data Processing Director
- Police Chiefs

Individual Department Approach

If your jail is being automated as a standalone system and only involves the sheriff's department and other police agencies, then the advisory group membership could include:

- Sheriff
- Police Representatives
- Division Commanders
- Jail Commander
- Records Chief
- Booking Officer or Other Line Staff Representative
- Data Processing Representative

What Tasks will the Steering Committee Perform?

The steering committee is meant to be a catalyst for the entire planning and development process; therefore, its tasks should be oriented toward monitoring the progress of the project and providing guidance and direction to the project staff. The tasks outlined below may vary for each jurisdiction but should reflect the general duties of this group:

- **Meet with the project team** to review all proposals, time lines, progress reports, and any other written material which describe the goals and objectives of the project and its accomplishments.

- The committee will **review and evaluate** all recommendations from the project team to determine whether they meet the needs of the department(s), internally as well as externally. The committee should pay careful attention to the planning assumptions used by the project team so that the automation recommendations are consistent with organizational policies.

- **Policy development and finalization** should take place within this group. Policies might include determining implementation priorities, security requirements, staff access, and definitions of critical or priority information versus routine information. As a group, the members must reach consensus not only on the planning process for the development of the automation system, but also on the policies for the daily operation of the system.

- Most importantly, the steering committee may be called upon to **make recommendations to the board of supervisors** about automation needs and how those needs can best be met in an efficient and cost-effective manner.

- Overall, the steering committee acts as a **sounding board** for the project team to try out concepts and to test procedures before they are finalized or taken to the board of supervisors for approval. Many problems can be avoided by taking advantage of this body to sound out proposed features of your system during the planning stage.

- Finally, each committee member should ensure that **line management and line staff are informed** of the planning process and **educated** on the new concept of automation, and that they are available to the project team for input into the process. (Remember, line management and staff, being involved in the operation of the jail every day, are invaluable resources. If they are not "sold" on the idea of automation early in the process, they can create considerable difficulty during the implementation and training process. The steering committee should work

closely with the project team to arrange for orientation and information meetings to help keep staff aware of the process.)

How Should a Steering Committee Function?

- The steering committee should elect a chairperson who sets up meetings, acts as liaison with the project team, and works with the project team in establishing an agenda for each meeting.

- Over the years, advisory groups have gained a reputation for being ineffective, but this ineffectiveness can be avoided through the establishment of specific guidelines. During the automation project, the steering committee should participate as an active part of the planning and development process and accomplish a number of tasks. In order to be effective, the group should -

    1. adhere to the agenda;
    2. set deadlines for each task;
    3. specify assignments for its members; and
    4. rely on the project team for organizing the sequence of events.

- Experience has shown that steering committee meetings of approximately one hour's duration produce the best results. The members should be able to rely on a regular meeting time and duration. If the project team and the users' group are meeting regularly and following the project plan and timetable, they should be providing concise information to the steering committee at each meeting and receiving advice and approval on each issue.

- Be aware that there will be a varying need for steering committee meetings, depending upon the phase of the project. During the needs assessment phase, meetings may be infrequent; however, once the findings are available and timely decisions are needed, meetings may be necessary more often.

  Regularly scheduled meetings (usually once a month) help to insure continuity, regular feedback, strong communications, and effective coordination.

5. How to Enlist the Support of Upper Management

If upper management does not support your need for automation, don't count on getting too far. That's obvious. But, what happens more often is that upper management only half-heartedly supports your need for automation. Their concerns are focused less on your need and more on the cost and their ability to justify that cost to the holders of the purse strings.

Who is upper management? In the sheriff's department, upper management usually refers to the sheriff, undersheriff, division commanders and department directors. In the county governmental organization, upper management usually refers to the board of supervisors, the county administrative officer, and the individual department heads.

In any case, you will need to **educate your upper management so that they not only understand the problem and the need for automation but are willing to seek funding support for it.** This educational process must be CONTINUOUS, so they are kept informed at every step.

Keeping upper management informed begins with documentation of manual data processing problems, including staffing issues, storage problems, delays, inaccuracies and any other problems experienced within the paper processing realm. This first step in the education process should consist of written reports and memos followed up by personal conversations with the appropriate superiors. (See Book III, "Initial Problem Description and Request for Authorization to Proceed.")

Another good idea in educating upper management is to request or suggest the use of an objective third party to come in and assess the needs of the department. Sometimes an outside consultant report which verifies the problems that in-house staff have documented can bring the necessary credibility to spur decision makers into action. This step may only be necessary if upper management seems unresponsive to an in-house documentation of the problem.

After you have established the fact that there is a real problem, you might want to explore the available alternatives. Work closely with your data processing representative whenever possible and talk with other jurisdictions to find out how

they are addressing their data processing needs. Examine their systems, observe their operations and ask questions about the scope and capability of their systems. Send a report of your findings to your immediate superiors. It is sometimes helpful to use the experiences of others to show that your request for automation has successful precedents.

Additionally, **ask data processing to play a role in educating management.** If your upper management distrusts computers, giving them some on-site visits to working systems may help to instill some confidence that automation may not be as complicated and as threatening as they thought.

Remember that in order to make a decision to support a project such as automation, upper management needs to be completely supportive of the concept, have a sound understanding of the scope and magnitude of the project, feel confident about presenting the concept for policy decision, be able to rely upon the research and needs documentation provided by your department or outside consultant, and feel confident of your support and commitment to the project.

For the county administrator to make a decision to take such a request to the board of supervisors, the same kind of needs are apparent. Therefore, the administrator should be able to rely on the support and knowledge of the upper management staff in your department in the same way that your upper management will be relying on you.

6. How and When to Involve Central Data Processing

No matter who designs and develops an automated system, if it is done for an agency of the county, the county data processing department, with few exceptions, must be involved, for reasons which are outlined below.

The question of when to involve them is an easy one to answer: the moment it appears likely that an automated system will be suggested or requested. Normally, this would be at about the point where you request authorization to go ahead with an informational needs assessment, which should occur right after you have completed your initial identification and classification of the problem.

It would probably not be a good idea to send the data processing director a courtesy copy of your letter to your superiors setting forth the problems and requesting further study. If the authorization is denied, then obviously no purpose would have been served by apprising the data processing director of your intentions. Once you receive the go-ahead, however, you should immediately notify him or her. As a practical matter, the issue may be taken out of your hands by your superiors, who might elect to confer with the data processing department to discuss your request.

Involving the DP department near the outset of your effort is more than a matter of simple courtesy, though it certainly is that. Remember that the county DP department will be heavily involved in any automation project undertaken by or for your facility.

If your project is to be undertaken fully by the county data processing department, their participation is obvious and total. What may be less obvious, though, is the amount of their participation even if your system is designed, programmed and implemented by a private consulting firm. Even in this circumstance, **their involvement will be extensive and would include at least the following participation:**

- They will be involved in the decision of who will do your project. If the DP director feels that in-house data processing staff have the time and the expertise to develop your system, you will be unable to justify contracting work out to a private consultant firm. The DP director could also decide that the DP department's current load is such that they could do part of the project while the rest is contracted out. But even if the decision is to contract the entire project out, their involvement will still be heavy, as the following paragraphs illustrate.

- They will (or at least, should) assist in writing the request for proposal (RFP) and in determining which firms should receive it.

- They will help in the evaluation of the proposals submitted in response to the RFP and in selecting the winner of the contract, based not only on the bids but also on their knowledge of the reputation and professionalism of the bidders.

- They will probably provide working space, desks, terminals, phones, etc., for members of the consulting firm if this is necessary.

- They will inform the contractors of the professional and technical standards of the DP department and will monitor to ensure those standards are followed.

- They will provide the computer, computer time and related resources (e.g., disk storage, terminals, controllers) to the contractors.

- They may assign a data processing representative to the project on either a full-time or part-time basis.

- They will participate heavily in project management and control, including its budget and expenditures, participation on the steering committee, acceptance or rejection of completed programs before allowing them to go into production, scheduling the implementation of each milestone, and adding to their operational schedules any work your system will require of their computer operators.

- They will ensure that their own analysts and programmers are thoroughly trained on the new programs so they can maintain them after the consultants have departed. (Toward this end, the data processing director will insist that each application be fully documented, including all changes made to the original program versions.)

From all this it should be overwhelmingly obvious that the data processing department will be, and must be, heavily involved no matter who does the major part of the work. It should be equally obvious that their participation should begin very early in the enterprise and will continue not only until the system has been developed, but for as long as the system runs on the county's computer. In view of this, the data processing director should certainly be a member of the steering committee.

It is to the advantage of the jail manager to develop a close working relationship with data processing early in the automation effort. In order for you to have the

appropriate amount of input, involvement and project control, you need to understand how they operate and what their limitations are. The data processing department will be your partner in any system development effort, whether or not contractors are involved, and theirs will be the talent you will have to rely on for as far into the future as your system is in operation.

7. A Discussion of Internal Development

"Internal Development" refers to the development of an automation system in-house using existing personnel from the county data processing department without the use of outside consultants.

Internal development of your system means that the data processing department has the time, staff and necessary expertise to do the job.

Allotting Sufficient Time

The development of a system, whether standalone or a complete integrated criminal justice information system, **takes a considerable amount of time.** Defining the problem, exploring needs, evaluating existing software and hardware, designing the system, testing, implementing, training, etc., require many person years to complete each phase. The data processing department must thoroughly assess the time needed for the project and the time available for existing staff. Data processing departments usually have many projects occurring simultaneously so that careful attention must be paid to providing adequate time for the efficient and effective development of each project.

Expertise To Do The Job

A jail management information system and certainly an integrated criminal justice information system require particular knowledge of the way criminal justice operates. **Data processing needs at least one staff member who knows jail operations and who understands the way in which data flows through the criminal justice system.** It's also helpful to have someone who UNDERSTANDS THE COMPLEXITIES OF INMATE MANAGEMENT. It's true that the jail manager can provide a great deal

of information to data processing. But it's also true that there is a considerable learning curve for data processing staff if they have to be educated from the ground up on criminal justice.

Some data processing departments may have the technical expertise to design and implement the system but may want to supplement their staff with a new employee or contract person to provide special expertise in criminal justice to avoid lost time. This is still considered internal or in-house development.

Overall, the basic areas of expertise necessary to do the job include the internal abilities:

to complete the needs assessment,
to conduct the feasibility study,
to develop functional systems requirements,
to complete systems design and implementation,
to provide enhancements,
to troubleshoot for systems operations,
to provide for system maintenance, and
to evaluate software and hardware.

If the data processing department has the in-house expertise to complete each of the aforementioned tasks, then internal development is a possibility in your county.

Selecting and Budgeting Project Staff

Of course, it's difficult to talk about "staff" separately from "expertise", but a decision to develop an automation system in-house must consider the number of existing, available data processing staff. It is not, however, just a matter of "numbers of people". **It's coming up with the right combination of people and expertise.**

Each project takes different levels of expertise and time, just as each phase within a project requires different levels of effort. It is difficult to provide a rule of thumb for making such decisions. Suffice it to say that the technical staffing needs will

include a project manager, design analysts, data base analysts, programmer analysts and system implementation analysts. The numbers of individuals within each of those categories is dependent upon the size and scope of the project at hand.

Potential Benefits of Internal Development

1. Using in-house staff avoids the time consuming bidding process which requires request for proposals, request for quotes, interviews, reference checking, proposal evaluations, presentations to committee and to the board of supervisors, etc.

2. If in-house data processing staff design and implement the system, they will be thoroughly familiar with it and should be better able to maintain and enhance it afterwards.

3. In-house data processing expertise in jail and criminal justice operations means that data processing will be able to troubleshoot and to generally understand your automation needs and problems.

4. It's possible that there may be a cost avoidance when using in-house staff since the pay rate for in-house technicians tends to be lower than for outside consultants.

5. On location data processing staff should mean greater access for the jail manager to technical assistance and other data processing services. Coordination of efforts and information exchange should be easier than when communicating with an outside contractor located off the jail site.

Potential Limitations of Internal Development

1. It is very common for data processing departments to have existing staff divided among several county projects making it difficult to free them for new projects.

2. The fiscal reality for most data processing departments is that they are seldom able to afford the full complement of data processing staff for every project

within the county. As projects are developed, the department often resorts to short term contract hiring for each project. This may mean that some in-house expertise for long term system enhancement and maintenance is lost.

3. The data processing department is subject to the same budget year as the jail. This means that the jail automation project must go through the usual annual county budget process. This process which is lengthy and time consuming, combined with using the traditional personnel system for hiring additional data processing personnel for the jail project, may offset any cost avoidance gained through the elimination of the bidding process.

4. In instances where counties use outside contractors to design and implement their automated system, it is possible to control accountability and to regulate the timeliness of a project through contract conditions and partial payment schedules. Accountability and control may not be as easily accomplished when the county data processing department conducts the project since the contractual obligations are not there.

5. There are many counties which have very small data processing departments which simply cannot handle the scope of a jail automation project. There are several counties which do not have a data processing department, and, therefore, contracting is the only resource available.

Summary

Please note that internal development is NOT just someone going out and buying a personal computer to handle commissary in the jail. **Internal development refers to the entire process of assessing needs through developing appropriate automation for your jail.** Internal development is not a shortcut; it's just using existing staff rather than contracting with outside consultants.

8. When and How to Use Consultants

When to Use Consultants

Consultants are available for a wide variety of services during the automation process, including needs assessments, feasibility studies, design, programming, implementation, and training. How do you know when it is appropriate to seek consulting services? A few rules of thumb might be helpful.

Don't assume that the jail manager needs to be an expert on everything about jail automation. In fact, the **primary responsibility of the jail manager** during the development of a jail information system should be to determine **HOW to use the available experts in the most effective manner.**

Whenever possible, you can tap into the expertise of the data processing staff, the county administrator's office, other departments and other counties. Sharing information and letting others assist you with setting up processes for identifying a problem can save enormous amounts of time and even money. There are numerous things that you should not have to accomplish yourself, but you should know what is being done, why it's being done and how it will affect you.

For example, there is no reason the jail manager should be expected to know how to automatically judge the quality of software or the capability of certain technical programs. Computer system development costs, equipment and software compatibility issues, and numerous other automation related issues are not going to be mastered by the jail project manager in a few easy lessons.

When the expertise you need is not available to you through your county, you may want to consider retaining a consultant.

Objectivity: It is often the case that when a department is attempting to convince a county administrator of a problem the department is considered to be biased or to lack objectivity. It is quite normal for departments to act in their own interest since it is the responsibility of the department director to run an efficient, effective department. Often, a consultant can document the same problems and needs as the

department staff, but the consultant is viewed as having more credibility because, as an outsider, the consultant is expected to have a more objective point of view.

If credibility is an issue or if an outside perspective will increase the chances that your problems and needs will be seriously addressed, you may want to consider the use of an outside consultant.

Expertise: Expertise becomes an issue during automation of criminal justice systems since automation of those systems is so recent that **few experts exist in the field.** It is not uncommon for individuals within a department to have some expertise in the field based upon a specialized or limited role in an automation project. Few counties can afford the variety of specialists required to staff the system effort from the conduct of the needs assessment and requirements definition through design and implementation. Given the significant expenditure that goes into automating a jail system, it is important for the county to see to it that knowledgeable professionals are available to the project.

One way to determine whether to hire consultants is for the data processing department to review its capabilities with county administration. Barring commitments to other county automation projects, staff expertise should be classified according to the major steps necessary to complete the automation process. Where there are gaps either in expertise or number of staff, the county should consider contracting to cover the tasks.

Another way to determine the expertise needed to conduct the project is to request consultants to assess the project competitively and provide estimates of time and staff needed to complete the work. **The key here is that, if you don't have the expertise in-house, you need to hire consultants.**

Time: There are occasions when the county may find itself with the in-house expertise for the job but not enough time for those staff to complete the job. Time is of the essence during development. System-wide automation, in particular, takes considerable time. Without adequate person power assigned to the job, the developmental time increases while the problems caused by the existing manual system grow worse, creating even more workload problems than before.

Consulting firms that specialize in automation can provide detailed time estimates which can assist the county in determining the number of staff necessary to develop the system efficiently.

Criminal Justice Staff Participation: A CONSULTANT IS NOT A SUBSTITUTE FOR IN-HOUSE STAFF INVOLVEMENT. Each department or unit being automated should have one staff member assigned to be a liaison with the project team and to provide information to the technicians when necessary. There must be adequate management and administrative involvement in the process, or the final project will simply be what the consultant wants it to be INSTEAD OF WHAT YOU NEED IT TO BE.

How to Use Consultants

- Consultants should be used as technical guides. **The user should make all decisions regarding scope, quality, quantity, etc.**

- The consultant is there to advise the jurisdiction based upon expertise and experience. The management structure of the project should be set up in such a way that the consultant's advice and recommendations are easily and quickly communicated to the decision makers.

- Frequent information, progress and liaison meetings are advisable throughout the project effort. Close working relationships between the consultant, project team and steering committee are important.

- Require the consultant to deliver **interim products and reports** for review which will allow the key participants to observe progress, understand problems and make any decisions necessary to keep the process flowing smoothly.

- A consultant is like a craftsman with a needed expertise. The consultant should advise you of problems, describe the options available, and the costs associated with each option. The decision can then be made by you as to which option will best suit your needs and pocketbook.

Check the Consultants' References: The key to determining the quality of the consultant team and their work product is to thoroughly check references. **Check references for both the consulting firm and for individuals on the consulting team.** The best reference checks are often personal calls to your counterparts in other counties. A call to another jail manager can give you important information about how the consultants worked with jail personnel, how responsive they were to special jail needs and issues, how knowledgeable they are about jail operations, etc. Daily work experiences on other projects are the most indicative of how the consultants will perform for you. Ask questions about their ability to communicate, their timeliness, their relationship with data processing and any other questions which provide insight into their track record. If possible, go to see the automation systems developed by the consultants and ask to review documents such as the needs assessment which were used on other projects.

Your involvement in checking out the consultants' track records will ensure quality contractors on your project.

9. The Pros and Cons of Working with Vendors

A vendor is a SALESPERSON. Each vendor has a product to sell and a commission to make. **Do not confuse a vendor with a consultant.** They play very different roles with very different expertise.

The following is a list of reminders for working with vendors that will assist you in getting the most out of their service or product:

- **First and foremost: don't use the vendor for fishing expeditions!** It is usually non-productive to solicit vendor input until a needs assessment has been conducted and the requirements definition has been completed. Once you know what is needed to address the information requirements, then a vendor's services can be helpful as you explore the alternatives.

- Vendors are trained to sell their products to people who have the authority to authorize the purchase. If a vendor contacts you without going through the data

processing department, administration, or purchasing, the vendor may not be familiar with (or may be ignoring) the appropriate channels of communication. Have the vendor contact your project manager for a formal presentation of the product to all of the appropriate users. The appropriate project team members should be involved.

- Take advantage of the vendor's skill with and knowledge of the product. **Ask questions, request demonstrations, and pose "what if's" to help you understand the scope and quality of the item being sold.** The vendor should be the most knowledgeable person about the product.

- A reliable vendor will be glad to furnish you with references of other jurisdictions that have bought or used the product in question. Follow up on the referral and arrange to see the product in operation in other jurisdictions if necessary. Ask your counterpart in those jurisdictions to describe the advantages and disadvantages of the product and to identify any problems or special features that you should be aware of.

- If the product is a new one and has not been previously used, be sure to ask what kinds of **warranties and guarantees** are available. Ask with whom they compete and what advantage there is in buying their untested product. Examine all options thoroughly before deciding on an unproven product. Your data processing staff and/or consultant should handle these details.

- Identify other competitors selling a similar product and contact each of them for a formal presentation by a knowledgeable representative. **Compare all vendors' products thoroughly.**

- If your jurisdiction is buying "ready made" software for certain functions within the jail information system, work closely with the project team and/or the experts to determine whether the software will actually meet your department's needs. **Demonstrations of the product are a good test; however, actual use in other jurisdictions is the best.**

- Avoid any reliance on the vendor for design advice unless you have reason to believe that the vendor really has expertise in this area.

- **Seldom will you find vendors who are actually specialists in your field.** Most likely, their specialty will be in their product, and they will have only a general understanding of the product's application in the jail or other criminal justice components. Therefore, it is up to you and the project team to articulate your information needs.

- **The vendor's intent is to sell a product.** Once the sale has taken place, the vendor may become unavailable for assistance. However, reliable vendors should make themselves available long after the product is in use. As the user, you should be able to count on assistance from the vendor and the company for as long as the product is in use. This can normally be accommodated through service or maintenance agreements.

10. Liability

Liability is perhaps the most terrifying word in corrections today. Detention facilities are the targets of numerous, costly lawsuits for a variety of problems. Almost every law suit involves some aspect of documentation. Usually, a facility does not have adequate documentation of its transactions and its policies and procedures.

An automated jail information system may contribute greatly to the prevention of liability claims primarily through the ease with which information can be recorded, updated, retrieved and stored. The key to prevention of liability is DOCUMENTATION.

The design of your system can address the most common instances when a jail is likely to be vulnerable to liability.

Daily Operational Issues

One of the most common occurrences is for the county to receive a claim that articles of clothing or property belonging to an inmate have been lost. And while it is usually an accurate claim that indeed the item has been lost, it is also just as common that the description and value of the item has not been properly recorded, so that neither the jail nor the inmate can prove what the quality of the lost article was. As one jail administrator aptly put it, "An inmate never loses a worn out pair of Sears' cowboy boots. It's always a brand new pair of Tony Lamas valued at $200."

If you examine the pattern and frequency of such claims in your jail, you may find, as many have, that the paperwork, staff time, and problems with documenting and retrieving the records have cost you a great deal. Your system can provide a property inventory checklist for completion at booking which is as extensive as you want it to be. It can be designed so that property and clothing are accurately, yet easily, described and recorded. In case of loss, the record can easily be retrieved, and the description of the item can be sufficient to document the type and quality of the item. Your replacement of the loss is then more likely to be comparable to the actual value of the original item.

Classification

Inmate classification is a common liability issue and one which is often not accurately documented, so that defense of your housing and classification decisions in court becomes quite difficult.

Almost daily, you have to deal with changes in the status of an inmate: pretrial to sentenced, felony to misdemeanor, etc. These changes result in a variety of housing decisions, some of which are required by law. When designing your system, use Title 15 as the guideline for setting up classification categories. **You can then arrange for your system to automatically send a signal or "flag" on the screen to warn you that you are not in compliance with Title 15 or to warn you that you may be coming close to exceeding particular limitations.**

You can also flag certain words or characteristics in your system so that a warning automatically appears on the screen to call attention to a particular problem or potential problem. Some examples might include categories such as "suicidal risk", "detox", "history of violent behavior", etc.

Time Limits

Every day, you encounter a variety of time limits which must be adhered to, or a violation of the law occurs. Two such instances occur if for any reason there is a delay in arraignment or a delay in release.

The JMIS can be designed to flag an advance warning to notify staff when these time limits are close, and the system can flag when, in fact, they have been exceeded.

Other releases, such as transfers to other facilities, pick up by state prison, time served, etc., can be signaled on a daily basis. Court entries on disposition can automatically create a warning signal to the jail staff so that inmates are not held improperly.

Housing

For those of you dealing with the constant overcrowding problem, which is complicated by court ordered caps on certain cells, you may find it **helpful to set up the JMIS so that it flags crowding issues for the facility manager.** This is a particularly useful feature for those counties with multiple facilities. The system can track available beds on an ongoing basis and provide basic information about housing classification for each facility which can aid in making transfer decisions.

If designed to meet your needs, the JMIS can improve documentation, contribute to the reduction of risk through special flags for inmate population management, and help to prevent liability problems.

B. TECHNICAL ISSUES

Introduction

You are a manager, not a data processing technician. Fair enough, but the fact remains that there are some technological issues you should know a little about in order to guide your system development to a happy ending.

Some of those issues will materially affect the kind of system your facility ends up with. Most of them can cause serious problems if related decisions are the wrong ones.

Your local data processing staff should be able to answer any questions you may have on any of these technical issues. However, how will you know what questions to ask, or what issues you want clarified, unless you at least know what they are?

This section of Book II is designed to acquaint you with these issues and the possible effects they may have on your system. We have emphasized the word, "acquaint" advisedly, for our intent is not to go into excessive (and probably boring) detail, but merely to familiarize you with certain technological considerations, believing sincerely that this knowledge will serve you well.

1. How to Determine What to Automate

It has been said ad nauseam that the things computers do best are clerical functions: creating, storing, updating and retrieving records, comparing things (e.g., for selecting some and rejecting others), counting things, and generating reports. Because of the phenomenal speed at which they perform repetitive functions, coupled with their great accuracy, computers perform much better than their human creators in these kinds of jobs.

Thus, the first category of work one ought to consider automating is the creation of records. Any document currently being recorded on by some person, whether by pen, pencil or typewriter, is a prime candidate for automation. In the confinement facility, the booking process is usually the first of

these record-making procedures that comes to mind, but it is by no means the only one.

The computer receives input through a keyboard attached to a video display terminal, with the characters being displayed in labeled "fields" on the display screen, just as they would appear in a block on a blank form being typed. (One difference is that it is far easier and faster to correct a typographical error on the terminal screen than it is on a typewriter, even with today's typewriters with their correction keys.)

Once a screen is completed and the operator presses the ENTER key, another of the computer's abilities is activated: the ability to edit data for accuracy and/or for conformance to a programmed set of limits. A simple example is a date edit routine. It could include a check to make sure the date is earlier than (or equal to or later than) the current date. It would also check whether the month is greater than zero but less than 13, and that the day is less than 32, 31 or 29 depending on the month entered.

A booking charge would be edited against a "table file" containing all of the valid violations (codes and sections), rejecting as an apparent error any charge entered which is not found on the table. (A good system will provide an "override" to force the program to accept and record the charge even though not validated from the violation table. After all, we can't afford to hold up a booking while someone updates the table!)

Just as record creation is a task suitable for automation, so also is record filing, or "storage". When the program accepts the record from the screen, it "files" it on a data storage disk and does it with no help from humans. It will also retrieve the record (or selected data from it) much faster than you or I could do so.

Another function computers do well is printing records or reports. Once you have keyed in the basic booking data, all of that information is then and there instantly available for printing of any documents you might need for that inmate.

This leads us to another of the computer's many talents: **retention of and re-use of data.** If a person were being booked who had previously been booked on your

system, your booking officer could key in the person's name (or just a part of it) or his social security number or driver's license number, and retrieve and display all the information entered on that person previously. He or she could then change any of the information which is no longer current (e.g., address, employment, etc.) and enter the revised data for the current booking. This re-use of stored data can save an enormous amount of duplicative data collection effort. Obviously, the more repeat customers your jail has, the greater the savings will be in time and effort.

Scheduling and monitoring of schedules is another place where computers shine. Your staff might enter appointments for inmates via the terminal, and the computer can then print out daily appointment listings for use in prisoner transportation scheduling. (If your system were part of an integrated justice information system, the court appointments would be entered by court people, and your staff wouldn't have to be involved in that end of the calendaring process.)

These, then, are the basic kinds of functions that are amenable to computerization. We did not mention other functions that computers do phenomenally well because we realize they are common knowledge. Among these well-known talents are mathematical calculations and logical comparisons.

The last capability comes in extremely handy when putting a computer to the task of compiling and printing reports. Suppose, just by way of example, that you required a monthly report showing the total number of bookings for the previous month, broken down by sex, race and age groups. With lightning speed, the computer can examine each booking record, compare the booking date with the month you're looking for and extract data only from those that match that month and year, then sort the selected records by sex, race and age groups and print out a detailed listing of those bookings, if desired, or just a summary report of totals. **You can program the computer to generate any report whatsoever, as long as the data it needs is included in your system.**

Your system could also include logic which would assign people to specific cellblocks or areas based on sex, on suicidal tendencies, on homosexual persuasions, on known gang membership, and so on. Obviously, a vast portion of your staff's duties are amenable to automation.

Before leaving this topic, we would do well to mention another talent of computers: the ability to perform several things simultaneously. You could be printing a document on one prisoner while using the screen terminal to book the next one, for example.

One could summarize the capabilities of the computer by saying that it can read, write, calculate, compare, file, retrieve, count, collate, sort, format and print. It can be programmed to make decisions based on stated parameters or conditions.

2. Pros and Cons of Phased Development and Implementation

Except for very small systems consisting of a few applications, **it is generally preferable to develop and implement systems in phases, or stages.** This means that the functional system design (which should encompass the total system at a conceptual level) will have to be divided into tasks and subtasks. The tasks will then have to be prioritized so that they can be developed and implemented in priority sequence.

No matter who assigns the priorities (usually it is the steering committee), they will have to use common sense to assure that the development follows a LOGICAL progression. (It would be illogical, for example, to develop prisoner management tasks before the booking system.)

There are several factors which argue heavily in favor of phased development:

- If a large system were implemented all at once, its users would be overwhelmed by all they had to learn - better to let them learn in increments, experiencing a series of small successes.

- Implementing in phases gives the user some automation while waiting for the next phase. The alternative would be to wait for the whole system to be ready before getting any benefits at all from it. Meanwhile, the users would have to continue to cope with all of the problems that made automation necessary or advisable in the first place.

- Typically, when people begin using a part of an automated system, they develop a better understanding of what computers can do and begin thinking of ways to improve the system - either the portion already in use or some later phase(s). These ideas are often exceptionally worthwhile, and if they are presented while the system is still under development, they can be included at little or no additional cost. Once the total system is implemented (or even a major portion of it), putting these good ideas into the system may be rendered impossible or, at the very least, economically impractical because so many programs would have to be revised.

- Breaking a major system into what essentially amounts to a series of subsystems makes it much easier to maintain. In addition, it speeds up system testing since each subsystem would be tested individually rather than waiting for the whole system to be ready for a much more massive testing. Often, program or design deficiencies ("bugs") are detected after the users begin operating an application. It is better to find these out before they can affect other functions of the system.

- If the funding for the project should be withdrawn before it is complete, a staged development would at least leave the user with part of the system.

The only circumstances that would favor developing and implementing all components of a system simultaneously are:

- It is too small to be divided into stages or phases.

- The nature of the system is such that it cannot be implemented in stages.

3. How to Help Ensure An Effective Implementation

There is no way to guarantee positively that an automated system, once implemented, will meet all the expectations of the user. However, there is one way to help avoid unpleasant surprises, and that is through the ongoing involvement of the user during the course of the project.

This handbook has presented a number of suggestions for involving the user from the identification of the needs for automation through implementation. Through the use of techniques such as a project team, a steering committee, subcommittees of users from each department and proper training of line staff, the county can be assured that the system "belongs" to the users. After all, they have participated in its design and have identified the capabilities which will meet their special needs. In effect, they have helped create the system that they will be living with and will have developed a maternal (or paternal) attitude toward it.

The user has a responsibility to commit to the project, to devote sufficient staff time to it, and to raise questions and concerns throughout the project in order to ensure that the system being designed meets the needs of the department(s).

The coordination effort and commitment of the users, ranging from line staff to outside agencies to administration, is paramount to the success of an automated information system.

4. Conversion From A Manual System To An Automated System

It would be nice if the transition from the old, manual system to the new, automated system was just a matter of flipping a switch. The reality is that transitioning is an elaborate process which requires considerable effort and commitment. It is the critical, pivotal process for your jail automation effort.

There should be a transition/conversion plan developed by the data processing staff/consultants which specifies how the existing data will be converted to the new system. The plan should also identify the steps that must be taken to begin operations under the new system.

The term "conversion" usually refers to changing records from one form to another, while "transition" refers to the overall change which includes staffing and procedural changes as well as data changes. The terms are often used interchangeably.

The transition/conversion plan should include:

- A discussion of the importance of the conversion and implementation planning
- Clear objectives of conversion
- Conversion strategy (how the conversion will be accomplished)
- A discussion of the system to be converted
- Conversion training
- Conversion staffing/personnel requirements
- Conversion procedures
- Conversion/transition roles and responsibilities
- Conversion schedule and time frame

It is important for the jail manager to understand at the outset of the project that this transition will be an intensive effort requiring extra staff and time (often running into overtime expenses). During this period, the jail will be operating both the manual system and, once implemented, the automated system. The manual system must be there for back-up in the event that problems occur with the automated system. While this duplication will occur only for a temporary period of time, it is a critical period because it is when staff get their first exposure to the operational system. Anything new requires practice and testing before all of the bugs are worked out.

Be sure that staff are well prepared for this period. They must understand that this process takes time and will require working through problems on a daily basis. If you and your staff understand the complexities beforehand, you can avoid much frustration and disappointment from unrealistic expectations.

You may go through more than one conversion/transition if you opt to implement your system in phases. There should be a specific plan for each of these sequences. Rehearse each conversion before it's actually implemented. You will be better prepared if you have walked through the conversion and thought out the possible difficulties.

Sit down with the project manager and work out the best schedule and staff pattern that will minimize interference with the daily jail operations and will utilize your most effective staff members. This will help make the transition easier for everyone. The important thing is for you to be involved in the development of the plan so that you understand all the requirements before the transition/conversion actually begins.

5. How Do You Know if What is Designed Will Actually Meet Your Needs?

Without personal knowledge of and experience with automated information systems, there is often doubt in the mind of the individual user about **how** the system will work and **what** it will actually do.

Several guidelines will be helpful to you:

- **Request that the designer(s) provide a list of all data elements to be included for each function that is automated.** Have your staff review the list and compare it with the data currently being collected and used for each function (e.g., booking, commissary, release, etc.). Suggest changes or additions, if appropriate. Ask questions. If you don't know what to ask, have the designer review with you the purpose and method of use of each element.

- **Request a list and description of all management reports and other products which your automated system will generate.**

- Ask for a **flow chart or diagram** to be provided with a presentation explaining how the system works, when it works, who operates it, etc.

- Work closely with your data processing representative and any outside consultant. Ask them questions and set up a relationship that encourages them to keep you informed and educated. Remember the adage, "There is no dumb question except the one which remains unasked."

- There is no substitute for a demonstration. Request an opportunity to **observe a demonstration or to observe a similar system operating on-site in another agency.** This gives you a chance to experience the system and its capability firsthand. Ask to see printouts, talk with users, review management reports, and observe actual functions such as booking.

- As each component of the system is readied for implementation, use a **checklist** to review with the designer all of the data, functions and products expected.

- Following the implementation of each component, require a complete demonstration and use the checklist to verify that all is operational. Get specific dates for modifications and add-ons.

- Be sure that a **training plan** (see Section A, Number 10 of this book) is in place to train line staff (or any other users) so that once operational, each component is immediately put to use. Request the availability of a trainer or technical assistant during the first few weeks of operation of each component. Training and on-site technical assistance help to reduce the amount of time lost while waiting to figure out what to do next.

6. Does Your County Have and Enforce Technical Standards?

"Technical Standards" refers to the criterion used to measure the quality expected or required for automation.

Some counties adopt technical standards for data processing which clearly spell out not only the quality of data processing expected in the county but which also specify approach, equipment, software, minimum training requirements and restrictions on budget.

For example, the data processing department may have a technical standard which requires that the only type of personal computer which can be approved for use in any county department is Brand X which is compatible with the county mainframe.

For jail managers, the significance of technical standards becomes most apparent when the standard limits the development of the jail management system in some way. For example, it has happened that a sheriff's department wishes to purchase an existing software package which can meet certain information needs in the jail. But because the county technical standard restricts the purchase of certain equipment, the software package cannot be considered because it cannot run on existing equipment without equipment modifications or enhancements.

It is important that you, the jail manager, be aware of all formal and informal technical standards (sometimes they are simply referred to as a policy), so that early in the study and planning phases the proper attention can be given to working within their scope or to requesting changes in county policy if necessary.

Technical standards should not be viewed as negative. They can be extremely helpful for ensuring quality data processing efforts and for controlling budgets. The planning phase of the information system will be more efficient if all parties are familiar with the standards.

7. Where/When Do Micros, Minis and Mainframes Fit?

This is pretty much like asking when it would be appropriate to use a half-ton pickup truck, a ten-ton truck, or an eighteen-wheeler. Much depends on the load you intend to carry on your system. But when we speak of load here, we refer not only to the number of programs to be included in your system, but also the size of its files and the number of records those files will contain, the frequency of creating new records or updating existing ones, the number of people who will want to use your system at the same time, and whether people in other agencies will be using it along with your agency. Finally, we are referring to the size and complexity of the computer programs needed to run your operations.

Of these three types of computers, the mainframes are the large ones, the minis are the medium ones, and the micros are the small ones. But the state of the art in the computer world is so volatile that what is considered a minicomputer today would have been a mainframe just a few years ago. Also, micros have become more and more powerful, to the point that some micros (or "home computers") today have as much internal memory as only minis or mainframes had a few years ago.

Determining how much horsepower your system will require is a job for experts. There are a number of things an analyst would have to consider, including the size of the records the system will use and the number of files (files being a collection of records); the size and complexity of the programs that will be needed; the number of people who will be using the system at a time; the operating speed the system ought to have; and whether your system will be integrated with that of some other agency or agencies.

There are other, more technical considerations, but these are a few of the ones that will most definitely influence the decision of whether to go with micros, minis, or mainframe, or some combination.

For the sake of simplicity, let us posit that micros are okay for use on a small system in a small office, minis are okay for a medium-sized operation shared by several offices, and mainframes can do anything that the micros or minis can do only much, much faster and more efficiently and are just the ticket for large-scale systems, including integrated ones using the data base concept.

8. Technical Considerations of Large-Scale Multi-User Integrated Systems

That's a rather imposing title, so perhaps we should define some of its terms:

- **Integrated system:** A system shared by two or more organizational entities, with data entered by any one of them being immediately available to some or all of the others.

- **Multi-User:** Used by more than one person at the same time.

- **Large-Scale:** This one is a judgment call, for there is no clear-cut definition that will tell us when a system goes from being small scale to medium scale to large scale. For our present purposes, however, let's just say that by large scale we mean a system consisting of a large number of programs being executed with high frequency throughout the average day.

What we are dealing with, therefore, in a large-scale, multi-user, integrated system is a complex system in which a great many programs are running on data which shares the same data base. It is as though all of the various agencies, offices, units and departments using it had dumped all their files into one huge filing system, where the people in each of the departments are constantly filing new information, retrieving old information, updating it, and replacing it. The essential difference, of course, is that this big filing cabinet resides inside a large computer's disk files, and the access is done through video screens and their associated computer programs.

One of the major concerns in such a large, integrated system has to do with knowing what other parts of the system will be affected by a change being made or proposed. **There has to be someone who knows the system in its totality, well enough to be able to see where a change here might create a problem over there.** Conversely, he or she would also be able to see how a change being made in this part of the system could be used to advantage in some other part(s) of the system. These are the kinds of considerations we include in the phrase, "assurance of system integrity." This aspect is so vital that there should be several people in the data processing department thoroughly conversant with every subsystem and every program. Also, there should be some people among the system's users who are experts in their own department's portion of the system, but who are also well versed in the other departments' portions.

But what we just discussed deals with a system that is already up and running. Back in the design and development stages, the fact that data is to be shared by several using agencies means that the data base on which the information will be stored has to meet certain severe criteria. Data bases work well in a multi-user environment, provided that the data is in a format usable by all members of the user family. If one part of the system needs to have twenty-five characters reserved for an inmate's last name, while another part of the system only allows for a sixteen-character last name, we have incompatibility in field length on our hands, and this is a no-no.

The point is that the design of an integrated system has to take into account all of the needs of all who will share the system and normalize all data items into a format and length usable by all.

In a large, integrated, multi-user system, one usually finds that data input by one department is needed by another department's subsystems to update its own files. This dependency is not different from what it is in the unautomated environment, except that in an automated system that updating should be done automatically, using data entered. But if the record being updated by Subsystem "A" ought to be used to update a record kept solely on Subsystem "B", then a program will have to be executed automatically to do that updating.

Thus we have the problem of normalizing data used by various departments, as well as the back-and-forth updating of files maintained on separate subsystems. Obviously, someone had better know what they are doing in the system design, but also in the system maintenance and enhancement.

There are, of course, many technical matters to be considered when designing or operating such a system, but these are some of the more critical ones for the system users to bear in mind.

9. Factors to Consider when Weighing Alternative Hardware And/Or Software Solutions

Nowadays, it seems that no matter what kind of a system an agency may want, someone will pop up with a system already developed, or under development, which (with a few "simple" modifications) can satisfy the agency's needs. The purveyors of such systems will ask you why you would want to reinvent the wheel when they already have a wheel that can be made to fit your agency's axle with "just a little tailoring."

Occasionally, a system already in existence will be just the ticket, saving your organization much time and expense. But, unfortunately, this is the exception, rather than the rule. Numerous system users have gotten themselves into a trap by

investing time and money in the "minor tailoring" of an existing system that looked good to them, only to find out that the tailoring job was a major overhaul.

Managers have to know what kinds of considerations they should worry about when weighing alternative solutions, not only for software but for hardware as well.

Before we look into some of the major factors to consider, though, let's put to rest that old cliche about "reinventing the wheel," giving it the demise it deserves.

In the first place, people who choose to design and develop their own system usually do so because they dislike the ones already available, or because the available ones run in entirely different hardware/software environments. Often, both reasons apply.

Secondly, it is inaccurate to accuse them of reinventing the wheel when all they are really doing is improving the design of the wheel, making it a more efficient tool for use in their operating environment. If people hadn't done this very sort of thing with the actual wheel, you and I would be driving around on wheels of stone.

Don't let any vendor make you feel bad about "reinventing the wheel." His wheel may have been developed a decade ago, and in the highly fluid field of data processing, systems developed even a couple of years ago will probably be passe simply because of the advances that have been made in software and hardware in the interim.

So let's examine some of the more critical factors that must be weighed and evaluated before deciding whether to start from scratch or opt for an existing product. In doing so, we will consider several items that relate to dollar cost, some that relate to time cost, and some that deal with system efficiency and acceptability. The factors that must be weighed are the following:

- The Cost to Your Agency to Obtain the Existing System

  Can it be purchased outright, or must one pay a periodic license fee? If there is an annual license fee, is there also an initial "start up" fee for using the software?

How much time and cost will be involved in getting our local data processing professionals trained on the programs? (They can hardly be expected to maintain or enhance programs they know nothing about.)

- The Time and Money Involved in Modifying the System to Fit Into Your Operations

Who will do the tailoring? (It is usually cheaper if the vendor does it, since their people are already quite familiar with all of the programs comprising the system. They won't have to undergo the learning cycle that your local data processors would need.)

How long will it take? (Vendor usually won't be able to answer this definitely until he knows your exact needs, which in turn will let him know how much of his system can be used without changes and how extensively others will have to be changed.)

How much money will it cost for the tailoring? (Vendor won't know this until he knows the extent of the tailoring needs and the estimated person-hours each program will require.)

- Hardware Considerations

Will the system run on the hardware and software now in use by your county? (Never accept a vendor's assurance of this.) Ask for a reference - a user of their system who is running it on the same hardware/software configuration your county uses. Then ask your data processing director to check the counterpart in the user agency to find out how well the system is working and whether that agency is in fact running under the same hardware/software configuration.

Will your county have to invest in any new hardware items? If so, can they be tied into your county's present network? How much would the new hardware cost to obtain and to maintain?

All of these factors have to be weighed against the time and money needed to design and develop your own system from scratch.

A manager who wants an automated system may not be sophisticated enough in the computer field to understand that they are not all the same, though they are all computers. They wouldn't think of welding a blade to the front of a Volkswagon Beetle and expect it to move tons of dirt in a construction project. They wouldn't think of trying to haul a ten-ton load in a half-ton pickup. Managers need to realize that there are just these kinds of differences in horsepower among computers, too.

A programmer writes programs for your system that are called "applications programs", or "applications software". Not one of these programs would even begin to work if the computer has no "operating systems software". These operating systems are made up of special kinds of programs which manage all of the resources of the computer. An application program must be written to conform to the operating system of the computer on which it is intended to run.

You may find a user of an existing system who operates the very same make and model of computer as is used in your county, but if that user's computer is running under a different operating system, there is little likelihood that the system will run on your computer without changes - and those changes may be extensive and expensive.

Before you and your data processing people can intelligently weigh the advisability of installing an existing system, YOU HAVE TO KNOW YOUR OWN NEEDS PRECISELY. Ideally, you will have gone through the needs analysis and system design all the way through the conceptual design level before attempting to evaluate any other system. How else can you determine how much of your needs the existing system will fulfill?

By all means, get your data processing professionals involved in any evaluation of existing systems. And visit any "happy user" of the system so you can see it in operation first-hand. (And while you're there, chat with the people who actually use the system and find out how they really feel about it.)

Finally, bear in mind that a system designed and developed specifically for your environment will be built from the ground up to run on the hardware and operating

system software currently in use by your data processing department. No corrective tailoring will be needed, for the garment will have been tailor made from the beginning.

10. Training Line Staff and Operational Managers

The project manager should develop a **training phase** early in the planning process and submit it to the steering committee for approval. This draft plan should outline:

who is to receive training;
the subject matter that is to be covered;
the goals and objectives of the training;
the sequence in which the training will occur; and
the appropriate time for training various groups and individuals.

The **training plan** should include input from the steering committee members, data processing, county administration, and any automation consultants.

Actual training may be provided by in-house or consultant personnel depending upon the topic matter and degree of expertise within your county. It may be helpful to coordinate with the in-service training section in your department to ensure that there is appropriate follow-up training on an ongoing basis. The training should include, at a minimum:

- **Separate Training for Line Staff and Operational Managers:** Managers should be trained first and separately from line staff. There are three main reasons for this approach:

  1. Managers are responsible for setting examples, eliciting cooperation, and encouraging support for the automation effort. Issues of rank and supervision can create undue tension for trainees. Peer group training is a more effective approach for both groups.

  2. Managers who are trained in advance can both participate and observe the line staff training. The manager can then be a more accurate judge of

progress, problems and can even provide assistance and monitoring to trainees during the hands-on phase.

3. Managers usually have access to special information that line officers do not have, such as personnel files, some management statistics, budget information, etc.

- **Orientation:** The goal of an orientation effort is to inform line officers and operational staff of the overall automation effort, its duration and intended results. It is meant to introduce the topic of automation and to let the participants in on the process. Their involvement and responsibilities should be outlined, and the training schedule should be presented.

  MOST OF ALL, the orientation should be designed to ENCOURAGE COOPERATION by line staff by **de-mystifying** computerization and making them more knowledgeable of the process.

- **An Overview of Jail/Criminal Justice Automation:** An introduction to computerization should be presented to educate the lay person to the whole concept of automation. It should be presented in comfortable, easy-to-understand language.

  This presentation is an opportunity to minimize individual and collective fear that develops when an organization decides to introduce computers. Remember that many people will be afraid that automation is "too technical" or "too sophisticated" for their knowledge and skills. Most of those who are inexperienced with computers will have stereotypes of "computer types" and will be afraid that they cannot make the grade. These fears can be overcome through proper training and familiarization with the topic and by honestly answering the questions that many people are afraid to ask:

  Will computers replace people?
  Will I lose my job?
  Why should we automate?
  What benefits are there to computerization?

We've gotten along so far without computers, why do we need them now?
How do I know it will work better than our manual system?
Isn't this just going to be extra work? We're overworked now!
How can a computer solve problems of confidentiality?

Answer these types of questions by organizing the presentation in the following way:

History of automation (in jails, your county, your criminal justice system)

Volume of paperwork (cases, bookings, etc.) over the past three years

Person hours spent in processing paperwork (costs)

Discussion of hours and costs saved through automation (estimates or projections or experience of other departments or counties)

Discussion of the length of time it takes to automate

Description of all the steps it takes to accomplish the conversion from the manual system to a computerized one (needs assessment through implementation)

Description of capabilities and products of the computerized system

Anticipated changes in how business is conducted in various departments

- **A Demonstration of Automation Capabilities:** Without heavy experience with automated information processing systems, it is often difficult for the novice to imagine how it works and what kind of product results. If an existing automated system is to be replaced, the operating staff may need to observe the way in which the new system is different from the existing one. In either case, an actual demonstration on a special terminal or on-site in another county is advisable.

Firsthand observation can go a long way in alleviating fears, increasing understanding and generally taking the mystery out of automation.

If you have the option of taking your personnel to view another county system, you might arrange for staff to talk with people who actually operate the system. Jail staff and the jail commander can help to educate you about their system by talking about how it works for them. They can debunk myths, talk about how the system might be improved and demonstrate how it affects their daily work.

- **Sequential Training for each Capability On-Line:** With a phased implementation, as each component of the system becomes operable, it is important that staff be TRAINED IN A TIMELY FASHION so that they become **competent** in it and **comfortable** with it **before** the next segment comes on-line.

  This requires that staff know the basic functions and purpose of each component and any philosophical foundation for why things are being set up in a particular way. For example, the sequence of implementation may not appear logical to the novice, but is logical from an information processing standpoint. The trainee learns more quickly if the "why's" are explained.

- **Hands-On Experience is the Best Teacher:** Whenever possible, trainees should have an opportunity to experience hands-on training. An opportunity to sit down at a terminal that actually works but which is not an operational part of the system gives the trainee a chance to get the feel of the equipment and its functions without the fear of making a mistake or breaking something. This type of training should be interspersed throughout the entire training plan so that trainees are not only comfortable but proficient by the time they are permitted to input official data.

  Getting familiar with the keyboard is often a major step for a line officer (and may be the first time the officer has come into close contact with a computer). It is important to create a setting where individual officers can touch all the keys, get familiar with their arrangement, learn the "help" keys and generally begin to feel comfortable with the keyboard. Some counties use games as a

means of "breaking the ice" for those who must overcome their discomfort or lack of familiarity with the computer.

- **Continuity and Practice:** To gain confidence and accuracy, the trainee needs as much exposure to the keyboard and terminal as possible. Regular, repeated use will result in higher efficiency. For this purpose, it is valuable to set up a terminal(s) for training purposes only in a setting without detention facility distractions.

  Simulated data entry, booking and release information, can serve to provide the trainees with actual practice and will prepare them for the real thing.

  A gradual introduction of the trainee to working with real data is often the most effective approach. The trainee, now familiar with the keyboard, help symbols, data displays, etc., is a good candidate for backloading data. The advantage here is that the trainee enters real booking information into the computer but does not have the added tension of handling an inmate and dealing with all the other activity normally associated with a jail booking area.

- **Progress Reports:** As with your advisory group, trainees need fairly frequent progress reports. These reports do not have to cover technical details of the design or even implementation of the system. But they should include information about dates of implementation, new training, any changes in function and scope, and, most of all, progress reports should include feedback regarding ideas and suggestions made by trainees. There is no better encouragement than letting staff members know that their input was taken seriously or was in some way valuable. Even if their input is not actually used, it produces information about how users perceive automation.

11. Security Requirements

For correctional facility administrators, security is of considerable concern, since you are responsible for insuring the safety of inmates and staff, securing the physical facility and for protecting the confidentiality of the inmate records as required by law.

In Section A, Organizational and Policy Issues of this Book (II), is a discussion of who will access the system. Access and security issues are logically linked since access is controlled through your own, well-defined security policies. **Access is controlled in four major ways: design, policy, authorization and physical security.**

This section is intended to provide some discussion of the ways in which security can be imposed upon the newly developed jail automation system. Security can be addressed from three aspects: physical location, user identification and transaction.

Physical location of terminals must be carefully considered since convenient access is critical for some activities such as booking. At the same time, protecting the terminal from misuse, malicious and nonmalicious damage is important. Ideally, the terminals should be in an area prohibited from inmates and with limited access to personnel not identified as authorized users of the system. If you are planning a new detention facility, you may want to consider locating the booking terminals behind "bank teller" type secured windows. Another approach is to locate the terminals in an area where there will be continuous authorized staff coverage so that unauthorized persons will not intentionally or accidentally enter the system. This is, of course, easy to do with booking terminals, but may not be as easy with other terminals which are not staffed around the clock.

Obviously, physical location is only one limited approach to security. Other methods must be combined with the location to really insure the integrity of the system.

User identification refers to the "password" or "authorization code" which is assigned to each individual allowed to use the terminal. By definition, this code defines the amount or type of data to be accessed by the individual assigned to the code. Therefore, if the individual requests the system to display data that is not within the authorization code, there will be an automatic rejection of the request.

Employees must be trained not only in the use of the terminal but also in the need for security within the automation system. Some agencies have internal policies which require that authorization codes be changed every so many months to avoid computer tampering. Whatever policies you develop, it is imperative that a master list be maintained by the administrator who is also responsible for systems security.

Transaction is tied in with the user identification since it is the password or authorization code which tells the computer what kinds of transactions the user can engage in. For example, there may be some users who should only be able to view data. These might include the district attorney's office, officers from allied agencies, and field officers. Other users might be allowed to view some kinds of data and to have a limited update capability. Officers from allied agencies, for example, may have the ability to actually enter new data into the system for a "pre-book" activity, but they may not have the ability to change any existing data within the system.

Within your own detention facility staff, there may be several layers of users with differing transaction capabilities. Booking officers can enter new data, change some existing data, display data on previous bookings, update medical prescreening data and arrest data. Medical and mental health staff may be able to update medical history but would not be able to display booking data.

Usually, only certain supervisory staff can change "charges" since this is one data element that is used by a number of departments if your system is integrated. Supervisory staff need to be aware of the larger implications for changes in data so that accurate information is maintained for CII, JUS8715's, Courts, D.A., etc.

Another way of limiting transactions is to allow some users the ability to add information but not to change information. This is particularly helpful when the user makes a mistake entering data and wants to correct it. The supervisor and any other viewer can see the addition, but the original entries are not altered. This avoids the problem of erroneous changes in original data.

Changing data becomes a big issue when the system crosses agency lines. Should the courts make changes in the booking record if the charges are changed in court? Can the D.A. change the arrest data if he decides to prosecute only on a lesser charge? When planning an integrated system, be sure that you sit down with other agency policy makers and decide data element by data element who has a need for the information, who has the right to see it, who has the right to change or update it, and who is responsible for maintaining which records. Is it more appropriate to add data rather than to allow changes?

One way to view these decisions is to ask yourself whether or not you would be willing to pass the jail inmate court cards (or tracking cards) in your manual system from agency to agency to let them make changes on the inmates' records. When viewed from this perspective, it becomes clear that security is critically linked with access and responsibility.

There is little equipment, electronic or otherwise, which can withstand intensive attempts at breaching security. There are many clever and sophisticated techniques for tampering with a system's security. There may even be fairly simple and unsophisticated techniques for tampering. **The primary security of any system is the proper monitoring of the system and its users through design, policy, authorization and physical location.**

Work closely with your design technicians to obtain the kind of security within the system that protects confidentiality as well as the integrity of the system. Visit other counties to observe their security measures firsthand so that you can incorporate what is known to work.

12. Life Expectancy of Automated System vs. Life Cycle of Jail

"Life expectancy" for automated criminal justice information systems refers to the length of time the system remains both operational and useful. It is **not likely** to be the same as the life cycle of your physical facility. There are a number of reasons for this:

- THE CRIMINAL JUSTICE SYSTEM UNDERGOES FREQUENT POLICY, PROCEDURAL AND LEGISLATURE CHANGES. These result in ever-changing information processing requirements, which in turn necessitate **constant** maintenance and enhancement. Your system must, therefore, be DYNAMIC rather than static. Changing information needs may tax the capacity and/or scope of your system. Programming and software alternatives may initially address the new changes, but there are no guarantees that your original design (even with modifications) can always accommodate the new requirements.

- JUST LIKE DETENTION FACILITIES, INFORMATION SYSTEMS ARE OFTEN KEPT OPERATING EVEN THOUGH CAPACITY AND USEFULNESS HAVE BEEN EXCEEDED. Your jail becomes overcrowded once capacity has been reached and intakes exceed releases. Overcrowding makes the facility less useful or functional since design and staffing capacities have been exceeded. Daily operation (policies and procedures) have to be changed to accommodate more people with the same amount of staff. The building's design becomes less effective as more people and equipment are crammed into it. Activities take longer, fewer tasks are accomplished, liability increases, etc.

  The same thing happens to an automated information system. The **hardware** can be compared to the physical structure of your facility. It has only so much space for information and operations. As data requirements increase and/or change, the space or capacity is exceeded, and the usefulness of the hardware becomes diminished. Tasks the computer can't handle are now done manually. This results in sloppy record keeping, potential liabilities, extra tasks for staff, difficulty with tracking information for management analysis, and loss of data control.

  Software can be compared to your jail operations (policies and procedures, daily routines, services). As information needs increase and change, software can often be modified or replaced to handle the changes. However, as with any equipment, software must be adaptable to the available hardware. Your policies and procedures change due to new laws, different characteristics of the inmate population, increases in population, changes in procedure by the courts and district attorney, etc. These changes may result in the need to re-program the software so that new or different information can be processed and stored.

- RAPID TECHNOLOGICAL CHANGES CAN RENDER YOUR SYSTEM OBSOLETE. Even now, the technology of automation is advancing so rapidly that it is difficult for data processing experts to keep up to date on the developments. Hardware and software available today, in 1987, is vastly superior to that marketed in 1983. Countless computer companies have come and gone just in the last three years.

  The lightning fast hardware you buy today may be slow and limited in scope and capacity by 1989 standards. And while having the latest equipment doesn't

necessarily guarantee you the best system, it may eventually influence your operations regarding staff time, maintenance costs, and the ability to communicate with other systems.

- WHAT CAN YOU DO TO GIVE YOUR SYSTEM A LONG AND EFFECTIVE LIFE? First, **educate** your staff and your administration to the fact that automated systems are dynamic rather than static. In a sense, it is best to view them as **"never complete".** They need **constant maintenance and replacement,** much like other tools.

1. Request the **assignment of a regular position** (such as a programmer/analyst) as a troubleshooter for your system. Depending upon the size of your jail facility, there should be a part-time or full-time person whose job it is to observe and maintain your system, give daily technical assistance, and make programming modifications which will accommodate changes in law and other informational needs.

2. Use the aforementioned position (programmer/analyst) or assign another staff person (in data processing or in your facility) to **review and monitor technological developments in both hardware and software.** Keep in touch with organizations such as the ACA, NSA, and CPPCA to keep up with changes in automated systems. Subscribe (selectively) to newsletters and trade magazines which review automation in general and criminal justice in particular. Keep an eye out for state and national standards which apply to automated information systems.

3. Arrange for **regular meetings** with all users and interested parties. Make sure that consensus and needs expressed by all parties are recorded and considered. Keeping a record of complaints, problems, limitations and malfunctions can be a great help when modifying an existing system and when trying to justify a new one. Information received at user meetings can result in keeping your system as up-to-date and as efficient as possible.

4. Make sure that **line staff training is thorough** and that refresher courses are available at appropriate intervals for regular staff. Make sure that new staff are trained correctly the first time so that bad habits are not learned and perpetuated.

5. **Consistently monitor and accurately record terminal response times.** Record all down time and the causes. Log all system errors, re-runs, etc. Record all information and processes that can't be handled by your system. Use this type of information for **justifying system replacement.**

6. **Keep your management, data processing department and county administration apprised of the status of your system.** Don't wait until major problems develop. Send copies of the minutes of user meetings to them so that when you do request a new or modified system, no one is surprised at the degree or urgency of need.

7. Finally, don't assume because your brand new automation system has been surpassed by recent technological advances that it is obsolete. **Obsolescence occurs only when your system no longer meets your needs for information processing that is timely, accurate and cost effective.**

13. What to Do When Your Current Automated Jail System is Obsolete

No matter how good an automated system is, it is highly likely that the day will come when it will have to be replaced. Along the way, changes will be made. Some of these will be mandated by legislation or by changes in working environment. Others will be enhancements. These modifications will serve to prolong the life of the system, but probably not eternally.

The state of computer technology is highly fluid. What is the leading edge today may be archaic next Tuesday. Improvements in technology can, in and of themselves, cause an organization to decide to redesign its system to take advantage of that technology. Keypunch machines were wonderful until key-to-tape and then key-to-disk data entry systems were developed, and while keypunch machines still do the same things they always did, the newer technology is so superior you hardly ever see anyone using a keypunch anymore.

So, at some point (hopefully in the dim future), it may become more economical to replace the system than to continue investing in enhancements or mandated changes. When this occurs, you will essentially be back to square one - or back to Book III, Section A - and will need to identify and classify the problems and seek authorization to proceed with further study and analysis (development of problem statement, needs assessment, etc.). The system development life cycle begins anew.

BOOK III

BOOK III - THE INFORMATION SYSTEM'S DEVELOPMENT LIFE CYCLE

Introduction

You already have an information system in your jail facility. It may be a manual one, consisting of a series of forms and inmate documents with which you collect (and re-collect), store and disseminate inmate information. It may be formal, backed up by sophisticated written policies and procedural guidelines. It may be an informal collection of seemingly isolated manual procedures involving the use of handwritten logs, 3 x 5 cards, etc. It may even be partially automated. But whatever it is and whatever state it is in, it most definitely exists.

Any information system, whether automated or manual, must go through a development life cycle. Simply put, the development life cycle includes these basic steps: recognizing the problem or need, formulating potential solutions, implementing the solution, monitoring results for effectiveness, and taking corrective action to improve the results.

The information system's development life cycle parallels the processes the brain leads us through whenever we attempt something new. If the activity requires both mental and manual dexterity, like learning to drive a car, then the recognition of the problem occurs when we realize we cannot conduct this activity without learning and practice. A discussion with a driving instructor, describing the steps required to drive a car, provides input which helps us understand the problem as well as helping us formulate a solution. When we actually get behind the wheel of an automobile and are allowed to drive, we are implementing our solution, monitoring the effectiveness and taking corrective action. We then cycle back to understanding the problem and go through this cycle again and again. This cycle may occur 100 times per minute when we are first learning to drive. As we become more skilled, the frequency of this cycle reduces. Repetition programs our thought processes so that we perform them automatically.

Although this analogy may be over-simplified, **it is extremely important that the jail manager**, or any manager responsible for the automation of information systems, **understands that the development of an information system must cycle through a very precise but similar set of processes.**

Many information systems fail or are inadequate because the information system's development life cycle was not properly acknowledged, understood or addressed. Many failures stem from the lack of thorough problem identification and understanding. It is an unfortunate fact that some naive "system engineers" have poorly served their clients by automating symptoms and ignoring problems. This calamity is abetted by the general belief by computer lay persons that any technician who can program a computer must also be a qualified information systems analyst. This assumption is simply not true. It is vital for the end user (in this case, the jail manager) to ensure that any system being developed and/or procured goes through the entire information system's development life cycle. Shortcuts taken along the life cycle usually result in poor design and cost overruns.

But how can a manager know whether all of the bases are covered in the development life cycle unless he or she knows all the steps and stages and processes included in the life cycle? The answer is self-evident: **the manager who lacks this knowledge is at the mercy of the data processing people engaged to develop or install the automated system.**

Book III will provide these managers with a full understanding, not only of the processes that must be included in the development cycle, but also the purposes each fulfills, its importance in the overall effort, and the products each is expected to generate.

The aforementioned basic steps of an information system's development life cycle are discussed under the following major chapters:

A. Stating and Analyzing the Problem
B. Development of the Functional Systems Requirements
C. Systems Design, Development and Implementation
D. Systems Operation, Maintenance and Enhancement

A. STATING AND ANALYZING THE PROBLEMS

Introduction

The first step in the information system's development life cycle is the development of a statement of problems and needs. This involves more than just recognizing and stating the problems, whose size and nature may require you to go through a series of analytical activities so that when you have completed this step you'll have enough information to help you decide whether to proceed to the next step. The objective of the problem/needs statement is twofold:

- To provide all that information needed in the next step of the analysis.
- To describe the scope, severity and impact of the problem or need in sufficient detail that upper management is motivated to commit to its solution or satisfaction.

In general, the steps to be followed during the problem/needs analysis are as follows:

- Problem recognition and classification
- Initial problem description and request for authorization to proceed
- Problem analysis yielding cause and scope or extent
- Informational needs assessment and formal problem/needs statement

1. Problem Recognition and Classification

Before any study is undertaken, regardless of its scope, the problem must be recognized and classified. Remember, the first step to solving a problem is to recognize and define it. Don't be quick to assume a solution. How many problems have been "solved" by simply adding staff, for example?

The jail manager may first recognize the symptomatic aspects of the problem, i.e., poor morale, excessive overtime, unusually high telephone coordination between jail

and other agencies, missed court hearings, excessive paperwork, etc. But these are the symptoms, not the problems that cause them. Pain is your body's way of indicating that a problem exists, but the pain is merely a symptom. So it is in any organism, including a jail facility. Still, it may turn out that a collection of symptoms is all you'll be able to come up with at this point. If so, don't panic. The task of determining the underlying causes of the symptoms can be done later.

At the problem recognition and classification stage, we recommend that you as jail manager, solicit written opinions of the nature of the problems from all levels of line staff. Hold staff meetings with line supervisors and impress on them the need to understand the problems thoroughly. But, remember, at this point you are only interested in problems and/or symptoms, not solutions.

As the problems and their characteristics become clear, you should document them and attempt to classify each of them under one of the following general categories:

- Management
- Administration
- Procedures
- Staffing (Structures or Levels)
- Personnel Related
- Informational
- Other

Not all problems are solved by automation. The best computer system in the world does not solve problems caused by poor management practices, for example. If, after you are satisfied with the description of the problem and its characteristics, and if problems are classified as either informational, procedural, administrative and/or staffing-related, it is possible that automation may provide a long-term solution.

If the problem affects not only the jail operation but also the operation of the records division, the courts, the probation department and/or the district attorney's office, an even greater chance exists that automation of your information system is in order.

2. Initial Problem Description and Request for Authorization to Proceed

At this juncture, you and your internal jail staff have formulated a problem description and classified the problem. (Incidentally, this process should take place with a minimum of effort and, preferably, no outside help. No one knows and appreciates the problems better than the jail manager and jail staff.)

If you now believe that the automation or re-automation of your information system may be part of the long-term solution, then you must be prepared to follow the natural flow of the information system's development life cycle. Both time and money may have to be expended as you move ahead.

Your next step is to request authorization from upper levels of management to proceed with the analysis. This can be accomplished by a letter describing the problems and delineating the more obvious effects. The letter should recommend that the following analysis be conducted:

1. Problem analysis, to determine cause and scope.
2. Informational needs assessment.
3. Formal problem/needs statement.

An example of a problem description and request for authorization to proceed is included in Section E: Sample Study Documents and Presentation Formats, Page 35.

A lot goes on between the strategy meeting among the jail commander, undersheriff, and sheriff and the "authorization to proceed," unless the Problem Analysis, Informational Needs Assessment, and Problem/Needs Statement can all be done competently, in-house, by sheriff's department personnel.

In most counties, it would involve discussions with and commitment from the county administrative officer and the computer services department. The board of supervisors, at minimum, would have to be informed if any other department staff were to be utilized. The board of supervisors would have to authorize and appropriate funds for the work, if done by computer services or by any outside firm. Contract services through request for proposal might require work with county

counsel, risk management, and possibly purchasing. All of this would require a more comprehensive justification document and recommendation report.

Assuming you received a go-ahead, a major decision has to be made as to whether this study will be conducted by county personnel or by a private consulting firm. This will, of course, be more involved than writing a letter and getting a green light. Discussions will no doubt take place with the county administrative officer, county data processing, and possibly the board of supervisors. The county may have personnel within the jail staff, the sheriff's administration staff, the county data processing department, or the county administrative office who are capable of conducting this analysis. If not, a very simple "Request For Proposal" (RFP) process for the purpose of soliciting proposals from qualified consulting firms can be used.

The estimated cost to conduct this initial problem analysis and informational needs assessment is primarily, though not exclusively, a function of size, measured by inmate population and staff, by number of facilities, and the scope of the problems. The RFP should, therefore, contain these statistics and should clearly describe the work to be performed and the expected results.

Your county's data processing department, the purchasing department, and county counsel are excellent resources for assistance in writing such an RFP. Let's move on to a discussion of the work that is needed in this stage, whether done by county talent or private-sector expertise.

3. Problem Analysis - Delineating Cause and Extent

Problem analysis differs from problem recognition and classification in that this analysis is done in much greater depth and should be conducted by a qualified systems analyst or management analyst or someone with those skills. The analyst begins by reading the original problem recognition and classification statement. From this statement, the analyst begins to track the problem backward and forward to determine both its cause and its extent or scope.

A primary objective is to determine the feasibility of using automation in solving this problem. The analyst will undoubtedly hone in on the fact that bookings are taking

an average of 40 minutes each. The analyst knows that if this can be reduced to 10 minutes or less, all the other symptoms (i.e., overtime, poor morale, paper-intensiveness, etc.), could be eliminated. The jail commander and his staff were correct in classifying the problem as procedural and informational, and the analyst should quite readily be able to determine the cause, which is the first of the two basic charges (i.e., determine cause, then scope or extent).

Solving a problem requires the full understanding of its cause; so, the analyst will now dissect the booking procedure until every aspect of it is thoroughly understood. He or she should collect samples of every form or document used, inventory every data item required and understand and diagram the flow of the information; showing where the forms and documents go.

The analyst should now be able to write a fairly detailed cause statement. For example:

Detailed Cause Statement

The booking procedure requires an average of 40 minutes per booking because of the use of cumbersome, slow, manual procedures that are replete with redundant efforts. There are no less than nine different forms, documents, tags and log entries required for an average booking. All but three of these are multi-part forms which must be typewritten. My observations are that less than half of the booking officers have good typing and other clerical skills; thus, the procedure is not only complex but unforgiving and frustrating, demanding skills which are too often lacking.

There are 143 different data items collected on an average booking, and many of these are typed or handwritten as many as nine times, with an average of 20 data items being re-typed at least three times. The procedure cries out for streamlining.

The analyst must now seek an understanding of the scope or extent of the problem. Experience demonstrates that any paper procedure using several forms with multi-part copies all going to different places may mean that only the tip of the iceberg is being observed. When the forms are followed they will lead to other departments not just to areas within the sheriff's department.

The analyst must now follow the forms to their various destinations, where he finds a whole new set of procedures and activities in the mug room and/or identification sections, in the records division where the records clerk manually matches and files booking sheets with the arrest history files, and so on. The analyst now knows that the job cannot be completed simply by solving the booking procedure and its informational problems. The scope of the problem has been discerned beyond the booking process, going beyond the jail to the courts, the district attorney and public defender, and even to arresting agencies.

The scope or extent statement, which is the second task in the analysis, may read something like this:

Statement of Scope

The booking procedure is only the beginning of a much larger information system upon which the operation of the entire jail relies. Information collected at booking is used and further built upon in the remainder of the jail operation for sentenced prisoners. An extensive record keeping system is required for the housing, clothing, feeding, medical administration, transporting and court scheduling of prisoners - in general, prisoner management. Further, the booking information is routed to the mug room during the initial arrest for prints, photos and prisoner identification. This information, along with the booking sheet, is sent to records where the prisoner's arrest history file is manually updated. Inmate management information affects the courts, the district attorney, and the public defender, all of whom rely on its accuracy and timeliness. To the extent that problems exist in managing the information at the jail, these other agencies are adversely affected in those areas of their functions which rely on prisoner data and prisoner scheduling.

If the scope of this problem is as large as the study indicates, it is going to take a sizable effort to address it. Basically, the cost of the solution is (or should be) somewhat proportional to the scope of the problem. The analyst should now see that the problem is not just a $180,000 overtime expenditure, but a multi-million dollar salaries expenditure being invested in the processing of information.

The analyst must next pin down the actual resources expended by conducting a budget and personnel analysis. One way to do this is to look at a five-year history of the jail budget and personnel allocations. By projecting both the salaries and total budget, based on the five-year history, the total budget costs can be related to salary costs. By using a percentage factor (to be determined in the informational needs assessment), the analyst can actually determine what the manual information processing labor costs are and what they are likely to be in the future. **It is very important to understand these numbers, as county administrators and boards of supervisors understand problems and solutions best when they are expressed in terms of dollars.** Managing tax-derived funds is, after all, their responsibility. But county administrative officers and boards of supervisors are also motivated by other factors, such as liability; non-compliance, e.g., county ordinance and court orders; and political or public relations.

Likewise, by projecting personnel required by type or classification based on a five-year history, we can reveal a pattern that presents a clear and meaningful picture to budget analysts, county administrators and, ultimately, boards of supervisors. Non-labor costs should be included by type: printing, photocopying, office supplies, etc.

Scope has now been expressed in terms of the original problem and the extent to which it directly or indirectly affects other parts of the enterprise. And it has been translated into budget and salary costs.

4. Informational Needs Assessment and Problem/Needs Statement

The informational needs assessment is conducted in conjunction with the problem analysis to ensure that the automation needs of the jail are fully identified. It helps the analyst understand not only the stated problems, but equally important, the unmet needs which may not have been expressed as problems.

The informational needs assessment, if properly conducted, will become the building block upon which the next phase of the system's development life cycle is supported. It also provides the basis for an estimation of current information processing costs. These cost figures will be very important later on when the cost/benefit analysis is made.

To perform an informational needs assessment properly, the analyst and jail manager must begin with a detailed and up-to-date organizational chart. The jail manager should identify key supervisors in each unit of the organizational unit where information is processed. This will probably include every unit within the jail.

The analyst will now conduct interviews with the line supervisors in each of the organizational units. From these interviews, the analyst should gather the following information:

- A brief narrative description of the informational processes conducted by each unit. Important items of information the analyst should collect include: the unit's purpose and objectives, major data items required, volume statistics, frequency of statistics, and source and destination of the information.

- Estimates from the supervisor and staff of the labor required for the processing of information.

It is the aggregate cost of this labor, supplies, printing, photocopying, etc., throughout the jail that represents the current cost of processing information and is used later in the cost/benefit analysis step of the information system's development life cycle.

The delivery of a problem/needs statement report represents the end product of the first definitive phase of an automation project. The report should provide documentation that will familiarize management with the background and history of the problem, its scope and impact, the assessment of informational needs, and the costs associated with the current information processing. It should include: full documentation of information collected in Steps 1 through 4, recommendation to proceed, and request for an authorization to proceed.

B. DEVELOPMENT OF THE FUNCTIONAL SYSTEMS REQUIREMENTS

Introduction

Once the problem/needs statement has been completed and the decision to proceed with the development of a system has been made, the next step is to develop the functional system requirements. The word "functional" really has two meanings in this regard:

- The individual functions (or activities) within the jail; and

- The functions which an automated system will have to include.

The functional system requirements represent the needs of jail and prisoner management classified by the various support functions. And because each jail facility, and each functional element within a jail, has specific concerns that must be included in any statement of functional system requirements, the systems development professional will need the assistance of jail management staff.

Developing the statement of functional system requirements is a multi-step process that begins with the identification of the functional activities performed in the jail facility. This includes the purpose or objective of each function, as well as its information flow, problem areas, effectiveness of existing automation support and associated costs. The functional requirements phase should achieve the following objectives:

- The functional requirements statement should provide an initial statement of the functions which a new automated system should include, as viewed by jail management and the systems design professional.

- A determination of the estimated scope of the project, including an indication of which business functions would be included in the new system and which ones would not.

- An estimate of general development cost and duration of the development effort.

The major components of this phase of the system development process will be discussed in the following sections and include:

- Defining the jail functions.
- Defining the current system.
- Discussing development alternatives.
- Estimating hardware and software requirements.
- Determining staffing requirements.
- Estimating costs of new system development and operation.
- Identifying benefits of the proposed system.
- Performing a cost/benefit analysis.

These topics will be discussed in the sequence listed above.

1. Define Major Jail Functions

When the needs assessment is complete and the problem areas have been identified and categorized, the pursuit of automated solutions to those problems can commence. The first step should be to identify the major functions that constitute jail management. Each function will then be defined in general terms. The definition should concentrate on "what" activities are performed in pursuit of each functional objective. Major information requirements will also be identified in this step.

A closer look at each function will then be taken. This is done by taking a single function and treating it as though it is an independent entity. Its sub-functions are then identified and defined as are the jail management functions. This type of functional decomposition is performed for each of the major functions and continues

until the system designer acquires a solid understanding of jail management. This approach requires that the systems designer participate in several intense interview sessions with key members of the jail management and subordinate staff.

As each function is identified, the information required to perform the tasks associated with that function are also identified. This begins the initial analysis of the information requirements that will be placed on the new automated system. The information is analyzed from several perspectives, such as: where it comes from, how it is used and where it goes.

As each function and its associated information are discussed and defined, the results are organized logically. The information requirements will then be analyzed for the purpose of identifying multiple entry points, data storage redundancies and various data inconsistencies.

Once the system functions have been clearly documented, along with their attendant information requirements, the discussion of "how" those functions are performed begins. Particular attention should be paid to those functions that are supported by automated systems.

2. Current System Definition

For those jails having some functions that are currently supported by an existing automated information system, it is time to take a closer look at the effectiveness of that support. This is accomplished through an **evaluation of the technical efficiency, cost efficiency and level of satisfaction with the service** provided by the system as it relates to the various functions defined in the previous step.

Jail management must be prepared to answer questions as to how they view the system. By this, it is not meant that they are expected to answer questions relative to the technical efficiency of the system. These questions are reserved for the data processing staff. The jail management staff must be able to answer questions relative to the cost efficiency and level of satisfaction of the system.

Jails with only a manual existing system must evaluate that system with regard to efficiency, cost efficiency and the overall level of satisfaction. Don't assume that

you will automate the existing system as is since most existing systems require considerable improvement before they can be automated.

Cost efficiency is a difficult area to assess in that one generally needs to be aware of new, more efficient ways of supporting the jail application so some comparative analysis can be made. Many times, this type of knowledge is not available; therefore, other measurement criteria must be used. One way to determine if your current systems are working effectively is to review the cost history. If the cost for support, inflation factors notwithstanding, is steadily increasing, this may indicate that increased maintenance is being performed to meet changing management requirements. Consequently, the question that must then be asked is: are we getting a commensurate increase in service for our efforts to enhance our automated systems? If your answer is yes, you probably have a cost effective system. Conversely, if your answer is no, then it may be time to consult a professional who may be able to provide the type of information required to perform the type of cost comparison analysis of the system alluded to above. Obviously, there are several other factors that must be weighed in the decision making process, but, in general, the same concepts still hold true.

The level of satisfaction felt with the existing system must also be considered in this step. This concerns items such as: reliability of the information provided by the system, timeliness of processing activities, ease of use and accessibility of system information. Most of these areas can be addressed by those members of the jail staff who work with the system on a daily basis. The answers to any questions in these areas can also be contrasted with the cost history of the system to help refine the understanding of the overall effectiveness of the system.

Once the technical cost and service factors associated with the existing system have been established, it can be viewed from an objective and comprehensive perspective. The results help determine whether the current system can continue to be modified to support future jail management requirements or if a new more sophisticated system is required.

3. Development Alternatives

At this point, several observations have been made relative to the jail operation. Those observations include potential areas for improvement and enhancement through the use of automated information systems. They are supported by our further knowledge of the jail environment acquired in the previous steps. An attempt is then made to formulate solutions for each of the problems perceived as a result of the study. The solutions are evaluated with respect to their impact on the jail environment and organization.

The development of alternative solutions involves deciding how best to approach the information needs which have been documented in the problem/needs statement. For example, it may be most efficient in terms of operations and costs to combine partial automation with an improved manual system. It may be that only certain functions can be justified in terms of volume and cost to warrant automation. Or, it may be that a particular jail approaches the solution in such a way that existing, packaged programs are combined with custom designed programs to meet all the information needs. Another jail may desire a completely custom designed automated information system, while in a neighboring county the jail adopts the existing, packaged software approach. Analyzing alternatives is best done function by function so that comparisons for cost and efficiency can be easily made and existing software can be evaluated more thoroughly.

No matter which alternative solution you choose, the decision will be driven by three things: the identified information needs, existing systems/programs, and economics.

The development of alternative solutions goes hand in hand with the assessment of hardware and software requirements.

4. Hardware/Software Requirements

As a result of the evaluation of the existing information systems and the definition of the requirements of the new system, hardware and software requirements must be specified which will achieve the desired results from a new information system.

Therefore, this requirement certainly must be taken into consideration when determining the cost of developing the new system.

The type of information needed to establish this cost centers on the performance requirements of the new system. In general, the ability must exist to estimate response times, processing modes, data management, security schemes, audit requirements, expansion requirements, distributed processing locations and maintenance requirements. All of this information is necessary to determine if current hardware (if any, in your jail or in your county) is, first, capable of supporting the application from each of these perspectives and, second, has within the current system the capacity to support the application. This analysis may result in a total hardware and software migration to new, more sophisticated systems or an upgrade of current hardware and software. In any case, this evaluation must be performed and the results included in any new system cost estimates.

5. Determine Staffing Requirements

At this point, staff levels can be anticipated by comparing the NEW system functions with the corresponding EXISTING system functions to determine, in general, which functions were manually performed that would now be performed automatically. This analysis is critical in those jail facilities employing heavy manual processing techniques that will be replaced by automated facilities. Although existing staff reductions may be realized as a result of automation, it is more likely that, due to enhanced productivity, the need for additional information processing staff to accommodate future workload messages will be substantially reduced.

It is also important to consider any changes in the nature of job responsibilities from an organizational perspective as additional systems administration and coordination positions are created. This can result in the addition of new staff positions which will need to be balanced against any anticipated staff manual workload reductions requiring redistribution.

Obviously, these changes have a direct effect on the cost of running the jail on a day-to-day basis; however, there are additional, less obvious costs when a major transformation takes place. That cost is realized in the initial transition from the

old system to the new system. It materializes in the form of training, reorganization and integration of new people and assignments. The costs for transition are significant and need to be carefully budgeted even though these costs are short term. During transition, both the manual backup and the newly automated components are functioning at the same time. Extra jail staff are required during this period, and hands-on training may be taking place at the same time.

6. Estimate Cost of New System Development and Operation

Once the new system functional design, the hardware and software requirements, and the staffing requirements have been established for the new system, the cost of development and operation can be estimated. The cost should be established and presented over time frames recognized by jail management as short and long range strategic units. The cost should then be contrasted with the corresponding costs of maintaining the existing system. This would provide a quantitative view of the viability of committing to the recommended solution, versus continuing the commitment to the existing system. A qualitative analysis must also be performed before any final decision is made. This type of analysis will deal with much less tangible evaluation criteria such as: levels of service, expediency in processing and accuracy of information used as a basis for on-the-spot decisions and liability prevention. There are several more of these "intangibles" that should be considered since mistakes in any of these areas could prove costly. Because of this, it is essential for jail management to try to the best of their ability to associate some cost factor with the value of more effective operating systems, as these factors should be considered to be as valuable as the quantitative factors.

7. Identify New System Benefits

Benefits must be identified from two perspectives, tangible and intangible. **Tangible benefits** are those items whose benefits can be clearly discerned, such as the costs that are avoided due to the increased productivity of the staff and the subsequent reduction in the requirement to add staff to process information. Cost avoidance relative to future staff reductions can be easily formulated. If the need for two positions is eliminated, costing the facility $50,000 each, then an annual savings of $100,000 (plus inflation factors) can be projected. Conversely, **intangible benefits**

are very difficult to identify from a dollar savings standpoint, but, nevertheless, they must be translated to be understood from that angle. For instance, what is the cost for not releasing an individual from the jail facility in a timely manner if that individual were brought there and held erroneously because of inaccurate or untimely information. The potential cost for such an error could be great, and though it is difficult to quantify this type of benefit, it must be done using as much historical evidence as is available. It is extremely important to both quantify and qualify all benefits.

8. Perform Cost Versus Benefits Analysis

The final step in the requirements definition phase is the performance of the cost/benefit analysis. The result of this step will determine if any further effort should be expended in pursuit of the new system. As implied by the title, this step essentially requires that the systems professional work with jail management in contrasting cost and benefit factors. Theoretically, if the benefits exceed the cost of providing them, then the new system solution should be pursued, and, conversely, if the cost of providing those benefits exceeds the anticipated gains provided by those benefits, the effort should be terminated.

Unfortunately, it is not that simple. First, all of the cost and benefit factors must be weighted in accordance with the priorities set by jail management.

The costs and associated benefits should be worked into a matrix for the purpose of assessing their importance to jail management. To further assist in this process, a scale to allow the jail management staff to weigh the cost/benefit factors within this scheme should be developed.

Once the costs/benefits have been categorized and weighted by the jail management staff, then the task of reviewing the results and making the decision as to whether or not to proceed can be made.

If and when the jail management should decide to pursue the automation of the jail, then a new series of steps must be taken to obtain the necessary funding for the project.

As in all budget matters, this will involve the county manager and the board of supervisors, and since the request may effect data processing resources, that department should also be involved.

Although it is not absolutely essential, the support of the data processing director and the county manager should prove helpful when requesting funds from the board of supervisors to automate the jail. However, if you have followed the steps previously described in this chapter, both data processing and county management will already have participated to some extent in the analysis and their support should not be difficult to obtain. Barring an extraordinary financial crisis within the county, the subsequent funding approval by the board of supervisors should be forthcoming.

C. SYSTEM DESIGN, PROGRAMMING AND IMPLEMENTATION

Preface

The following section becomes somewhat more detailed and technical than the previous sections in this book. The jail manager is not required to become proficient in this area and may want to refer this section to the project manager or to data processing staff. If, however, the jail manager would like to understand more of the technical side of jail automation, this section is a good overview of the processes involved in the design and programming stages.

C. SYSTEM DESIGN, PROGRAMMING AND IMPLEMENTATION

Introduction

System design, programming and implementation represent the largest and most involved segment of the system development life cycle. The purpose of this step is to construct an operational system using the functional system requirements defined in the previous step. It begins with system design which entails the generation of the logical (jail management view) and physical (system view) specifications of the new system designed to support the jail requirements. Programs will then be created from the physical specifications and tested in accordance with the jail management requirements. Implementation of the new system will take place after the programs have been fully tested to insure they provide the results expected by jail management. Also, all required hardware and software must be operational, and the jail staff must be properly prepared to make the transition to the new system. The management of this process requires extensive advance planning and constant monitoring once the project is in effect.

System design programming and implementation commences once the system requirements development phase has been completed and the decision to proceed has been made.

1. Project Management and Control

The process of developing a new automated information system is a difficult and sometimes costly endeavor. In order to provide the best chance for positive results, it is important to require that a structured method of management and control be employed in this process. This is commonly referred to as project management. Project management encompasses the planning and controlling of all aspects of the project for the purpose of achieving the project objectives. Those objectives can generally be categorized as follows:

- **Cost** represents the general expenditure parameters established for the development of the system.

- **Schedule** represents the established time parameters that must be met in the course of development.

- **Service** represents the expected level and quality of operations and products the system is to provide.

Within each of these concerns, there is a multitude of activities and entities to manage, and since it is such a dynamic environment, objectives and priorities are constantly changing. Consequently, it is extremely difficult, if not impossible, to predict all of the potential problems that may be encountered in the development process. This logically gives way to the argument that project management is a vital part of the application development process, for without it we could never determine where we stood with respect to the objectives established in each of these categories.

Project management usually begins with a general plan for system development. The plan is formulated based upon the information acquired in the development of the system requirements. From those requirements we can determine, in general, the functions the new system will have to support. This allows us to make some determinations as to the manpower requirements to support the effort. We can also establish the preliminary equipment requirements of the new system. With these factors established, we can now prepare a cost schedule for phasing these resources into the project. The schedule will reflect a logical sequence of events based on professional experience in system development. With all this information we can now structure the development scenario. It is important to note that this scenario will be altered as we acquire more knowledge of the project as it progresses. Estimates will be forecast and extended through the subsequent project phases.

Once the plan is established and approved and the project is underway, progress must be controlled and monitored on a regular frequency. The progress reporting frequency is established by the principal project participants. Usually, these individuals are organized into a steering committee. Reporting consists of the status of tasks accomplished to date and the projected impact of any task delays that may exist. Impact is to be assessed relative to the objectives and associated priorities set at the beginning of the project. Corrective action is to be a function of the steering committee. (See Book II, Page 11, for a discussion of the role of the steering committee.)

2. Logical System Design

Logical system design is the translation of the functional requirements into a series of integrated processes, specifying the entry and exit points of the information required by those processes. That statement may leave you confused if you have never been through a system development cycle. This is only because sometimes too much emphasis is put on the technical side of systems development, and, because of that, logical design is confused with physical design. In order to clarify the meaning of logical design, physical design must be discussed to some degree. Physical design is the translation of the detailed requirements into the physical data processing world. Physical specifications define the details of the programs, data bases, etc. Logical specifications do not deal with the physical data processing world, even though they lead us into it. It strictly deals with the logical or external issues that involve design. Because of this, the jail staff will be intensely involved in the establishment of the logical specifications.

Logical design begins with an analysis of the functional system requirements and the development of a system level logical design. The system level design will then be "decomposed" to constituent levels. This will bring out the details of the components that comprise the system. Each of these components will then be explored in the same fashion. This decomposition process will continue through as many iterations as are necessary to provide a complete set of system elements. Depending on the size of the jail management system being developed, logical design can be an extensive effort.

Throughout this process, the jail management staff will have a critical responsibility: to provide the systems design professional with an accurate and complete description of each application. The system designer will have the responsibility for documenting and organizing the information into logical streams of processing. As each process is designed, the jail staff will be presented with the results in what is referred to as a "logical design walkthrough". Walkthroughs will be done at every level of the system development process.

The result of the logical design effort will be documentation that represents the detailed specifications of the new jail system, including all processing functions to be supported by the new system and a description of how that support will be provided.

Data elements needed by the system will also be defined at this point. All of this information will be analyzed and used in the development of the physical design specifications.

Logical system prototypes can also be developed as part of the logical design effort when economically feasible. A prototype is a working model of the new system. It can provide a hands on demonstration of what the new system will do and enable the jail staff to see how it will work. It can also enhance communication between the jail staff and the design team on the finer details of the logical design effort. Sometimes time and money can be saved in the physical design and programming efforts when the prototype becomes the production system.

3. Physical System Design

The physical specifications represent the detailed information required by the data processing staff to create a system. This includes program specifications, data base specifications, report layouts, screen layouts, processing modes and frequencies as they relate to the programs, and any hardware and software network configurations that may be applicable.

The physical specifications will be developed using the logical specifications as a basis. This is why it is critical that the jail staff stay intensely involved in the development of the logical specifications, as they form the foundation of the system.

The physical design, as stated above, is based on the logical design specifications. This process begins with an analysis of the logical input and output requirements defined. This leads to identification of the physical input and output requirements. These entities are represented in the form of report layouts, screen layouts, and data base schemas. Report layouts are facsimiles of the hard copy reports the system is to generate. They include the specific data requirements and display format. In any case, it is essential for the system designer to have all of this information available for analysis before any design decisions are made. Screen layouts are very similar to the report layouts in that they are represented in facsimile form and include specific data requirements. Screen layouts differ in that they are always produced on-line.

Data base schemas or designs are another input/output entity. It is a critical entity in that it provides the information for the system. The data base will be designed based on the processing requirements of the system. That is why it is necessary to capture these requirements accurately in the logical design process. Relationships between the data will need to be established so that related information can be grouped together and accessed as a group. This greatly reduces the time required by the computer to locate data in the data base. Once the data is grouped, relationships are taken a step further. All repeating groups of information are removed to minimize redundancy at the group level. The next step is to remove the elements within the groups than can be derived through some operation on the others. This is process is called normalization. It is critical to the construction of an effective data base that will support the system efficiently. The key to developing accurate data relationships is a thorough logical design.

As the physical specifications are defined, the processing specifications are being refined and the programs required to support the system are being identified. As each program is identified, the appropriate logical processing specifications are converted into physical processing logic. The key difference between the logical and physical processing is first evident at this point. Physical references will now be incorporated into the specifications. This will come in the form of physical data element names, physical report, screen references and so on.

The result of the physical design step is the physical data base and programming specifications. They represent the blueprint of the system from which the programmers, the data base administration staff, and other technical support staff will build the new system. It is the translation of the logical (what we want the system to do) to the instructions which the computer will understand which we call the physical design (how the system is to do all those things).

4. Program Development

Program development includes the writing and testing of the many programs needed to support the new jail system. It is, for the most part, a process of coding a program according to the physical design specification provided in the previous step, testing the results of program execution and integrating the program into the system

scheme once test results are acceptable. The system designer works closely with the programmers to be sure they have an adequate understanding of the design they are working with. Members of the jail staff involved in the project are also consulted when application level questions arise.

Program development begins with a walkthrough of the physical design specifications provided by the system designer for the programmer. Once the program requirements are understood, the programming task will commence, relying heavily on continuous communication between the designer and the programmer.

Once the programmer has completed the initial effort, the "unit test" on the program will be performed. This tests the program as a single unit for compliance with the design specifications. It is common to ask users to provide a series of test cases for this test. Generally, the cases range from simple to complex relative to the processing required by the program. The program will be tested, ideally, for these expected outcomes, beginning with simple cases and progressing to the most complex. The system designer is responsible for insuring that the unit test results are satisfactory.

Once the unit test is complete, the integration test is performed. This procedure is essentially the same as the unit test in terms of the test criteria, but the program will now be run as part of an integrated system where processing will be invoked by the system, as opposed to the programmer.

Once all the programs have passed the integration tests, it is time to implement the system in the production environment - the jail.

5. System Implementation and Training

System implementation takes place when the new system has been fully tested and is ready to be transferred to production. Before this can happen, however, some major organizational and technical issues must be resolved. Technically, all systems must have been fully stress tested using actual data, and test outcomes must have been satisfactory in every respect. **Testing is commonly performed by running a scaled-down version of the new system in parallel with an existing system.** In cases where there is no existing system, a parallel test can be performed with the

manual processing. Theoretically, it really should not matter, since you are looking for the same results either way. But, practically, trying to parallel-test an automated system with a manual one can pose some problems if you are dealing with the elimination or major modification of staff assignments. There are a variety of options for performing the system test other than parallel testing, so if this approach poses any problems, you and your design analyst can select a less troublesome method.

Implementation does not begin until the system test results meet all of your expectations. At this time, planned organizational changes should be in effect and training of jail personnel should be complete. If any of these issues is still unresolved, it will make the transition to the new system very difficult. Training is supplied by the systems development agency or contractor. It is an ongoing process that really begins with the jail staff's participation in the development effort. Once a nucleus of staff is trained, it is broadcast to all the jail staff affected. This is usually handled by a specially designated individual on the project staff in conjunction with a member(s) of the jail staff. This individual is called an implementation analyst and will provide the jail staff all the training they will need to use the system.

Organizational changes, such as the elimination and/or modification of existing tasks or positions, are an essential part of jail management's implementation plan. At the time of system implementation, each new position should be activated with only a skeleton crew performing any activities that require old practices. Everyone must have a clear understanding of his role in the new environment. If any role is unclear some difficult and unnecessary problems can occur.

With the system tested, training complete, hardware installed, and the jail staff ready, full implementation can take place. This usually entails a set of very involved steps. All systems modules must be moved from the test environment to the production environment. Data base areas usually need to be expanded to accommodate a production quantity of data, reorganized and loaded with current production data (generally applies to those new systems replacing existing systems). If a new system is being implemented for the first time, the process will include loading both currently active data and some historical records into the data base. The data processing operations staff need final job instructions for all batch

processing in the new system. They also need specific telecommunications instructions for controlling the network activities for the on-line processing. Then, at a pre-designated point in time, the switch will be thrown. This is referred to as "cutover". **Effectively, this is the point at which the old system is shut down and the new system is activated to assume the next processing cycle. The cutover procedure is rehearsed several times before the actual cutover is made.**

This completes the system's development life cycle. The next stage to be considered is maintenance and enhancement of the system. Though that stage is technically not a part of the development portion of a system's life cycle, some further development often occurs after a system goes into operation.

D. SYSTEM OPERATION, MAINTENANCE AND ENHANCEMENT

Introduction

System operation, maintenance, and enhancement encompass the general set of activities that needs to be performed once a system becomes operational: all the steps necessary to provide continuing support to the jail staff as they use the system in their daily operations. System operation and maintenance is performed at two levels, the first being the user level. This includes the operations and maintenance performed by jail personnel as part of their daily usage of the system. The second level is the technical level, which includes the data processing staff's daily participation in the system activities.

Enhancements are basically small systems development projects in that they follow a logical sequence of events much like the development process described in the previous section. **Enhancements come as a result of regularly scheduled review periods in which the jail staff is urged to make suggestions as to how the system may be improved.** This review should be extended at some point to periodic system-wide reviews for the purpose of assessing the economic wisdom of continuing to support the system. Just as it became cost beneficial to upgrade your previous system, there will come a day when it will again become cost beneficial to consider improvements in this one.

System operation and maintenance will commence the moment the system is put into operation. Enhancements will be reviewed and approved for addition to the system as part of an established procedure after the system has been in production for a reasonable period of time.

1. Systems Operation

As was mentioned, systems operation is performed at both the technical level and the user (jail staff) level. The technical operation is performed by the data processing support staff. Activities include the start up and running of daily systems and the ongoing monitoring of the processing activity. More and more, this area is becoming "operator free", thanks to improving technology. Automated job scheduling and sophisticated user controls are replacing many of the manual procedures associated with this effort.

User level operations include all activities involving direct interaction between the jail staff and the system. This applies to any requests made of the system using some electronic communication facility. An example of this is an on-line inquiry for information made at a terminal. The request is entered on a screen, and response is received at the screen. That constitutes a user operation. Other more sophisticated operations are being performed more and more by users, including operations usually performed by systems administrators or coordinators. They typically include remote invocation of batch processing or direct data dictionary entry for the purpose of updating a data base.

2. Systems Maintenance

As in the case of system operations, system maintenance would most likely be performed at two levels. Technical system maintenance will be performed by the data processing staff and will include such activities as updating tables and upgrading hardware and software to more advanced versions and correction of any system deficiencies that may exist. It is ongoing monitoring of system processing activity and results.

User system maintenance would be performed by a designated individual(s) on the jail staff. It will involve the ongoing maintenance of various user level concerns which have traditionally been controlled by data processing. One example is access authorization. The user has always been the owner of the data and thus has determined who had access to data and what privileges were associated with that data. In years past, this concern would be communicated to data processing, and they would set the access criteria. With today's technology, this is no longer necessary. Data processing systems have evolved to a level of sophistication that permits the user to have absolute control in this area if that is desired. Facilities can be provided that allow the jail system administrator to directly establish access authorization for all system users. This is just one of several examples of the type of user level system maintenance that is becoming more prevalent in today's data processing world.

3. System Enhancement

System enhancement is a refinement process that becomes continual once the system is in production. It is important to discern the difference between enhancement and maintenance changes. Enhancements are usually initiated as a result of regularly scheduled review periods in which suggestions to improve the system's services are entertained. Maintenance, as described earlier, is primarily focused on supporting status quo operations.

As areas for improvement are identified, they must be prioritized for action. They should be part of an integrated plan that takes into account all planned upgrades to the system. The approach to enhancing the system is much the same as that taken to develop the system, including the assessment of cost vs. benefit of the change. If the change is felt to be beneficial, then it should progress to the design/programming/testing stage where its impact on the system can be established and, finally, to implementation if the results of the previous steps are acceptable.

4. Systems Review

The system enhancement review process should include an occasional look at the big picture. This is for the purpose of strategic system planning of the next system development effort. The reason for this is that at some point it will be technically, organizationally, and economically advisable to stop enhancing your existing systems and begin formulating a new system solution.

The automated system is an extremely powerful tool, but also an expensive one. It is vitally important that you schedule regular reviews of the service provided by your system and consult a systems professional to assist in this review. The systems professional, who can be from data processing or an outside consultant, can provide you with an unbiased perspective of your operation and should know the state of current technology and how it may apply to your situation.

5. Systems Replacement

Obviously, it is not economically feasible to develop a new system and throw out the old system every time technology changes. There will come a time, however, when it will be advisable to begin planning development of a new information system. All too often, economic support of existing, obsolete systems goes far beyond the point of diminishing returns. This is unfortunate because it expends resources that could be channeled into a more attractive and effective solution.

This is the last leg in the system development life cycle loop. It takes us back to the initial process of assessing the need for a new system. It logically follows the previous process where, through systems review, it was determined that the time had come to explore the need and feasibility of a new system.

Once the fact that we want to explore the feasibility of a new system has been identified, we return to the start of the system's development life cycle, the development of the problem/needs statement. At this point, one would progress through all of the steps discussed in the previous sections of this chapter. At the completion of each major step or phase, decisions are made as to how the next step should be approached. Effective information systems management within the jail environment is dependent upon recognition of the processes described in this chapter. It is also evident that, because of the dynamic nature of both jail management and information systems technology, it is necessary to manage in a manner that insures continual review of the cost and informational efficiency of data processing systems. For this reason, the systems development life cycle is presented as a closed loop or continuum of technical and administrative activities.

E. SAMPLE STUDY DOCUMENTS AND PRESENTATION FORMATS

Introduction

The first chapter of this book identifies the problem/needs statement as the first step in the development of the information system.

This chapter presents selected samples of documents resulting from that phase of system development. These samples are intended to demonstrate the kind of reports necessary to document problems, needs and projections.

The samples have been used in real situations. They are presented here as examples of content, format, style and approach which have been effective in motivating management to participate in the solution of the problem. As a jail manager, you may find that a review of these samples will help you develop your own documents. If you are working with information system consultants, these examples may help you define what products you should expect.

1. Example Number One - Problem Description and Request for Authorization to Proceed

March 10, 1986

Sheriff Robert Smith
Any County
Any Address
Any City, State, Zip

Re: Problems with the Booking Procedure

Dear Sheriff Smith:

The average booking episode, including collecting all the basic booking data and completing, routing and filing of all booking forms and documents, requires 40 minutes of a booking officer's time.

Our jail books an average of 125 persons per day; therefore, the effort to process the booking information is equivalent to 11 full-time booking officers per day, or approximately 4 per shift times 21 shifts per week, or 84 person days per week.

Our booking workload is heaviest between the hours of 9:00 p.m. and 3:00 a.m., when approximately half of all bookings are conducted. Therefore, we are required to staff our swing and graveyard shifts with 5 booking officers for each of those shifts. This staffing of 2 shifts times 5 booking officers times 7 days equals 70 man days.

With a total of 84 man days required to book prisoners and 70 man days required for swing and graveyard shifts, only 14 (84 - 70) remain for day shifts. This is basically all right because daytime bookings are spread out rather evenly during that shift. Secondly, we are more completely staffed during the day shift period, and other duty officers can fill in if booking gets particularly heavy.

The problem exists, however, in scheduling our 18 booking officers. It is most difficult to schedule these individuals so that the correct mix of officers is on duty seven days per week, three shifts per day - particularly when one takes into account leave time. Unplanned leave or sickness throws us into a complete state of chaos. In this situation, we are not staffed at the proper level. Bookings may back up in our peak times for as long as four to five hours. Further, because we may have multiple suspended bookings taking place during shift changes, our booking officers are staying after the end of their shifts so as to not drop problems onto those officers who are picking up the next shift.

Our booking officers alone are accounting for the expenditure of overtime salary at the rate of 150 to 175 hours per week. The average hourly salary of the booking officers at their time-and-one-half rate is $19.94 per hour. This equates to an annual budget commitment of from $155,532 to $181,454.

The morale of our booking officers is low. We hear constant complaints regarding the requirement to work overtime and the inflexibility for leave. They are very unhappy with the county because they think we are too bureaucratic and are making paperwork for them. They don't understand why they have to re-collect the same data on prisoners that they remember booking very recently and sometimes within the same month. The booking officers have a gut feel that our re-books are running around 75%.

1. Example Number One - (Continued)

In short, we have a problem. Overtime is too costly, staffing is difficult, and morale is poor due to the need to re-collect the same information again and again.

My staff and I have classified this problem as follows:

Staffing - difficulty in staffing shifts

Procedural - The booking procedure is cumbersome and labor and paper intensive

Informational - re-books amount to approximately 75% of the bookings

Personnel-related (poor morale) - too much overtime, job too intensive with no flexibility for leave

We believe that some form of automation of the booking procedures may alleviate and possibly eliminate problems. We are, therefore, recommending the following action:

1. Conduct an in-depth problem analysis to determine the cause, scope and impact of the problem.

2. Conduct an informational needs assessment for the entire jail to determine what additional processing requirements may be identified and potentially satisfied through automation.

I would appreciate a meeting with you and the Undersheriff to discuss the strategy to proceed.

Sincerely,

John Brown, Jail Commander

JB:ba

2. Example Number Two - Excerpt From a Needs Assessment (Manual Booking)

COUNTY SHERIFF DEPARTMENT

JAIL

Booking/Release and Prisoner Management

Brief Narrative

Booking Process

The booking process begins when an arresting officer brings a suspect to the jail for booking. The arresting officer completes an incarceration report, and turns the report and prisoner over to the jail personnel. The booking officer then types a booking sheet, completes the medical report, removes and collects all property and completes a property report, types the JUS8715 report (when applicable), types the 3x5 roster index card and completes the prisoner management index card. The prisoner is then fingerprinted, photographed, dressed down, showered and housed.

After the prisoner is housed, a copy of the booking sheet is forwarded to Dispatch for both a local and state-wide warrant check to be conducted. A subsequent copy of the booking sheet is routed to Records for arrest record processing.

Daily, a pre-arrangement status list is compiled by jail personnel. Both the courts and District Attorney's office are called and notified of the arrest, the charges, the date of arrest, and arresting agency. The justice courts then notify the jail by phone when they are ready to arraign the prisoner in the pre-arrangement status.

At the time of arraignment, the bailiff records the next court appearance date, and upon return of the prisoner, the prisoner management index card is updated with next appearance date, and the master desk calendar is also updated.

Sentenced Prisoners

If a subject is sentenced to County Jail after being booked, the time of release is calculated and recorded on the prisoner management card as well as on the master release calendar.

Eligible prisoners may be allowed to participate in the Work Furlough Program. The Work Furlough prisoners are checked in and out daily depending upon work schedules. The check-in and check-out process involves the updating of the in/out log daily, breatholizer checks are conducted periodically, and searches are conducted in all cases upon return. For weekenders, a short form booking procedure is used for check-in each weekend.

Release Procedure

Upon release, a warrant check is conducted by Dispatch to determine if any new warrants have been issued for the subject. Holds from other jurisdictions are notified approximately five days prior to release. The release procedure involves completing the release section of the booking sheet, the prisoner trust fund is cleared and money returned; the property card is pulled and signed by the prisoner, and the property is returned. Upon release of the prisoner, all documents and prisoner management index cards are pulled and forwarded to Records for incorporation in the arrest record jacket, and the 3x5 roster card is filed in Booking.

2. Example Number Two - (Continued)

Source of Data:

Arresting agencies, prisoners, court calendars, commitment orders.

Primary Data Elements:

Arresting Agency/Officer
Charges
Defendant Identification Information
Crime Report Number
Court Dates/Times
Release Date

Disposition of Output:

Arrest records are routed to Records for arrest record file maintenance and JUS8715 processing.

Frequency of Process/Number of Transactions:

24 hours per day, 7 days per week; approximately 4,700 bookings are anticipated in 1984 (includes average estimate of 14 weekenders).

Supervisor/Contact: Lt. John Brown

Personnel Required:

Classification	Function	% Time	FTE*	Annual Salary
3 Corporals	Booking	10.0%	.30	$ 6,247
	Prisoner Mgt.	10.0%	.30	6,247
	Prisoner Trust Fund	2.0%	.06	416
	Release	5.0%	.15	3,124
	Medicine Adm.	12.5%	.375	7,809
9 Deputies	Booking	10.0%	.90	16,190
	Prisoner Mgt.	10.0%	.90	16,190
	Prisoner Trust Fund	2.0%	.18	3,238
	Release	5.0%	.45	8,095
	Medicine Adm.	12.5%	1.125	20,238
			Total:	$87,794
			Benefits @ 32%:	$28,094
			Total Salary:	$115,888

*Full-Time Equivalent (Position)

3. Example Number Three - Needs Assessment (Automated Booking)

COUNTY SHERIFF'S DEPARTMENT

ARREST AND BOOKINGS

Brief Narrative:

Pre-Trial Detainment

The arrest and booking process begins with the arresting agency bringing the subject to either the main jail or one of the outlying facilities. If the subject is not cited and released or does not post bail, he will be transported from the outlying holding facilities to the main jail.

The booking process at the main jail is currently automated, and this process takes place as soon as possible after the subject is brought in. The process involves the entering of all pertinent arrest data via a CRT whereupon the computer generates the booking slip and provides for the accounting of property and money.

A copy of the booking slip is routed to the mug room and the prisoner is placed in a holding cell. The mug room personnel, with the aid of the arrest and booking information, will conduct a record's search in the records division to determine if the subject has had prior arrests and an existing LAR file.

If the prisoner has no prior arrest information, the mug room personnel assigns a new LAR number and sets up a new LAR file. This process involves fingerprinting and taking photographs of the subject, collecting personal data, and the completion of required DOJ and FBI reporting forms. If the subject has an LAR file, the mug room personnel adds the new arrest data to the file and brings current all pertinent data. The required DOJ and FBI reporting forms are prepared.

Upon completion of the mug room processing, the prisoner returns to the holding cell, and the computer-generated 3x5 card, along with a mug shot, is forwarded to the jail office. The updated LAR file information is then routed to the records division for processing.

Upon completion of the booking process, the subject may be cited and released, post cash bail or bond or, in some cases, court released. In that event the subject is given the date he must appear for arraignment.

If the subject is unable to post bail or if he has an outstanding warrant and he is unable to post the warrant amount, the subject will be assigned housing and detained until his arraignment.

After arraignment, depending upon the severity of the offense combined with his ability to post bail, the subject may be detained through final disposition of the case through the courts.

Sentenced Prisoner

As a result of the court process, those defendants found guilty and requiring jail time will be turned over to the county jail with a court-ordered commitment form. If the prisoner was not in custody at the time of commitment, he must be re-booked into the system.

3. Example Number Three - (Continued)

The prisoner is then assigned a housing unit at the main jail and then is eventually transported either to the honor farm or state prison.

Source of Data:

Original arrest agency - field arrest report and court documents.

Primary Data Elements:

Name/Address/AKAs
Sex/Age/Race
DOB/Place of Birth
Date/Time/Location of Arrest
Arresting Agency/Department
Soc. Sec. Number
Driver's License Number
Court/Branch of Appearance
Charges

Disposition of Output:

Final court disposition.

Means of Storage/Volume of Cases:

Automated system - average of 1,250 inmates per day. Hard copy backup.

Frequency of Process/Number of Transactions:

Daily; 2,100 new bookings monthly.

Supervisor/Contact:

Lt. Bob Smith

Personnel Required:

Classification	Function	% Time	FTE*	Annual Salary
10 Sgts.	Supervision	25.00	2.50	$71,890
3 Sr. Deputies	Booking Supervision	33.00	1.00	25,766
11 Deputies	Booking/Release	75.00	8.25	194,337
8 Female Deputies	Booking/Release	10.00	.80	18,844
6 Sheriff Aides	Mug Room	100.00	6.00	100,620
1 Account Clerk	Prisoner Trust Fund	20.00	.20	2,844
15 Clerk Typists	Phones/Counter	50.00	7.50	91,455
	Update Prisoner Inv./ File maint./Maintain Daily Release Logs/ Receive & Process Court Documents & Correspondence	50.00	7.50	91,455
		Total:		$597,211
		Benefits @ 30%		$179,163
		Total Salary:		$776,374

*Full-Time Equivalent (Position)

4. Example Number Four - Budget/Personnel History and Projection

Analysis of Employee and Salary Budget Increases

Fiscal Yr.	#Empl.	Increase/ #Empl.	Sal.+Ben. Budget (Millions)	% Increase Over Prior Year	Total Budget (Millions)	% Increase Over Prior Year
79-80	135.33		$2.5		$3.2	
80-81	154.33	+19.00	$3.3	32.0%	$4.2	31.3%
81-82	159.33	+5.00	$4.0	21.2%	$4.9	16.7%
82-83	168.33	+9.00	$4.2	5.0%	$5.2	6.1%
83.84	173.93	+5.60	$4.7	11.9%	$5.7	9.6%

As can be seen, a significant growth period has occurred; however, with the predicted growth in population, the changes and complexities in the laws and associated system of justice, it is difficult to envision any major deviation in this pattern by the end of this decade. If the total combined criminal justice budgets were to increase by only 7.5% per year through the 1990-91 fiscal year, the cost would be 9.5 million dollars. If the total budget were to increase by the present average of 19.5% per year, as reflected in the above chart, then the cost would be $19.8 million. It is reasonable to assume the increase will fall somewhere between these extremes. Because the criminal justice system is labor-intensive (approximately 83.4% of the total cost is salaries and benefits), it is difficult to consider anything less than at least a 10% increase per year throughout the 1980 decade even with the most prudent management and budget practices. For example, an across-the-board salary increase of 9.5% was provided in 1981-82, yet the total salaries and benefits budget actually increased 21.2%. In 1983-84, a salaries adjustment of approximately 4.5% was approved. However, actual salaries and benefits cost increased 11.9% for the fiscal year.

Another factor to consider when projecting costs for this system is the average cost of an employee in the criminal justice system. The following chart depicts the average salary cost, plus benefits, per employee:

Analysis of the Average Cost Per Employee

Fiscal Year	Salaries Plus Benefits Budget (Millions)	# of Empl.	Average Cost Per Empl.	% Increase
79-80	$2.5	135.33	$18,210	
80-81	$3.3	154.33	$25,138	17.9%
81-82	$4.0	159.33	$25,138	17.0%
82-83	$4.2	168.33	$25,000	-.5%
83-84	$4.7	173.93	$27,232	8.9%

On the average, the number of employees has increased at a rate of 9.65 per year over the past four years for an approximate increase of 7.1% per year. Assuming the growth in employees can be contained to an increase of only 5% per year and the total increase in the salaries and employee benefits budget can be held to 7.5% per year, the following projection would indicate the cost for the criminal justice system through 1989-90.

4. Example Number Four - (Continued)

Projection of Employee Count and Average Salary

Fiscal Year	# Empl.	Avg. Cost	Salaries Budget (Millions)	Total Budget*
83-84	173.93	$27,232	$ 4.7	$ 5.7
84-85	182.63	$29,274	$ 5.3	$ 6.6
85-86	191.76	$31,470	$ 6.0	$ 7.5
86-87	201.35	$33,830	$ 6.8	$ 8.5
87-88	211.42	$36,368	$ 7.7	$ 9.6
88-89	221.99	$39,096	$ 8.7	$10.9
89-90	233.09	$42,028	$ 9.8	$12.3
90-91	244.74	$45,180	$11.1	$13.9

*Based on 80% Salaries

This method of projecting costs of the total system is basic and does not take into account the subtleties in the variance of salaries among the range of position classifications. For example, adding a clerical employee will not generate the same overhead as adding a deputy. However, based on the five year historic data and the experience derived from that data, this method may be valid for the system as a whole.

APPENDICES

APPENDIX A

GLOSSARY OF TERMS

Access - The availability of a computer-resident file or files for reading and/or updating. (When used as a verb, the act of getting into the files for such purposes.)

Access Authorization - Approval for a user to gain access to a file or system.

Application - A job performance by a system's users on one screen format.

Backup - A copy of a file for use if the main file is rendered unusable.

Batch System - An automated system in which data is entered in batches, rather than piecemeal, and whose output reports are executed under the control of a computer operator rather than a system user using an on-line terminal.

Bit - (from binary digit) That portion of a byte which contains a binary "1" or "0".

Byte - A unit of computer storage or internal memory capable of storing one alphabetical character or an eight-digit binary number.

Communications - The transmission of encoded information from one device to another.

CRT - (From cathode ray tube, which is the technical name for a picture tube on a television set) The glass-fronted screen on which data is displayed on an on-line data terminal. (The term, CRT, is often used to include the entire terminal, including its attached keyboard.)

Data Base - A sophisticated system by which a computer manages the storage and retrieval of records and relates records to one another.

Data Base Schemes - The basic methods for relating data elements (files, records, fields) to one another (e.g., relational, hierarchical).

Data Flow - The direction in which information passes from one point to another within an organization or function. Within an automated system, data flow is the passing of data from one program to another.

Distributed Processing - A network of computers distributed over a geographical area, in which each computer performs a part of the organization's data processing and each computer communicates with the host computer (and usually each other) and its data bases.

Drive - A disk drive or a tape drive connected to and controlled by the computer. Both are data storage devices.

Enhancements - Changes to a program (or to a system of programs) which, though not essential for operation, improve the system or program.

Functional Systems Requirements - A statement of the functions which a system is to perform in order to meet the requirements of its intended users.

Gigabyte - A billion bytes (actually 1,000 Megabytes).

Hardware - The computer and any electronic, mechanical, or electromechanical devices connected to it, such as printers, CRT terminals, tape drives, disk drives, controllers, modems, etc.

Integrated - Blended, merged, combined. An integrated system is a system of subsystems serving more than one part of an organization, sharing the same data bases.

Interface - Method of communicating between devices.

Kilobyte - 1,024 bytes. (Note: although kilo means 1,000, a kilobyte is actually 1,024. Thus, a microcomputer with 256K-bytes of memory actually has 1,024 x 256, or 262,144 bytes.)

Logical Design Process - That part of the process of designing an automated system in which the logical functions of the system's applications are spelled out.

Mainframe - A term usually reserved for very large computers, having a number of remote terminal devices communicating with it, and often having smaller computers communicating with it. Memory is usually measured in megabytes, while disk storage is usually in hundreds or thousands of megabytes, or in gigabytes.

Megabyte - (From mega, meaning million plus byte) Actually means 1,024,000 bytes since it is 1,000 kilobytes (1,000 x 1,024).

Microcomputer - A small computer, often referred to as a home computer or personal computer whose memory is usually one megabyte or less and whose disk storage is usually confined to one or a few diskettes (though many now can handle 20-megabyte hard disks).

Minicomputer - A computer whose size and power place it somewhere between a microcomputer and a mainframe computer. Minicomputers come in a variety of sizes and powers, some of them approaching a size and power entitling them to mainframe status. Likewise, some microcomputers are now more powerful than the minicomputers of just a few years ago.

Modem - (From modulator/demodulator) A device through which a computer communicates with another computer or with a remote CRT terminal over telephone circuits.

On-Line Inquiry - An application which enables a user to enter some key data item onto a screen, based on which the application program locates and displays information. Example: Enter a jail inmates' names and retrieve personal data (DOB, SSN, height, weight, scars/marks/tattoos) via on-line terminals.

On-Line Update - The act of updating a computer-resident file via an on-line application using a remote CRT terminal.

Operator-Free - An application which does not require an action by a computer operator (such as mounting a tape or executing a program). Synonym: on-line application.

Phased Development - The process of implementing an automated system in discrete phases based (usually) on function. Example: implement on-line booking system first, then prisoner management.

Prototype - (From proto, meaning first or earliest) An original, or first of its kind. When used to describe an automated system, the term can mean the first system of its kind, or it can mean the first location where a new system is implemented.

Processing Modes - The modes (or methods) by which data can be processed on a computer. There are two: batch and on-line.

Program - A set of instructions to a computer, written in a particular programming language and translated into language that is understood by the computer.

Programmer - A person who writes computer programs.

Remote Invocation (of Batch Processing) - The act of executing a batch program on a computer using a remote device to send the execution command.

Software - Computer programs.

Subsystem - A smaller automated system which works as a part of a larger system.

Systems Analyst/Systems Designer - A person who, being qualified by education and experience, analyzes existing operations within an organization and designs automated systems to improve manual or automated procedures. (The terms are nearly synonymous, as systems designers are normally systems analysts who have reached the design level of proficiency.)

Technical Standards - A set of rules or guidelines to be followed by systems analysts, systems designers, computer programmers, etc., to measure the quality expected or required for automation and in some cases to specify the approach to achieving the desired results.

Terminal - A device which is connected to a computer, either by direct cabling or through modems, by which users send and/or receive data from the computer. Examples: CRT terminal for both input and output, remote printer terminal for output only.

Update - The act of bringing a record, file or field up-to-date by adding, changing or deleting information.

User-Friendly - A term which indicates that a program, application or system is easy to learn and to use.

APPENDIX B

DATA FLOW DIAGRAMS

The logical data flow diagrams described below are discussed in greater detail in Structured Systems Analysis: Tools and Techniques, by Chris Gane and Trish Sarson. It is not necessary that you read this book to accomplish your job, but it is extremely useful if you understand the diagrams and the meanings of the four symbols used in them.

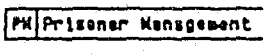
The first symbol is used to represent **external entities.** External entities are people or things that represent a source or destination of information that is "outside" the system. As an example, the arresting officer is an external entity who provides information needed in the booking process. Your county's probation department is an external entity if it receives information from the system, such as a daily resume of bookings. An external entity can be symbolized by a square with the top and left sides in double thickness. On a diagram, the square will be labeled to identify the source or destination.

The second symbol is an arrow with the arrowhead showing the direction of **information flow.** If information flows both to and from a particular point, the flow can be diagrammed either as two arrows, one in each direction, or a single arrow with arrowheads at both ends. The information that is passed along the arrow should be written alongside it.

The third symbol represents **functions or processes.** This component represents some action (add, change, print or display) taken on the information that results in a product. A function or process is represented by an upright rectangle with rounded corners and may be divided into three areas.

In practice, a number is usually assigned to the process for the purpose of identification. The booking function shown above actually breaks down into smaller processes, and these processes are identified as a decimal of the assigned booking function number. As an example, the medical pre-screening process might become 1.3, and 1.4 might become the property inventory process. The description should be a short narrative sentence, the simpler the better. The location where performed is often omitted, but, when used, it need only describe the physical location where the function or process is conducted.

The final symbol represents a **data store.** Simply stated, a data store is a place where information is stored or comes to rest between processes. There will be functions or processes that put information into these stores, others that only use information from them, and still others that both use and enter information from one or more data stores. A data store is represented by a pair of horizontal parallel lines which are closed at one end. Each store is identified by a label and a description that is meaningful to the user.



Once you understand the four symbols used in data flow diagrams, you must next understand the process of designing "top-down" and the technique of "exploding" the diagrams. It may seem virtually impossible for any one individual to sit down and

list every task performed in a jail facility, yet that is exactly where you need to end up. The best method of getting there is to start with broad generalities and gradually refine these generalities down to more specific units and then, finally, down to the specific tasks. In the terminology of this book, those generalities are called **functions;** the more specific units are called **processes,** and the specific duties are called **tasks,** all of which comprise the components of the "top-down" design methodology. Diagram A is a **process** level diagram, and Diagram B is an example of a **task** level diagram.

Diagram A

CJ104 Manage Local Arrest Record Function

Process Level Diagram
Revised 6-10-85

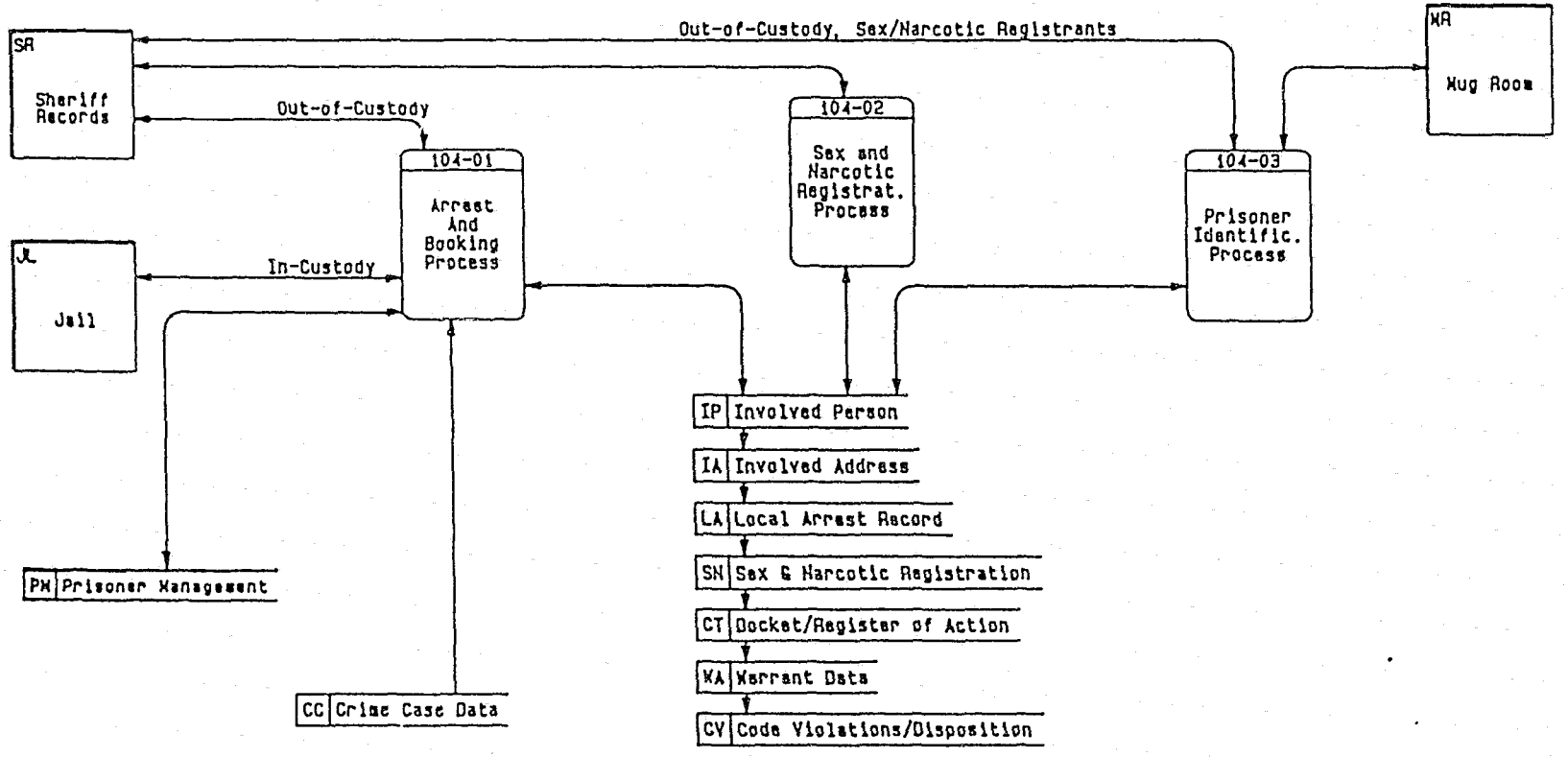


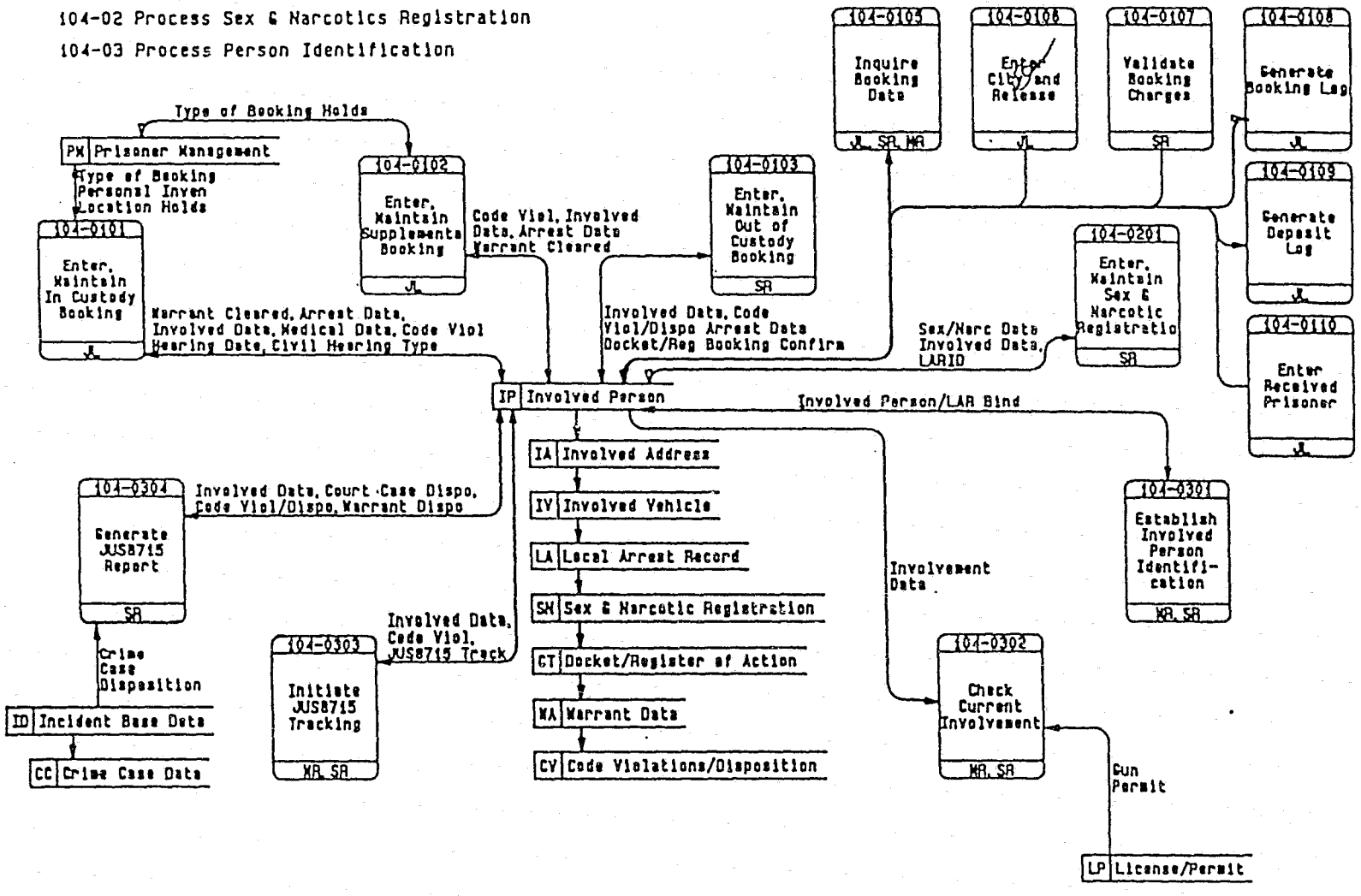
Diagram B

CJ104 Manage Local Arrest Record Function — Task Level Diagram — Revised 1-7-84

104-01 Process Arrest & Booking

104-02 Process Sex & Narcotics Registration

104-03 Process Person Identification



APPENDIX C

SURVEY RESULTS

TABLE 1

COUNTIES REPORTING DETENTION FACILITY AUTOMATION

Total = 20

COUNTY	ADP	AUTOMATION STATUS*	INTEGRATED?
Colusa	42	Partial	No
Del Norte	55	Most	No
Napa	128	Partial	No
Yolo	247	Partial	No
San Luis Obispo	262	Most	No
Shasta	275	Most	Partial
Santa Cruz	407	Most	No
Sonoma	436	Partial	No
Santa Barbara	588	Most	Most
Stanislaus	693	Partial	No
Contra Costa	871	Most	No
San Mateo	897	Most	Partial
Ventura	1,240	Comprehensive	No
San Francisco	1,585	Most	Yes
Kern	1,898	Most	No
Alameda	2,521	Comprehensive	Partial
Santa Clara	2,756	Most	No-In future
Orange	2,906	Partial	No
San Diego	3,103	Most	No
Los Angeles	16,865	Most	No
San Bernardino	1,200	Partial	No

*Partial refers to automation of three major functions or less (e.g., booking, classification, inmate jail records).

Most refers to counties having most of their major jail functions automated.

Comprehensive refers to not only major jail functions but includes specialty features and complete inmate management reports.

TABLE 2

STATUS OF INTEGRATION IN AUTOMATED COUNTIES

TOTAL = 20

	A LOCAL ARREST RECORDS		B WARRANTS		C MUNI COURT		D SUPERIOR COURT		E D.A.		F PROBATION		G PUBLIC DEFENDER	
	A	I	A	I	A	I	A	I	A	I	A	I	A	I
1. Colusa	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No
2. Del Norte	Yes	Yes	Yes	Yes										
3. Napa	Planned													
4. Yolo	None													
5. San Luis Obis.	Yes	Yes			Yes	No			Yes	No				
6. Shasta	Yes	Yes							Yes	Yes				
7. Santa Cruz									Yes	No				
8. Sonoma	No	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
9. Santa Barbara			Yes		Yes		Yes		Yes		Yes			
10. Stanislaus	None													
11. Contra Costa	Yes	No			Yes	No	Yes	No						
12. San Mateo	Yes	No	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No
13. Ventura	Some	No	Yes	No	Yes	No	Yes	No	Some	No	Yes	No	No	No
14. San Francisco	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15. Kern	Yes	Yes	Planned No	No	No	No	No	No	Jan '87	No	PC Some	No	No	No
16. Alameda	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
17. Santa Clara	Yes	No	Yes	No	Yes	No	Yes	No	No	No	Yes	No	No	No
18. Orange	No	No	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
19. San Diego	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No		
20. Los Angeles	Yes	Yes	Yes	'87	Yes	'88-89	'88-89	'88-89	Yes	'88-89	'88-89	'88-89	'88-89	'88-89
21. San Bernard.	Yes	Yes	Yes	Yes	Yes	'88-89	'88-89	'88-89	No	'88-89				'88-89

TABLE 3

COUNTIES REPORTING DETENTION FACILITY
AUTOMATION BY FUNCTION

TOTAL = 20

	BOOKING RECEIVING	INMATE I.D.	CLASSIFICATION	INMATE JAIL RECORDS	INMATE RELEASE DATE	INMATE PERSONAL FUNDS	COURT APPOINTMENTS	INCIDENT REPORTS	DISCIPLINARY RECORDS	INMATE POPULATION RECORDS	INMATE HOUSING LOCATION	MEDICAL PRE-SCREENING	MEDICAL RECORDS	INMATE WELFARE FUNDS	INMATE WORK ASSIGNMENTS	INMATE EDUCATION	INMATE EXERCISE AND RECREATION	OTHER AUTOMATED FUNCTIONS
COLUSA	X						X											
DEL NORTE	X	X	X	X	X	X	X	X		X	X	X	X		X			
NAPA	X			X	X		X			X								
YOLO		X			X						X							
SAN LUIS OBISPO	X	X	X	X	X			X		X								
SHASTA	X		X	X	X		X			X	X	X	X					COMMISSARY
SANTA CRUZ	X	X	X	X	X	X	X			X	X							VISITING
SONOMA*	X		X	X	X		X			X	X	X						SHIFT REPORT, ALPHA LISTING
SANTA BARBARA	X	X	X	X	X	X	X		X	X	X	X						TIME COMPUTATION CLASSIFICATION IS ON A PC BUT WORKS OFF HOUSING FILE VISITATION ROSTER
STANISLAUS		X				X								X				INMATES IN CUSTODY
CONTRA COSTA	X	X	X	X	X	X	X			X	X	X	X	X				
SAN MATEO	X	X	X	X	X		X			X	X							ENROUTE BOOKING
VENTURA	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		SPECIAL DIETS, VISITING, COURT CASE DISPOSITION, PROPERTY, BOARDING INFO
SAN FRANCISCO	X	X	X	X	X		X	X		X	X				X	X		INSTANT REPORTS ON BOOKING, CLASS STATS, STC PROGRAM
KERN	X			X	X	X	X			X	X	X						
ALAMEDA	X	X	X	X	X	X	X	X	X	X	X		3/87					CONTRACT BILLING, IWF COMMISSARY, SALES & INVENTORY, STC TRAINING RECORDS, MOVEMENT HISTORY, HOUSING HISTORY
SANTA CLARA	X		X		X		X			X	X	X						WORK FURLOUGH,WEEKENDERS COMMUNITY WORK PROGRAM
ORANGE	X			X	X		X			X	X							
SAN DIEGO	X	X	X	X	X	X	X			X	X	X		X	X			
LOS ANGELES	X	X	X	X	X		X		X	X	X	X			X	X		VISITING COMMISSARY WORK FURLOUGH
SAN BERNARDINO	X	87	X	X	X	X			87	X	X	X	87	87	87			WEEKENDER CASH BAIL RECEIPTS COMMITMENT WORK-UP

*With exception of booking, Sonoma reports that the other functions are "reference only"

TABLE 4

CONFIGURATIONS FOR AUTOMATED COUNTIES

	CENTRAL COMPUTER ROOM			OPERATED BY			SOFTWARE			EQUIPMENT
	A IN YOUR AGENCY	B CENTRAL DATA PROCESSING	C PRIVATE COMPUTER FIRM	A EMPLOYEES OF YOUR AGENCY	B EMPLOYEES OF COUNTY DATA PROCESSING	C PRIVATE FIRM	A IN HOUSE	B PACKAGE	C CUSTOM	MAKE, MODEL QUANTITY
1. Colusa	Yes			Yes			X			TELEVIDEO MODEL TS-16054
2. Del Norte	Yes			Yes				ITS BOOKING/ POP. FILE	X	IBM HARD DISK PC
3. Napa		Yes			Yes		X		X	1-SPERRY 1100 1-SPERRY MAPPER 10
4. Yolo	Yes			Yes			X			IBM XT - BASIC JAIL MANAGEMENT IBM PC - STORES MANAGEMENT
5. San Luis Obispo		Yes			Yes		X	IBM SQL/DS	X	IBM 4341 AND 4381
6. Shasta		Yes			Yes			NOT REPORTED		HARRIS 800-A712 ESPIRIT TERMINAL MODEL 6310
7. Santa Cruz		Yes			Yes			INSCAN PROMIS JAIL MOC		CEE DATA MODEL 1218 (APPROXIMATELY 15)
8. Sonoma	Yes			Yes	Yes		X	SEARCH JAMS 11		IBM SERIES I, 8 IBM 3101 TERMINALS 1 IBM XT
9. Santa Barbara		Yes			Yes				Yes	MAINFRAME IBM SERIES 1 IBM PC XT
10. Stanislaus		Yes			Yes				Yes	IBM 3178C IBM PRINTER 3287
11. Contra Costa	Yes			Yes			X			1 DATA GENERAC ECLIPSE C-350 FOR JAIL AUTOMATION, 1 FOR MESSAGE SWITCHING
12. San Mateo		Yes			Yes	Yes		X	Yes	DEC POP 11-70 (1) DEC POP 11-34 (1) IBM 4341 (1)
13. Ventura	Yes				Yes		X			AP 3000 III, HP 2631 TERMS (22) MANUS. TERMS (15) VISUAL TERMS (3) T.I. PRINTERS (3)
14. San Francisco	Criminal Justice Agency				Yes		X			IBM 4381 (2) WANG VS 100 (1) IBM & WANG PERIFS.
15. Kern		Yes			Yes		X			IBM
16. Alameda		Yes			Yes		X			IBM AF AND IBM 3200 SERIES CRT
17. Santa Clara	Yes	Yes		Yes	Yes		Yes	Yes	Yes	DEC POP 11-44
18. Orange		Yes				FMO County Equipment	X			SPERRY 1100 MF SPERRY UTS 20W TERMINALS
19. San Diego		Yes			Yes		X			CRT - IBM 3278 PRINTERS, IBM 3278 3033, 3083 MF 3705 CONTROLLER
20. Los Angeles		Yes			Yes		X			IBM
21. San Bernardino		Yes		Yes					Yes	CRT-IBM 3179 MEMOREX PRINTER 2087, 2068 MODEL 2A, IBM 3274/41C

TABLE 5

MANAGEMENT STATISTICS AVAILABILITY
IN AUTOMATED DETENTION SYSTEM

	A Bookings By Offense Type	B Population By Offense Type	C Population By Category (Male-Fem.)	D Average Length of Stay Per Inmate	E Other
1. Colusa					
2. Del Norte					
3. Napa	Yes	Yes	Yes	Yes	
4. Yolo			Yes		
5. San Luis Obispo	Yes	Yes	Yes	Yes	
6. Shasta	Yes		Yes		Contracts, ICOF
7. Santa Cruz	Yes	Yes	Yes		
8. Sonoma			Yes		Incidents by type, location and time of day
9. Santa Barbara	Yes	Yes	Yes	Yes	Bookings by agency, bookings by jail facility
10. Stanislaus					
11. Contra Costa	Yes	Yes	Yes		
12. San Mateo	Yes	Yes	Yes	Yes	State billing, limited access
13. Ventura	Yes		Yes	Yes	Age, race, sex, accounting reports, booking by arresting agency
14. San Francisco	Yes	Yes	Yes	April '87	Instant availability all class
15. Kern			Yes		
16. Alameda	Yes		Yes	Yes	Classification activity, IWF Commissary Survey, STC activity, daily activity reports & monthly appointmnts
17. Santa Clara	Yes		Yes		
18. Orange			Yes		A, B and D anticipated in next fiscal year
19. San Diego	Yes		Yes	Yes	Release by type, bookings by agency, age, race analysis, bookings by time
20. Los Angeles	Yes	Yes	Yes	Yes	Not considered accurate or timely, revision in progress
21. San Bernardino	Yes	Yes	Yes	Yes	ADE, Race, Sex - Breakdown in Custody Crime Reports - Bookings by arresting agency

TABLE 6

FOR FISCAL YEAR 1985-86 COUNTIES BY
OPERATIONAL BUDGET AND STAFFING ALLOCATION

	A 1985 COUNTY POPULATION	B OPERATIONAL BUDGET*	C PEACE OFFICERS PC 830.1	D CUSTODIAL OFFICERS PC 831	E CLERICAL	F OTHERS
1. Colusa	14,700	463,100	4	12	None Reported	None Reported
2. Del Norte	18,800	314,489	7		None Reported	None Reported
3. Napa	104,000	1,200,000	0	33	3	5
4. Yolo	124,000	2,832,970	46	0	1	7
5. San Luis Obispo	190,100	2,300,000	3	34	7	3
6. Shasta	131,700	5,824,880	65	0	16	10
7. Santa Cruz	214,300	3,790,000	9	75	3	32
8. Sonoma	335,400	9,800,000	2	142.4	31.95	25.5
9. Santa Barbara	334,600	7,100,000	24	98	18	22
10. Stanislaus	304,900	No Response	2	53	6	2
11. Contra Costa	717,600	14,000,000	168	0	21	29
12. San Mateo	616,600	12,549,519	113	45	16	1
13. Ventura	600,200	14,118,000	137	138**		None Reported
14. San Francisco	735,000	18,802,982	300	0	3	None Reported
15. Kern	480,600	19,189,580	201	70	34	10
16. Alameda	1,197,000	20,500,000	390	0	83	55
17. Santa Clara	1,600,000	66,000,000	685	0	305	100
18. Orange	2,127,900	No Response	733	0	55	149
19. San Diego	2,131,600	28,826,927	439	0	154	120
20. Los Angeles	8,085,300	158,677,448	1,829	77		619***
21. San Bernardino	1,086,400	2,266,553	130	0	25	23

FIGURE 1

COUNTIES WITH DETENTION FACILITIES AUTOMATION IN PROGRESS

COUNTY	AVERAGE DAILY POPULATION	1985 COUNTY POPULATION
GLENN	48	23,200
MARIN	251	226,100
MONTEREY	743	329,700
SACRAMENTO	1811	893,800
SAN BERNARDINO	1608	1,086,400

AUTOMATION CONFIGURATION FOR COUNTIES IN PROGRESS

COUNTY	CENTRAL COMPUTER ROOM			OPERATED BY			SOFTWARE			EQUIPMENT
	A IN YOUR AGENCY	B CENTRAL DATA PROCESSING	C PRIVATE COMPUTER FIRM	A EMPLOYEES OF YOUR AGENCY	B EMPLOYEES OF COUNTY DATA PROCESSING	C PRIVATE FIRM	A IN HOUSE	B OUTSIDE PACKAGE	C CUSTOM	MAKE, MODEL QUANTITY
GLENN	YES			YES				YES		SPERRY SERIES 5000 MODEL 1100
MARIN		LIKELY			LIKELY					IBM
MONTEREY		LIKELY			LIKELY		---- U N K N O W N ----			?
SACRAMENTO		YES			LIKELY		YES	YES	YES	IBM 3083 LIKELY 30XX
SAN BERNARDINO		YES		YES					YES	IBM

DETENTION FACILITY OPERATING BUDGET AND STAFFING FOR FISCAL YEAR 1985-86

COUNTY	OPERATIONAL BUDGET	PEACE OFFICERS	CUSTODY OFFICERS	CLERICAL	OTHERS
GLENN	572,884	1	16		1
MARIN*	1,375,175**	29		5	
MONTEREY	7,628,418	118		11	14.5
SACRAMENTO*	22,000,000	220		79	29
SAN BERNARDINO	2,266,553	130		25	23

* Included only main jail figures
**Does not include Honor farm

TABLE 7
COUNTIES WITHOUT DETENTION FACILITY AUTOMATION

COUNTY	1985 COUNTY POPULATION	ADP	FY 1985-86 OPERATING BUDGET	STAFFING			
				PEACE	CUSTODY	CLERICAL	OTHERS
ALPINE	1,200	NA	NA	NA	NA	NA	NA
AMADOR	23,400	17	617,311	3	8	1	0
BUTTE	164,000	240	3,417,292	1	39		9
CALAVERAS	26,800	32	595,457	1	9	1	2
EL DORADO	18,800	153	2,156,263	19	23	0	4
FRESNO	576,200	1,405	10,978,349	1	184	30	29
HUMBOLDT	113,009	176	1,600,000	1	30	1	0
INYO	18,400	44	1,500,000	11	0	1	5
LAKE	48,300	60	1,558,518	6	17	1	3
LASSEN	24,600	39	365,000	2	9	0	0
MADERA	76,300	277	2,287,645	0	41	6	3
MARIPOSA	13,400	16	750,000	0	11	0	1
MENDOCINO	73,800	156	1,872,486	1	37	1	13
MERCED	160,500	424	2,783,696	0	61	3	5
MODOC	9,500	18	122,677	3	5	1	0
MONO	9,300	10	396,700	0	16	0	0
NEVADA	68,300	107	1,335,217	12	22	2	3
PLACER	138,400	157	1,040,571	35	0	7	19
PLUMAS	19,200	26	232,602	0	8	0	5
*RIVERSIDE	820,600	1,152	14,305,000	90	162	13	42
SAN BENITO	30,500	59	462,178	18	16	3	1
SAN JOAQUIN	416,700	901	8,211,991	65	66	19	6
SIERRA	3,500	7	38,000	4	4	0	0
SISKIYOU	42,800	51	753,760	8	5	0	2
SOLANO	275,200	510	6,000,000	5	107	15	19
SUTTER	58,500	161	1,120,244	21	0	0	2
TEHAMA	44,300	80	682,473	11	18		
TRINITY	13,600	25	411,532	26	9	2	2
TULARE	280,500	624	4,698,900	50	0	2	4
TUOLOMNE	40,800	62	566,000	0	22	0	2
YUBA	54,300	133	845,237	20	0	1	3

* Riverside peace officer and custody categories include support services.

APPENDIX D

SHERIFF'S DEPARTMENT CONTACTS FOR JAIL AUTOMATION

Alameda County
B. A. Wilkinson
Lieutenant
1225 Fallon
Oakland, CA 94612
415/272-6919

Alpine County
Archie P. Wood, Jr.
Sheriff
P.O. Box 278
Markleeville, CA 96120
(No Detention Facility)

Amador County
Emmett L. Rettagliata
Jail Commander
108 Court Street
Jackson, CA 95642
209/223-6506

Butte County
Helen Ryan
Sergeant
#33 County Center Drive
Oroville, CA 95965
916/534-4471

Calaveras County
R. O. Black
Lieutenant
P.O. Box 729
San Andreas, CA 95249
209/754-4201

Colusa County
Scott D. Marshall
Lieutenant
929 Bridge Street
Colusa, CA 95932
916/458-2115

Contra Costa County
David L. Fry
Data Processing Analyst
651 Pine Street
Martinez, CA 94553
415/372-2437

Del Norte County
John P. Fay
Undersheriff
650-5th Street
Crescent City, CA 95531
707/464-4191

El Dorado County
Ed Newman
Captain
300 Fair Lane
Placerville, CA 95667
416/626-2496

Fresno County
Doug Papagni
Lieutenant
P.O. Box 1788
Fresno, CA 93717
209/488-3005

Glenn County
Mick Carter
Lieutenant
543 West Oak
Willows, CA 95988
916/934-4631

Humboldt County
Robert G. Williams
Captain
826 4th Street
Eureka, CA 95501
707/445-7572

Imperial County
Michael T. Schneewind
Chief Deputy, Corrections
P.O. Box 1040
El Centro, CA 92244
619/339-6301

Inyo County
Dennis R. Bacoch
Lieutenant
P.O. Drawer S
Independence, CA 93526
619/878-2441

CONTACTS FOR JAIL AUTOMATION (Continued)

Kern County
Al Gutierrez
Chief Deputy
1350 Norris Road
Bakersfield, CA 93308
805/861-7535

Kings County
Bob Begley
Captain
1444 W. Lacey Blvd.
Hanford, CA 93230
209/584-1431

Lake County
Jeffrey B. Markham
Lieutenant
375 Third Street
Lakeport, CA 95453
707/263-2336

Lassen County
Ron Jarrell
Sheriff
Courthouse Annex
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