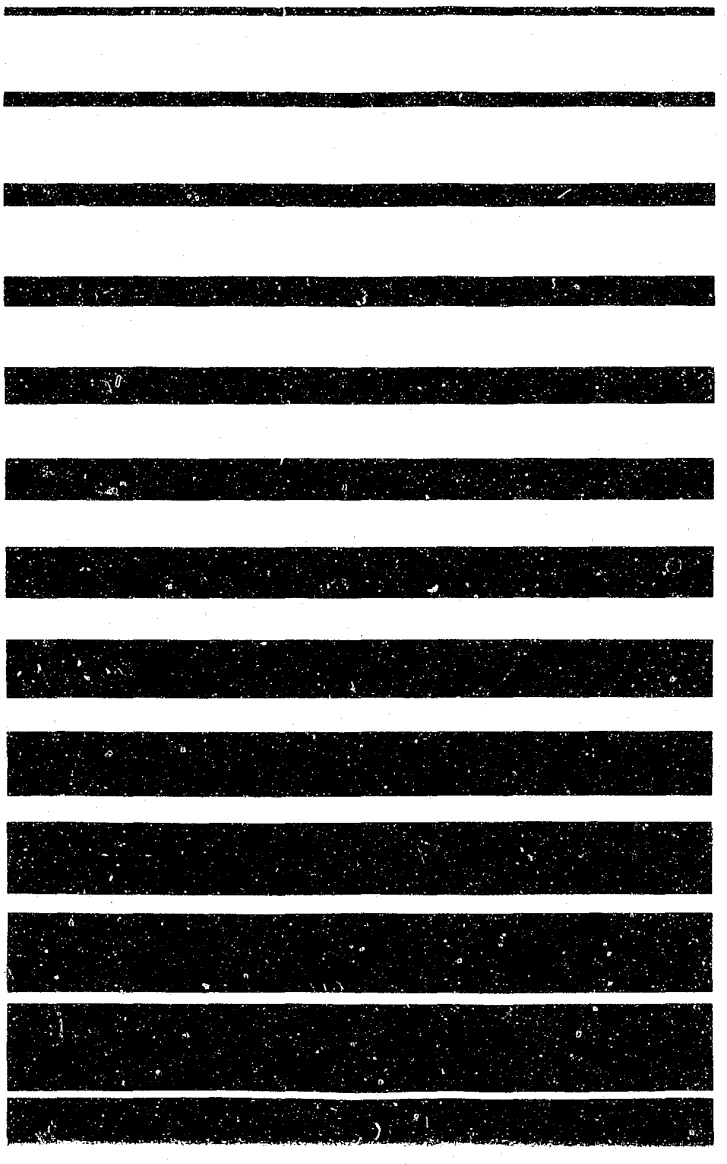
U.S. Department of Justice National Institute of Corrections

How to Collect and Analyze Data

A Manual for Sheriffs and Jail Administrators



HOW TO COLLECT AND ANALYZE DATA:

A MANUAL FOR

SHERIFFS AND JAIL ADMINISTRATORS

PREPARED BY:

GAIL ELIAS

SENIOR ASSOCIATE

VOORHIS ASSOCIATES, INC.
BOULDER, COLORADO

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PREFACE

WHO SHOULD USE THIS DOCUMENT - AND WHO WON'T NEED TO:

Although the title of this document, How To Collect and Analyze Data: A Manual for Sheriffs and Jail Administrators, should make it clear that this document has been written for individuals who are in policy-making roles in corrections, this doesn't imply that others in the chain of command, from lieutenants to line officers, won't also find it helpful. On the contrary, it should be helpful to anyone who suddenly finds themselves in the position of having to gather information about jail problems, policies and practices. How to Collect and Analyze Data concerns itself with both on-going and special issue data collections in local jails.

Those of you who have been involved in doing in-house data collections, who have crime analysts or statisticians on your staffs will find that many of the items covered in this manual are familiar. This manual is not intended for criminal justice policy analysts, planners, or other individuals who regularly work with statistics, information systems or techniques like systems analysis.

WHAT THIS MANUAL WILL - AND WILL NOT - DO:

This manual can not be all things to all people. It will not teach you everything you ever needed to know about statistics, but it will make you a more informed consumer of the statistics you receive. It will also provide a basic explanation of common statistics that is written in English, not statistical jargon. It will not teach you how to design the most up-to-date computerized management information system, but it will help you identify the elements that should be included in such a system and will provide some help in setting up a manual information system. It will not make you into a criminal justice policy analyst, but it will give you the opportunity to analyze some real data and show how that information was used in policy decision-making in other criminal justice systems.

This manual has several goals:

1. to identify reasons why corrections policy-makers should collect data;

2. to "de-mystify" statistics and data collection procedures;

3. to provide tips on how to collect data in the simplest, easiest, most efficient way possible that allows policy-makers to draw valid conclusions;

4. to provide an opportunity to practice your analytical skills; and

5. to provide guidelines which ensure that the information collected can be displayed clearly and effectively so that county officials, other agencies and the public can understand it.

A WORD ABOUT GOOD DETECTIVE WORK:

I hope that you find this manual to be a useful tool which introduces you to a new way of understanding and solving problems. Statistics are just one more tool that managers can use to "get the facts". That's all that analysis really is. Analysis is very much like good detective work. It involves looking at a series of facts and trying to piece together a picture of what has happened.

Those of you whose background is in law enforcement actually have a head start on many individuals who are just beginning to try to analyze information. Many of the skills are the same. You will still need to "play your hunches". You still need to think things through deductively. The tools that you will be using may be strange to you at first, but once you're used to them, they'll be as comfortable as the tools you've used to solve your cases. I hope this manual makes you feel more at home with data and encourages you to try to apply these tools to solving the problems your jail and your criminal justice system face.

Gail Elias, 1982

INTRODUCTION

At times, correctional systems appear to be slowly sinking under the weight of their own paperwork. Together with law enforcement and the courts, jails document tremendous amounts of information.

- Law enforcement officers complain about the paperwork associated with arrests and complaints.
- Court personnel document countless appearances and dispositions in addition to the text of every hearing.
- Jail staff document details, like descriptions of inmate property, operational procedures, head counts, incidents which occur while an individual is in custody, etc.

Considering the vast amounts of time involved in these activities, it is frustrating and disheartening to think that so little of the information is captured so that it can easily be retrieved and used for management decision making. However, this state of affairs isn't too surprising when you stop to think about the purpose of the multiple record keeping systems found in the criminal justice system. These systems are designed to store information about people or events; information is put together on a "case by case" or "event by event" basis. The way in which information is identified for each system often makes it impossible to look for information in any other way searching through the entire record keeping system, file by file.

TRADITIONAL RESOURCES HAVE FAILED TO HELP

When Sheriffs and Jail Administrators have tried to learn how to collect jail data or set up a management information system in the jail, many found that the traditional resources available to them were very helpful. Usually, they turned to one of the following resources:

- statistics coursework;
- information systems coursework or computer programming; and
- research methods.

RESOURCE #1: INTRODUCTORY STATISTICS COURSES

Most statistics courses focus on mathematical foundations of statistics, derivations, and computation, which are things most correctional managers don't need to know. Calculators can perform these computations for you. And memorizing statistical formulae doesn't make a whole lot of sense, since they are readily available in texts or pre-programmed calculators. Yet frequently, that's what success in statistics coursework requires.

In addition, most statistics courses require breaking through a statistical language barrier. Not only do you have to deal with mathematical formulae, but you also have to deal with phrases like, "ninety-five percent

confidence intervals", "significant at the .001 level", and "non-parametric tests of significance", which mean little at first exposure to statistics. And the explanations of these terms are often worse than the terms themselves! THIS MANUAL MAKES A CONCERTED EFFORT TO STAY AWAY FROM STATISTICAL JARGON. From time to time, this manual will tell you what the statistical term is for the concept we've been discussing in plain English. This may be necessary as preventive medicine - so that you don't suffer cardiac arrest the first time a serious student of statistics starts throwing Standard Deviations and Sampling Schemes at you. If any statistical terms are introduced, they'll be defined in the text and then summarized in Appendix A: A Dictionary of Statistical Terms for Non-statisticians.

In the long run, introductory statistics classes don't deal well with analysis, which is precisely what the Sheriffs and Jail Administrators hope to get from these courses. Analysis is really just the process of figuring out what something means and what, if anything, can be done about it. Statistics are tools that can aid in the process, not the process itself. Sheriffs and Jail Administrators need to apply this tool to solve "real-life" problems. Instead, in most statistics classes, they get a series of instructions on how to make the tool. As a result, beginning statistics courses leave most Sheriffs and Jail Administrators frustrated, confused - or very, very bored. This manual will avoid statistical jargon, focus on statistical assumptions, and expose Sheriffs and Jail Administrators to data analysis and its resulting statistics.

RESOURCE #2: INFORMATION SYSTEMS SEMINARS

Information systems seminars often focus on the machine and forget about the information. This fails to help many Sheriffs and Jail Administrators, because many organizations can't afford to purchase or design their own automated (computerized) information system. And many Sheriffs and Jail Administrators attend these seminars to find out the data elements they should include in any system they may develop at a later date.

Actually, the process for designing a manual system is a precursor for designing an automated system. However, many system designers don't emphasize this point, because they have an investment in your purchasing their hardware (the computer) and their software (the programs). This may turn out to be a sizeable investment when programs have to be tailored to meet the needs of a specific department. Sheriffs and Jail Administrators who don't have the resources to invest in a system of this type may hope they can buy a mini-computers and program it to meet their needs. However, problems in learning programming languages and in making the time commitment associated with entering data into the computer frequently make these individuals re-consider.

Frequently, too, the language associated with information systems is even more confusing than that associated with statistics, but everybody picks up the "buzz words". And conversations are spiced with words like, "Data base, integrated, distributive network, and others. None of this seems to help much when all you really wanted to know is how to reorganize your files so that you could find out how many pre-trial felons you held for more than a month in 1980 by some easier method than looking at all the prisoner files and the shift activity sheets for that year. In frustration, many Sheriffs and Jail Administrators throw up their hands and continue

gathering information like they had in the past, or they don't collect the information at all. This manual will provide assistance in designing a manageable, manual information system.

RESOURCE #3: RESEARCH METHODS

Sheriffs and Jail Administrators who try traditional research or program evaluation coursework actually may have more of their specific questions answered than those who try the previously mentioned resources. Research methods or program evaluation coursework will provide some answers for those who want to know how to go about defining problems, designing questionnaires, and organizing data collections.

However, there are several problems attached to this resource as well. Research methods too, has a language of its own, and the complexity of research designs which require control and experimental groups may seem unrealistic to Sheriffs and Jail Administrators who rapidly come to the conclusion that the researcher thinks the organizational world revolves around his/her research. This simply isn't and can't be so for corrections.

The jail's often competing missions of safety, security and service do not mesh well with traditional research models. As a result, there is a tendency to "throw out the baby with the bath water" and disregard aspects of these courses which are useful, because other aspects make very little sense to Sheriffs and Jail Administrators who are faced with real decisions and real problems. This manual will provide "real world" research methods that can help with jail management.

ADDITIONAL RESOURCES:

Within the last year, a number of manuals and materials that deal with data collection issues have been published by a variety of agencies. Unfortunately, many of these resources are unknown to Sheriffs and Jail Administrators. Many of these manuals are very, very thick documents, which intimidate by virtue of their very size. Other documents are written by planners, for planners, and assume that the reader shares a common understanding of terms and techniques with the writer. These tend to be somewhat difficult for non-planners. At the end of this document in Appendix E is an bibliography of data collection manuals and materials with some comments regarding their contents. In addition, in that section, several statistics and evaluation texts, as well as other books on the subject are listed. These should be helpful to those of you getting started collecting and analyzing data and those of you who are organizing an information system.

In spite of the fact that a considerable amount of material has been developed over the last year or two, there is still a surprising lack of materials and resources for those who need to BASIC INFORMATION about how to collect data in their correctional facilities. This manual will help fill that gap by identifying:

1. why you should collect data;
2. how to identify the information that is needed;
3. how to organize a data collection;
4. how to locate and capture that information;
5. how to put the data collection together;

6. how to analyze the information;
7. how to interpret the results; and
8. how to share that information most effectively.

This manual also includes the following resources you may find useful in collecting data:

1. a list of common data elements that jails should begin to collect;
2. a description of the skills needed to collect data;
3. a list of common places where data elements are found in jails;
4. a model manual information system;
5. a sample data collection sheet, code book and a corresponding SPSS (Statistical Package for the Social Sciences) Program that would process it;
6. a short introduction to descriptive statistics;
7. a series of programmed learning exercises to be used to practice your analytical skills; and
8. a series of examples of charts and graphs that can be used to display data.

I hope that you find these resources helpful in getting started and that you adapt them and improve upon them to meet your needs.

CHAPTER ONE:

WHY GOOD MANAGEMENT REQUIRES GOOD INFORMATION

INTRODUCTION:

In the past, managing jails was considered to be something so basic that there was nothing to it. However, in the 1970's, with increased court intervention in correctional matters, demands for better management of correctional facilities increased. The courts discovered that often the difference between a "Constitutional jail" and an "Unconstitutional jail" was the way in which the facility was managed. Since good management relies strongly on good information, Sheriffs and Jail Administrators found that their organizational world had just become a much more complex place in which to work.

As a result, "professional management" arrived in correctional facilities. Sheriffs and Jail Administrators were introduced to a number of techniques, such as cost-benefit analysis, management by objectives (MBO), and organization development (OD) that were designed to help them improve organizational performance. Sometimes these techniques were very helpful, and sometimes less so. In analyzing their relative successes and failures, the relative ability of the organization to generate <u>good, valid</u> information about its problems emerged as a critical variable.

WHAT IS MANAGEMENT?

Management is mostly about mobilizing the resources of an organization, in this case the jail, to solve or "deal with" problems. In many cases, problems are not "solved" in the sense that they "go away", but the organization finds a way to manage them more effectively. Unfortunately, most of the problems confronting jails today are far more complex. However, a basic management formula applies to analyzing both simple and complex situations. It consists of five steps.

1. FACTS are gathered.

2. FACTS are interpreted in light of the organization's MISSION and personal VALUES.

3. ALTERNATIVE SOLUTIONS are developed.

4. A DECISION is made.

5. ACTION is taken.

All of the elements in the formula are critical to its success application. FACTS are the foundation on which everything which follows depends. If the facts are wrong, you are likely to reach the wrong conclusion, make the wrong decision, and take the wrong action. Good detectives don't bring a case to court unless they've gathered the evidence. Correctional managers are in precisely the same position. They should avoid making policy deci-

sions without the best available information. This manual will provide guidelines in this method of getting the FACTS.

WAYS TO GET THE FACTS:

There are two major ways in which facts can be gathered. They are:

- by qualitative methods; and
- by quantitative methods.

Quantitative methods rely on numbers to tell us something about an event or phenomenon; they usually focus on questions like, "How often?" or "How much?". Qualitative methods describe an event or phenomenon. Law enforcement professionals use qualitative methods all the time. Two of the most commonly used qualitative methods are:

- interviews; and
- observation.

Qualitative methods are excellent tools for problem solving. However, even in the hands of trained observers and interviewers, there are some problems attached to using them. First, as human beings, we have certain perceptual biases; we hold certain values and assumptions about the way the world operates. And we interpret all information in the light of these biases and assumptions. Qualitative tools provide few "checks" on these biases.

Another problem associated with qualitative measures lies in the fact that "where we sit often determines where we stand". All the actors in the criminal justice system have specific sets of tasks that they perceive as their "mission". These, together with the expectations that other individuals have of them comprise their role. Because of their roles, the major actors are apt to see the same event a little differently. For example, an individual charged with major narcotic sales may post bond while the court is deliberating. The Court has no problem with this as long as the defendant comes to court. A crowded jail may see the individual as a relatively good risk for release since he/she is not a violent criminal. However, law enforcement will probably have a major problem with this, because they suspect (with good reason) that this individual will probably disappear.

If a researcher approached these actors, with this case fresh in their minds, with questions about changing bonding procedures, undoubtedly different reactions would emerge from the persons who were interviewed. With qualitative methods, the researcher would obtain a great deal of rich, descriptive information, but there would be no way to evaluate how often a situation like the one cited above actually occurs. Nor could the researcher tell how many less spectacular individuals bond out of the jail under far less dramatic circumstances.

Without quantitative data, you have no way of knowing how many people bond out of jail, the level at which bond is set, how many fail to appear, and many other questions that should be answered when bonding criteria are reveiwed. By gathering information in numerical form, we can be more objective. The effects of our own individual perceptual biases can be limited. This is not to say that statistics can't be biased, because they can be.

However, it is rarely the numbers themselves that are biased. Most often, it is their interpretation or representation that is slanted. We will deal with these issues (and how to guard against them) in Chapter 6: How To Analyze Information - or a Short Course in Statistics.

Perhaps the biggest advantage of gathering information in quantitative form is the fact that you can determine just how much error is involved. Not only can you estimate what your chances are of being wrong, but you can also estimate how wrong you're likely to be. In other words, you can identify how many times out of a hundred times you'd come up with a similar answer and how much each new answer would vary from the first one.

In addition to focusing on the FACTS portion of the management equation, this manual will focus specifically on quantitative ways of getting those facts. This is the process we've called collecting, analyzing, interpreting, and displaying data.

WHAT CAN YOU DO WITH DATA?

Sometimes, the hardest thing about collecting data is convincing yourself that it can be useful. On the following pages are three examples that illustrate how jail data can be used to make better management decisions.

EXAMPLE #1: BETTER BUDGETING AND ALLOCATION OF FUNDS

For many jails, budgeting has been a somewhat mystical process, in which the next year's decision is based upon what was spent last year. This figure is then divided into four equal amounts for each of the four quarters. Sometimes, this process "backfires" when additional funding without any unusual circumstances is required because critical variables or changes were not considered.

Let's consider one area of the budget, food service, and apply this approach as well as one that is somewhat different. Last year, in two small, nearly identical facilities with average daily populations of 27 prisoners, $30,000 was spent for food. Operating on the "let's ask for 5% over last year's" approach, Sheriff #1 requests $31,525 for food in the next year's budget. Sheriff #2 decides to try a different approach. The local Consumer Affairs Office advises Sheriff #2 that inflation hit food products heavily last year, causing an increase of 10% in food costs, and that costs are projected to increase by at least 10% next year. Sheriff #2 has also been following increases in the jail population closely. The statistics on Average Daily Population, Length Of Stay and Jail Days (the total amount of days spent by all prisoners in jail during a fixed period of time like a month or year) have also increased regularly. Over the past five years, Jail Days have increased by about 5% each year. Furthermore, Sheriff #2 knows that the jail was fuller from July through December.

Last year, Sheriff #2 calculated that $3.00 was spent on food each day for each prisoner in the facility. At 10% inflation, next year it is anticipated that $3.30 will be necessary to provide the same meals. And, if the population continues to increase, Jail Days will increase to 10,500 for the whole year. As a result, Sheriff #2 asks for $34,650 for food.

Let's assume that Sheriff #2 is also a good politician and that the County Commissioners provide the full amount requested. In addition to dividing the money into four equal amounts of $8,662.50 per quarter that the accountant recommends, Sheriff #2 calculates how much money will <u>really</u> be used each quarter - if the jail population behaves as it has over the last five years. Usually, 19% of the Jail Days fall during the each of the first two quarters of last year; 29% fall during the third quarter; and the fourth quarter accounts for a whopping 33% of the Jail Days. So, by dividing the $34,650 by those percents, Sheriff #2 knows that about $6,583.50 should be spent during each of the first two quarters of the year, $10,048.50 during the third quarter, and $11,434.50 will be needed during the last quarter.

Based on this scenario, assuming Sheriff #2 can stick to the budget, the funds should last through the fiscal year without any difficulty, but Sheriff #1 will have spent all the funds in the food budget somewhere around the first week of December. That's not going to make either the prisoners, cooks or the Commissioners very happy. Similar strategies can be used to calculate future costs of any items supplied to the inmate population. A little information and a relatively simple mathematical procedure helped Sheriff #2 make a more accurate estimate of future expenditures and to monitor the rate at which dollars were being allocated for that purpose. It also got Sheriff #2 a slightly larger budget.

EXAMPLE #2: DEPLOYING STAFF MORE EFFECTIVELY

Jails have traditionally been understaffed; if personnel are among the jail's most precious resources, it is critical that they be deployed in the most effective manner. Let's assume that Sheriff #1 and Sheriff #2 are evaluating their staffing patterns. Both know that their average daily populations are about 27 and that there are about 2,000 bookings a year (about 5 bookings a day).

Sheriff #1 looks at these statistics and decides to staff the Booking Room 365 days a year, 24 hours a day. After all, since prisoners are brought in 7 days a week, 24 hours a day, personnel have to staff the Booking Room. If the shift relief factor is 1.7, 5.1 officers will be needed to cover the Booking Room. When presented with this information, the Board of Commissioners express a great deal of concern about the costs attached to this staffing pattern and refuse to give Sheriff #1 the money to hire additional staff.

Sheriff #2 decides that more information is needed before deciding how to deploy the staff. Because Sheriff #2 suspects that more people are booked during the weekend, a search for data to validate this assumption begins. Sheriff #2 has the Jail Administrator go back over the Booking Log for the previous year and prepare a chart that shows the number of bookings on each shift for the last year by day of the week. Actually, all the Jail Administrator has to do is count the number of bookings that take place on each shift each day of the week. The results look something like this.

SHIFT	MON	TUES	WEDS	THURS	FRI	SAT	SUN	SHIFT TOTAL
12AM-8AM	50	10	20	10	10	300	300	700
8AM-4PM	10	10	10	10	10	150	100	300
4PM-12AM	50	75	75	50	300	300	150	1,000
DAILY TOTAL	110	95	105	70	320	750	550	2,000

TABLE 1: DAILY BOOKINGS BY SHIFT (1981)

Sheriff #2 decides against full-time Booking Officers on all but the 4-12 Shift when the volume of activity on that shift is heavy enough to warrant a full-time position. During the week, on the other shifts, jail staff assigned to other areas should be able to handle any in-coming prisoners. However, weekends are a different matter for the 12-8 and 8-4 shifts when the Booking Room is very busy. Sheriff #2 elects to post one staff member in the Booking Areas during the graveyard and day shifts on weekends with instructions that the "roving jail officer" assigned to each shift will assist in the Booking Room when it's busy. Ultimately, this results in 1.4 staff posted to the Booking Room. When the 1.7 shift relief factor is considered, Sheriff #2 need 2.4 staff for the Booking Room. And the Sheriff believes that this area will be covered more effectively during peak periods of use that it had been in the past.

EXAMPLE #3: DEVELOPING A CLASSIFICATION SYSTEM

Inmate classification systems are one of the most useful tools that Sheriffs and Jail Administrators have to manage the inmate population since housing the right inmates at the right security level is a critical variable in making sure that the jail operates safely and securely. Using good information can be extremely helpful in designing and evaluating classification systems. In states where the classification system is defined by standards, at a minimum, data can tell you how large each classification is likely to be and which inmates are likely to be found in that area. In states which simply require that jails have an inmate classification system, good information can be use to design an even more effective inmate classification system which is based in discovering groups of inmates with related housing and program needs.

The latter situation was the case in the state where Sheriff #1 and Sheriff #2, happen to hold office. Sheriff #1 takes a rather traditional approach to designing a new classification system. Following the lead of many other jails, pre-trial and sentenced prisoners, felons and misdemeanants, and males and females are separated. This seems quite logical to everyone concerned. Unfortunately, Sheriff #1 has a jail in which the inmate living units are all the same size. Equally unfortunately, number of inmates in each of the classifications designed by Sheriff #1 are nowhere near equal.

There are a great many pre-trial felons but very few who are sentenced; there are few pre-trial misdemeanants, but a substantial number of

sentenced misdemeanants, who are there primarily on weekends. Needless to say, Sheriff #1 experiences a lot of crowding in the pre-trial felons' living unit while the pre-trial misdemeanants' area is nearly empty. Cleverly juggling bodies, Sheriff #1 makes it through the week - only to have his classification system fall apart on the weekends when the "weekenders" arrive. Struggling with a crowded jail, Sheriff #1 approaches the Commissioners Commissioners about constructing a new facility. Their response is not available for the record.

Sheriff #2 decides to use the information that is available to analyze the problem of designing a classification system. In consultation with a professor at the local university, Sheriff #2 uses a statistical technique called discriminant analysis (an advanced type of statistic that identifies the variables that differentiate between groups) to identify groups of similar inmates in the jail population. The technique tells Sheriff #2 that there are essentially three groups in his jail population:

- a group of pre-trial felons who stay an average of 90 days, use about 60% of the available jail space, constitute only about 5% of all persons booked at the jail, and about whom there is a <u>great deal</u> of descriptive information;

- a group of sentenced misdemeanants who stay an average of 20 days, use about 30% of the available jail space, constitute about 15% of all persons booked at the jail, and about whom there is a <u>great deal</u> of descriptive information; and

- a group of other pre-trial felons and misdemeanants who have nothing in common except for the fact that they stay less than three days, comprise the other 80% of the people booked at the jail, and about whom there is relatively little information, other that the fact that nearly all of them are released on some kind of bond.

Sheriff #2 decides to structure the classification system around these three groups: one classification for long-term pre-trial detainees; one classification for sentenced prisoners; and an intake classification. The idea seems even better when the professor confirms one of Sheriff #2's suspicions: the two non-intake classifications consist of very different individuals with very different program needs and security requirements.

The PRE-TRIAL DETAINEES are:	The SENTENCED PRISONERS are:
1. charged with felony-level property crimes;	1. charged with traffic offenses;
2. three or four time offenders;	2. two or three time offenders;
3. unemployed at the time of arrest;	3. employed at the time of arrest;
4. high school drop outs;	4. high school graduates;
5. drug abusers;	5. alcohol abusers;

6. single;	6. married, with at least two dependents;
7. aged 18-22;	7. aged 28-40;
8. involved in between 1 and 5 incidents while in custody; and	8. involved in few if any incidents while in custody; and
9. are ultimately placed at either the State Reformatory, State Prison, or on intensive probation.	9. are ultimately returned to the community, unsupervised, following release.

Sheriff #2 remembers a number of individuals from the pre-trial group all too well! They tend to be trouble-makers unless staff closely supervises them and makes sure that they are very active. Sheriff #2 also remembers the sentenced group quite well. Many of them are trustys; most of them are no problem in the facility. Their major problems are caused by alcohol abuse and the mandatory jail sentences required for second offense DUI.

Since Sheriff #2 also knows how many Jail Days each group spent in the facility during the last year, it is easy for the professor to translate that statistic into the number of beds required for each classification (the number of Jail Days divided by 365). Sheriff #2 decides that the sentenced classification can participate in a community work program during the day and attend an alcohol treatment program sponsored the local Alcoholics Anonymous at night. This idea is so popular with the Commissioners that they authorize Sheriff #2 to hire a Work Program Coordinator to keep the sentenced prisoners busy working on community projects!

CONCLUSION:

The rather "tongue in cheek" examples cited above are only three of many cases which illustrate ways in which good information can be used to help Sheriffs and Jail Administrators manage more effectively. Generating and using good data is a critical aspect of dealing with jail issues such as:

1. crowding;
2. facility planning;
3. policy and procedure development;
4. controlling violence in facilities;
5. managing special inmates;
6. transporting prisoners;
7. cost-effective operations;
8. staffing; and
9. determining appropriate programs and services.

These examples suggest that a lot of good can come from collecting, analyzing and using good information. In addition, most standards for correctional facilities mandate that jails maintain records systems which contain information which can (and should) be used for management purposes. In some cases, management information systems are even specified. Furthermore, compliance with standards requires a considerable amount of documen-

tation. As you will see in Chapter 4: How To Locate and Capture Information, much of the documentation you keep to defend against litigation will be part of the management information and data collection system.

That being the case, you can take your choice about <u>why</u> you are going to collect data and <u>what</u> you are going to do with it. In most cases, you <u>will</u> collect some information. By now, it should be evident to you that information <u>is</u> power. It's up to you to tap it, channel it, and put it to good use.

CHAPTER TWO:

HOW TO IDENTIFY THE INFORMATION THAT SHOULD BE COLLECTED

Many people find it difficult to identify all the pieces of information (or data elements) they will need to collect to improve the both the quantity and the quality of information available to them for management decision making. As a result, Sheriffs and Jail Administrators may rely on professional analysts to define the data elements that will be collected. The problem with this is that the analysts will select data elements that they think jails could use. The resulting information system or data collection may be fine; it may also be less than spectacular.

This Chapter will help you decide which data elements should be collected on a routine basis in your jail. It will also provide guidelines for developing good problem statements, since they are the basis from which the data elements you will need to gather in special issue data collections emerge. It will suggest how organizational or program goals can be used to identify data elements. Finally, it categorizes and lists data elements which are commonly collected in jails and identifies other criminal justice data elements which should be of concern to the jail although they may not be readily available in the jail itself. These data elements will probably become part of your management information system.

WRITING GOOD PROBLEM STATEMENTS:

This section will describe a process for identifying the data elements to be gathered in special issue data collections. Statements that describe problems in detail are actually composed of many basic data elements which should be collected; others may be suggested by the problem statement. Writing a good problem statement sounds as if it should be elementary. However, most people find it very difficult to describe a situation in its most basic terms, and that's what a good problem statement does. Most people tend to define problems a little differently. They define problems as:

1. solutions (ways of solving problems)
2. obstacles (conditions that make it difficult to solve problems)
3. reasons (why things happen)
4. symptoms (visible signs that indicate a deeper problem is present)
5. goals (the end results to be achieved)

There are costs attached to substituting any of these imposters for a true problem statement.

1. By defining a problem as a solution, other solutions which may be longer lasting and more cost-effective may be glossed over; or you may fail to solve the "right" problem.

2. By defining problems as obstacles, they may seem insurmountable and no effort to change the status quo is made.

3. By defining problems as reasons, it's possible to de-rail the whole problem solving process into a disagreement.

4. By defining problems as symptoms, it's all too easy to miss the factors that are really causing the problem. Unless these are identified, it's likely that the problems will perpetuate themselves, and that the situation will actually deteriorate.

5. By defining problems as goals, no description of the situation as it presently exists (which is the point from which all change must begin) is developed; as a result, it may be difficult to identify the data elements which should be collected.

A good problem statement is a concrete description of the situation. It makes it possible to identify the data elements needed to determine causes and suggest solutions. For example, the following paragraph is a good statement of the crowding problem in a specific jail:

> "For the last year, the number of people who have been arrested and booked at the jail has steadily increased; I've observed that their length of stay has increased too. As a result, I've had prisoners sleeping on mattresses on the floor from time to time. Something appears to have changed the way our criminal justice system operates. I wonder if the personnel changes at the Prosecutor's Office are related to this."

This is a useful problem statement, because it concretely describes the crowding that is troubling the jail. In the next section, we'll use this problem statement to identify the pieces of information that should be collected to figure out what is causing the problem.

IDENTIFYING DATA ELEMENTS FROM PROBLEM STATEMENTS:

Turning a problem statement into the data elements related to it is usually not too difficult; the better the problem statement, the easier it will be. Generally, by asking yourself the questions for which you are trying to find answers, the pieces of information that you will need begin to emerge. It may help to think of possible questions like:

1. what's changed?
2. how much?
3. how often?
4. why?
5. what's related to this?

The problem statement as it's written above directs the analyst toward pieces of information that will help to unravel the reason for crowding. These include data elements like:

1. the ones mentioned in the problem statement itself (number of people arrested and booked and length of stay);

2. charges on which persons are arrested (this year compared with last year);

3. numbers of summons and citations issued by local law enforcement agencies (this year compared with last year;

4. amount of time from first appearance to arraignment, trial disposition (this year compared with last year);

5. average length of sentence (this year compared with last year); and

6. charges for which sentences are given (this year compared with last year.

While these data elements will not identify the ultimate cause of the problem, they will identify the area in which the investigation should proceed. A good follow-up to this analysis would include interviews with key actors in other law enforcement agencies, the courts and the prosecutor's office to identify any policy changes that would lead to crowding in the facility.

This problem statement is good for two other reasons.

- It is based on a knowledge of the criminal justice system and an understanding of the basic factors which lead to crowding, i.e., increased admissions and increased length of stay; and

- It includes an educated guess (a hypothesis in the terminology of research methods) about what may be causing the problem.

If the problem statement actually defines goals, the task of identifying the data elements becomes a little bit more difficult, but it is still very manageable. In fact, most program or performance evaluations start from a statement of the goals of a particular program. The trick with goals, which are usually very abstract statements, is to find something measureable that will be present IF the goal is achieved. To put this in research terminology, you must look for measurable objectives which lead to the goal or an operational definition of the goal.

For example, suppose that Sheriff #2 has established a goal of providing a safe environment for staff, inmates and visitors to the facility. After making a number of policy and procedural changes, Sheriff #2 decides to find out how well the organization is meeting that goal. Sheriff #2 and the Jail Administrator work together to define the conditions that will describe a safe environment. These include the following conditions:

1. there are no assaults on staff, inmates or visitors;
2. no contraband enters the facility;
3. no fires occur in the facility;
4. there are no accidental injuries to staff, inmates or visitors; and
5. the tension level in the facility is low.

Sheriff #2 and the Jail Administrator have no trouble in identifying the data elements for most of these objectives. The data elements are:

1. the number of assaults on staff, inmates and visitors;

2. the number of times contraband was found either in the facility or before it entered the facility;
3. the number of fires which occurred in the jail;
4. the number of Compensation Claims; and
5. the number of accidental injuries recorded in the inmate medical records.

While the process of identifying data elements from goal statements is somewhat more complex than working from a problem statement, jails can identify the data elements needed to evaluate program performance. There are a number of good handbooks which can help Sheriffs and Jail Administrators with this particular kind of data collection. Some are listed in the Annotated Bibliography (Appendix B).

So, to determine the data elements that you need to collect, you will generally following these steps:

1. Define the problem and its component parts.

2. Determine the data elements that are represented in the problem.

3. Identify potential causes and contributing factors.

4. Write the questions for which you are trying to find answers.

5. Determine the data elements represented in the potential causes, contributing factors, and questions.

A CATALOG OF CORRECTIONAL DATA ELEMENTS:

The process we have described in the preceding section is very helpful when putting together a data collection that deals with a specific issue or problem. However, it makes a great deal of sense to collect some data on a routine basis so that you don't have to collect frequently used data elements every time you need that bit of information. This section will categorize, identify, and describe frequent uses for commonly collected data elements. Some of these data elements should be routinely collected to be most useful; others will more likely be collected only when specific problems confront the jail.

Correctional Data Elements can be divided into four different categories:

1. Inmate Population Data Elements;
2. Inmate Profile Data Elements;
3. Operational Data Elements; and
4. Criminal Justice System Performance Data Elements.

INMATE POPULATION DATA ELEMENTS:

The following section includes most Inmate Population Data Elements. They are called "population" data elements because information is kept about each and every person booked at the jail (the whole population in a statistical sense). These data elements should be kept regularly; they are the items should be included in an information system.

1. AVERAGE DAILY POPULATION (ADP) = is an arithmetic average of the number of people housed at the jail (the mean). ADP is usually expressed as a monthly or yearly average. It is really a computed data element and is calculated for one year by dividing Total Jail Days by the 365 days in the year. ADP is most often used as a way of expressing how full the facility is.

2. LENGTH OF STAY (LOS) = is the number of days between a prisoner's admission and release. LOS is often expressed as an average. That way it refers to how long (on the average) each prisoner stays at the jail. LOS can also be expressed as a frequency distribution. In that case, the amount of time each prisoner stays is divided into groups, i.e., prisoners released within 24 hours, 48 hours, 72 hours, 1 week, etc., and then the number of prisoners in each group is counted and expressed as a percent, i.e., 66% are released within 24 hours, another 14% are released with 48 hours, etc. LOS is almost always expressed in days in jails and in months in prisons. It is used as a way of assessing the speed of the court process.

3. JAIL DAYS = is another measure of the amount of time spent in the jail. Jail days are calculated by adding up the time each prisoner spends within the facility within a given period of time (usually a month). In many respects, this data element is one of the most useful because ADP and LOS can both be calculated from it if the number of bookings and the amount of time it spans. Jail Days can be translated directly into the percent of capacity at which the jail operates and the number of beds that are needed to accomodate a certain jail population, and used with other data elements to develop cost ratios (i.e., food cost per resident per day). Jail days are often called by other names, including prisoner man days, inmate days, resident days, days of care, etc.

4. TOTAL BOOKINGS = are all the persons who are arrested and brought to the jail. TOTAL BOOKINGS is a good measure of Booking Room activity; together with TOTAL ARRESTS, TOTAL BOOKINGS suggests something about law enforcement practices in your jurisdiction, i.e. field citations. A word of caution is in order here, however. Sometimes persons are brought to the jail, detained there for some time, and NOT booked. These could include persons such as those held on mental or alcohol detainers. If you find that these practices occur in your facility, you will need to keep separate statistics on these individuals.

5. NET BOOKINGS = are persons who are actually housed at the facility, following Booking. NET BOOKINGS also may be called INMATES, PRISONERS, RESIDENTS. While TOTAL BOOKINGS are the best measure of activity in the Booking Room, NET BOOKINGS are the best measure of activity in the jail itself. If you subtract NET BOOKINGS from TOTAL BOOKINGS, the result will tell you how many people are released directly from the Booking Room without ever entering General Population. These individuals usually leave by posting bond, signing a summons and citation, or because release is authorized by the Arresting Officer.

   Most jails maintain records on several sub-groups of this data element as a way of describing the jail population. Common subsets of net bookings include:

a. felony and misdemeanor inmates, traffic offenders, and holds;
b. pre-trial, post-trial and sentenced inmates;
c. male and female inmates; and
d. adult and juvenile inmates.

Jails frequently keep information on these subsets because of statuatory requirements for separation. These elements become particularly important when planning for a new facility since they are directly related to the number of beds which must be provided for certain types of prisoners.

These are the basic data elements that jails should routinely keep to describe the inmate population. They can be used for a multitude of purposes, from monitoring population levels in the facility, long-range facility planning, population forecasting to determine anticipated bed space needs, to budgeting, deployment of staff, and program development.

INMATE PROFILE DATA ELEMENTS:

The following list represents many common inmate profile data elements. However, there are many additional data elements, related to the unique needs of a specific jurisdiction, which deserve consideration. You will have to identify what these are for your jurisdiction on your own. You may elect to keep this some of this information on a regular basis; other data elements will likely be collected only as some special issue or problem emerges.

1. LEGAL STATUS = describes the legal reason why the prisoner is at the facility. General categories used with this data element are: pre-trial, post-trial, sentenced, and holds. This is one of the most basic descriptive data elements. It is used in a variety of ways. Some uses relate to the kinds of programs in which the inmate may participate (i.e., only sentenced inmates can work); others relate to the development of alternatives to incarceration or changes in arrest or court practices to relieve crowding. If your classification system is based on objective criteria, this will probably be one of them.

2. CHARGE STATUS = describes the level of charges on which the prisoner is detained or sentenced. General categories used with this data element are: felon, misdemeanant, municipal ordinance violator, traffic offender, or hold (especially probation and parole violations). This is another one of the very basic descriptive data elements. Charge status is frequently used as one of the criteria to decide if an individual is housed in maximum, medium or minimum security. It's not certain how good an indicator of behavior in the facility an individual's charge status really is.

3. SPECIFIC CHARGE or CHARGES = are what the prisoner is arrested for. This data element is often used to try to predict behavior within the facility. Sometimes it does, and sometimes it doesn't. However, charge on arrest is often a good indicator of who will remain in custody. You may want to add a data element which tells what the charges are on release. A word of caution in categorizing charges is in order. If you hope to pick out information about persons charged with specific offenses, i.e., all individuals charged with DUI, you have to code your

information at that level. You can group charges in a number of ways in later analyses, i.e., all traffic offenses, or all alcohol-related offenses, but if you code the charges as a traffic or alcohol-related offense, you can never separate out the information for ONLY DUI's. There is more information about this coding procedure in Chapter 5: How To Put It All Together.

4. DATE OF BIRTH = is preferable to AGE as a data element. Statistical studies have shown that people make more "mistakes" (or misrepresentations) when asked their age. An advantage to this element is that many computer programs (including the one included in this document) can calculate AGE from DATE OF BIRTH. This data element is often expressed as the age of the average prisoner. It is frequently more useful when displayed as a frequency distribution. This data element is often used to make decisions about the types of programs which would be appropriate for the inmate population, i.e., younger prisoners are more likely to use an active recreation program than older prisoners.

5. ETHNICITY = refers to the prisoners' racial or ethnic background. Common general categories include: white, black, hispanic, oriental, american indian, and other. This data element can be used in a number of ways. It may suggest ethnic groups from which corrections personnel should be recruited. It may suggest cultural or social customs or practices of which staff should be aware. It may suggest potential language barriers. It may be a useful data element in dealing with the assumptions the community holds about <u>who</u> is in jail.

6. EDUCATION = is really several potential data elements of varying levels of sophistication. They include: the last grade completed, actual level of educational attainment as indicated by testing, degree of interest in obtaining a GED, interest in a Remedial Program, or interest in college coursework. Its main application is in deciding what type of education program is appropriate for the inmate population.

7. VOCATIONAL SKILLS = also consists of several data elements, including skills attained; and skills interested in building. This data element, in combination with LOS data, is useful in developing programs and services which might be provided to the inmate population. It also provides information that is potentially useful for those designing a "bridge" or "re-entry" program for inmates.

8. EMPLOYMENT = is also really several potential data elements, including the amount the individual is employed (i.e., employed full-time, part-time, unemployed at time of arrest); last date employed; whether or not the prisoner is or was receiving unemployment benefits; and occupation (categorized). There are several popular uses for this data element. It is frequently used as one criteria for release on recognizance. It may also suggest certain programs or services which might be helpful to the prisoner in preparation for release, i.e., employment counselling.

9. FAMILY TIES = also consists of several potential data elements, which include marital status; next of kin; residence; and number of dependents. All of these are potentially useful in assessing whether or not the prisoner is a good candidate for release on recognizance.

10. PHYSICAL HEALTH STATUS = consists of several data elements, including current illnesses or injuries; disabilities; and history of physical illnesses. These data elements will define the most likely medical conditions the medical staff will have to treat; they are useful in preparing training for staff in First Aid, CPR, etc., and in preparing and defending the Medical budget, including requests for medical staff

11. EMOTIONAL/MENTAL HEALTH STATUS = also consists of a number of data elements, including past or present treatment for emotional or mental health problems; type of treatment (i.e., in-patient vs. out-patient) whether mental health crisis worker had to see prisoner on intake; and whether special housing is required because of psychiatric condition. These data elements are becoming more and more important to Sheriffs and Jail Administrators as increasing numbers of seriously disturbed individuals wind up in jails and prisons. These data elements are useful in making decisions about the level of programs and services that are required by the inmate population; they identify the types of personalities that staff should be trained to manage; and they are helpful in pre-architectural programming since these individuals have special requirements in their housing units. They will also be of interest to a number of the other actors in the criminal justice system and the community.

12. SUBSTANCE ABUSE STATUS = also consists of a number of discrete data elements, including the presence of past or present substance abuse problems; types of substances abused; whether or not there is a history of treatment for substance abuse problems; whether or not substance abuse is related to the reason the prisoner is in custody; whether or not the prisoner was under the influence when the crime was committed, or under the influence when arrested; and interest in treatment for substance abuse problems. These data elements will be useful in making decisions about the kinds and levels of programs and services which should be provided for the inmate population; they can be used to identify areas in which staff will require training; and they will be of interest to many of the other actors in the criminal justice system.

13. RELEASE STATUS = is a series of data elements that describe how the individual was released from the facility, including the location to which the prisoner was released; legal and charge status on release; and bond type and amount (if a bond release. These data elements can be particularly helpful in assessing how the local criminal justice system is working; they can be useful in making choices about the appropriateness of alternatives to incarceration for some elements of the jail population, i.e., those who are released back into the community.

Inmate Profile Data Elements contain some of the most useful information that can be gathered in the jail. They may used to:

- assess the impact (or potential impact) of alternatives to incarceration and additional release options on the jail population;
- illustrate the impact of criminal justice policy and legislative decisions on the jail;
- determine the causes of crowding;

- design and implement a classification system; and
- develop a pre-architectural program that is based upon needs and describes the functions and programs that will be carried out in the new facility.

Many jails don't collect the Inmate Profile Data Elements on a routine basis although some of these data elements will almost certainly be recorded in every jail. Data of this type often is collected at specific times to provide information about specific problems. These data elements are often collected for only a specially selected portion of the inmates housed at your facility (a sample). There are variety of ways in which samples can be selected in jails. Information about sampling is provided in Chapter 6: How To Analyze Information - or a Short Course in Statistics.

Particularly in smaller jails, this is some of the most difficult data to gather in jails because of the way in which most jail record systems (when they exist) are structured. It is also some of the most powerful information you can have. But unless your system is atypical, you will not be able to locate all the information from your records. This is extremely frustrating, because when people are in custody, you generally know the answers to all or most of these questions. If you are to capture this information, most likely you will need to fill out a special data collection sheet (a data collection instrument) while the individual is in custody until you have enough people for the sample.

OPERATIONAL DATA ELEMENTS:

Operations are the core of any correctional facility, and if you are going to monitor operational performance, additional data elements are necessary. These data elements will be necessary to:

1. complete a staffing analysis;
2. change operational policies and practices;
3. evaluate organizational efficiency and effectiveness;
4. assess the "climate" within the facility; and
5. defend against litigation.

These data elements also can be grouped in "sets" that relate to specific operational areas. Listed below are some of the most common operational data elements.

1. TRANSPORT SET = are data elements that provide information about transports to court and to other locations including the locations to which prisoners were transported; reasons for transport; number of staff required to do the transport; number of inmates transported; time in; time out; transport expenditures, i.e., meals, gasoline, etc; and miles travelled.

   These data elements can be combined to identify the staff hours used (from which personnel costs can be calculated), the most frequent destinations, and the number and cost of medical transports (useful in assessing whether providing a medical service in-house through a contract physician or dentist would be more cost-efficient than transporting to hospitals, doctor or dentist offices, etc.). This data would also

be critical in supporting requests for additional staff.

2. INCIDENT SET = are the data elements which provide information about the crimes and incidents (significant events) which take place in the jail, including reason for incident; number of inmates involved; number of staff involved; location of incident; time of incident; date (day) of incident; action(s), including disciplinary hearings, taken as a result of the incident; character of the incident (violent or non-violent); and injuries and/or property damage resulting from the incident.

   You should already be documenting these data elements in a systematic way to use in the event that legal action is taken against the jail. Since you're already documenting them, you might as well get some additional use out of the documentation and try to identify problems which lead to incidents. By analyzing these data elements, you may be able to identify specific places, times, days, or staffing patterns that contribute to incidents. Once you know what they are, you can take corrective action.

3. PERSONNEL SET = summarizes all of your personnel changes and practices, including number of sick days used per employee; vacation days; compensatory time authorized and taken; other leave time, i.e., military, maternity, etc., authorized and used; rate of turnover, both by those leaving the department and by those vacating a position but remaining in the department through transfer or promotion; and demographic information (age, sex, race, etc.).

   This is another set of data elements that you already record in your personnel records. You will find them critical when you establish your shift relief factor (how many actual people it takes to fill one post that operates on a 24 hour a day, 365 days a year basis). They are also critical in dealing with a problem most correctional facilities are constantly dealing with - employee turnover.

4. COST OR BUDGET SET = are data elemnts associated with the cost of running the jail, including all your budget information, particularly categorical expenditures. Hopefully, your budget (or your accounting system) divides the dollars you are authorized into categories, such as personnel, fringe benefits, food, medical, inmate supplies, etc. Most budgets provide a considerable amount of detail about how the jail's money is spent.

   These data elements are very useful when they are translated into ratios with Inmate Population Data. Examples of these ratios include: meal cost per inmate per day; cost of care per inmate per day; medical, staff, etc. cost per inmate per day; cost of photo processing per inmate (mugshots); and other similar elements. They are often used to evaluate the efficiency and effectiveness of jail operations.

Operational data elements are most frequently used for "in-house" purposes: to evaluate and monitor organizational performance; to locate organizational "trouble spots" before they get out of hand; and to document present problems which can then be rectified.

However, these data elements have some fairly obvious uses outside the organization, primarily in developing effective funding requests. In these days of limited and declining governmental resources, it is critical to justify budget requests. Data elements of this type can help you with your budget presentation by presenting a well-documented rationale for funding.

CRIMINAL JUSTICE SYSTEM PERFORMANCE DATA ELEMENTS:

The policy choices of the other elements of the criminal justice system (primarily law enforcement and the courts) determine the size and nature of the jail population. Law enforcement practices determine the number of people who come into the criminal justice system in general and the jail in particular. The court, on the other hand, determines the jail population by controlling the amount of time inmates spend within the facility. Basically, the jail is a lot like a bathtub. Law enforcement has control over the water tap; it controls both the rate at which water comes into the tub and the "mix" of the water. The Courts (including the Prosecutor, Probation, and the Defense in addition to the Judges) have their hands on the plug; they control the rate at which water flows out. This leaves the jail with little ability to regulate the rate at which water flows into or leaves the tub.

The jail's influence over the size of the inmate population is indirect at best. As a result, in many situations, it is essential to delve into the practices of the other elements of the criminal justice system. Two such times are when you are planning a new facility and when you are trying to reduce crowding. There are a variety of data elements which reveal a great deal about the policy and practice of the other components of the system.

LAW ENFORCEMENT DATA ELEMENTS:

The following list identifies data elements that are helpful in assessing the activity of law enforcement agencies in your area.

1. POLICE AGENCY = is the data element that identifies the police department responsible for the arrest. It is generally used to determine which agency accounts for what % of the bookings at the jail, and on what charges. Generally, comparisons are made from agency to agency or against a common set of arrest criteria (if you have one).

2. ARREST TYPE = is a data element that attempts to document how the agency "uses" the jail. General categories of ARREST TYPE could include: "book and releases" or stationhouse bookings (in which prisoners are "booked", and prints and photographs done prior to immediate release from the jail upon signing a citation; warrant arrests; and on-view arrests. This data element is often used in conjunction with the CHARGES on which the individual is arrested and other data elements included in the Inmate Profile Data to determine if there are individuals being jailed who are candidates for release on citation or diversion alternatives.

3. SUMMONS AND CITATION IN LIEU OF ARREST USE = is a data element which refers to the number of summons and citations which are written by law enforcement agencies. It is most commonly used in conjunction with CHARGES, like ARREST TYPE, to determine if there are individuals who

might be diverted from the jail.

4. TRAFFIC-RELATED ARRESTS = is a data element that is used to identify arrests that are associated with a traffic violation which results in arrest and in which a summons is not used. It, too, is generally used in conjunction with CHARGES and ARREST TYPE to determine if there are individuals who are candidates for diversion from the jail.

5. ALCOHOL-RELATED ARRESTS = is a data element that identifies whether or not alcohol abuse was related to the arrest. It is generally used in conjunction with CHARGES, ARREST STATUS and other Inmate Profile Data Elements to determine if detoxification instead of arrest is a viable alternative.

It can be helpful to determine who the chief "supplier" of the jail's population is and to assess how each department uses the jail. Information from this area can be helpful in assessing the viability of diversion programs and the use of summons and citation as ways of reducing the jail population. This is especially true when this information can be related to the amount of time that individuals who are potential diversion candidates actually spend in the jail. This will help you assess whether or not the increased use of summons and citation (or any of the other options) will significantly reduce crowding or the need for additional bed space.

COURT DATA ELEMENTS:

The following data elements are critical to managing jail populations. Unfortunately they are often the hardest to collect since that involves delving into another record system, which is not organized to facilitate data collection. Since the court's impact on the jail is on the amount of time that prisoners spend in the facility, LENGTH OF STAY and JAIL DAYS become even more important when trying to assess the impact of changes in court policy and practice. Furthermore, it is critical be able to identify the LENGTH OF STAY of the group you are trying to divert or the number of JAIL DAYS that group spends in the jail. The average LOS for the whole jail will only give you misleading information. This requires either that LOS or JAIL DAYS information be collected with the court information. The court data elements include:

1. BONDING SET = are several data elements relating to the bonding practices of the criminal justice system, including the types of bonds used in the jurisdiction; offenses for which bond is granted; the level at which bond is set; and the number of bond reductions. These data elements are often used with the Inmate Profile Data Elements, especially EMPLOYMENT STATUS, RESIDENCE, and MARITAL STATUS; frequently, two other elements are added: # OF PRIOR ARRESTS, and # OF PRIOR FAILURE TO APPEARS (FTAs). The primary application of these data elements is to determine if changes in bonding practices, i.e., the use of release on recognizance (ROR) bonds or reduction in the level at which bond is set, would reduce the jail population.

2. FAILURE TO APPEAR RATE (FTA) = is a data element which measures the number of people who have been granted bond fail to return for court (also potentially the number of bond revocations) in comparison with the total number of bonds and citations given. Local criminal justice sys-

tems will have to determine what an acceptable FTA Rate is for their jurisdiction. This data element can be used to compare FTA rates for individuals released through different mechanisms, i.e., those released in the field with a summons vs. those released after screening at the jail.

3. OFFENSES FOR WHICH JAIL SENTENCES ARE GIVEN = lists the charges which resulted in sentences at the local jail. This data element is often used in conjunction with other data elements, i.e., JUDGE or COURT, to assess differences in sentencing practices. If you have sentencing guidelines in your jurisdiction, this data element would be useful in assessing the degree to which they are followed.

4. TYPE OF RELEASE = is the data element that describes how the individuals who are jailed prior to a court appearance are released as soon as they go to court. In any event, you will need qualitative information about the system to help you interpret this data element.

5. JUDGE = identifies which Judge has responsibility for the cases. Frequently jurisdictions find that different judges use the jail to different degrees. If changes in practices are necessary, it is critical to identify <u>who</u> must change. This data element should be handled with great care; it can raise very sensitive issues around judicial discretion.

6. ATTORNEY = identifies the Defense Attorney. Frequently, cases are managed differently by the elements of the defense bar and require different amounts of processing time. Changes in processing speed can be critical in reducing crowding at the jail; this data element is needed to identify points at which extra manpower or a change in policy could influence the jail population.

7. OFFENSE ON ARREST, OFFENSE ON FILING AND OFFENSE ON SENTENCING = are all charges. Charge is a very tricky data element to interpret even though its definition seems relatively clear. You will need to interpret it in the context of information you have about criminal justice policy and practice. Some of the issues which emerge around this data element include:

   - o does law enforcement incorrectly charge the persons they arrest?;
   - o does law enforcement "over charge" the persons they arrest?;
   - o does the prosecutor engage in plea bargaining;
   - o do local law enforcement and the prosecutor charge bargain?

   Often, the trickiest part of this data element is its political sensitivity. Use a lot of caution when you present information on this data element.

8. SENTENCE = describes the sentence imposed by the court. It should include all alternative sentences which are used in the jurisdiction; sentence should also include the length of sentence.

9. CRITICAL EVENTS = are the dates of critical events in the court process. Since the length of time needed to process a case is the major way in which courts determine the jail population, it is critical to identify the amount of time each aspect of the process requires. The primarily

critical event data elements include the dates of arrest, first appearance, arrignment, trial, and sentencing. This data set should also include # OF CONTINUANCES (and on whose request).

Both law enforcement and court data serve a critical purpose in planning. In order to establish an appropriate level of confidence in any planning or forcasting to be done, one element for close consideration is the degree of variability in the behavior of the other parts of the system. These data elements provide the best means of assessing the degree to which the behavior of other parts of the criminal justice system has fluctuated over the years and determining what the actual variations in practice have been.

CONCLUSION:

Sometimes the hardest part of any activity is getting started. Knowing what can be collected and how other jurisdictions have used these data elements should help Sheriffs and Jail Administrators decide what data elements they need to collect to solve the specific problems their jails face. In many cases, the data elements which have been identified in the previous section will more than cover the spectrum. Some systems will not require more than the Inmate Population Data Elements, a few of the Inmate Profile Data Elements, and the Operational Data Elements. Other systems which are confronting more specific problems will need to do a special data collection, including both Inmate Profile Data Collections and the Criminal Justice System Performance Elements.

Some of you may find that there are specific issues or problems that confront you which are not included in the previous section. You will need to define those data elements, using the methods suggested in the section of this Chapter, IDENTIFYING DATA ELEMENTS FROM PROBLEM STATEMENTS. The program evaluation and research texts cited in the Annotated Bibliography (Appendix B) can provide some additional help with this. By now, some of you are probably shaking your heads and saying, "This is nice, but how will I ever find the time to do this? And if I hire someone, how much is it going to cost me?" For those of you who aren't concerned about those issues, go directly to Chapter 4: How To Locate and Capture Information. For those of you who are concerned about these issues, turn to Chapter 3: How To Get Ready for the Data Collection for information on data collection strategies.

CHAPTER THREE:

HOW TO GET READY FOR THE DATA COLLECTION

Now that the data elements to be collected have been identified, the next big task is to decide how to collect them. This is not the same thing as the format in which they should be collected (that's the next chapter); nor does it mean identifying the sources of the information that you need. This chapter offers suggestions about who might actually find the information and record it on the data collection sheet or on your manual information system's collection sheet. What you are really looking for is a set of skills and the people who possess them. That's what this Chapter is about.

DATA COLLECTION SKILLS:

At this point, it's important to differentiate between the routine information gathering activities that the jail will perform to maintain a modest, but effective manual information system and the special data collections that are done for specific purposes, i.e., planning for a new facility or reducing crowding in the jail.

Let's start with maintaining the management information system. Let's assume that you've decided on the data elements which will be captured routinely have already been determined and that the mechanisms for recording this information have been designed. Chapter 4: How To Locate and Capture Information provide guidelines for Sheriffs and Jail Administrators who are interested in that. But if the organization doesn't have the skills to maintain the system, there is no point in setting it up in the first place.

Interestingly enough, the skills that are associated with maintaining the information system are GOOD CLERICAL SKILLS, including:

1. the ability to read and write legibly;
2. the ability to do simple math (mostly adding and subtracting) with the assistance of a calculator;
3. the ability to organize one's work; and
4. commitment to doing the work on a daily basis.

Once the system is set up, clerical personnel can maintain it. And they'll probably do a far better job at it than either the Sheriff or Jail Administrator.

Collecting data for a specfic study requires a few more skills, particularly when the data collection involves a lot of cases and requires you to use information from more than one source. Still, these skills are routinely found in jails, other agencies of County Government, Criminal Justice Planning Agencies, consulting agencies and in the community. The skills you will need are:

1. DATA COLLECTING AND CODING SKILLS = are, once again, mostly good clerical skills. It is very helpful if the collector or coder has at least superficial knowledge of jail operations and criminal justice system terminology. Data collectors and coders should also know what information is already being collected in the jail. Finally, they should be resourceful people who aren't afraid to ask questions about the information they uncover; they will need access to people within the system who can answer their questions. Depending on the size, scope and time constraints of the data collection, this person will probably need to work at least half-time on the data collection while they are tracking down the information.

2. COORDINATING SKILLS = are mostly administrative skills, with a few areas of technical expertise thrown in for good measure. The data collection coordinator needs to have an understanding of basic descriptive statistics, good writing skills, some experience in using data to convey information, making presentations, and some understanding of the jail. This person will most likely present the information. He or she will help make some of the critical data collection decisions - like how big the sample will be, what data elements will be included, and which sources of information will be used.

3. ANALYTICAL SKILLS = are largely interpretive. The person (or preferably persons) involved in analyzing the information should be able to think logically and to see the whole situation in terms of the relevant components. These people will be drawing on their experience and knowledge of the jail and the criminal justice system. They will be trying to answer the question, "What does this data mean to us?".

4. DATA PROCESSING SKILLS = could vary a great deal depending on the nature of the data collection. At a minimum, data entry skills, such as keypunching or typing information into a computer terminal will be necessary. In the case of the Inmate Profile Data Collection program that is included with this document, the services of a person who is familiar with operating a common statistical package computer program, i.e., the Statistical Package for the Social Sciences (SPSS), will be necessary.

   If you are collecting data for a special study, or if you can't find a computer with SPSS reasonably close to you, the person who processes the data will need to use another statistical program. WARNING! If this is the case, work closely with that person as you design the data collection sheet. This is for two reasons:

   - to make sure that the data can be input as easily as possible; and
   - to make sure that the computer program you are using can process the data you are collecting.

   There are few things more frustrating than to collect data that you want to use very badly only to discover that the computer can't handle it! And while this is rare, since most common statistical programs can process any data that is numerically coded, it can happen. Make sure it doesn't happen to your data collection!

These skills have been included in this manual even though most jails don't have their own computers. It simply is much faster and easier to use a computer to process data (particularly for a large number of cases) that it is to calculate averages on the adding machine and to use tally sheets to figure out frequency distributions. We are finding more and more county governments and private individuals have micro- or mini-computers, many of which have programs that are powerful enough to process jail information and perform basic statistical functions. Just because you don't have a computer, don't give up. This chapter will give you some ideas about where you might be able to find one for free or for a rather small dollar cost to pay for the amount of time that you actually use the computer's memory.

A very few lucky Sheriffs and Jail Administrators may be able to find all these skills in one person. Most counties will find that the skills they need are divided between two or more people. While it may be a little easier to coordinate the data collection if all the data collection roles are found in one person, a team approach to the data collection is certainly a viable option. What is important is that ALL of these critical roles are represented in the data collection effort.

WHERE TO FIND THE SKILLS YOU NEED:

Each jail, criminal justice system, county and community are unique. Unfortunately, as a result, it's impossible to tell Sheriffs and Jail Administrators <u>specifically</u> where they can find the people who have these skills in their own communities. However, there are a number of strategies you can pursue to bring these skills into your data collection.

1. RESOURCE #1 - VOLUNTEERS: More and more communities have volunteer offices that attract people who wish to donate their skills for "public service" or "charitable" reasons. This is a source of clerical help that can't be overlooked by jails, particularly those with little or no clerical help of their own. If the county does not have a volunteer office, Sheriffs and Jail Administrators should consider recruiting volunteers on their own. Often churches in the community prove to be good sources of volunteer help. This chapter will offer some suggestions that have made working with volunteers in jails easier - for everyone!

2. RESOURCE #2 - LAW ENFORCEMENT RESERVES: While most Reserves are interested in more exciting aspects of working in the jail, they <u>are</u> a potential source of help for some special projects. It might be a good learning experience for the Reserves to discover that there is a lot of paperwork involved in working in a career in law enforcement or corrections.

3. RESOURCE #3 - STUDENTS: College students are a wonderful source of volunteer help. Not only do they work for nothing, but they also are usually very motivated (because they will be earning credits or completing a required internship) <u>and</u> they come equipped with an outside supervisor (their professor) who has some sanctions to use against them if they don't cooperate or participate fully. Many community colleges now have criminal justice coursework; students in these programs are ideal volunteers, and you get the added benefit of pre-screening individuals who may very well apply for jobs in the near future. The same colleges

often have Computing Centers and computing classes, complete with students who need practical experience. A number of counties have been able to find students to enter all the data, and a professor (or graduate student) with the skills to develop or run an already existing program to process the data. The only thing that these counties had to pay for was the computer time; in several cases the actual cost to the county was less than $200. Even if costs do include keypunching and verification, they will still be surprisingly low!

4. RESOURCE #4 - TEMPORARY CLERICAL HELP: Unfortunately temporary help does cost something. However, most do not cost as much as a regular employee, and they may be needed for a relatively short period of time, i.e., 3-4 weeks.

5. RESOURCE #5 - OTHER COUNTY OR CITY AGENCIES: These other county agencies may be willing to lend clerical staff to your department for a short period of time. This is particularly true if they are interested in the outcome of the data collection. This may be very beneficial in the criminal justice system, since data collectors and coders who are familiar with the court or prosecutor's record systems may collect data there more efficiently than individuals who don't know the "ins and outs" of the system.

6. RESOURCE #6 - JAIL CLERICAL STAFF: One of the greatest overlooked resources in law enforcement agencies are clerical personnel. Not only do they have the necessary skills, but they also have first-hand working knowledge of the jail, and they know where to find information. Training the clerical staff to collect and code data may have many benefits, both to the organization and to the personnel involved.

WORKING WITH PEOPLE FROM OUTSIDE THE SYSTEM

Many systems are beginning to use volunteers from outside the criminal justice system to help in special data collection efforts, particularly those associated with planning new jails. Citizens' Advisory Boards often take an active role in this process. While this manual can not provide all the information needed to successfully initiate a volunteer program, the National Institute of Corrections Information Center does have a great deal of information that could help you get started. In the meantime, here are a few tips that may help.

1. SPEAK ENGLISH, NOT JAIL.

Criminal justice professionals have a language of their own; it is filled with abbreviations which are routinely used by people in the system, but are unfamiliar to outsiders. If you hope to collect <u>valid</u> information, make sure that everyone understands what you are talking about.

2. FIND OUT WHO YOU ARE DEALING WITH.

Do set up a mechanism to screen your volunteers. Most systems that use volunteers conduct the same background investigation on their volunteers that they do for employees. This is not to suggest that polygraphs and psychological evaluations on your volunteers should be required, but

routine reference checks and clearances should be part of the volunteer selection process.

3. PROVIDE ORIENTATION AND TRAINING.

Most people from outside the system (and a number of people within it) find jails very intimidating places to be. Volunteers will need an orientation to the jail; they will also need a place to work in which they feel safe and relatively comfortable. Training in the tasks that the volunteers are to perform must be provided. For example, if volunteers will be used to code and collect data, training in good coding procedures and the codes being used is mandatory. If the volunteers are going to work in the jail itself, they will need both an orientation to the facility, an explanation of the security requirements which apply to them, and an clear explanation of the behavior that is expected of them while they are there. They should also be clear about what behavior is unacceptable.

4. CHECK YOUR CONFIDENTIALITY REQUIREMENTS.

Before recruiting volunteers, check your state statutes regarding the confidentiality of inmate records. If there is any question regarding the use of volunteers, an opinion from the County Attorney may be necessary. Generally, the laws regarding the confidentiality of records allow individuals to gather information from them for research purposes. To insure the confidentiality of the records once the information is gathered, remove any identifying information, such as a name, from the data collection sheet. When in doubt, use caution and good sense.

5. ACCEPT THE VOLUNTEERS.

Law enforcement and correctional agencies sometimes find it very hard to accept "outsiders". This state of affairs is not very conducive to developing good working relationships with volunteer groups. Your volunteers will be doing you and your jail a favor. Being supportive of your volunteers is critical.

CONCLUSION:

Doing a good data collection in-house requires a considerable amount of time and commitment. It is an area in which counties have frequently sought outside help. And there is nothing wrong with securing professional help in this area. It isn't an admission of failure or inadequacy. Sometimes it may be much more practical, as in situations in which the jail lacks the necessary skills or when there is insufficient time to do the study in-house. A good consultant can fill the role of the data collection coordinator as well as any or all of the other roles.

However, there are a number of benefits attached to doing the data collection yourself.

1. Since you understand your system better than outsiders, you may be able to identify better sources of information that are not known to outsiders. You may have access to information that outsiders don't and will never be privy to. You will not need help to understand either the

language of corrections or the peculiarities of your system.

2. Your familiarity with the system may let you make better "educated guesses" that shape the research.

3. You understand the politics of your system better than any outsider and so will probably know more accurately the alternatives that will be acceptable to the system.

4. You may be surprised at the amount of money that consultants get for some types of data collections in relationship to what the jail gets for its money.

5. Most important, if you do your own data collection, you are far more likely to believe the findings, and as a result, it is more likely that some action will be taken as a result of the study.

As you might expect, there are also drawbacks to doing your own data collection. These are some considerations you will have to trade-off against the benefits attached to using others to do your data collections for you.

1. Doing a data collection involves an investment of time and energy. And data collections are something that should be done right - if you want to be sure that the results you get are accurate.

2. Because you are <u>so</u> close to the situation, your interpretation of the data may be somewhat slanted. Having an outsider participate in the analysis and interpretation of the information can guard against this type of bias.

3. If you are not familiar with what is happening in similar jurisdictions, you may find it difficult to identify data which suggests that something unusual is happening in your system. To illustrate with a very simplistic example, if you had little knowledge of other jail populations, you might not think it unusual to discover that 40% of your jail population was female.

In deciding if you are going to do your own data collection, you must realistically determine if you have the people with both the right skills <u>and</u> the time to do the work. Chapter 4: How To Locate and Capture Information will identify places to locate the necessary information and tips on useful data collection formats.

CHAPTER FOUR:

HOW TO LOCATE AND CAPTURE INFORMATION

Many people begin their data collections at this point by grabbing a yellow pad and pencil, starting a tally sheet, and rummaging through files. Six pages later, unable to read their notes, they design a form on which the data can be recorded. Halfway through the data collection, they discover that they didn't leave enough spaces for one of the data elements. At this point, they often change their minds about doing the data collection. This Chapter will suggest ways to avoid these difficulties by:

1. identifying documents, forms and logs commonly found in local jails, which are frequent sources for the data elements identified earlier;

2. suggesting how to implement a manual information system, providing samples of the forms that might be used in such a system, and estimating the time invcived in maintaining it;

3. providing copies of data collection sheets and code books (summaries of all the data elements, their possible values, the numerical codes for each, and the columns in which each is located on a keypunch card) for some of the data collections mentioned in the manual, (the Inmate Profile Data Collection, a Transport Data Collection, and ar Incident Data Collection); and

4. discussing guidelines for the development of data collection sheets and code books.

JAIL INFORMATION SOURCES:

The first step in locating information is to identify all the places in which information is already being captured or recorded on a routine basis in the jail. One way to do this is to take blank copies of every form routinely used in the jail and list the data elements that are specified on them. Next, review all the activity logs (such as the Booking Log, a Release Log, a Daily Activity or Shift Activity Sheet, etc.) and do the same. Don't list items that are normally recorded in any narrative sections as data elements. There are several reasons for that:

- they will probably not be recorded on ALL the forms and certainly won't be found in the same place; and

- reading the entire narrative to extract one piece of information is far too time-consuming for most data collections.

METRO COUNTY SHERIFF'S DEPARTMENT

JAIL DIVISION

INCIDENT REPORT FORM

INMATE NAME _____ BOOKING NUMBER _____

HOUSING ASSIGNMENT _____

INCIDENT DATE ____ TIME _____ REPORTING EMPLOYEE _____

REPORT DATE _____ TIME _____ SUPERVISOR _____

INCIDENT DESCRIPTION (including who was involved, what happened, where the incident occurred, what caused it, etc.) _____

DISCIPLINARY ACTION TAKEN _____

RULE VIOLATION MAJOR ____ MINOR ____ NO ____

IS A C. R. NEEDED? YES ____ NO ____

Figure 1

Figure 1 is an Incident Report Form. The data elements that Officers must fill out on this form are:

1. inmate's name;
2. inmate's booking number;
3. inmate's housing assignment at time of occurrence;
4. date of occurrence;
5. time of occurrence;
6. date report is completed; and
7. time report is completed.

This step may reveal that a number of data elements are already being collected. However, there will undoubtedly be some essential data elements that are camouflaged in the narrative section of a form. If that's so, make a list of these items and at least think about revising the form so that it specifically asks for the missing items that are critical. If, in your opinion, the form leaves something to be desired, revision might make good sense from a number of perspectives. In the case of the Incident Report Form in Figure 1, a data element that is both missing AND highly desirable is LOCATION OF INCIDENT. While this is normally included in the narrative section, it's often not very visible. Sometimes Officers forget it or several locations are listed. This is a data element that should be placed on the list of missing data elements; it's a form I'd consider revising if I were the Jail Administrator.

On the other hand, it may be that a number of common data elements are NOT collected in your facility. Few if any forms may be used, and the only log book available may be the Booking Log. These jails have not developed their record keeping systems. And while that really is too far afield from data collection topic to devote much time to in this document, it should be a matter of great concern to Sheriffs and Jail Administrators. The reason has to do with the prevalence of inmate litigation against jails and Prisons and the fact that without adequate documentation, the Sheriff, Jail Administrator, County Commissioners and the County itself are in a very vulnerable position.

The logs and forms which are briefly described below provide both a source of data elements which are commonly collected in jails AND documentation in the event of litigation.

1. BOOKING LOG - is a chronological record of all persons who are arrested and booked at the facility. It typically captures the following data elements:

   A. date;
   B. time prisoner accepted;
   C. police agency;
   D. name of prisoner;
   E. date of birth;
   F. place of birth;
   G. charges;
   H. court of jurisdiction; and
   I. booking number.

   Don't be surprised if the Booking Log used in your jail isn't exactly like this. The information that is recorded in the Booking Log will vary from county to county, but it should contain most of these data elements. The Booking Log is an important source document for both the Inmate Population and Inmate Profile Data Elements.

2. RELEASE LOG - is a chronological record of all individuals who are released from the facility. It typically includes the following data elements:

A. date;
B. time of release;
C. name of prisoner;
D. booking number; and
E. means of release.

Release Logs are often combined with Booking Logs so that Release Data Elements for each inmate are recorded on the same line as his or her booking information.

3. ARREST REPORT - provides basic identifying and some demographic information about persons who have been arrested, a statement of the authority under which individuals are detained, and some information about the details of the arrest. Jails usually keep a copy of the Arrest Report (or a comparable Booking or Arrest Summary) as their documentation of the reason for the arrest. This practice enables them to prove that the jail is not unlawfully detaining anyone. The Arrest Report is a surprisingly good source of some of the Inmate Profile Data Elements.

   However, a word of caution is in order. Although there is some evidence that information which comes directly from people without any additional documentation (self-report data in research methods terminology) is quite reliable, it is important to note that Arresting Officers get information from prisoners at a time when they have a number of good reasons to conceal something and make themselves "look good". As a result, data elements like employment status or educational level may not be very accurate here.

4. BOND LOG - is a chronological record of all bonds that are paid at the jail. It usually includes the following data elements:

   A. name;
   B. date;
   C. time;
   D. charge (for each bond);
   E. type and amount of bond;
   F. return court date;
   G. jurisdiction; and
   H. officer's initials.

   This is a good source of information about bonding practices.

5. MEDICAL SCREENING FORM - records the results of the Intake Medical Screening. It usually includes the following types of information:

   A. the inmate's responses to a series of diagnostic questions, designed to reveal the presence of any medical conditions which would require immediate treatment or of which the jail should know about immediately, i.e., is the prisoner a diabetic or epileptic?;

   B. a brief description of the inmate's physical state; and

   C. a brief medical history, including questions about substance abuse problems, mental health problems and any treatment the inmate was receiving or had received in the past.

This form is one of the few places to find Inmate Profile Data Elements relating to medical, mental health and substance abuse problems.

6. MEDICAL LOG - is a chronological record of medical activities at the facility. It includes data elements like:

   A. distribution of medication (what, when and to whom);
   B. sick call (when, who);
   C. doctor's rounds (when, who); and
   D. special requests for medical care (when, who, what and response).

   These are important items of medical documentation, but they aren't of major help in any of the data sets mentioned in the manual. They would, however, be very helpful in evaluating the medical care received in the facility and might be important in making decisions about how medical care should be delivered to inmates.

7. CLASSIFICATION SCREENING FORM - records a great deal of information about the individual who is custody. It includes the following types of data elements:

   A. demographic information;
   B. criminal history;
   C. current legal status;
   D. medical, psychological, substance abuse problems and treatment recommendations; and
   E. program and service needs.

   Classification Screening Forms may be relatively simple or detailed documents that result from an in-depth interview of an hour or more. The amount of information contained in them varies accordingly. They are excellent sources of Inmate Profile Data.

8. DAILY (OR SHIFT) ACTIVITY LOG - is a chronological record of all operational activities. Whether the jail uses a Daily or Shift Activity Sheet or Log will depend on the size of the facility. Small (less than 25) facilities will probably want to use a Daily Activity Log; larger facilities will probably want to use a Shift Activity Sheet. Very large facilities (100 or more) will probably need to subdivide the data elements that are listed below into separate Logs:

   A. court activity (who went to court for what type of hearing);

   B. master control activity (results of routine head counts, any routine tests done by master control, inmate movement records, results of any routine tests done on jail equipment, notation of any unusual events, i.e., smoke detectors going off, etc.);

   C. physical plant checks (routine check of all locks, windows, security equipment, life safety equipment, etc.);

   D. laundry exchange (dates of distribution of bedding and or uniforms to prisoners);

E. outside agency inspections (dates and results of routine inspections done by State Inspectors, Fire Marshalls, Public Health Officers, Rodent Control, etc.); and

F. program activity records (date, time, type of program, i.e., recreation, religious services, etc.) and identity/number of inmates attending).

Other than the head counts which would provide a measure of Average Daily Population, this information does not relate directly to any of the data sets identified in the manual. It would be impossible, however, to evaluate any of the programs and services provided in the facility without this information. This information represents critical documentation of a jail's efforts to come into compliance with standards.

9. VISITOR'S LOG - is a chronological record of visitors to the facility. It includes both professional and family visitation. Data elements found here include:

A. name of visitor;
B. name of inmate visited;
C. relationship to visitor;
D. date; and
E. time.

Both professional and family visitors should be entered in the Visitor's Log. This is a good source of information that measures the level of activities in the facility, and its review would be a critical component of a staffing analysis. It is not a very good source of information about any of the data sets we have mentioned.

10. MAIL AND TELEPHONE LOG - is a chronological record of all in-coming mail and telephone calls. Its major purpose is to document the jail's practices in these areas for standards compliance. It is not helpful in data collection efforts. Small jails may want to incorporate this with their Daily Activity Log.

11. TRANSPORT LOG - is a chronological record of prisoner transportation activities. It includes all the data elements identified in the Operational Data, Transport Data Set mentioned in Chapter 2. It is often the only source of that information. This is another critical source of information for staffing analyses. Facilities that do a large number of transports may want to develop a Transport Form, to be completed for each transport and then compiled in a chronological Transport File.

12. INCIDENT LOG - is a chronological record of all "out of the ordinary events" in the facility, including fires, assaults, injuries, contraband, major and minor rule infractions, suicide attempts, violent behavior, psychiatric problems, etc. It should include all the data elements noted in Operational Data, Incident Set described in Chapter 2. In smaller facilities, it may include information about Disciplinary Hearings and Administrative Segregation Moves; larger facilities will need other mechanisms for documentation of this type. This is often the only source of information about this type of event in the jail and is

a critical part of any evaluation of the jail and its operations. Larger facilities will probably want to develop an Incident Report Form, to be completed for each incident and then compiled in a chronological Incident File.

13. PERSONNEL RECORDS - document all personnel actions taken, including:

    A. hirings (date, salary, position);
    B. terminations (date, position, type, reason);
    C. demographic information.

    These are normally kept in individual employees' files; they are the only source of information for Operational Data, Personnel Set. One way to facilitate using these documents (without having to go through each and every file) is to develop a Personnel Notebook, with a face sheet for each employee. Copies of all personnel action forms can be placed in the notebook behind each employees face sheet, with a special section for terminations.

14. BUDGET RECORDS - document budget allocations and expenditures, usually by quarters. The budget should be divided into categories so that dollar costs attached to personnel and salaries, fringe benefits, food, medical care, inmate supplies, etc. can be used as described in Chapter 2.

15. COMMISSARY REQUEST - is a form on which inmates list the items they would like to purchase from the jail's Commissary. Staff then deducts the cost of the items listed on the form from the inmate's funds; the form is placed in the Inmate File as a record of the transaction. It is not useful for any of the data sets identified in Chapter 2 with the possible exception of Operational Data. It does help to measure the level of activity in the facility and is, as a result, important when conducting a staffing analysis.

16. PROPERTY SUMMARY - is a form on which the Booking Officer records all items of personal property that the inmate has in his possession when jailed. Items released by or brought to the inmate are also noted. While essential for good operations, it is not helpful in data collections.

17. INMATE BEHAVIOR LOGS - are chronological records of staff observations of inmates in a particular housing unit. They describe inmate-inmate and inmate-staff problems, as well as any behavioral indications of medical or psychological problems. While these Logs are critical sources of information for officers working with the inmates on a daily basis, they are frequently too cumbersome to use in data collections.

18. JAIL LIST - is a daily list of all inmates detained at the jail, (their charge status, legal status, specific charge, any holds, housing location and age); all bookings (same information as above); and releases (means of release, type and amount if a bond). This list is primarily put together for the other actors in the system and should be sent to all courts, the public defender, the prosecutor, law enforcement agencies, etc. It is a source of both Inmate Population and Inmate Profile Data. Maintaining this document is not as time-consuming as might be

inmagined. A little creative use of "white-out" and the xerox machine makes it possible for most jails to type one new copy a week. Smaller facilities may find their copy will last even longer.

The documents that are listed above are those which are found in jails. It is a fairly generic list. As a result, some of the documents kept in your facility may not be listed by name. So, don't be concerned if the record system in your county's jail is not identical to this. But DO start thinking about improving documentation at the jail. If there are any additional questions about record keeping systems, the NATIONAL INSTITUTE OF CORRECTIONS INFORMATION CENTER, 1790 30th Street, Boulder, Colorado, 80301 has additional resources which might be of help to you.

In terms of data collection efforts, however, many of the forms and logs routinely kept by the jail are not particularly helpful. The most useful information sources for data collections tend to be:

1. the Arrest Report;
2. the Booking Log;
3. the Incident Log;
4. the Transport Log;
5. Daily Activity Log; and
6. the Jail List.

THE PROBLEM WITH DATA SOURCES - AND SOME SOLUTIONS:

Unfortunately, the documents kept in the jail provide little help in gathering data about criminal justice system performance. It is possible to find out something about arrest, bonding practices, and sentencing for which jail time is given, but the whole picture is not available. As the jail data collection begins, because no system is perfect, some problems or "quirks" will emerge. Because each jail and criminal justice system is unique, a particular problem may not be included in this section. However, the problems listed here are shared by virtually every criminal justice system. Some of them are things that can be managed; others can severely damage the data collection and should be avoided at all costs.

1. DATA ELEMENTS ARE SCATTERED.

Typically, in jail data collections, the data elements are scattered from one information source to another. Some elements are only available outside the jail (i.e., the courts). Not only does this increase the amount of time required to collect the data, but it also sets in motion other problems.

Even within the same criminal justice system, the same term can have different meanings. For example, the term "charge" has distinctly different meanings to law enforcement, the prosecuting attorney and the courts. To avoid comparing "apples and oranges", Sheriffs and Jail Administrators who use more than one source of information must make sure that everyone uses the same definition for the data elements they are collecting. Errors of this type can lead to mistaken conclusions in spite of the most sophisticated computer programs and statistical analysis. That's because the best analytical tools can be used on bad data.

2. DATA IS MISSING.

Missing data is a common problem - and one of the most frustrating. When collecting and coding persons finally find the right arrest report in the three-inch-thick file on one of the jail's regular guests, and discovers that the one piece of information they were looking for is missing, their responses are apt to be unprintable.

Missing data is frustrating from another perspective. Let's assume that a good sample of 500 prisoners has been developed for an Inmate Profile Data Collection. Unfortunately, because a lot of the data is missing, only 50 of the files have any information about one of the variables, for example, employment status. Assuming that the information that's been gathered about the 50 cases applies equally well to the other 450 people in the sample is the statistical equivalent of standing out on the limb of a very tall tree and giving your worst enemy a chain saw. Researchers consider this an "external validity" problem. While information is available about some of the prisoners, there is no evidence that suggests that the results can be generalized to the other prisoners.

In fact, there may be good reason to believe that the 50 prisoners who provided that information might be "different" from the 450 who didn't. They may have been unemployed people, charged with serious offenses, who stayed in jail a long time; maybe they were all students who were trying to convince the Arresting Officer to take pity on them; or maybe they had good employment histories and were trying to make themselves look like good candidates for release on bond. In those three "maybes" are three significantly different employment pictures. A little missing data is manageable in a data collection; a lot of missing data makes it very difficult to interpret the results of the data collection and analysis. Anything more than 10% missing data is a REAL problem.

However, missing data provides an extremely useful piece of management information. It means that staff aren't filling out the forms completely. There may be a number of reasons for that:

1. they don't have the information at the time they have to fill out the form;
2. they forget to ask for the information;
3. they forget to write down the information; or
4. they don't think the information is important.

As a manager, you can forgive the first as long as the form is changed to reflect the information that is available when staff have to complete it. Then make arrangements to routinely capture the information at the time when it finally surfaces. As a manager, you can't consistently forgive the others. This implies one of two things. Either your staff has to learn the importance of filling out the information that you ask for or you need to design better forms. Two more implications are hidden in that statement:

- staff should not be asked to fill out information that isn't important; and

- the information that is collected should be shared with staff and used to solve organizational problems.

3. THE INFORMATION ON THE FORM IS WRONG.

"Bad data" is a serious problem for any data collection. It's an especially serious problem if there is no way to know that the information that being gathered isn't correct.

In Chapter 2, the manual mentioned a problem associated with taking the data element, EMPLOYMENT STATUS, from an Arrest Report, e.g., the individual being arrested might have reasons to give inaccurate information. That problem belongs in this general category. One way to deal with this situation is to check the information given by the prisoner at one time with information given later or against information that has been verified.

One other kind of error should be mentioned here. The people who fill out your forms are human; they make clerical and typographical errors in recording information. And while these errors may be obvious to you, they will only be a series of numbers to the person who enters data into the computer. Even worse, the computer will make no judgements <u>at all</u> about the quality of the information that it processes. One of the oldest computer programmer sayings ("Garbage in = garbage out") is still all too true today.

Sheriffs and Jail Administrators can take steps to make sure that this doesn't happen by identifying a logical range of responses for each data element, e.g., the likely range of responses for the variable age might be from 18 - 55. Anything above or below that would warrant checking the data. This is a common checking procedure statisticians use to make sure they don't have bad data. Most computers printouts will list the high and low scores for each variable which makes it elementary to perform this simple check.

If this should happen, the person who processed the data will know procedures to find out if there is a problem with a single computer run, i.e., a keypunch card is in the wrong order, or if there are problems with the data itself. Even if there are data problems, there are statistical conventions to help counteract the effects of bad data.

4. THE DATA ELEMENTS ARE POORLY DEFINED.

This can happen to the most skilled people who develop data collection sheets. They design a question that asks the person filling out the form to make a value judgement and then fail to provide any criteria for making that decision.

A common jail example will make this clear. Let's suppose the Medical Screening Form asks the Booking Officer to answer the following question, "Does the prisoner exhibit any mental health problems?". This sounds fine until you stop to think about what constitutes a mental health problem. Does it include:

- only people who are so "out of it" that they have to be seen by a crisis worker from the Mental Health Department?;
- people who are violent on intake after a bad night at the local watering hole?;
- people who smile benevolently and giggle at questions like "Name?", but are totally cooperative?; or
- only people who would be considered "legally insane"?.

There is nothing wrong with asking this question, providing that the criteria for answering "Yes" or "No" are defined. This is an area ir which staff need training anyway. Make sure to get some help in defining these criteria and then train the jail staff in applying them.

5. THE HANDWRITING IS ILLEGIBLE.

No one ever said that all of these problems would be elegant or complex. Sometimes, the data is there, but the handwriting is indecipherable. Data collectors and coders do not read either hieroglyphics or cuneiform. And "guesses" in this area can lead to "bad data". As a manager, this is something that can be remedied for future data collections. If you have people on staff whose handwriting isn't legible once it's cold, suggest they print; if that fails, suggest they type; and if that fails, consider whether or not that person should be ir that particular position.

6. NO ONE KEEPS DATA FOR THE WHOLE SYSTEM.

This is really an extention of Problem #1: Data Elements Are Scattered. Each of the agencies in the criminal justice system keeps its own data; some agencies guard their data like the crown jewels. As a result, each agency has facts about only its own part of the system. This results in information being lost or fragmented. As a result, it may be extremely difficult for a data collector from one part of the system to get information from or access to records in another part of the system. This frustration sometimes leads to the elements of the system maintaining duplicate record systems.

All of this lends credibility to charges that the criminal justice system is uncoordinated. As policy makers in the system, Sheriffs and Jail Administrators must take an active role in remedying this problem. At a minimum, the elements of the system must begin to share information and to work together on common problems. It would be nice if we could move directly into guidelines for developing an automated, integrated information system for the entire criminal justice system. But that goal is a long way off for most of us. So this Chapter next turns to developing a manual information system for the jail. Who knows? Once the rest of the system sees the benefits attached to having management information on a regular basis, they might be more interested in working on a shared system. After all, if you want to get somewhere, you need to follow one of the fundamental laws of physics, "Direction first, then velocity!"

SETTING UP A MANUAL INFORMATION SYSTEM FOR THE JAIL:

Information systems are structurally or functionally related elements or procedures which provide information to an organization, usually in summary form. They may be automated (computerized) or manual (on paper). They vary a great deal in their usefulness, their complexity, and the amount of time involved in maintaining the system. The system described in this section is a very basic management information system that generates monthly statistical reports about the Inmate Population Data Elements and some Inmate Profile Data Elements, as well as some operational data. This system has been used in a fairly large facility (100 beds, about 6,000 bookings per year) for six years. It provides basic information to management; it is relatively simple to maintain; and it demands a relatively small time commitment on the part of clerical staff. And it works!

ELEMENTS OF THE SYSTEM:

To set up this management information system, the jail will need:

1. a supply of 5x8 cards, preferably pre-printed with the names of the data elements elements you want collected and spaces for information to be recorded (@ about $15.00 for 500, plus the cost of printing);

2. two sets of alphabetic file dividers (@ about $4.00 each);

3. two card files (which vary in cost from $17.50 for the Cadillac of card files to $7.65 for the Chevette);

4. a ballpoint pen (@$.29); and

5. about 4% of a clerk's annual working hours (about 70) for every 1,000 bookings. This translates to about 4 minutes for each card filled out.

So, if the jail booked 1,000 people in a year, the cost of maintaining this information system would be about $32.90 for equipment (assuming you chose the least expensive equipment) and $350 for labor (if the person maintaining the system makes $5.00 an hour). At $382.90 for the annual operating cost, this manual information system is far less expensive than even the most inexpensive computer; suddenly manual systems become very appealing!

SYSTEM START-UP:

The information covered so far in this manual should have made it clear as to what the first thing to be corsidered in starting up the new information system might be. If not, re-read Chapter 2: How To Identify the Information that Should Be Collected; you missed something.

1. IDENTIFY THE INFORMATION THE SYSTEM SHOULD COLLECT.

The purposes of this information system is exactly as stated in the first paragraph of this section:

- to collect the Inmate Population Data Elements (Average Daily Population; Length of Stay; Jail Days; Total Bookings; Net Bookings; Number of Felons, Misdemeanants, Traffic Offenders, and Holds; Number of Pre-trial, Post-trial, and Sentenced Offenders; Number of Male and Female Inmates; and Adult and Juvenile Inmates;

- to collect some basic Inmate Profile Data Elements (Charge; Age; Ethnicity; Residence; and Release Status); and

- to collect some operational data (Number and Location of Transports; Number of Incidents; and Number of Contact & Non-contact, Professional and Family Visits).

2. DETERMINE HOW FREQUENTLY SUMMARY REPORTS ARE NEEDED.

Most Sheriffs and Jail Administrators will probably want monthly statistical reports. The Inmate Population Data Elements are most understandable statistically when they are grouped by month; somehow, weekly stats are too much to absorb when looking for jail population trends and patterns. An exception to this general rule occurs when the jail is trying to control crowding. Then monthly stat reports would not be frequent enough; weekly summaries would be helpful.

3. DESIGN AN INMATE INFORMATION CARD.

Later in this Chapter, there are tips on how to design good data collection sheets. When you are ready to design the Inmate Information Card, refer to that section. Figure 2 provides a sample Inmate Information Card. A full-sized copy of this card is provided in Appendix C.

INMATE INFORMATION CARD

NAME _____ BOOK-IN DATE _____

BIRTHDATE _____ BOOK-OUT DATE _____

RACE _____ SEX _____ LENGTH OF STAY _____ (IN DAYS)

CHARGE(S) _____

___ FELONY ___ PRE-TRIAL ___ RELEASED AT BOOKING

___ MISDEMEANOR ___ POST-TRIAL

___ TRAFFIC ___ SENTENCED ___ HOUSED IN JAIL

___ OTHER ___ HOLD FOR _____

___ COUNTY RESIDENT RELEASED TO _____

___ STATE RESIDENT BOND TYPE _____

___ OUT OF STATE RESIDENT AMOUNT _____

#_____ EMPLOYED - FULLTIME ___ PARTTIME ___ UNEMPLOYED ___

Figure 2

4. DECIDE WHO WILL MAINTAIN THE SYSTEM.

Sheriffs and Jail Administrators should make one person responsible for maintaining the information system. As this manual has strongly suggested, it's a clerical function. If there are no clerical staff in the jail, Officers who work the graveyard shift or dispatchers might be able to maintain the system during slow periods. One of the benefits of having clerical staff maintain the information system lies in the fact that they aren't tied to their radios like dispatchers. They can leave their work area to get the information if need be.

METRO COUNTY SHERIFF'S DEPARTMENT

JAIL DIVISION

SHIFT ACTIVITY SHEET

IN:	OUT:
TIME ______	TIME ______
NAME ______	NAME ______
CHARGE ______	RELEASE TO ______
P. D. ______	BOND ______
TIME ______	TIME ______
NAME ______	NAME ______
CHARGE ______	RELEASE TO ______
P. D. ______	BOND ______
TIME ______	TIME ______
NAME ______	NAME ______
CHARGE ______	RELEASE TO ______
P. D. ______	BOND ______
TIME ______	TIME ______
NAME ______	NAME ______
CHARGE ______	RELEASE TO ______
P. D. ______	BOND ______
TIME ______	TIME ______
NAME ______	NAME ______
CHARGE ______	RELEASE TO ______
P. D. ______	BOND ______
TIME ______	TIME ______
NAME ______	NAME ______
CHARGE ______	RELEASE TO ______
P. D. ______	BOND ______

STATISTICAL SUMMARY BEGIN COUNT ______ END COUNT ______

FELONS ______ # MISDEMEANANTS ______ # TRAFFIC ______ # OTHER ______

PRE-TRIAL ______ # SENTENCED ______ # FEMALES ______ # JUVENILES ______

Figure 3

5. DETERMINE WHERE THE JAIL ROUTINELY CAPTURES THE INFORMATION AND DECIDE HOW TO GET IT FROM THAT SOURCE TO THE CARD.

It's hard to be very specific about this step because jails capture the information in so many places. It would be helpful to review the list of documents included in this Chapter. The Daily Activity Log or a Shift Activity Sheet, Booking Log and the Arrest Report will probably provide most of the inmate data elements; the operational data elements will need to come from the Transport, Incident and Visitor Logs. Another potential resource for the Inmate Data Elements would be the status board found in most Booking Areas which records the inmates who are in custody, some descriptive information and their housing assignments.

Let's assume for this example that the Inmate Information can be collected from a Shift Activity Sheet. In case the jail doesn't currently use a Shift Activity Sheet, Figure 3 provides an example. Appendix D includes an 8 1/2" x 11" copy; depending on the amount of activity on each of your shifts, you may want to use legal size paper.

Let's also assume that none of the Logs that needed to gather the operating information about Transports, Incidents and Visitors are available. This will require some additional equipment:

- three three-ring binders; and
- a ream of xerox paper.

Repeat Steps 1 through 4 to decide what information should be included in these Logs; how frequently the information will be needed; design Transport, Incident and Visitor Log Sheets; and decide who will maintain the system. Figures 4, 5, and 6 provide sample Visitor, Transport and Incident Logs; Appendix E provides full-sized copies.

VISITOR LOG

DATE	TIME IN	TIME OUT	INMATE NAME	VISITOR NAME	RELATIONSHIP	CONTACT YES	CONTACT NO

Figure 4

METRO COUNTY SHERIFF'S DEPARTMENT
JAIL DIVISION

TRANSPORT LOG FORM

OFFICER

NAME _____ O. T. / COMP YES ____ NO ____
NAME _____ O. T. / COMP YES ____ NO ____
NAME _____ O. T. / COMP YES ____ NO ____

REASON

____ EMERGENCY ROOM TREATMENT
____ SCHEDULED MEDICAL APPOINTMENT
____ COURT APPEARANCE
____ WARRANT PICK-UP
____ RETURN TO OTHER JURISDICTION
____ TRANSPORT TO STATE INSTITUTION
____ TRANSPORT TO STATE HOSPITAL
____ TRANSPORT TO TREATMENT FACILITY
____ COURT ORDERED
____ OTHER _____

DATE _____

PRISONER / LOCATION

NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____

TIME DEPARTURE _____
RETURN _____

MEALS $ _____
$ _____
$ _____

VEHICLE ODOMETER START _____
ODOMETER END _____

____ VAN ____ CAR # _____
____ OTHER _____

CLEANLINESS GOOD FAIR POOR

MECHANICAL CONDITION GOOD FAIR POOR

GAS COST ____ # GALLONS PURCHASED ____ # GALLONS TO FILL ON RETURN ____

PROBLEMS _____

Figure 5

METRO COUNTY SHERIFF'S DEPARTMENT

JAIL DIVISION

INCIDENT REPORT FORM

INMATE NAME _____ BOOKING NUMBER _____

HOUSING ASSIGNMENT _____

INCIDENT DATE _____ TIME _____ REPORTING EMPLOYEE _____

REPORT DATE _____ TIME _____ SUPERVISOR _____

LOCATION

___ HOLDING	___ VISITING
___ BOOKING	___ KITCHEN
___ INTAKE SALLYPORT	___ HOUSING UNIT #: 1
___ PERSONAL EFFECTS ROOM	___ " 2
___ ISOLATION	___ " 3
___ CORRIDOR	___ " 4
___ LIBRARY / CLASSROOM	___ " 5
___ EXERCISE	___ OTHER _____

REASON

___ SUICIDAL	___ ARSON
___ VIOLENT	___ PROTECTIVE CUSTODY
___ ILLNESS	___ CONTRABAND VIOLATION
___ ACCIDENTAL INJURY	___ ESCAPE ATTEMPT / RISK
___ CAUSING A DISTURBANCE	___ REFUSAL TO OBEY AN ORDER
___ HARMING / THREATENING STAFF	___ DESTRUCTION OF JAIL PROPERTY
___ HARMING / THREATENING INMATE	___ OTHER _____

INCIDENT DESCRIPTION (including who was involved, what happened, where the incident occurred, what caused it, etc.) _____

Figure 6

Front

RULE VIOLATION MAJOR ____ MINOR ____ NO ____

IS A C. R. NEEDED? YES ____ # _____ NO ____

DISCIPLINARY ACTION

MAJOR VIOLATION

____ MOVE TO ISOLATION

____ MOVE TO MAXIMUM SECURITY

____ MOVE TO ADMINISTRATIVE SEGREGATION

____ MOVE TO _____

MINOR VIOLATION

____ NO ACTION

____ VERBAL REPRIMAND

____ 48 HOUR LOSS OF PRIVILEGE _____

____ 24 HOUR LOCK-DOWN

____ OVER 48 HOUR LOSS OF PRIVILEGE _____

____ OTHER _____

USE OF RESTRAINTS

____ NONE NEEDED

____ PHYSICAL

____ MECHANICAL

INJURY TO

____ STAFF

____ INMATE

____ OTHER _____

DISCIPLINARY REVIEW BOARD REQUIRED YES ____ NO ____

DATE OF REVIEW BOARD _____

DATE NOTICE SERVED _____

GRIEVANCE FILED YES ____ NO ____

ADDITIONAL COMMENTS _____

ADMINISTRATIVE REVIEW AND APPROVAL

COMPLETED BY

CORRECTIONS OFFICER _____ DATE _____

SHIFT SUPERVISOR _____ DATE _____

JAIL ADMINISTRATOR _____ DATE _____

Figure 6

Back

The easiest way to get this information is to:

- require that all incidents which occur in the facility be documented on the Incident Form. In order to do that, the Sheriff or Jail Administrator must define for staff what kind of events must be documented. The Sheriff or Jail Administrator should review each form and then give it to the person who is maintaining the information system to be three-hole punched and placed in the binder.

- require that all Officers transporting inmates outside the facility begin a Transport Form prior to their departure from the jail and that they complete it as soon as they have returned. Have them give the completed form to the person who is to maintain the system to be three-hole punched and placed in the binder.

- require that all persons who visit the facility complete the Visitor's Log. The forms should be pre-punched and placed in the three-ring binder, which should be kept at the place at the visitors' entrance.

One more comment is appropriate here. If the jail has more than one source for a particular data element, a decision must be made about which source should be used. Several criteria might help with that choice:

1. one source may be more accurate than another; and

2. the fewer sources needed to get the information, the better. When confronted by a choice between one source that has only one data element and another source that has more than one of the data elements you need, unless there is a COMPELLING reason to use the source with just one element, use the source that provides the most data elements. It's more convenient.

6. TRAIN THE PERSON WHO WILL MAINTAIN THE SYSTEM IN HOW TO FILL OUT THE INMATE INFORMATION CARD. INSIST THAT IT BE DONE DAILY!

Manual systems are very manageable IF they are maintained on a daily basis, Monday through Friday. Mondays may be a little hectic until the person who does this job becomes fully comfortable with the system (usually no more than a week or two). But if information systems are neglected, up-dating them when it is time to complete the monthly report is extremely tedious. Worse yet, if some of the information is missing, it may be impossible to get it once the inmate is gone and staff's memory of him has faded. From time to time, it is also a good idea to make sure that the information filled out on each of the Inmate Information Cards is accurate.

7. PICK A DAY TO START.

Ideally, the information system should start on the first of the month. However, it's wise to allow a few days of grace (no more than a week) to practice just to be sure that the system is working properly. On Day 1, make a card for each inmate who was in custody at 8 AM. Get out the rest of your equipment. Label the two Card Files, "Current Inmates" and

"Past Inmates". File the Inmate Information Cards by inmate last name after the appropriate letter in the Current Inmate Card File. Get a calendar that's small enough to be put inside one of the Card Files. Each day at the same time, record the number of inmates who are in custody. Be SURE to pick a time when the jail's population is not artificially low (like right after court). Usually 8 AM is a good time.

8. BEGIN DAILY MAINTENANCE ROUTINE.

Each day, complete an Inmate Information Card for every person booked at the jail. Pull out the Inmate Information Card of every person who is released, enter the release information, and file it in the Past Inmate Card File.

METRO COUNTY SHERIFF'S DEPARTMENT
JAIL DIVISION

INMATE INFORMATION SYSTEM MONTHLY TALLY SHEET

AGE

18	34
19	35
20	36
21	37
22	38
23	39
24	40
25	41
26	42
27	43
28	44
29	45
30	46
31	47
32	48
33	49 OR OLDER

SEX

MALE
FEMALE

Figure 7

9. PREPARE THE FIRST MONTHLY REPORT.

Before starting the monthly report, make "tally sheets" for the each of data elements. Figure 7 provides a sample of a monthly tallysheet (a piece of paper which lists all the categories for each data element and on which a check mark is made next to the appropriate category for each Inmate Information Card); Appendix F provides sample full-sized monthly report tally sheets. Begin by averaging the head counts to calculate the jail's average daily population for the month.

Take out the Past Inmate Card File and remove all the Inmate Identification Cards. NOTE!!! Use only the Past Inmate Card File. The system actually counts inmates as they are released from the jail rather than counting them as they are booked. Statistically this is better, because it captures information sooner about people who have been in the facility for a long time. Think about it for a second. Since inmate turnover in jails is relatively rapid, it will only take about a month for the system to catch up.

When going through the Inmate Information Cards, make a mark on the section of the tallysheet which represents the value noted on the card. In plain English, put a check mark in the section of the tallysheet marked "Felony" if the prisoner is a charged with a Felony (If there is more than one charge always code the most serious charge). When you've finished with the Inmate Information, pull the Transport, Incident and Visitor Logs for the month and follow the same process.

Now summarize and type up the information in report form. For some help in doing this, refer to Chapter 8: How To Share Information With Others for some tips on how to display data.

Next, make an accounting sheet for each of the data elements so that when each monthly report is completed, a "Year To Date" Total can be calculated for each data element. This will make doing the Annual Report much easier. Bunch these cards together, and label them by month. When the Annual Report is completed, store the cards in a dry, secure place. They may be useful in later data collections.

10. EVALUATE YOUR INFORMATION SYSTEM IN SIX MONTHS AND MAKE ANY CHANGES YOU THINK NECESSARY.

Every jail has its own peculiarities. This system may not be tailor-made for you. After all, you're essentially buying it "off the rack". After six months, however, you should have enough experience with it to know what portions should be changed or adapted to fit your needs more adequately. Do plan a time to do this. And certainly talk about it with the person who is maintaining it. Evaluations that aren't planned have a way of never happening. This information system, when tailored to meet the needs of the jail can be a powerful management tool. Take the time to improve on it!

CONGRATULATIONS! You've just set up a management information system! You've got a mechanism by which you can collect all the information you routinely need. Now, let's deal with those special issue data collections.

SPECIAL ISSUE DATA COLLECTIONS:

Even though the manual system may routinely collect a great deal of the information needed for jail management, sooner or later, there will come a time when a special data collection is needed. You may decide to:

1. build a new jail;

2. design a new Inmate Classification System or evaluate the present one;

3. evaluate inmate programs provided within the jail;

4. change operational policies and procedures;

5. conduct an analysis to determine appropriate staffing levels in the jail; or

6. take a proactive approach to crowding.

While the data that is available through the information system will be invaluable in these projects, additional information that the system doesn't provide will be required. This section will describe a process for designing these special data collection forms, including tips for designing easy to use forms; it also will provide copies of data collection sheets and code books for the following data collections:

1. Inmate Profile Data Collection (Appendix G);
2. Inmate Profile Data Collection - Overcrowding Modification (Appendix H);
3. Incident Data (Appendix I); and
4. Transport Data (Appendix J).

DESIGNING SPECIAL DATA COLLECTION FORMS AND CODE BOOKS:

The process for designing forms for special data collections is very similar to the process for designing the form for the manual information system.

1. IDENTIFY THE INFORMATION TO BE COLLECTED.

   If questions arise regarding this step, refer to earlier sections of this Chapter.

2. DETERMINE WHERE THE JAIL ROUTINELY CAPTURES THE INFORMATION.

   Designing the forms for special data collections is very similar to the process for designing the form for the manual information system. Furthermore, if good design procedures were followed when the Log Sheets or forms on which you routinely collect information, then this should be a elementary. The forms routinely used will double as data collection sheets. If the jail's record system doesn't capture the information at all, there are only two choices for remedying the situation.

1. Redesign a form that staff already completes at a time when the information that's needed is likely to be available. For example, the special data collection may be concerned with finding out how many people in the jail have been hospitalized for mental illness. The jail's Medical Screening Form already asks whether or not the prisoner exhibits a signs of mental illness. This would be an ideal time to ask about hospitalization for mental illness; the Medical Screening form would be a likely target for redesign. This strategy is almost always preferable because it limits the proliferation of additional forms, and it doesn't increase Officers' paperwork significantly.

2. Design a form to collect the information. To use the previous example, if you didn't have a Medical Screening Form, this would be the time to do it. It is important to design good forms which capture the information which is <u>really</u> needed and reduce the amount of duplication.

If the Log Sheets and other routinely used forms are well designed, they will double as data collection sheets with no modification. A good example of a form that doubles as a data collection sheet is the Transport Log Form in Appendix E. However, if the information that's needed is located in several different documents, a separate data collection sheet on which ALL the information for each case is recorded will be needed. A classic example of this kind of situation is the Inmate Profile Data Collection Sheet also included in Appendix G.

3. ANALYZE THE DATA ELEMENTS.

Once all the data elements are identified, the next step to developing a special data collection sheet is to think a little bit about what information will be recorded for each data element. This is one more time that first-hand working knowledge of the jail and its operations will be invaluable. To explain this step, let's work with the Transport Log Form. Figure 8 on the following page provides a sample of a completed Transport Log Form.

This step identifies differences in the ways in which the data elements are measured. On the Transport Log, the responses to some of the data elements easily fall into different categories. These are data elements like:

1. REASON FOR TRANSPORT - the items in the checklist define the number of categories that are possible for this data element;

2. LOCATION FROM AND TO - all the locations that are possible places to which prisoners would be transported define the categories possible for this data element;

3. VEHICLE USED - there are three possible categories for this data element;

4. BADGE NUMBER - the number of commissioned employees defines the number of possible categories in this data element;

METRO COUNTY SHERIFF'S DEPARTMENT
JAIL DIVISION

TRANSPORT LOG FORM

OFFICER

NAME George R. Good O. T. / COMP YES ____ NO X
NAME _____ O. T. / COMP YES ____ NO ____
NAME _____ O. T. / COMP YES ____ NO ____

REASON

DATE 8/3/82

___ EMERGENCY ROOM TREATMENT
___ SCHEDULED MEDICAL APPOINTMENT
___ COURT APPEARANCE
___ WARRANT PICK-UP
___ RETURN TO OTHER JURISDICTION
_X_ TRANSPORT TO STATE INSTITUTION
___ TRANSPORT TO STATE HOSPITAL
___ TRANSPORT TO TREATMENT FACILITY
___ COURT ORDERED
___ OTHER _____

PRISONER

NAME Frank F. Felon

LOCATION

FROM County Jail TO State Prison

NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____
NAME _____ FROM _____ TO _____

TIME DEPARTURE 0900

RETURN 1800

MEALS $ 3.00
$ _____
$ _____

VEHICLE ODOMETER START 32,672
ODOMETER END 32,993

___ VAN _X_ CAR # 54
___ OTHER _____

CLEANLINESS GOOD X FAIR POOR

MECHANICAL CONDITION GOOD X FAIR POOR

GAS COST 23.50 # GALLONS PURCHASED 20 # GALLONS TO FILL ON RETURN 14

PROBLEMS None.

Figure 8

5. DATE OF TRANSPORT - there are 365 possible categories for this data element (which would probably be grouped into months for a study); and

6. RETURN AND DEPARTURE TIMES - there are as many possible categories as there are minutes in the day (which would probably be grouped in hours for a study).

Other data elements have responses that fall into some kind of order from better to worse. The data elements like that on the Transport Form relate to:

1. VEHICLE CONDITION - asks the Officer to rank the cleanliness and functionality of the transport vehicle from good to poor.

The rest of the data elements have responses in which the possible answers are recorded are in equal units. These are data elements that could have a great many possible answers, such as:

1. REGULAR AND O.T. HOURS - answers could vary a lot, from less than an hour to several days, but they will all be expressed in hours (or minutes which can be turned into parts of hours);

2. TOTAL TIME - answers could vary from less than an hour to better than a day, but they will all be expressed in hours or parts of hours;

3. TOTAL MILEAGE - answers could vary from a mile (or less), but they will all be expressed in miles;

4. GAS COST - answers will vary from 0 (if no gas had to be purchased on a transport) to a rather significant amount of cash, but they will all be expressed in dollars and cents;

5. # OF GALLONS PURCHASED - answers will vary from 0 (if no gas was purchased while on the transport) to a large number, but they will all be expressed in gallons;

6. # OF GALLONS REQUIRED TO FILL - answers will vary from close to 0 to the entire capacity of the gas tank, but they will all be expressed in gallons;

7. MEAL COST - answers will vary from 0 to the total amount the department authorizes for food on transports, but they will always be expressed in dollars and cents.

This may seem so logical that you may wonder why so much time and space were spent on describing the different kinds of data elements. To statisticians, this elementary phenomenon is a BIG deal. These are the LEVELS OF MEASUREMENT associated with all data elements. The first group of data elements (whose answers can be divided into a series of categories) are called NOMINAL data elements. The second group (whose answers can be ranked in order from good to bad) are called ORDINAL data elements. The third group of data elements (whose answers were expressed in equal units) are called INTERVAL and/or RATIO data elements. Statisticians divide the third group into two sub-groups, depending on whether or not 0 is a possible response. For the purposes of this manual, they can be treated as one group.

Levels of measurement are critical in calculating statistics, because some statistical procedures are valid only with data of certain levels of measurement. So, if the statistical procedure applied is not appropriate for the data's level of measurement, the resulting analysis of the data may be meaningless. Chapter 6 will spend more time on problems of this nature. However, this has one very obvious application for developing data collection sheets: nominal data elements, with a relatively short list of possible categories (like REASON FOR TRANSPORT), lend themselves to checklists which make the forms easier to fill out.

The final task in analyzing the data elements is to decide the level of detail to be reported. For example, for TOTAL MILEAGE, it's necessary to decide if the answer must be written out correct to the tenth of a mile or if responses can be rounded off. Either write this information on the sheet or design the sheet in such a way that Officers must write the answer in the right form.

This is a very critical task because these categories of the variables will become the finest amount of detail that your data collection sheet will measure. It's always possible to re-group or re-define the categories into larger topic areas, but it's impossible to get finer detail once the information is coded. The data element, CHARGE, is an excellent illustration of this problem. If, for example, charges are coded as "CRIMES AGAINST PERSONS", "TRAFFIC OFFENSES", etc., then it would be impossible to find out how many inmates are charged with specific types of offenses or to investigate the characteristics of inmates charged with DUI, Assault, etc. Take the time to make sure that the information is gathered in the finest level of detail that could possibly be important to the jail.

4. DESIGN A DRAFT DATA COLLECTION SHEET.

Once all the data elements have been defined and the ones which require special treatment, i.e., checklists, decimal places, etc., have been determined, design of the data collection sheet itself can begin. Data collection sheets are really just forms on which people record the information that you need to collect, but statisticians call them "data collection instruments".

Good data collection sheets have the following characteristics:

A. they reduce the amount of writing that has to be done to a minimum by pre-printing the names of the data elements;

B. they are clear, easy to understand, and easy to fill out;

C. they group related data elements in sections so that the person filling out the sheet has a logical sequence to follow; and

D. they are as short as they can be (preferably 1 sheet of paper) <u>without being crowded.</u>

The first data element on the data collection sheet (and in the code book) should be a case identification number (a unique number assigned to ONLY one case about which you are gathering information). Remember, a "case" in the statistical sense can be a person, event, or object, about which information is gathered. Thinking in terms of "cases" is so important that we'll spend some time on that in the next Chapter. But for now, either fill in the case identification number (such as 001, 002, 003, etc. through the last case) on each of the data collection sheets BEFORE you start using them, OR you can number the data collection sheets AFTER the data has been collected, but before keypunching. But DO number them. Otherwise, there is no good way to check and correct keypunch errors. Worse yet, the keypuncher could have the bad luck to drop all the cards. Once the cards are out of order (especially if there is

problems versus how many were treated for mental health problems. Review the sample code books in the appendices, and begin to develop your own.

6. REVISE THE DATA COLLECTION SHEET.

Based on any changes which may be made while developing the Code Book, revise the Data Collection Sheet. This time, when it is typed, make sure that the space next to each data element on which the information is to be entered reflects the exact number of digits that will be included in that code. So, for MEAL COST, a four digit code, the entry on the Data Collection Sheet would look like this:

MEAL COST $ 0 3 . 9 8

Other variables might look like this:

DATE OF TRANSPORT 0 6 / 0 4 / 8 2

DEPARTURE TIME 1 3 3 0

RETURN TIME 1 6 4 5

STARTING ODOMETER READING 0 4 7 , 6 2 3 . 2

7. TEST IT.

As thorough as the job of designing the data collection sheet might have been, no one has ever designed a perfect form on the first try. Because we have been known to make mistakes from time to time, it's important to find out how well the data collection sheet works. Statisticians call this process "pre-testing the survey instrument". Sometimes it's a good idea to ask someone who works in the jail to fill it out and give you feedback about how well it works before the form is finalized. When you're confident that the data collection sheet is right, decide on a time period for the test.

As the data collection sheet is tested, problems will quickly surface. Information will suddenly appear that isn't included in the coding system; data won't "fit" into those categories that seemed so clear. As decisions are made about how to handle each instance, write them down in the code book.

8. FINALIZE THE CODE BOOK AND THE DATA COLLECTION SHEET.

When the test period is over, there are several items to consider. First, review the Code Book in which changes made to respond to coding problems have been recorded. Second, review each data collection sheet and look for places where people have had to use the "Other" category. If the same things are frequently written in, it's likely that a cate-

gory has been omitted. Third, look for data elements that have a lot of "Don't Know" responses. This can mean a couple of things:

- staff should be directed to find the missing information if it is important;
- the data element should be removed from the data collection sheet if it's not important); OR
- the question is confusing.

Most often, it's the latter. The only way to find out which is which is to ask the people who have completed the form. Once the nature of the problem has been determined, after a final check with the data analyst, make the final copies of the data collection sheet and the code book.

CONCLUSION:

That's about all there is to it! The data collection sheet and the code book, have been developed; if the data collection is going to be computerized, the operating or control deck has been prepared. Once the data collection sheet has been finalized and the data collection begun, your attitude toward changing it should be somewhat like your attitude toward drawing a gun: if there are COMPELLING reasons, by all means, go ahead, but if you can avoid it, DO SO AT ALL COSTS!

By keeping the data collection essentially the same from year to year, it becomes possible to compare the data elements over time. Statisticians call this a "longitudinal" data collection. If you do the data collection just once, statisticians call it a "cross-sectional" data collection. While a "cross-section" can help you describe something, "longitudinal data" can document change and even begin to explain it. So, without any further adieu, let's take care of a few final tips about putting the actual data collection together.

more than one card per case), it's virtually impossible to figure out which sets of cards went together. In most cases, this results in keypunching all the cards again.

Begin by looking at the data collection sheets that are included with this manual. Think about the format of the data collection sheet. Once the results are satisfactory, type it up. As nice as it may look, this will probably not be the final data collection sheet. It needs to be tested first. This will require a code book.

5. DRAFT A CODE BOOK.

Code books are documents that translate the data element categories (which are usually written words) into numbers so that computers can process them more quickly. Code Books identify:

- the data elements;
- the categories for each data element;
- the codes for each data element; and
- the keypunch column numbers for each data element (if the data will be computerized).

It is generally good practice to have the data analyst help to develop the Code Book. He/she will probably have a number of suggestions about ways to format the data collection sheet that will make it easier to keypunch. It is also good practice to have the data analyst develop the operating program (in the case of SPSS, a statistical program we've mentioned before, the procedure cards or control deck) before the data collection sheet is finalized.

The following example illustrates how code books work. The categories (which statisticians call VALUES) of the data element (which statisticians call VARIABLES) RESIDENT STATUS are:

- Metro County resident;
- Your State resident; and
- Non-resident.

It's not very efficient to type words into the computer. And some computers can only handle numerical data. To deal with this problem, people designing data collection sheets develop codes (almost always numbers) to represent the different categories (or values) of each of the different data elements (or variables). So, for the above example, the three values of RESIDENT STATUS would become:

1. Metro County resident;
2. State resident;
3. non-resident;
4. other;
8. not applicable; and
9. unknown.

The code for the data collection is in some respects like Morse Code or the 10 code; it makes communication with the computer more efficient and effective. This actually is a very tricky job. Three major challenges

lie ahead. The first concerns the categorical data elements (which statisticians call NOMINAL VARIABLES). It is critical to identify ALL of the possible categories (or as many as possible). This is another area in which knowledge of corrections and the criminal justice system is very helpful; it gives Sheriffs and Jail Administrators a head start over any researcher who has never collected data in a jail before.

In dealing with this challenge, there are a number of ways to get started. First, decide what level of detail is needed. For example, continuing with the data element, RESIDENT STATUS, decide if the responses should be rather general (like the values identified above) or more specific (the specific city or town in which the prisoner resides). For some data elements, this will be very easy, i.e., CHARGE STATUS. The criminal code will define some of the categories for you, i.e., felony, misdemeanor, etc. For other data elements, it will be much more difficult.

Next, do a little more research to identify all the possible categories. It's often a good idea to ask an associate to review a final list of the categories. For a little added insurance, include a category, "Other", with a space for people filling out the form to write in information which is missing from the checklist. If it's possible that the people who will fill out the form may not have the information, add two categories, "Not Applicable" and "Don't Know". These will be a big help in finalizing the data collection sheet.

The second major challenge is particularly important if a computer will be used to process the data. It concerns the interval/ratio data elements which are measured in some type of unit. These are almost always expressed in numbers already. The challenge is to identify the number of digits that will be in the largest possible answer to that question. MEAL COST, one of the data elements on the Transport Form, is a good example of this type of data element. Assuming that both dollars and cents are necessary, the code book must identify how many spaces should be reserved for that data element.

Should it be 3 digits, as in $3.99?
or
Should it be 4 digits, as in $03.99?

If it's likely that meal cost for a single meal would run in excess of $9.99, then a 4-digit code is necessary, or information about the most expensive meals will be lost. Generally speaking, it's better to use an extra digit, especially if the size of the biggest response is uncertain.

The third and final challenge is to review each and every question that has been asked to be ABSOLUTELY SURE that only ONE question at a time is asked. For example, let's taking an innocent-looking question, which might be found on a Medical Screening Form, "Has the prisoner been hospitalized for treatment of mental health or substance abuse problems?". This kind of question may sneak through the coding stages of the data collection without causing many problems. However, when it's time to interpret the information, there will be no way to identify how many of the people who were hospitalized were treated for substance abuse

CHAPTER FIVE:

HOW TO PUT IT ALL TOGETHER

Now that the data collection sheet and the code book have been developed, there are only a few more details to be cleared up before starting the data collection. Now is a good time to think about the nitty-gritty details of really DOING the data collection. That's what this Chapter is all about.

DOING THE DATA COLLECTION:

Doing the data collection itself is really just a matter of good planring and organization with a healthy dose of hard work thrown in for good measure. Collecting data in jails can be tedious and time-consuming. But this manual has done its best to make it as easy as possible to collect jail data by insisting that the proper preparations are made and by providing a number of guidelines and resources to save you extra time and energy. Now, however, it's time for you to go to work. As you start the actual data collection, follow these steps to get organized.

1. DETERMINE WHERE YOUR JAIL ROUTINELY CAPTURES THE INFORMATION AND (IF NECESSARY) DECIDE HOW TO GET IT FROM THERE TO A DATA COLLECTION SHEET.

   This manual has dedicated a considerable amount of time to this topic in the previous Chapter; documents that are commonly sources of jail information were identified. If you're not certain about how to proceed, you might want to review those sections.

2. DETERMINE HOW MUCH DATA TO COLLECT.

   For some of the data elements (Inmate Population Data Elements and the Operational Data Elements), this is not an issue at all. Information will be collected about EVERY inmate or event. But for other types of data collections, determining how many and which cases to collect data on is a major issue. Statisticians refer to this process as sampling.

   Although it may be desirable, from a statistical point of view, to have a large amount of data, (for example, Inmate Profile Data from an entire year), in reality, that's often impossible for most jails. Sometimes the Record Keeping System has not captured the necessary information, or the record system may be unreliable. If the Inmate Record system is in "good shape", historical cases can be used. In many situations, however, the data collection has to move forward in time to gather information on people who are currently passing through the jail. However, most systems can not afford to wait for an entire year to get the information they need. Data collections need to be timely as well as accurate. Furthermore, collecting some kinds of data about every case may be too time consuming. This is particularly true when the data collection involves getting data from other parts of the criminal justice system.

Fortunately, statistical sampling allows analysts to gather information from a segment of the entire population (a sample) in such a way that you can be safe in applying what you've found out to the whole population. You can even determine HOW safe you are in making this assumption. Earlier, this manual indicated that statistics enables analysts to estimate what the chances of being wrong are. Statistics uses the laws of probability and applies certain mathematical formulas to what's known about the data. The laws of probability should be pretty familiar to individuals who have been known to wager a bit; the laws of probability are essentially the same thing as "the odds".

In sampling, statisticians use probability to determine what the odds are of selecting a statistically similar sample. Samples are statistically similar if they are drawn from the same population AND the differences between them can be explained by the just sampling process itself (sampling error). Statistics can determine how many times out of a hundred a sampling scheme will result in a statistically similar sample. Most statisticians want to be at least 95% certain that they would get similar results if they analyzed a different sample from the same population, and some want to be 99% certain.

The similarity of samples taken from the same population is measured by a statistic called the Standard Error of the Mean. Statisticians can also estimate how accurate this statistic really is. The accuracy of this statistic tells you how "reliable" your sample - and the statistics that result from it - are. Researchers have to decide how big a difference they can tolerate in the results of their studies when they use a sample. This concept, reliability, becomes very meaningful when scientists are trying to determine appropriate dosage levels for new medications; it is less a "life and death" issue for social research.

One of the main factors that causes the differences between samples that are drawn from the same population is something that statisticians call variability. Variability essentially asks how different the individuals cases that make up the entire population (all of the cases from which the sample is drawn) are from one another. The more all the cases in the population differ, the more likely that samples drawn from the population will differ too. In other words, the statistical reliability will be less.

So, to construct a sample, you first need to answer three basic questions:

1. what is the population for be sampled;
2. how many cases should go into the sample; and
3. which cases should go into the sample.

In most jail data collections, defining the population is relatively easy. For example, a "typical population" would include "all persons booked at the Metro County Jail during calendar year 1982".

To determine how many cases should go into the sample, statisticians and mathematicians have developed a formula that allows an anlyst to calculate <u>exactly</u> how many cases should go into sample. It is:

$$SE_{\bar{x}} = \frac{s}{\sqrt{N}}$$

$SE_{\bar{x}}$ = the standard error of the mean
s = the standard deviation of the sample
N = the number of cases in the sample

The manual will formally introduce standard deviations in the next Chapter. So, for now, just think about the concepts, not the specifics. This formula forces the user to decide two things:

1. how much variation can exist in the sample (in other words, how confident of the results do you want to be: 99%?; 95%?; or less?); and

2. how reliable must the results be (how much error can you tolerate? - which gets really interesting when you are estimating dollar variables).

Most researchers don't follow this process every time they decide to put together a good sample. They use a table that has been developed by statisticians to save time. The tables also force analysts to answer the same questions, but they provide a little more help. The tables give the actual number of cases that must be included in the sample to meet the specifications determined by the answers to the two questions written above. The tables included in Appendix K are for 95% and 99% confidence intervals; variation in the sample error of the mean of 2%, 3% and 5% are calculated for both the 95% and 99% confidence intervals. All you will need to know is:

1. how much confidence must the analysts have in the results (most jail data collections can live very happily with 95% confidence intervals);

2. how reliable must the data must be (most jails can get along wonderfully with 2% or 3% sampling error, which is the same thing as 97% or 98% reliability);

3. the size of the population from which you are sampling; and

4. what proportion of the population from which the sample is drawn has the characteristic being measured (the tables only include proportions from 5% to 50% because if the proportion is more you can reverse the question). If, for example, you wanted to sample female inmates, you would need to be concerned about the proportion of female inmates found in the jail population.

Now, that the number of cases to go into the sample has been determined, the next problem is to decide which cases should go into the sample. This is a very important decision, because the laws of probability (and all the statistics that are based upon them) assume that the cases that go into the sample are selected randomly. This is the famous "random sample". All that really means is that each case has an equal chance of being selected for the sample. Samples that are structured this way have the least bias (built-in error).

There are a number of ways to determine which cases go into the sample (sampling schemes in "research-ese"). They include:

1. SIMPLE RANDOM SAMPLE in which cases are selected randomly from a homogeneous population;

2. STRATIFIED RANDOM SAMPLE in which the population is divided into different groups, such as felons and misdemeanants, and cases are selected randomly from within the different groups so that equal numbers are selected from each group. In this kind of a sample, there would be an equal number of felons and misdemeanants.;

3. PROPORTIONAL RANDOM SAMPLE in which the population is divided into different groups, and cases are selected randomly from within the groups until the groups are in the same proportion in the sample as they are in the population, i.e., if the population had 70% felons and 30% misdemeanants, the sample would be the same;

4. CLUSTER SAMPLE in which the population is clustered into specific areas or units, i.e., housing units. Then the housing units to be sampled would be selected randomly, and information collected about every individual in the housing unit;

5. COHORT SAMPLE is essentially the same thing as a cluster sample, but it is based on time periods, rather than physical or geographic areas, i.e., all prisoners arrested on a specific date that had been selected randomly would go into the sample; and

6. SYSTEMATIC SAMPLE in which information is collected about cases in a certain sequence until the number of cases required for the sample is reached, i.e., data is collected about every 3rd, 5th or 10th, etc. (every Nth person in statistical terms) etc. person booked until enough cases are reached, with the number on which you begin being randomly selected.

Some of these sampling schemes (or designs) seem to work better than others. Appendix L provides both a good discussion of methods for constructing a simple random sample and the random number tables (charts of numbers without any logical sequence) that are often used to develop random samples. Constructing random samples from random number tables can be extremely tedious - and time-consuming. Statistically, they are "the best", but from a practical perspective, other sampling methods may be preferable.

Because of the nature of jail record keeping practices, a SYSTEMATIC RANDOM SAMPLE, based upon the booking or release log, works very well for Inmate Profile Data Collections. Once the number of cases to be included in the sample has been determined, divide the number of cases in the population by the number of cases wanted in the sample. The result tells you how frequently to put a case in the sample, i.e., every 3rd, 4th or Nth case. For example, if the jail books 10,000 people per year and wants a 20% sample, information should be collected on every 5th case in the booking or release log. Don't start with the first case in the year for which data is being collected. Randomly pick a number from (in this case) one to five out of a hat and start with that. This method will also work well if most of the information is gathered from records.

If possible, it's preferable to use a Release Log (rather than a Booking Log) as the basis of the sample. This helps to eliminate a particular type of bias with regard to length of stay data. Even over periods as long as a year, if information is collected on intake, at the end of the year, there will probably be some individuals in the sample who are still in custody; they have no release data.

The two most common approaches are either to leave that as missing data (omit this data element on the coding sheet) or to use the last date of the period of time for which data is being collected as the release date, i.e., if the sample period were 1981, the release date would be 12/31/81. This biases the sample by making the length of stay shorter than it REALLY is. If this option is selected, be aware that your length of stay data may be biased and decide what how to manage this coding problem. This problem is particularly acute if data is only being collected for a short period of time.

Another type of sample which works quite well is a COHORT SAMPLE. Randomly select several dates throughout the year and collect the information on all individuals in custody on those dates until the necessary sample size is reached. These samples are frequently called "snapshots" of the jail population.

Edward Lakner of the NATIONAL CLEARINGHOUSE FOR CRIMINAL JUSTICE PLANNING AND ARCHITECTURE has developed a manual, STATISTICAL SAMPLING METHODS FOR CORRECTIONAL PLANNERS which provides a lot of information about sampling procedures. It is an excellent resource, but it is written for planners. If figuring out sample size is difficult for you, perhaps a professional bias will help. Samples that are smaller than 10% of the total population and are less than 500 in absolute size make most statisticians very uncomfortable. When in doubt, err in the direction of including too many people in the sample rather than including too few.

3. TEACH THE PERSON WHO WILL COLLECT AND CODE THE DATA HOW TO FILL OUT THE DATA COLLECTION SHEET.

Many people under-rate the importance of good data collection and coding practices, but this what makes the difference between a data collection that provides accurate information and one that is filled with errors. There a number of coding practices that will make life much easier for anyone who has enter the data into the computer. Since keypunchers earn

at least $10 an hour, it very important to make their life easy paying for their services.

The following rules should be followed when coding data on the Data Collection Sheet:

RULE #1: ALWAYS USE LEAD ZEROS.

Always fill in all the spaces on the coding sheet unless the data is missing. That means using lead zeros as in the following example. If there is a variable, MILEAGE, on your Data Collection Sheet:

MILEAGE _ _ _._

If only 3.5 miles were travelled on the transport, the person coding the Transport Form (who will probably not be the same person who filled it out) should write:

MILEAGE 003.5

RULE #2: USE ONLY ONE MEANING FOR EACH CODE.

Never, never, never use more than one meaning for a single code. For example, on the Inmate Profile Data Collection Sheet and Code Book, there are several blank spaces to list City Police Agencies which bring individuals to the local jail. Assign just one city to each value of this variable, i.e., 9 = City of Metropolis.

RULE #3: ALWAYS WRITE LEGIBLY.

Be sure to write large and legibly if the data will be keypunched. Keypunchers who can't read the information can punch the wrong codes which will result in wrong answers from the computer.

RULE #4: LIMIT THE NUMBER OF PEOPLE WHO CODE THE DATA.

If possible, have only ONE person do all the coding. That way the information will be coded consistently. If that isn't possible, it is absolutely essential to make SURE that all those who will code information understand each data element and will code it in exactly the same way. The Data Collection Coordinator should check to make sure that this is happening.

RULE #5: BE CONSISTENT.

Once codes have been established, DON'T CHANGE THEM! It will bias your information. If questions arise during the data collection, make a decision, record the answer in the Code Book and make sure that all coders know how to handle this coding irregularity.

RULE #6: MAKE A COPY OF THE LAST VERSION OF THE CODE BOOK.

Without the Code Book, it is extremely difficult to analyze the data collection. And if the same study is to be repeated at a later date, for purposes of comparison, it must be collected in exactly the same format.

Without the Code Book, that is next to impossible.

RULE #7: WHEN IN DOUBT, CONSIDER IT AS MISSING DATA.

When in doubt about information to be coded, i.e., the handwriting is so bad that you can't tell if the Officer meant "Burglary" or "Battery", treat it as missing data (leave the coding sheet blank or use 9's).

Before the data collection is to begin, make sure that the coders are trained in good coding practices. Go over the Code Book item by item so that all the coders understand each one of the data elements. This avoids those "sudden sinking sensations" when one of the coders tells you something like, "Oh, you mean Robbery is a crime against persons, not a property crime?".

Coding, at first, always goes slowly. There are questions to be answered; coders need to become familiar with the Code Book and the information sources. Be a little patient. The more time that people spend coding, the faster they get. The time spent "up front" to learn the coding scheme and to develop good coding habits is well worth it!

4. GATHER YOUR DATA COLLECTION SUPPLIES.

This is the home stretch! Now, for the final steps to get organized!

STEP #1: COPY THE DATA COLLECTION SHEETS AND CODE BOOKS.

Make as many copies of the Data Collection Sheet and Code Book as you will need to complete the data collection. Each coder should have a copy of the Code Book and several copies should be filed in reserve.

STEP #2: DEVELOP WORKING FILES FOR THE COLLECTION SHEETS.

Purchase several large file folders or manila envelopes to hold the data collection sheets. These will come in very handy if coders have to go to several sources for the information or if the information must be collected over a period of time. Label "Completed Data Collection Sheets", "Blank Data Collection Sheets", "Pending Information (whatever type of information you're waiting for). That's why Inmate Name is critical during the data collection stages, but can be disregarded once all the information is gathered.

5. BEGIN.

For some data collections, i.e., ones which use historical data (already completed records are the sources of information), beginning the data collection will be a matter of pulling the information out of the files, recording it on the Data Collection Sheet and placing the Data Collection Sheet in the "Completed Data Collection Sheets" folder.

Other data collections, ones in which the information will be collected over time are a little more complex. An Inmate Profile Data Collection which collects information from a variety of sources about people currently in custody is probably the most difficult logistically. In that case, you'd need to proceed like this:

STEP #1: BEGIN A DATA COLLECTION SHEET FOR EACH PERSON IN THE SAMPLE.

Start a Data Collection Sheet for each person selected for the sample. That will include each person in custody on the date that your data collection begins.

STEP #2: ALPHABETIZE THEM.

Usually, the identifier on the coding sheet will be the name of the inmate. In that case, it is most convenient to file the Data Collection Sheets in alphabetical order. If a numerical identifier, i.e., booking number, is used, it would make more sense to file the Data Collection Sheets in numerical order.

STEP #3: SECURE INFORMATION FROM THE FIRST SOURCE DOCUMENT.

Go to the information source that provides the most information about each individual and complete as much as possible of the form.

STEP #4: SECURE INFORMATION FROM THE SECOND SOURCE DOCUMENT.

Go to the information source that provides the next most information about each individual and complete as much as possible of the form. Continue until each information source has been exhausted and no more information is available about any of the cases.

STEP #5: FILE PARTIALLY COMPLETED FORMS.

Place all the partially completed forms for persons who are still in custody in one file folder.

STEP #6: UPDATE RELEASE INFORMATION DAILY.

Each day, as people are released from the jail, pull their Data Collection Sheets, add the release information, and review the form to see if there is any additional information that can be obtained. If there is, file them in a Pending File Folder. If not, place them in the Completed Inmate Data Collection Sheet Folder.

STEP #7: ADD CASES TO THE SAMPLE DAILY.

Each day, as people are booked into the jail, (according to the sampling scheme), begin a Data Collection Sheet for new bookings.

STEP #8: STOP SAMPLING WHEN THE NECESSARY NUMBER OF CASES IS REACHED.

When the number of cases required for the sample are in the Completed Inmate Data Collection Sheet Folder, the data collection is done.

CONCLUSION:

Now that the information is in hand, the worst of it is really over! The next stages in the data collection are the really exciting phases. Chapter 6: How To Analyze Information - or a Short Course in Statistics will suggest some ways to analyze the information. It also introduces some statistics that will probably be found in nearly any statistical study. Chapter 7: How To Interpret Information will provide the opportunity to figure out what those statistics <u>really</u> mean. The best is yet to come, so turn to Chapter 6.

CHAPTER SIX:

HOW TO ANALYZE INFORMATION - OR A SHORT COURSE IN STATISTICS

INTRODUCTION:

Many people have assumptions about statistics that make them subject to a statistical phobia of sorts. They may believe that:

- statistics is something that only Ph.D.s can understand;
- understanding statistics requires straight A's in calculus;
- statistics can be made to say whatever analysts want.

These popular statistical misconceptions have been made more believable by statistical jargon. No one can deny that at the level of proving and discovering theoretical relationships, statistics is complex. But it's no more essential that you understand the theoretical proofs than it is for you to be able to recite the laws of physics that explain why the internal combustion engine works to be able to drive! What's important is to apply the right statistical tools to the data that is being analyzed, to understand some statistical assumptions, and to be aware of the limitations of these techniques.

This Chapter would like you to put aside your assumptions and preconceptions and pretend you've never heard of statistics before. It will present a discussion of statistics that is very different from most statistics courses. It will not spend much time explairing how to compute the statistics that we'll be talking about, and it will not require the memorization of any formulas. In most cases, studies that are analyzed on the computer will provide you with a veritible <u>wealth</u> of statistics - so many in fact that you will probably have to learn which ones to ignore. For those of you who will need to compute more complex statistics that the ones explained in this Chapter, the best resource for this that we've ever found for non-statisticians is a book cited in Appendix B, <u>How to Calculate Statistics</u>, by Carol Taylor Fitz-Gibbon and Lynn Lyons Morris. Another basic statistics text book that will be helpful to those of you who decide to try a more traditional resource is <u>Understanding Statistics</u>, by William Mendenhall and Lyman Ott. Both of these sources have been used liberally throughout this Chapter.

This Chapter will help you by:

1. defining statistics and identifing the purposes for which statistics can be used in jails;
2. explaining the differences between statistics that are calculated for an entire population and statistics that are calculated for a sample (a specially selected sub-group) of that population;
3. defining the types of results of statistical computations;

4. introducing a number of common statistics; and

5. describing a number of statistical "sins".

WHAT IS STATISTICS ANYWAY?

Statistics, as a field, is an area of mathematics. It uses numbers to make large or diverse amounts of information more understandable. Most people can only remember very limited amounts of information at one time. When, for example, asked to summarize the findings about the entire inmate population of the jail during the last year, most people can not handle it without using numbers to represent facts.

The term, statistic, is also frequently used to mean the information that has been summarized by statistics, i.e., jail statistics. The potential for confusion is great enough in this area without using the same word for two terms, and that's one reason why we've used the term, "data element(s)", for what most people call jail statistics.

Basic statistics can be used for three main purposes. They can help you by:

1. summarizing information;

2. telling you how seriously to take differences between groups of people or events; and

3. helping to determine how strongly pieces of information are related to each other (Taylor Fitz-Gibbon & Morris, 1978).

Certain kinds of statistics are used for each of these major purposes. This manual will deal with which statistics go with which purposes and which kind of data element later in the section of this Chapter that deals with types of statistics. In the meantime, let's focus on one of the most important dividing lines in statistics: the difference between statistics that are based on <u>entire populations</u> and those that come from <u>samples</u> (parts of a whole population.

A (VERY) STATISTICALLY SIGNIFICANT DIFFERENCE:

In Chapter 2, this manual introduced an important term, "population". In a statistical sense, it means <u>ALL</u> the cases (persons, events, objects, times, etc.) about which a data element could be collected. In Chapter 5, another important term, "sample", was introduced. A sample is a specially selected <u>PART</u> of a population. At the time, the degree of emphasis placed on these terms may have not made a great deal of sense. However, this happens to be one of the major dividing lines in statistics. It is such a big difference that statisticians actually use different terms to refer to the statistics that are associated with populations and those that relate to samples. They call the statistics that relate to an entire population "parameters" to differentiate them from true <u>"statistics"</u> that relate only a sample.

When data is collected about a population and a parameter, for example, a frequency distribution, is computed, analysts can be certain that

the information is correct. For example, if an analyst collected Legal Status data for all the people booked at the jail during a given year, and if he/she discovered that 80% of the people booked at the jail were pre-trial and 20% were sentenced, there's no disputing it. You KNOW ABSOLUTELY how many of the people booked were pre-trial and how many were sentenced that year.

However, if this information had been collected by a sample of people booked at the jail, some uncertainty enters the picture. A skeptical person might ask, "How do you know that's true for everybody? You might have selected people for your sample that are somehow different from the "real" jail population!"

In statistical terms, when information that comes from a sample is applied to the entire population, "an inference" is made. Analysts infer that what is discovered about a sample is equally true for the population. And, provided that the sample is collected randomly (by a sampling scheme like the ones identified in Chapter 5) and if the sample is large enough to adequately represent the population, making inferences is very acceptable statistical practice - provided that the analyst identifies how reliable the inference is. The mechanism that allows analysts to make inferences about a whole population from a sample is probability.

PROBABILITY:

In Chapter 5, we introduced the term, "probability", to you as "the odds". It's time to get just a little more scientific about it. Probability is another one of those things that is best illustrated by an example.

Let's revisit Sheriff #2. The Inmate Population Data at Sheriff #2's jail indicates that 80% of the people booked there are pre-trial and 20% are sentenced. Sheriff #2 had collected the Inmate Population Data over an entire year when there were 6,000 bookings (Thank goodness for the information system or we might not know that!).

Sheriff #2 and the County Commissioners are now working together to build a new jail that will meet the new state standards. Inmate Profile Data is needed to help the architect with programming the facility, but Sheriff #2 is somewhat disturbed at the prospect of collecting all that Inmate Profile Data for 6,000 cases. Once again, statistics come to Sheriff #2's aid. Sheriff #2 randomly selects a sample of about 1,000 cases, which will represent the whole population. Collecting data on 1,000 cases is preferable to collecting data on 6,000 cases.

However, Sheriff #2 is no pushover and (to be on the safe side) decides to experiment with the sampling procedures. Because of the manual information system, Sheriff #2 knows what some of the REAL population parameters are. Randomly pulling 100 of the last year's inmate information cards, Sheriff #2 asks the Jail Administrator to count how many pre-trial and sentenced inmates are in the first sample. Sheriff #2 repeats this process three times. The Jail Administrator tabulates the results and is absolutely amazed. The results of these sampling procedures are included in Table 2.

SAMPLE #	PRE-TRIAL	SENTENCED
SAMPLE #1:	79	21
SAMPLE #2:	77	23
SAMPLE #3:	82	18

TABLE 2: THE RESULTS OF SHERIFF #2'S EXPERIMENT

Sheriff #2 was convinced that sampling would work in the Inmate Profile Data Collection. Furthermore, Sheriff #2 was convinced that once the probability of getting a specific sample is known it would be relatively easy to decide whether or not to agree with the statistics. Sheriff #2 had grasped a really important point about probability. Probability really measures a belief in a particular outcome. Often, in statistics, probability is defined as the number of times a particular outcome will occur if a test or experiment is repeated many, many times. This becomes a criterion for deciding whether or not the results are credible. Probability theory is one of the foundations of statistics.

Unfortunately, life is not always as easy as it has been for Sheriff #2 in this example. Often, the true population parameter is unknown. Statisticians have done us all a big favor by providing a wealth of tools which can be used to determine how sure we can be that statistics which come from a sample represent the whole population. The catch is that they only work when the sample has been randomly selected. Some of the more complex math involved in statistics allows analysts to calculate the probability of getting a particular sample IF the sample was selected randomly. ALL OTHER SAMPLES have unknown probabilities and are as a result totally useless for statistical purposes. Randomly selected samples have what is usually called "normal distribution". Normal or bell-shaped distribution (as it is sometimes called) is the other statistical foundation that covered in this manual.

NORMAL (BELL-SHAPED) DISTRIBUTION:

Normal or bell-shaped distribution isn't just a statistical or mathematical phenomenon; it's real! And once it's understood, many parts of statistics that may have once been nonsense may suddenly start making sense. An example will help to illustrate this phenomenon. As you'll recall, the Jail Administrator in the last example was rather amazed by Sheriff #2's ability to pull 100 cards out of the information system that represented the whole inmate population so well. In fact, the Jail Administrator strongly suspected that the whole thing might be some kind of trick.

To be really sure that no chicanery was involved, the Jail Administrator decided to try an experiment. Thinking that Legal Status might be too easy to manipulate (after all 80% of the inmates were pre-trial), the Jail Administrator decided to use a data element that would be much harder to "fix", Length of Stay (LOS). By consulting the information system, the Jail Administrator knows that the average LOS is 20 days. Deciding that the Sheriff's three attempts to test out the sampling procedure simply aren't enough, the Jail Administrator decides to repeat the sampling procedure 100

times. Following the Sheriff's procedure, the Jail Administrator randomly pulls 100 cards from the Information System, asks the jail's finance officer to calculate the average length of stay for those 100 cards on the adding machine, and recorded the result on a piece of paper. Then, the Jail Administrator puts those cards back and randomly selects another 100 cards the Jail Administrator has been working too hard. When the results are posted, they looked like Figure 9.

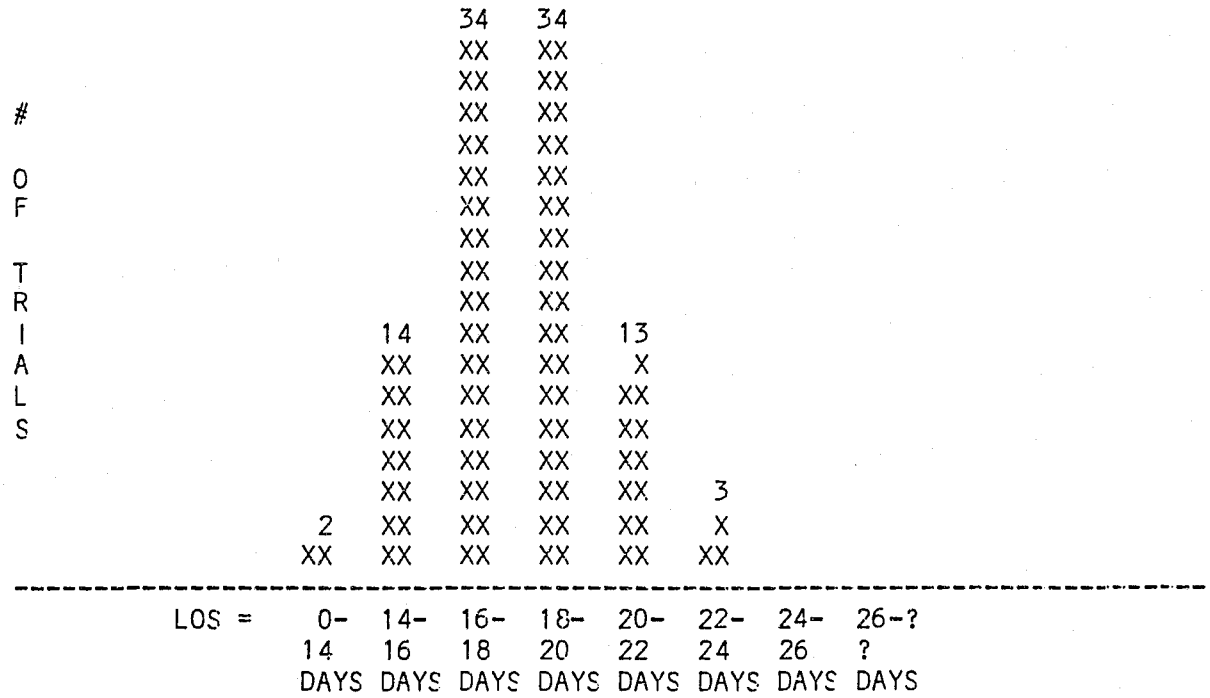
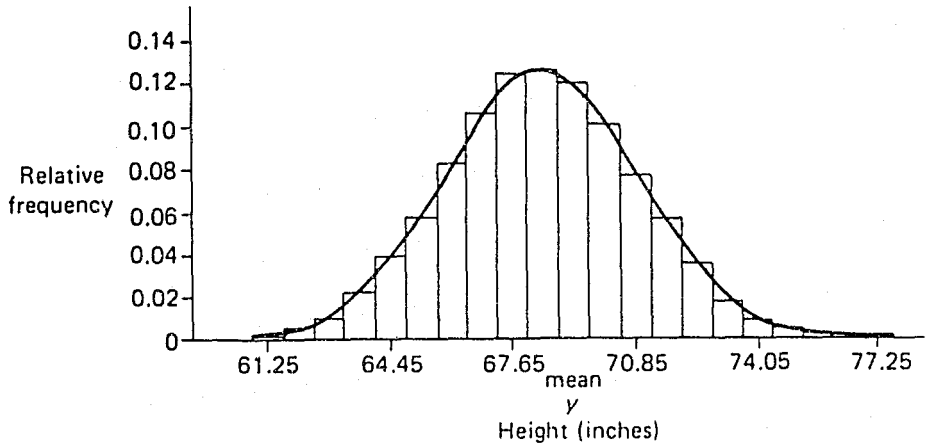


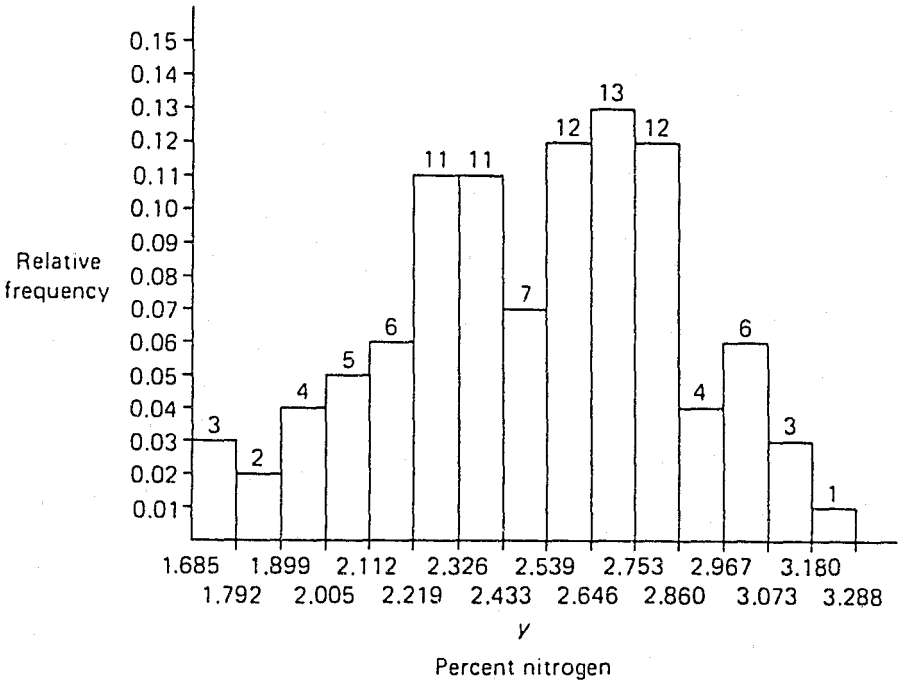
FIGURE 9: RESULTS OF THE JAIL ADMINISTRATOR'S EXPERIMENT

Sixty-eight out of the hundred trials had resulted in samples that had an LOS of between 18 and 22 days; and even more incredible, 95 out of the 100 trials had resulted in samples between 16 and 24 days. By now, the Jail Administrator was a true believer and decided never again to question Sheriff #2's statistical wisdom. What the Jail Administrator discovered is a phenomenon that characterizes nearly all data elements in the real world. If they are selected randomly and graphed like Figure 9 above, the data elements are distributed to form a very distinctive curve called a "normal or bell-shaped" curve. Figure 10 on the following page provides some examples of bell-shaped curves and normal distribution.

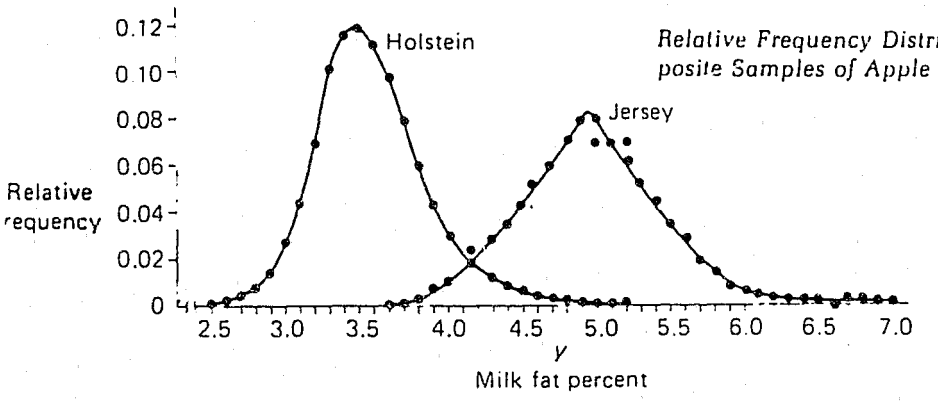
What is most important in the Jail Administrator's experiment is the fact that sample averages (means) which are randomly selected from an entire population also have a normal distribution. This is a basic statistical assumption . It's what makes many statistics work. Statisticians and mathematicians discovered that this "normal" curve has some very special mathematical properties. These special properties will be discussed in the section of this chapter on types of statistics.



Relative Frequency Histogram for the Heights of 24,404 Servicemen



Relative Frequency Distribution for the Nitrogen Content of 100 Composite Samples of Apple Leaves



Distributions of Fat Percent in the Milk of Wisconsin Holstein and Jersey Herds

FIGURE 10: NORMAL DISTRIBUTION

Right now, you deserve some special credit, because in the last three and a half pages, you've absorbed two topics that often take half a semester in a basic statistics course. Undeniably, more detail is provided in basic statistics courses, but once you understand probability and normal distribution, you understand two major statistical concepts. CONGRATULATIONS!

STATISTICAL RESULTS:

Almost incidentally, the Jail Administrator's experiment illustrates two other important statistical facts of life. First, statistics can be expressed by using graphs and charts as well as by using numbers. In fact, reports in which statistics are used will benefit by the use of good display of your data. There are few areas in which "pictures" are more useful. Using graphs and charts effectively is so important that this manual devotes a good part of Chapter 8 to this topic.

The second statistical concept the Jail Administrator discovered will bring back a topic discussed in some detail in Chapter 4, Levels of Measurement". This is another basic concept that organizes the field of statistics; it refers to how different types of data elements can be measured. Data elements are divided into three basic categories. The first group of data elements (whose answers can be divided into a series of categories) are called NOMINAL data elements. The second group (whose answers can be ranked in order from good to bad, high to low, etc.) are called ORDINAL data elements. The third group of data elements (whose answers were expressed in equal units) are called INTERVAL and RATIO data elements. Statisticians divide the third group into two sub-groups, depending on whether or not there is a possible 0 response. The level of measurement of each data element determines the types of statistics that may be used to analyze it.

These data element categories actually fall on a kind of scale themselves. This scale (or continuum) ranges from the simplest to the most complex and can be expressed graphically something like Figure 11.

FIGURE 11: THE RELATIVE COMPLEXITY OF DIFFERENT TYPES OF DATA ELEMENTS

The jail's Finance Officer actually discovered something it took statisticians quite a while to figure out. A more complex data element can be graphed or expressed like a simpler one. In the example, the book-keeper took Length of Stay (which is an interval/ratio data element) and grouped certain scores together (LOS from 0-14 days, 14-16 days, 16-18 days, etc. were put together). In doing that, interval/ratio data was turned into ordinal data. That allowed the person displaying the data to use a bar chart (which was much easier for the Jail Administrator to understand), and would have allowed a statistician to use a different statistical procedure, (one that is a bit easier to use without a computer) to analyze the data.

Unfortunately, it's impossible to turn "simpler" data into more "complex" data. As a result, this is just one more compelling reason to collect data carefully.

Statisticians call the process of grouping data into various ranges "aggregating the data"; the reverse is called "disaggregation". Experimenting with different ways to group data is one way in which analysis takes place. Generally, analysis begins with the data grouped in the largest general categories and preceeds by disaggregating it to show progressively finer and finer levels of detail.

TYPES OF STATISTICS:

Now that you understand three basic statistical concepts (probability, normal distribution and levels of measurement), it's time to discuss the types of statistics that will probably be used in analyzing jail data. The first section of this Chapter indicated that basic statistics could be used for three main purposes:

1. summarizing information;

2. determining how seriously differences between groups of people or events should be taken; and

3. determining how strongly pieces of information are related to each other.

Each of these purposes leads to a different set of statistics. Most of the rest of this Chapter focuses on the statistics that summarize information (DESCRIPTIVE STATISTICS), but a little time will be spent on the other statistical types as well. It's probable that they will be included in reports that are prepared for you. And you will certainly encounter some of them in any special issue data collections analyzed on a computer.

DESCRIPTIVE STATISTICS:

There are two basic types of descriptive statistics:

- measures of central tendency (which locate the center of any kind of distribution of data); and

- measures of variability (which defines how widely the data is spread).

TOGETHER, these two types of descriptive statistics can provide a great deal of information about the data with a minimum of math. With the exception of frequency distributions which work with data elements of all levels of measurement, these statistics only make much sense with interval and ratio level variables.

1. FREQUENCY DISTRIBUTIONS.

Frequency distributions have been mentioned in earlier sections of this manual. However, they are worthy of a short review, because they are among the most useful basic statistics. They are actually where all

descriptive statistics begin. Frequency Distributions are calculated by dividing all the data points (the scores or individual measurements for one data element or variable) into a series of categories (either because they fall into categories naturally or because the data was divided into groups). The number of cases that fall into each group are counted and then expressed graphically (as a bar chart) or in numbers (including both a percentage and the number of cases in each group). Table 3 is a frequency distribution displayed in percentages.

AGE ON INTAKE	PERCENT/N OF CASES
Under 18	-
18-21 years	16% / 160
22-25 years	16% / 160
26-29 years	28% / 280
30-33 years	12% / 120
34-37 years	13% / 130
38-41 years	5% / 50
42-45 years	8% / 80
46 or older	2% / 20
TOTAL	100% /1000

TABLE 3: FREQUENCY DISTRIBUTION
EXPRESSED AS A PERCENT

Figure 12 turns the same frequency distribution into a bar chart.

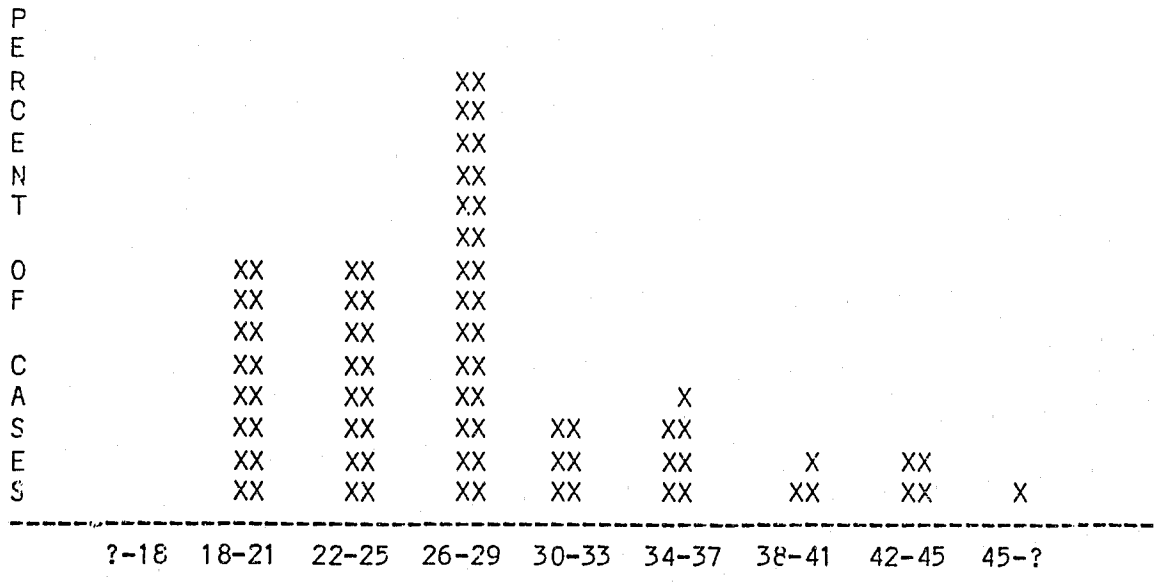


FIGURE 12: FREQUENCY DISTRIBUTION
EXPRESSED AS A BARCHART

The astute analyst can gain a lot of information about the jail population from just these two frequency distributions. It's possible to tell:

- the percentages and numbers of people in various age groups at the jail;
- how many people were included in the sample; and
- the fact that the population distribution leans toward the younger end of the age scale (statisticians would say that the distribution is skewed).

Sometimes, the data is neatly divided into categories, and the frequency distribution is obvious. Nominal and ordinal variables, like Legal Status, Charge Status, etc., which have values that fall into distinct categories, are like that. However, interval/ratio variables have a wide range of possible values. In order to express these variables in a frequency distribution, the possible values must be divided into groups. Here are several rules that can help in doing that.

RULE #1: Divide the possible values into groups that "make sense". Statisticians call these groups "classes". In the previous example, you wouldn't divide the data about age into classes that consisted of thirteen months.

RULE #2: The classes should be small enough so that most of the data isn't bunched into one group. In the previous example, you wouldn't want to divide the jail population into groups of 18 and younger, 18-50, and over 50.

RULE #3: The classes should generally be equal in size, i.e., the same number of years should be included in each class.

RULE #4: No value should fall into two of the classes. For example, if you had two classes, one 18-21 and one 21-24, it would be impossible to know where to put someone who was exactly 21 years old (if you were counting in whole years). In other words, pick boundaries for each of the classes so that no cases fall exactly on the boundary line between two classes.

While frequency distributions are helpful, sometimes they aren't very convenient, and they can take up a lot of room in a report. Descriptive statistics has another way to counteract these problems.

2. MEASURES OF CENTRAL TENDENCY.

These statistics locate the center of a frequency distribution. At least one of these, the mathematical average or mean, will be familiar.

A. THE MEAN

The mean is an arithmetic "average". To calculate the mean, add all the measurements for a particular data element and divide the result by the total number of measurements in the set. So, if Sheriff #2 wanted to calculate the average daily population of the jail for a

given month in which the average daily population each day was something like Table 4...

DAY #		COUNT =
	1	26
	2	32
	3	37
	4	33
	5	29
	6	28
	7	29
	8	30
	9	37
	10	35
	11	36
	12	31
	13	32
	14	29
	15	25
	16	28
	17	30
	18	33
	19	34
	20	31
	21	34
	22	29
	23	27
	24	28
	25	31
	26	33
	27	30
	28	35
	29	31
	30	+ 29
		932 = RESIDENT DAYS FOR THE MONTH

932 / 30 DAYS = 31.06 = AVERAGE DAILY POPULATION FOR THE MONTH

TABLE 4: CALCULATING THE MEAN JAIL POPULATION FOR ONE MONTH

When most people talk about an "average", this is what they mean. However, there are two other measures of central tendency that can be used in addition to (or instead of) the mean. That "instead of" will receive a little extra attention in the section of this Chapter on Statistical Sins. Sheriff #2 knew enough not to stop with just an average and continued by exploring several other measures of central tendency.

B. THE MEDIAN

The Median is the middle measurement when all of the measurements in the set are arranged according to size. Statisticians call this process "rank ordering". If there are an odd number of measurements in the set, the median falls <u>exactly</u> on the middle measurement. If there are an even number in the set, the median falls exactly <u>halfway</u> between the middle <u>two</u> measurements. Using the same data, Sheriff #2 put all the measurements in order from lowest to highest. Table 5 is the result.

DAILY COUNTS IN ORDER

LOW =	25
	26
	27
	28
	28
	28
	29
	29
	29
	29
	29
	30
	30
	30
	31
	31
THE MEDIAN	
	31
	31
	32
	32
	33
	33
	33
	34
	34
	35
	35
	36
	37
HIGH =	37

TABLE 5: CALCULATING THE MEDIAN

Sheriff #2 noticed that although the median (31.0) and the mean (31.06) were not <u>very</u> different, they were not exactly the same. The Sheriff also suspected that the difference was not caused by a math error, because the two measures of central tendency actually measure different things. Sheriff #2 calculated one more measure of central tendency.

C. THE MODE

The Mode is the measurement that occurs most frequently in a set of measurements. To calculate the mode, Sheriff #2 arranged the scores like a frequency distribution. Table 6 shows the results.

THE DAILY COUNT WAS:	# OF TIMES	
25	1	
26	1	
27	1	
28	3	
29	5	= THE MODE
30	3	
31	4	
32	2	
33	3	
34	2	
35	5	
36	1	
37	2	

TABLE 6: CALCULATING THE MODE

As might be expected, the mode (29) is different from both the mean (31.06) and the median (31.0). In this case, all three measures of central tendency are very close, which would lead an analyst to believe that the data is both normally distributed and is clustered closely together. However, this isn't always the case. Sheriff #1's jail was about the same size, but the jail population fluctuated quite a bit more. And in another county nearby, Sheriff #3 had a small jail with some rather unusual population problems. Table 7 on the following page, compares the Daily Inmate Counts for the three jails during the same month.

DAY #	SHERIFF #1'S COUNT	SHERIFF #2'S COUNT	SHERIFF #3'S COUNT
1	57	26	14
2	54	32	15
3	30	37	16
4	28	33	18
5	15	29	17
6	21	26	16
7	27	29	13
8	54	30	19
9	51	37	15
10	24	35	17
11	19	36	16
12	10	31	13
13	12	32	19
14	26	29	15
15	58	25	17
16	51	28	16
17	34	30	15
18	38	33	17
19	40	34	18
20	31	31	14
21	26	34	16
22	54	29	172
23	50	27	167
24	23	28	161
25	29	31	16
26	35	33	18
27	23	30	14
28	20	35	17
29	54	31	15
30	+ 49	+ 29	+ 16
RESIDENT DAYS	932	932	932
AVERAGE DAILY POPULATION	31.06	31.06	31.06
MEDIAN	30.50	31.00	16.00
MODE	54.00	29.00	16.00

TABLE 7: MEASURES OF CENTRAL TENDENCY AT THREE JAILS

This table should clearly show why it is important to look at more than one measure of central tendency. Extreme cases can really distort the mean, but the median and the mode are much less likely to be effected by extreme cases.

As you can see, the three jails have very different patterns of use.

- Sheriff #1 has a very bad problem with weekenders. The numbers which show up in Sheriff #1's column regularly "peak" every seven days.

- Sheriff #2 has a nice evenly distributed population. It appears that the Judge who sentences most people to local jails supports the Sheriff's work program and doesn't use weekend sentences.

- Sheriff #3's county was absolutely ideal. It had a very small county population and was very rural and heavily forested. There were very few major law enforcement problems until a rather famous motorcycle gang decided to spend a long holiday weekend camping in the county. This manual will spare you the details, but Sheriff #3 had a rather hectic weekend. And the jail statistics for that month reflect it!

This is a perfect example of a major problem with the measures of central tendency. Without another statistic which measures how much variation there is in the data, any of the measures of central tendency is incomplete.

3. MEASURES OF VARIABILITY

Measures of variability tell how widely the data is distributed. If the measures of central tendency tell where the middle of the "bell-shaped curve" is, the measures of variability describe how wide the curve is from side to side. There are four important statistical measures of variability.

A. RANGE

Range is the simplest measure of variability to calculate and use. In a series of data points (individual scores or values), the range is the difference between the highest and lowest data points. In the case of the three jails, the range is quite different for all three. Table 8 illustrates the difference.

JAIL #	HIGH COUNT -	LOW COUNT =	RANGE
1	58	10	48
2	37	25	12
3	172	13	159

TABLE 8: RANGE AT THREE JAILS

Range is also the fastest measure of variability to calculate. By looking at the high score, the low score and a measure of central tendency, it's possible to tell if all the scores are grouped close to the average or if the scores are widely scattered. The more the scores are scattered, the less confidence should be placed in the average.

B. PERCENTILES OR QUARTILES

Percentiles refine the median (the middle measurement when all of the measurements in the set are arranged according to size). By the same process, find the score that is exactly between the median and the highest score. This becomes the upper quartile (75% of all the scores are below it). Then find the score that is exactly between the lowest score and the median (25% of all scores are below it). This becomes the lower quartile.

Quartiles divide all the scores into four equal groups, with the quarter that are the lowest being below the 25% percentile, scores that are below the median being below the 50th percentile, etc. Percentiles often divide all the scores into ten groups so that scores are located in the 80th, 90th, 95th, etc. percentile. This provides a fairly good idea how the data is distributed. Percentiles and quartiles are frequently used to report test scores, like the Scholastic Aptitute Test (SAT), etc. Although they are seldom used in jail data, they are useful ways of beginning to analyze your data. A disadvantage is that quartiles and percentiles don't define the highest and lowest scores are.

C. VARIANCE

Variance is another statistic which measures how far individual data points lie from the mean. It is rarely if ever mentioned in anything but the most technical papers. For that reason, this manual will not spend much time on it. However, the variance is essential for calculating probably the most famous measure of variation, the standard deviation.

D. STANDARD DEVIATION

The standard deviation is the square root of the variance. Several formulas for calculating the standard deviation (including one tremendous shortcut) are included in Appendix M. But the most important thing is to understand how to use and interpret a standard deviation.

What's really important about the standard deviation is this. If distribution is normal (the data is distributed in a "normal or bell-shaped curve), and one standard deviation is added to and subtracted from the mean, 68% of ALL the cases will be found. If approximately two standard deviations (1.96 standard deviations to be exact) are added to and subtracted from the mean, 95% of all cases will be found in the interval (this is that famous 95% confidence interval). If three standard deviations are added to and subtracted from the mean, then ALL (actually 99%) of the cases will be contained in that interval. Statisticians call this the "Empirical Rule", and it's so impor-

tant it might as well be called the Statistician's Golden Rule.

As an analyst, this phenomenon provides a great deal of information from just two statistics. Not only can the central point in the data be identified, but an interval can be placed around it which defines where 95% of ALL the cases in the data set are found.

Before closing this section on descriptive statistics, let's estimate the standard deviation for the daily counts of the three jails by using the shortcut explained in Appendix M.

DAY #	SHERIFF #1'S COUNT	SHERIFF #2'S COUNT	SHERIFF #3'S COUNT
1	57	26	14
		... ...	
30	+ 49	+ 29	+ 16
RESIDENT DAYS	932	932	932
ADP	31.06	31.06	31.06
RANGE	48	12	159
STANDARD DEVIATION	12	3	39.75
MEDIAN	30.50	31.00	16.00
MODE	54.00	29.00	16.00

TABLE 9: MEAN AND STANDARD DEVIATION OF THREE JAILS

Now with the standard deviation, the differences between the three jails become obvious when the Empirical Rule (68% of all cases lie within plus and minus 1 standard deviation; and 95% of all cases lie within plus and minus approximately 2 standard deviations) is applied. Sheriff #2's jail has the smallest variation in its inmate population. Sheriff #1's jail has a much broader range of daily populations. And for that size jail population, the standard deviation is large. Sheriff #3 has the strangest situation of all. The standard deviation for the jail is BIGGER than its average daily population. While this was strange to Sheriff #3, this is relatively common in some kinds of jail data - especially Length of Stay Data.

To the experienced analyst, Sheriff #3's strange standard deviation means one of two things:

- There are two groups in the data (one near the low end of the range and one near the high end) and few if any cases in the middle. Statisticians call this bi-modal distribution, which means that there are TWO normal curves (and two populations) instead of one; or

- There are several extreme cases. On several days (when the motorcycle gang was in the county) Sheriff #3 had over 150 in the jail. Those are the extremes that are throwing off ALL the calculations!

The standard deviation is a huge help to statisticians, because it's one way to determine that the distribution of the data is really normal (and that's the basis for a great many statistical assumptions). The standard deviation is really a kind of check on many basic assumptions.

Congratulations! You've just finished most of a course on descriptive statistics. While the manual will provide some information about the statistics which serve other purposes, there won't be quite as much detail in the discussion of them - nor will there be any discussion of how to calculate them. As suggested before, there is an excellent resource listed in Appendix B, How To Calculate Statistics, that will do precisely that.

This is about as complicated as basic jail statistics ever get, and if Sheriffs and Jail Administrators can begin to use these tools to make good management decisions and to monitor the jail population, this manual will have achieved one of its primary goals. However, as managers, Sheriffs and Jail Administrators read reports, articles, newspaper stories, etc. which cite other kinds of statistics. It's important to understand something about more advanced statistics and to know how to interpret them when they are cited.

STATISTICS FOR EXAMINING DIFFERENCES BETWEEN GROUPS:

Statistics that examine the differences between two or more groups are called TESTS OF SIGNIFICANCE. Sheriffs and Jail Administrators are most likely to encounter significance tests in journal or magazine articles about inmate programs and services which claim to make some kind of a difference in inmate behavior either before or after release. Significance tests would typically be used to determine if there was any difference in the number of arrests after release between two groups, one of which had participated in a pre-release program and one of which had not.

WHAT'S SIGNIFICANT ABOUT STATISTICAL SIGNIFICANCE?

Many tests of significance work by using two of the basic statistical concepts, normal distribution and the Empirical Rule. The Empirical Rule indicates that if a sample is normally distributed, then 68% of all cases in the sample will fall within an interval that is plus and minus one standard deviation from the mean, and 95% of all cases will fall within an interval that is plus and minus approximately two standard deviations from the mean.

Statisticians apply the Empirical Rule in a situation in which interval/ratio level scores of two groups are compared. One group's score is allowed to represent the mean. Using logic, statisticians deduce that if the other group's score falls WITHIN the intervals defined by the Empirical Rule, the difference MIGHT be attributed to the sample, and therefore the difference MIGHT not be "REAL". Therefore, these differences are not "statistically significant".

Continuing the logic a little further, the opposite is also true. Using one group's score as the mean, if the other group's score falls OUTSIDE the interval defined by the Empirical Rule, the difference might be "REAL" - and not merely a sampling difference. If the other score is outside the 2 standard deviations in either direction from the mean that contains 95% of all the cases, using logic again, it has to be in the other 5% of the cases. This kind of difference is "statistically significant at the .05 level". For those compulsive researchers who aren't satisfied with "significant at the .05 level", the mathematicians determined that to be "significant at the .01 level", the interval around the mean had to be plus and minus 2.58 standard deviations. That increased the odds to 1 out of 100 times that the difference might be REAL and not just a statistical quirk!

THE ERROR OF THEIR STATISTICAL WAYS:

Notice that the previous paragraph is full of "MIGHTS". Statisticians realize that there is always the possibility that the difference might be a "statistical long-shot", and their logic might be wrong. Statistical logic can be wrong two ways. These are called Type I and Type II Error.

TYPE I ERROR occurs if researchers say there has been a change when there hasn't been. The difference that's been detected is just one of those "long-shot" sampling flukes. The sample which was drawn was one out of the 5% or even 1% of all the possible samples that is different from the REAL population mean. Type I Error can be controlled by using small significance levels. TYPE II ERROR occurs if researchers say there hasn't been a change when there REALLY has been. Program evaluation results might suggest that the difference between two groups is only significant at the .15 level Traditional researchers would say that this difference is "not statistically significant" and might discontinue the project.

Generally, the best cure for Type I and Type II Error is good sampling procedures and the use of large enough samples. But this problem has led to a major debate in social research. Since our understanding of what REALLY makes people change is very imperfect, it's possible that the measurements that used to evaluate programs that are supposed to change people are not able to pick up true differences. And so, researchers might say that a program hasn't made a difference simply because they can't measure accurately what has happened.

Analysts must use some judgement in this area. Significance levels are only tools which may sometimes be helpful in making management decisions. For example, consider this situation. One group of inmates who participated in the pre-release program at the jail had an average of 4.3 arrests after release; Another group who didn't participate in the group had 4.4 arrests after release. If the groups were very large, these results could be statistically significant at the .001 level. But the REAL difference between

the scores is SO small that the results are not significant at all from a management perspective. If the situation were changed so that the differences were only significant at the .15 level, but the difference ir arrests were much greater (i.e., 1.3 arrests for the group that participated in pre-release to 4.4 for the group that didn't), Sheriffs and Jail Administrators should have a rather different opinion of the pre-release program in all but the most stringent scientific studies.

DECIDING WHICH KIND OF SIGNIFICANCE TEST:

There are a great many different tests of statistical significance with variations to use with different numbers of groups, different sizes of groups, different types of groups, and different types of data. There are:

1. T-TESTS;
2. MANN-WHITNEY U TESTS;
3. THE SIGN TEST; and
4. ANALYSIS OF VARIANCE.

Deciding which one to use is a little like working your way through a series of questions which ultimately lead to the only possible answer. Researchers call this technique a "decision tree". Figure 13 illustrates the decision tree that can be used to determine which significance test should be used. It is based on a decision tree developed in How to Calculate Statistics (which provides the instructions for actually doing the significance tests mentioned here and develops worksheets that will help in their computation).

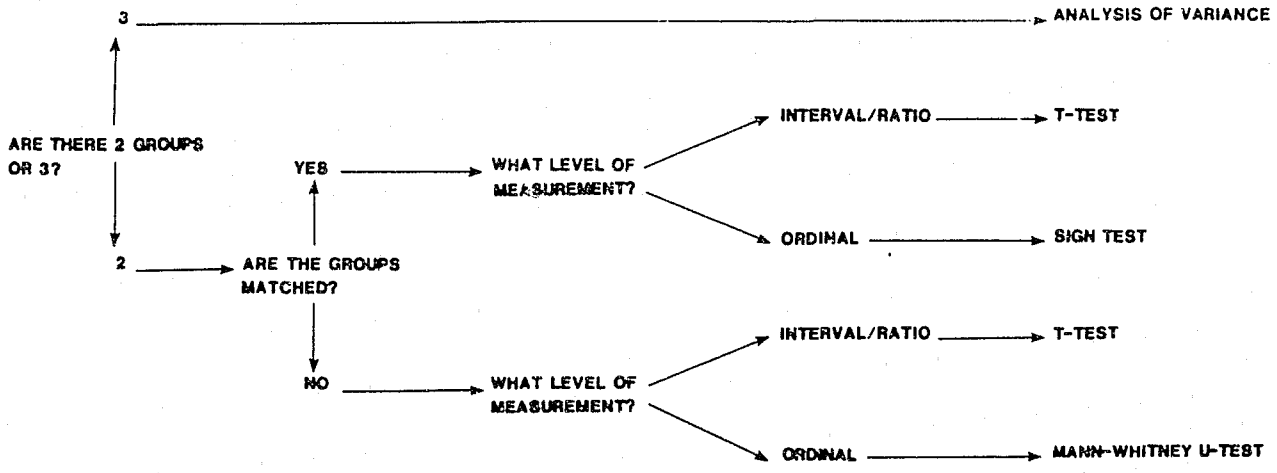


Figure 13

QUESTION #1: ARE THERE TWO GROUPS - OR THREE OR MORE?

If there are are three or more groups, an advanced statistical technique called ANALYSIS OF VARIANCE will be needed to measure the differences in scores among groups. If analysis of variance is required, some expert help will probably be necessary. It's a rather complex statistical procedure. If there are only two groups, you can use the other statistics mentioned here.

QUESTION #2: ARE THE GROUPS "MATCHED"?

Researchers consider groups "matched" if each case in Group I is paired with a similar case in Group II. A "match" can be a person with similar characteristics, or it may be the same person who has been tested at another time. The most likely instance of "matched groups" in correctional research is when one group is compared before and after participation in a program (the classic "before" and "after" picture).

All other groups have to be considered "unmatched". When working with "unmatched groups", the relative sizes of the two groups are important, as is the amount of variation within each group. These two factors will help to determine how different their scores are likely to be. The smaller the groups, the more likely that one group mean will be different from the mean for both groups together. The more variation in the scores, the more likely that one group mean will vary from the mean for both groups together.

QUESTION #3: WHAT LEVEL OF MEASUREMENT ARE THE SCORES?

Significance tests that are used on the wrong kind of data are worthless. Differences between NOMINAL level variables (data elements that are divided into discrete categories, i.e., the Pre-trial and Sentenced categories of Legal Status,) really deal with the relationship between the two categories that are being measured. This chapter will discuss this kind of relationship a bit later. Differences between ORDINAL level variables (data elements that are rank ordered or arranged from lowest to highest) are measured by two tests. If the groups are NOT matched, the MANN-WHITNEY U TEST should be used; if they ARE matched, the SIGN TEST can be used. Differences in INTERVAL/RATIO level variables (data elements like age, number of miles, dollar costs, etc. that have equal units on a scale) are measured by T-TESTS. Special kinds of T-TESTS have been developed for matched or unmatched groups.

Most of the statistical tests of difference are not particularly difficult to calculate. They are merely tedious and involve a great many repetitions of similar mathematical functions. If you have to calculate these tests by hand, a good programmable calculator (or better yet a statistical calculator which allows you to enter the data and then does the test for you) would be a great asset. Most special data collections will be processed on a computer that will print out the results of these tests of differences together with the significance levels that are attached to them. With the understanding of statistical significance that you have gained in this Chapter, you should be ready to handle most of the common statistics of this type that you meet.

STATISTICS TO EXAMINE THE RELATIONSHIP BETWEEN DATA ELEMENTS:

A number of statistics test the relationships between data elements. Statisticians call these relationships "correlations". Correlations are, at first, a little hard to understand, but once you've got it, they are a statistical shorthand that can describe the nature and strength of relationships between data elements.

TYPES OF RELATIONSHIPS BETWEEN DATA ELEMENTS:

Correlations operate in a variety of ways:

1. the more one variable increases, the more another variable increases, i.e., the greater the number of miles driven on a transport the greater the number of gallons of gasoline used;

2. the more one variable decreases, the more another variable decreases, i.e., the fewer the number of prior arrests, the lower the level at which bond is set; and

3. the more one variable increases, the more another variable decreases, i.e., the older the prisoner, the fewer the number of incidents in which he/she is involved at the jail.

Correlations like #1 and #2 are called positive correlations because a change in one direction in one variable is accompanied by a change in the same direction in the other variable. The variables have a direct relationship; statisticians abbreviate correlations like these by this symbol, "+r". Correlations like #3 are called negative correlations because a change in one direction in one variable is accompanied by a change in the other direction in the other variables. The variables have an inverse relationship; statisticians abbreviate correlations like these by this symbol, "-r".

All correlations are expressed in numbers between +1 to -1. The "+" sign denotes positive correlations while the "-" sign denotes negative correlations. Numbers that are close to either +1 or -1 (+ or - .7 and above) indicate very strong relationships; numbers that fall between + or - show weak relationships.

If a graph which shows all the data points for a strong positive or negative correlation is plotted, the data points "cluster" together. A straight line can be drawn through the cluster that "summarizes" the cluster. When it is relatively easy to draw this straight line, the relationship between the data elements is said to be "linear". This line is called the trend line and is used by statisticians for a special kind of correlation called population forecasting or trend analysis. In population forecasting, statisticians attempt to determine if there is a relationship between a jail data element, such as average daily population, and time. Figure 14 on the following page provides examples of data.

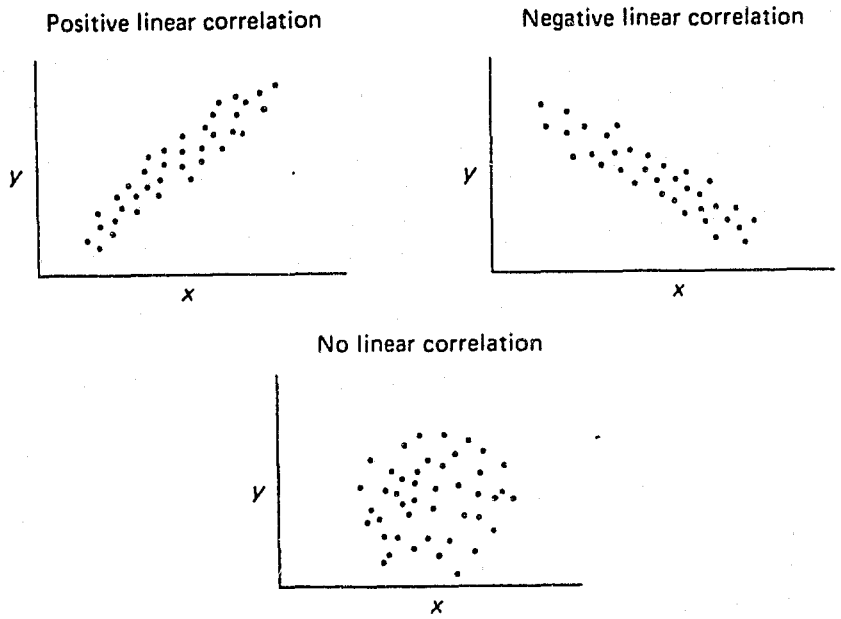


Figure 11.8 *Interpreting the Correlation Coefficient*

FIGURE 14: DATA CLUSTERS

Actually SEEING a plot of the data points is important because there are times when correlations should not be used to measure the relationship between variables. The correlation (the number itself) can not reveal this problem. In fact, some very strong relationships which aren't linear exhibit weak correlations. For example, when taking tests, people who have either very low or very high anxiety levels tend to get low scores, but people who have moderate levels of anxiety get high scores. Relationships like this are called curvilinear relationships. While there are few of these in basic jail data, they are possible. The best way to detect them is to graph the data. If such a relationship does emerge from the data, use a statistic called a CHI SQUARE or PHI to find out if there is a relationship between the data elements.

STATISTICAL TESTS FOR CORRELATION:

Most statistical tests for correlation are mathematically descended from one called the Pearson Product Moment Correlation. Common statistical tests of correlation include:

1. Phi Coefficient;
2. Rank Biserial Correlation Coefficient;
3. Point Biserial Correlation Coefficient;
4. Spearman's Rank Order Correlation Coefficient; and
5. Pearson's Product Moment Correlation Coefficient.

Another statistic that is used to assess relationships which is not a true correlation is the Chi Square.

A series of questions will help to decide which test to use (Taylor Fitz-Gibbon and Morris, 1978).

QUESTION #1: WHAT KIND OF MEASUREMENT IS USED FOR THE FIRST DATA ELEMENT THAT IS MEASURED?

Is the case classified (put into categories), ranked (put in some order) or rated (given a score)? There are no problems as long as the measurement is ORDINAL or INTERVAL. However, if the case is classified (NOMINAL), the researcher must answer QUESTIONS #2.

QUESTION #2: DOES THE MEASUREMENT OF THE DATA ELEMENT PUT THE CASE INTO TWO CATEGORIES OR ARE THERE MORE THAN TWO?

If the answer is more than two (as it will be for many jail data elements), a correlation can not be used to define the relationship between the variables. However, a CHI SQUARE can be used to test for a relationship.

Appropriate Correlation Coefficients for Use With Dichotomous, Ordinal, or Interval Measures

Classification of FIRST MEASURE	Classification of SECOND MEASURE		
	Dichotomous	Ordinal	Interval
Dichotomous Examples • Yes - No • Agree - Disagree • U.S. Citizen - Alien • Preschool - No preschool • Like - Dislike	Phi Coefficient ϕ	rank biserial r_{rb}	point biserial r_{pb}
Ordinal Examples • Rank in class • Low, moderate, high • Never, sometimes, often • Negative, neutral, positive	rank biserial r_{rb}	Spearman's rank order r_s	Spearman's rank order r_s
Interval Examples • Arithmetic score • Reading achievement • IQ	Point biserial r_{pb}	Spearman's rank order r_s	Pearson's product moment[14] r_{xy}

Table 10

QUESTION #3: WHAT KIND OF MEASUREMENT IS USED FOR THE SECOND DATA ELEMENT THAT IS MEASURED?

See QUESTION #1. If the case is classified, the researcher must ask Question #2 for the second data element.

Table 10, reprinted from Taylor Fizt-Gibbon and Morris, is a table which shows which test of correlation should be used, depending upon the results of your answers to these questions.

ANOTHER STATISTICAL RELATIONSHIP TEST - THE CHI SQUARE:

Correlations can't be used when either of the variables are classified and put into more than two groups. The statistical test that allows analysts to identify whether or not being a member of a particular category of one data element has anything to do with being a member of a particular category of another data element is the CHI SQUARE.

Sheriffs and Jail Administrators will find this a very useful statistical test, because most of the basic jail data elements can be categorized, and their values usually fall into more than one category. It is also rather easy to calculate. The Chi Square begins with something statisticians call a "contingency table". A contingency table (also called a crosstabulation) is nothing more than a chart which displays the relationship between <u>two</u> frequency distributions. The Chi Square test indicates if the results of the contingency table are different than the results that would be expected <u>if the two data elements were not related</u>. Appendix N provides step by step instructions for calculating the Chi Square.

INTERPRETING MEASURES OF RELATIONSHIP:

It's important to avoid errors when interpreting correlations and Chi Squares. One common problem in interpreting these statistics is the fact that people assume that that one data element has caused the other because a relationship exists between them. Correlation is <u>NOT</u> the same thing as causation. Think about height and weight, which have a strong positive correlation. But does height cause weight?

The technical aspects of this section have been included as resources; they are not part of the basic descriptive statistics which are tools for better management. If Sheriffs and Jail Administrators can begin to keep good descriptive statistics on the jail population, then a major goal of this manual will have been achieved. The discussions about the statistics themselves should make Sheriffs and Jail Administrators much more informed consumers of the statistics you receive.

STATISTICAL SINS:

Statistical sins can be either sins of commission or omission. Both varieties can leave the statistical consumer in a very uncomfortable position. Part of the problem is that sometimes the most carefully calculated statistics are used carelessly; they may be interpreted by people who really don't understand the statistical foundations you've just been exposed to. One additional purpose for this manual is to make Sheriffs and Jail Administrators more knowledgeable, careful consumers of the statistics

that they encounter on a daily basis - both on and off the job.

One of the best resources in this area (outside of a thorough understanding of statistics and a lot of exposure to them) is a book, How to Lie with Statistics, written by Darrell Huff in 1954. Even though this book is almost 30 years old, and the examples that are used to illustrate the statistical sins are dated, the sins Huff identifies are just as prevalent today as they were then. It's the source from which the following section was drawn.

SIN #1: HOW COULD THE RESULTS BE WRONG? THE CALCULATIONS WERE PERFECT!

In Chapter 5, a considerable degree of emphasis was placed on random sampling. Chapter 6 showed why that was important. Well, sometimes, in spite of the best intentions, samples can acquire a "built-in bias". This can happen in a number of ways:

1. Researchers may report as FACT what people SAY they do. Sometimes people have a tendency to either embellish or "play down" some aspects of their behavior. People may say that they make more money than they actually did when they want to impress someone and say that they make less when it comes to tax time.

2. Researchers may fail to mention how many people DIDN'T respond to their survey. Frequently, people with certain characteristics (maybe even some of the characteristics being measured) will fail to respond to the survey because of personal considerations. College surveys that proclaim how successful their alumni have been may be guilty of this kind of "built-in" bias. There's a good possibility that alumni who aren't quite so successful won't participate.

3. Researchers may ask questions about behavior that is not socially acceptable. Surveys that ask, "Have you stopped cheating on your taxes?"will probably discover that no one cheats on their taxes.

4. The source on which the sample is based doesn't represent the whole population. A frequent source of names for many surveys is the telephone book or a list of registered voters. While more people have telephones now than in the era when social research was beginning, there still are some kinds of people who do not have telephones. This biases the sample. Even though the people who were surveyed were selected randomly, they were selected from a biased source. One famous political survey used the telephone book to structure a sample of voters. The survey predicted an Alf Landon landslide. Needless to say, they were wrong. The problem? They had constructed a sample that represented voters who had telephones and not ALL the voters. In the Depression, that was a serious sampling error.

5. If information is collected by interview, the time of day and location of the interviews can bias the sample, i.e., house to house, daytime interviews can bias the sample by filling it with people who don't work; "man in the street" interviews miss the people who stay home.

6. The person asking the question can bias the response, i.e., the race and sex of the interviewer, have been known to elicit response that the respondent believes he/she has to say to the interviewer, but may not really believe.

In developing a sample, not only must the cases be randomly selected, but the sample must really represent the whole population. This can be a problem in jail surveys. For example, a systematic random sample of all people booked at the jail was developed for an Inmate Profile Data Collection. A major concern was the number of prisoners who were management problems during booking, i.e., they were violent, incapacitated by alcohol, mentally ill, etc. When the statistics were analyzed, the results seemed AWFULLY low to all the people who worked in the system. The problem was soon discovered. Some prisoners who were the largest management problems in the Booking Room were never booked. They were held on alcohol detainers and not charged with a crime. No crime...no booking = one biased sample.

SIN #2: WILL THE REAL AVERAGE PLEASE STAND UP?

In the discussion of measures of central tendency three different measures of central tendency (the mean, the median and the mode) were presented. These are not always the same thing. Table 11 illustrates that.

DAY #	SHERIFF #1'S COUNT	SHERIFF #2'S COUNT	SHERIFF #3'S COUNT
1	57	26	14
		... ...	
30	+ 49	+ 29	+ 16
RESIDENT DAYS	932	932	932
ADP (MEAN)	31.06	31.06	31.06
RANGE	48	12	159
STANDARD DEVIATION	12	3	39.75
MEDIAN	30.50	31.00	16.00
MODE	54.00	29.00	16.00

TABLE 11: MEAN AND STANDARD DEVIATION AT THREE JAILS

It's fine that these measures aren't the same; they measure different things. The problem comes when researchers don't tell you WHICH average they are using. Data elements that are expressed in dollars, like annual income, are most vulnerable to this kind of statistical misrepresentation. Figure 15 should illustrate why.

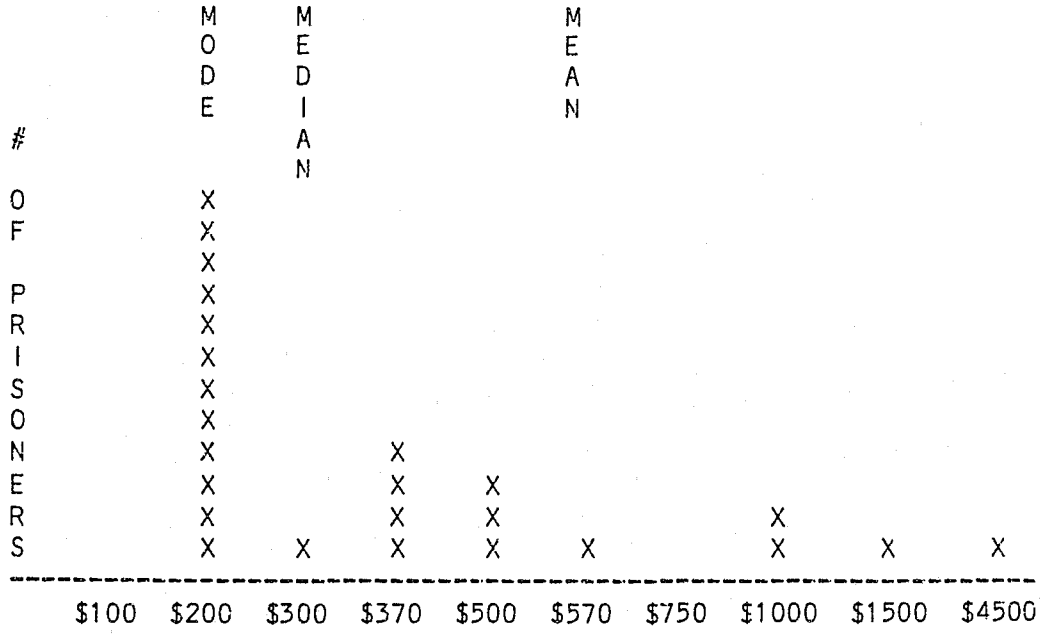


FIGURE 15: MEASURES OF CENTRAL TENDENCY (AMOUNT OF BOND)

Imagine how these differences could be used during a political campaign in which a "get tough on crime" political platform had emerged. The incumbent says, "The average amount at which I set bond was $570." The challenger says, "The incumbent is soft on crime. Why the average amount at which bond was set was only $200." The different averages present rather different pictures of bonding practices. Watch out for "averages" that don't say which kind of average they are!

SIN #3: WHAT'S MISSING FROM THIS PICTURE?

This is a statistical sin which is well illustrated by the data from the three jails. There are two aspects of descriptive statistics: measures of central tendency AND measures of variability. The two of them should go be inseparable. Well, frequently, the "average" is presented without any measure of variability, such as range or standard deviation. Recall Sheriff #3's weekend when the jail (with a usual ADP of 16) was disrupted by 170 bikers, resulting in an ADP of 31 (which is twice what the the ADP was the other 27 days in that month). Mistaken conclusions could easily be drawn by using an "average" without something that tells indicates how representative that number is. That's what the measure of variability does. Be a little skeptical of averages that stop before giving a measure of variability.

Another statistic frequently among the missing is somewhat less obvious. And it may more devious because it misrepresents one of the basics, the frequency distribution. Sometimes the data is presented in percentages without the number of cases in each group. A comparison of the two examples below should serve to illustrate the problem.

AGE ON INTAKE	PERCENT/N OF CASES
Under 18	-
18-21 years	16% / 160
22-25 years	16% / 160
26-29 years	28% / 280
30-33 years	12% / 120
34-37 years	13% / 130
38-41 years	5% / 50
42-45 years	8% / 80
46 or older	2% / 20
TOTAL	100% /1000

TABLE 12: EXAMPLE 1 - FREQUENCY DISTRIBUTION OF AGE

Table 12 provides a lot of information:

- the actual frequency distribution for each of the age groups;
- how many cases were in the whole sample (1,000); and
- how many cases were in each group.

Now compare it with Table 13 below.

AGE ON INTAKE	PERCENT
Under 18	
18-21 years	16%
22-25 years	16%
26-29 years	28%
30-33 years	12%
34-37 years	13%
38-41 years	5%
42-45 years	8%
46 or older	2%
TOTAL	100%

TABLE 13: EXAMPLE 2 - FREQUENCY DISTRIBUTION OF AGE

With Table 13, there is no way to know if there are a thousand prisoners, or a hundred prisoners in the sample or less. In this example, there could be only 2 people in the study who were 45 or older, and only 28 that were between 26-29 (the largest category). That's TOO SMALL a sample to be at all comfortable with! What has happened is that the chart does not how many cases comprise each group; only the percentage is given. Just remember that "50% of the cases" can be just 1 case, and you'll be forever suspicious of results that only talk in terms of the percentages.

SIN #4: SO WHAT IF IT IS STATISTICALLY SIGNIFICANT?

With a very large sample, very small differences between groups can be statistically significant. From a manager's perspective, what difference does a pre-release program make if program participants average 4.21 subsequent arrests versus people who didn't participant in the program who average 4.23 subsequent arrests?

Informed statistical consumers look not only at whether the difference is statistically significant but also at what the REAL difference is. It's important to remember that some differences that aren't statistically significant may be important for management decisions.

SIN #5: IF A, THEN B?

This is so important that although it's been mentioned earlier, it's worthy of repetition. CORRELATION IS NOT THE SAME THING AS CAUSATION. Just because one thing happens before another does, it doesn't imply that one causes the other. Strong correlations can result from:

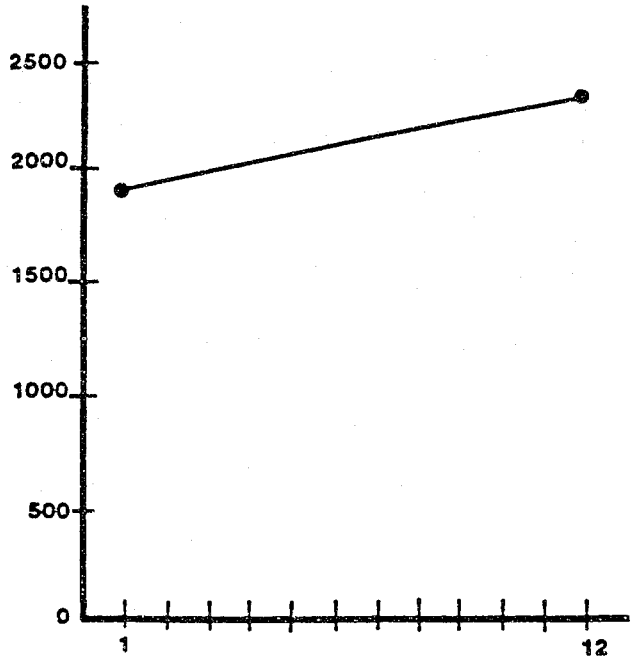
1. both factors being related to a third (and possibly unknown factor) that causes BOTH of them;

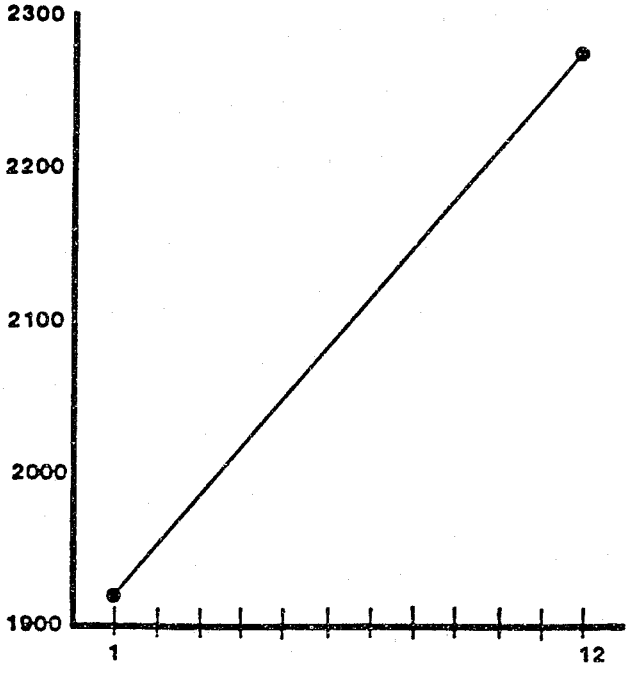
2. chance (a favorite example in this area is a very strong positive correlation found between one state's prison population and the price of Hog Futures on a local commodity exchange). Researchers call these "spurious correlations"; and

3. a very real relationship which exists between two data elements, but you can't really tell which one causes which. One example in this area would be a relationship between LOS and the number of incidents committed by prisoners. Do prisoners commit more incidents simply because they stays longer (they have more opportunity)? Or does the number of incidents committed by prisoners predispose the court to keep bond high in the case of pre-trial inmates and reduce the amount of good time earned ir the case of sentenced prisoners?

SIN #6: WHAT'S WRONG WITH THIS PICTURE?

This manual indicated that statistics result in both a numerical summary of the information AND a graphic representation. Some of the grossest statistical misrepresentations, have been in HOW the information has been displayed. By carefully chocsing the scale on which information is graphed, a strong (and sometimes misleading) message of what the data means can be depicted. Figure 16 displays the same data on three scales.





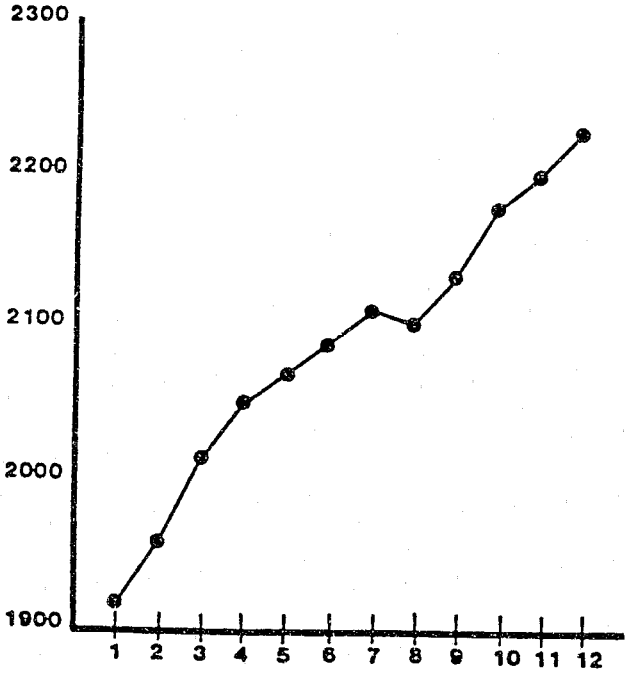


FIGURE 16: THREE SCALES

Most people have rather different reactions to the three graphs. And most people don't look closely enough at graphs and charts to see the "graphic tricks" that were played on them. Displaying data effectively and responsibly is a major part of any data collection. Sometimes there is a rather fine line between effective and ethical data display.

CONCLUSION:

This Chapter has covered a great deal of territory - from some of the foundations on which the entire field of statistics rest, to how to use the different types of statistics (and how to calculate some of the more basic ones), to the statistical sins that have the field a bad reputation. This manual should encourage Sheriffs and Jail Administrators to keep jail statistics and use them to make more informed decisions about situations that effect the jail. Having completed this Chapter, Sheriffs and Jail Administrators should be more informed consumers of the statistics that they read. Learning how to understand and calculate statistics is only a part of this manual's mission. If Sheriffs and Jail Administrators are to benefit from this knowledge, they will need to learn how to apply it in their own situations; they need to be able to interpret statistics. That's the purpose of Chapter 7.

CHAPTER SEVEN:

HOW TO INTERPRET INFORMATION

INTRODUCTION:

Once the information has been collected and processed, the exciting part of the data collection, the analysis itself, begins. Analysis is the process of interpreting what the information means in the context of the environment in which it was collected. Explaining how to begin this process is a little like TELLING someone how to ride a bicycle. It's possible to explain about balance and velocity and even go into the laws of motion, but until you actually start pedalling, none of it makes much sense.

Ideally, Sheriffs and Jail Administrators who are interested in learning how to interpret statistical information should identify someone in their community who can work with them to analyze the data. This is the best way to learn about interpreting statistics. The next best alternative is to use a "programmed text" to teach analytical skills. In a programmed text, the reader is presented with a problem, given an opportunity to respond to it, and then given instructions to turn the page to see what the teacher thinks. Although you may be tempted to gloss over them, do take the time to write down your responses. Writing helps many people think things through.

This Chapter has been structured as a programmed text. There are two case studies that provide examples of how basic jail data can be used for management decision making. These are examples that come from real situations. As a result, what the key actors elected to do in each case may not be exactly the same thing YOU would choose to do if you were in the same position. That's why interpreting the information is so interesting and such a challenge. Analysis provides the opportunity to integrate correctional philosophy and resulting criminal justice policy choices with good information. Although you may not agree with their choices, these case studies make it clear how people in these situations used the information that was available to make critical policy decisions for their jails.

CASE STUDY NUMBER ONE: THE FRIDAY NIGHT BLUES

THE SITUATION:

The Metro County Jail has the authority to detain persons for the local Alcohol Recovery Center (hereafter called ARC Holds and the ARC respectively) under two circumstances:

1. if the ARC Hold is violent; or
2. if the ARC is full.

ARC Holds are housed in the Holding Area adjacent to the Booking Room for eight hours and are then released.

The ARC has been operating consistently at about 50% of capacity, but the number of ARC Holds at Metro County Jail has steadily increased over the three years that this practice has been in existence. The Booking and Holding Areas are frequently crowded and congested. If the situation gets worse, it is likely that construction of a new booking and holding area will be necessary.

You are the Jail Administrator. A special task force, called together by the Sheriff and County Commissioners has been established to decide whether or not Metro County should expand the present Booking and Holding Areas. The Sheriff has told you to have some data available for the task force at the next meeting. You go back to the jail and sit down to figure out how to get the information.

WHAT SHOULD THE JAIL ADMINISTRATOR DO FIRST?

The Jail Administrator needs to develop a problem statement. Actually, the Jail Administrator's secretary (who went to the meeting with the Task Force along with the Jail Administrator to take minutes) wrote the description of the situation that you see.

> The Metro County Jail has the authority to detain persons for the local ARC two circumstances:
>
> 1. If the ARC Hold is violent; or
> 2. If the ARC is full.
>
> They are housed in the Holding Area adjacent to the Booking Room for eight hours and are then released. The ARC has been operating consistently at about 50% of capacity, but the number of ARC Holds at Metro County Jail has steadily increased over the three years that this practice has been in existence. The Booking and Holding Areas are frequently crowded and congested. If the situation gets worse, it is likely that construction of a new booking and holding area will be necessary.

That's quite a good problem statement. The Jail Administrator was lucky. The first task was already completed.

NOW THAT THE JAIL ADMINISTRATOR HAS A GOOD STATEMENT OF THE PROBLEM, WHAT'S THE NEXT STEP?

Right! The Jail Administrator identified the questions that would have to be answered in the analysis and the data elements that would be needed to do that. Just in case you missed that one, try the next section.

WHAT QUESTIONS DID THE JAIL ADMINISTRATOR HAVE TO ANSWER - AND WHICH DATA ELEMENTS ARE NECESSARY TO DO THAT?

At this point, different opinions about which course to follow might begin to emerge. The Jail Administrator identified the following questions:

1. Are the ARC Holds who are brought to the jail violent?

2. Are ARC Holds brought to the jail when there is space at the ARC?

3. How much have ARC Holds increased over the last three years?

4. Will the number of ARC Holds stabilize, decrease, or increase?

The Jail Administrator identified the following data elements that would be necessary for the analysis:

1. the number of ARC Holds detained at the jail by month as far back as possible;

2. the number of ARC Holds who commit incidents in the Booking Room; and

3. the number of times that the ARC had been full during that year.

WHAT SHOULD THE JAIL ADMINISTRATOR DO NEXT?

The Jail Administrator was concerned about identifying where the jail kept information about ARC Holds (since they were NEVER booked). By talking with the individual who maintainec the manual information system, the Jail Administrator discovered that a special category for ARC Holds had been established and that records had been kept about ARC Holds for about four years. The information system could provide the required historical data. The Jail Administrator made a mental note to recommend a raise for the individual who maintained the manual information system!

The Jail Administrator had a lot of misgivings about how to decide if ARC Holds were likely to increase, decrease or remain stable. Hopefully, the information already available will help answer that question. The Jail Administrator was also a little worried about identifying the number of ARC Holds who were violent. The best measure jail records could provide was the number of ARC Holds who were involved in incidents at the jail. It was the jail's policy that whenever it was necessary to restrain someone (or someone behaved in a violent way) the Officer(s) involved would write an incident report. The Jail Administrator was very pleased that this Incident Log had been instituted. Now, it would be relatively easy to go back through the Incident Log Book to identify how many ARC Holds were involved in incidents in the facility.

The question that really stumped the Jail Administrator was how often people were brought to the jail because the ARC was full. The minutes of the meeting indicated that the ARC had been operating at about 50% of capacity - but the Jail Administrator was a little suspicious of averages. What was worse was the fact that the jail had no way to gather that data

Let's assume that the Jail Administrator got all the data together and decided that it might be a very good idea to share this information with the Sheriff first. This is a very wise idea. NO ONE likes to be surprised about data from his/her own organization.

WHAT SHOULD THE JAIL ADMINISTRATOR DO TO PREPARE FOR THE MEETING?

The Jail Administrator not only used numbers to summarize what had been discovered. Deciding that the information would be a lot clearer if it were displayed in neat tables and charts, the Jail Administrator developed a series of tables and charts. The first table that the Jail Administrator showed the Sheriff displayed the number of ARC Holds that had been detained at the jail for the last four years. The Jail Administrator decided to summarize it by year, rather than showing the number of ARC Holds each month.

YEAR	# OF ARC HOLDS
1979	136
1980	323
1981	460
1982	528

TABLE 14: HISTORICAL TREND IN ARC HOLDS

WHAT DOES THIS TABLE SUGGEST?

Both the Sheriff and the Jail Administrator were amazed at the rate at which the ARC Holds had increased. They had tripled in the years from 1979 to 1982. That made both the Sheriff and Jail Administrator VERY nervous. Even if they did decide to build additional space in their jail to deal with the problems they were having in the booking area, both the Sheriff and Jail Administrator knew that it would be just about three years until that space was available. And if ARC Holds had tripled in four years, it was becoming very obvious that they might have a very bad situation to cope with until new space was built.

The Sheriff (who had recently read a Manual on How to Collect Data in Jails) had heard of a technique called population forecasting that allowed statisticians to predict what future jail populations were likely to be. Recognizing that this was an advanced statistical technique, the Sheriff asked for technical assistance from a friend at a local college. After writing this down as a "follow up" to the meeting, the Sheriff asked the Jail Administrator what else had been discovered. The Jail Administrator showed the Sheriff the following Chart that displays the relationship between ARC Holds and Incidents committed in the jail in 1982.

ARC HOLD DESCRIPTION	% / NUMBER
ARC HOLDS WHO COMMIT INCIDENTS	5% / 22
ARC HOLDS WHO DO NOT COMMIT INCIDENTS	95% / 438
1982 TOTAL ARC HOLDS	100% / 460

TABLE 15: ARC HOLDS AND THEIR INCIDENT PATTERNS (1982)

WHAT DOES THIS TABLE SUGGEST?

Both the Sheriff and the Jail Administrator were surprised how few of the ARC Holds had been involved in incidents while in the Booking Room or Holding Area. The Jail Administrator was able to add that while a review of the Incident Log Book had revealed that almost all the incidents which DID involve ARC Holds were violent (usually because the person was violent when being brought in), very few ARC Holds actually were involved in incidents. Only 22 of the 460 ARC Holds that were brought in that year were violent.

The Jail Administrator told the Sheriff that the odds were against the ARC being full the other 448 times that the jail had detained people. In addition, the ARC Administrator had been contacted about the ARC population, and this contact had revealed that the ARC had been at capacity only about one day a month. Even if this provided a reason for some of the ARC Holds, it left a <u>great many</u> NOT accounted for.

WHAT DOES THIS INFORMATION SUGGEST TO YOU?

Both the Sheriff and the Jail Administrator came to the conclusion that there were a number of ARC Holds coming to the jail who did not meet the criteria for detention. Remember...

The Metro County Jail may detain persons for the local Alcohol Recovery Center:

1. If they are violent; or
2. If the ARC is full.

And, while both the Sheriff and the Jail Administrator (having spent time as Patrol Officers) were beginning to have some suspicions about what might be occuring, by now, both were cautious. They didn't jump to conclusions. Both agreed that some additional information about ARC Holds and why they were brought to the jail was necessary. That "follow-up" task was given to the Jail Administrator. The Sheriff and Jail Administrator agreed to meet one week later to decide what action (if any) the jail should take and what their recommendation to the Task Force would be.

WHAT DID THE JAIL ADMINISTRATOR DO NEXT?

The Jail Administrator considered a number of different strategies, including:

- asking Patrol Officers about their past use of the ARC for people who were under the influence.

- identifying several dates when there were a number of ARC Holds, pulling the Complaint Reports completed for those ARC Holds, and calling the ARC to find out whether or not they had been full on those dates.

The Jail Administrator, however, rejected both of these strategies. If asked, the Patrol Officers might not remember, and even if they did, there would still not be any documentation about why the ARC Holds had been brought to the Jail. However, the thought of going through all that paperwork was more than the Jail Administrator could handle. After thinking for awhile, the Jail Administrator developed a third strategy. The following directive (Figure 17) for Booking Officers was written and read at all Shift Briefings that day.

MEMO TO ALL BOOKING STAFF

EFFECTIVE: IMMEDIATELY

FROM: THE JAIL ADMINISTRATOR

Effective immediately, when Patrol brings in an ARC Hold, the Booking Officer will:

1. ask the Patrol Officer why the ARC Hold is being brought to the jail rather than to the ARC and make sure that this reason is recorded on the Complaint Report;

2. accept the ARC Hold;

3. If the ARC Hold is violent at the time of admission, attach a copy of the Incident Report to the jail's copy of the Complaint Report and place in the Jail Administrator's in-basket;

4. If the Patrol Officer indicates that the ARC Hold was violent at the ARC, call the ARC for verification (after the Patrol Officer has left), record this information on the jail's copy of the Complaint Report and place in the Jail Administrator's In-basket; and

5. If the Patrol Officer indicates that the ARC was full, call the ARC for verification (after the Patrol Officer has left), record this information on the jail's copy of the Complaint Report and place in the Jail Administrator's in-basket.

FIGURE 17: MEMO TO ALL BOOKING STAFF

While the Jail Administrator was a little concerned about how Patrol officers might view this strategy, avoiding disagreements between the Booking and Patrol Officers (particularly in front of the ARC Hold) while the information was being gathered was more important. Having leafed through the Sheriff's data collection manual during the week, the Jail Administrator was also more than a little concerned about the size of his sample. After all, it was only one week, and altogether it included only 25 ARC Holds.

Never the less, the Jail Administrator decided that SOME information is better than NO information and compiled the information that was available for the meeting with the Sheriff. At the meeting, the Jail Administrator displayed this chart (Table 15).

PATROL REASON FOR ARC HOLD	ARC VERIFICATION/RESPONSE
ARC HOLD VIOLENT AT ARC	YES = 4% / 1
	NO = 60% / 15
ARC FULL	YES = 8% / 2
	NO = 28% / 7
TOTAL ARC HOLDS FOR THE WEEK	100% / 25

TABLE 16: COMPARISON OF PATROL'S REASON FOR ARC HOLD AND ARC RESPONSE

WHAT CONCLUSION WOULD YOU DRAW FROM THIS SAMPLE?

Both the Sheriff and the Jail Administrator came to the conclusion that Patrol Officers were bringing ARC Holds to the jail when they should have gone to the ARC. The Jail Administrator was able to add some additional verification of this. Several of the Booking Officers had noted on the copy of the CR that Patrol Officers who had said they had taken people to the ARC had never been there.

The Sheriff then showed the Jail Administrator the results of the professor's effort to project what the increases in the number of ARC Holds that would be held at the jail. Once again, the professor had summarized the number of ARC Holds for each year although the forecast was actually made by using data grouped by month.

YEAR	# OF ARC HOLDS
1979	136
1980	323
1981	460
1982	528
1983 EST	686
1984 EST	815

TABLE 17: HISTORICAL TREND IN ARC HOLDS (PROJECTED)

The Sheriff indicated that the professor had said that if the present trend in ARC Holds detained at the jail continued, they could expect to have 686 ARC Holds (about 57 a month) in 1981 and 815 (about 68 a month) in 1982. The prospects for the future looked even WORSE! The professor had drawn a graph (Figure 18) of the data with a solid line to represent the known ARC Holds and a dotted line to represent the estimated ARC Holds.

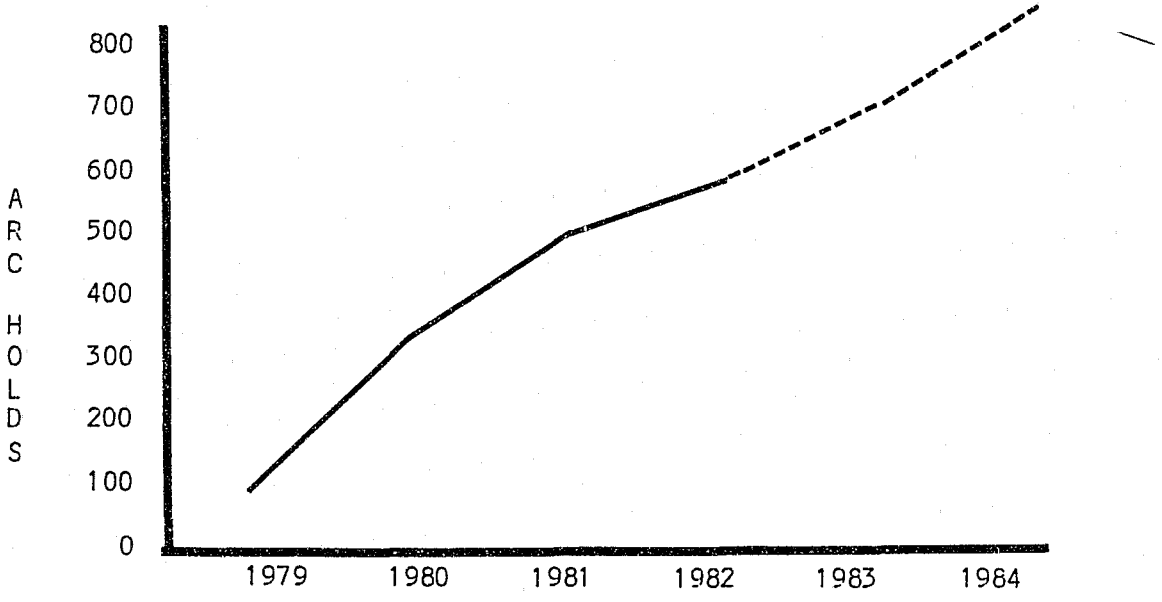


FIGURE 18: ARC HOLDS

BASED UPON THIS INFORMATION, WHAT RECOMMENDATION WOULD YOU MAKE TO THE JAIL TASK FORCE?

There are a wide range of actions that could be taken to deal with the large number of ARC Holds that are brought to the jail instead of the ARC. The real Sheriff (in this case study) knew that a city police agency was the primary user of the facility (they brought in about 75% of all prisoners and nearly all ARC Holds). The first approach to solving this problem was to discuss the matter with the local Police Chief. The Sheriff and the Police Chief weren't able to come to an agreement about how to deal with the situation. After all, as the Police Chief suggested, it was only 25 people a week or so. And as the Sheriff suggested, if the Police Chief thought it wasn't much of a problem, he should try working in Booking on Friday night.

Having tried a collaborative approach without being able to remedy the situation, the Sheriff decided that to act to preserve the jail's interest in this situation, which was consistent with local criminal justice system policy. The ARC had been developed when public intoxication had been decriminalized so that Officers could do something with people who were intoxicated and needed protection rather than taking them to jail. A policy decision was made that the jail would no longer detain people on ARC Holds until further notice. Remember...

> The Metro County Jail MAY detain persons for the local Alcohol Recovery Center:
>
> 1. If they are violent; or
> 2. If the ARC is full.

ARC Holds who were violent could be charged with a crime. And the ARC indicated that it was seldom full and had the space to expand if necessary. This was not an easy decision to make - nor a very popular one with some of the local law enforcement community. It had been easier to take people to the jail than to the ARC.

Six months later, the ARC reported that it was operating at close to 95% of capacity and was adding 10 more beds. The jail reported that space problems in the Booking Area were much improved. Even though it was still busy on Friday and Saturday nights, they no longer had eight to ten people a night "sleeping it off" for eight hours in their three available Holding Cells when they were trying to book a number of other people who were charged with crimes. The Patrol Officers began to discovered that the ARC staff did know something about detaining and treating alcohol abusers after all. And the ARC changed their weekend staffing pattern to more adequately manage the people placed in their custody.

The Sheriff's response to the Task Force was actually a much easier policy choice. The Task Force was advised that the jail had detained ARC Holds as a favor for the local criminal justice system and the ARC. The Sheriff added that this favor had been somewhat abused and that ARC Holds had become a serious problem for the jail on weekends since they used space that the jail desperately needed for persons who had been arrested. And while the situation NOW was bad enough, if action were not taken, the trend in ARC Holds was increasing at such a rate that if no changes were made, the Booking Room would be inundated by a tidal wave of ARC Holds in the next two years.

The Sheriff concluded by saying that expanding the Booking Room to accomodate the ARC Holds would represent a major shift in criminal justice system policy. The system had decided that these individuals were to be detained outside the jail. The Sheriff indicated that if the only reason for expanding the Booking Room were ARC Holds, the real impact of the ARC Holds should be clear within the next six months - since the Booking Room would be processing ONLY people who had been charged with crimes. The Sheriff recommended that the Task Force assess other patterns of Booking Room use, primarily the total number of people being booked at the jail (which was also increasing) and expected future jail populations. The jail Task Force was encouraged to make a decision based on facts and the original policy choices of the local criminal justice system.

-- END OF CASE STUDY #1 --

BEFORE GOING ON TO THE SECOND CASE STUDY:

It should be clear that statistics are used with both qualitative information (the Sheriff's meeting with the Police Chief) and criminal justice system policy preferences (the system's choice to use the ARC as a way of dealing with alcohol problems) to make policy decisions. In this case, the Sheriff made a policy decision that was very proactive - and very supportive of the jail's position. Other Sheriffs in other systems may have made decisions that would have been equally effective, i.e., with a little more interest from the Police Chief a cooperative strategy in reducing the number of ARC Holds would probably have been very effective.

With no information, the Sheriff might very well have recommended to the Task Force to expand the Booking Room immediately! This might have resulted in the expenditure of County dollars to house people in the jail that the criminal justice system itself had just determined should be housed elsewhere until they were able to be released. No one said that the policy decisions would get any easier! Information just makes them better.

By now, the process of analysis should be a bit clearer. Now take a look at the second case study, and see what decisions you make to resolve a problem most counties face when they plan new jails: their need can't be accomodated by their resources.

CASE STUDY NUMBER TWO: THE CASE OF THE SHRINKING JAIL

THE SITUATION:

Forest County is another real county. It encompasses a relatively small, though rugged, geographic area, with a county population of about 35,000. They have been preparing to build a new, city-county joint law enforcement complex for about one year. Their population projections indicate that they will need a facility of approximately 60 beds in order to meet their anticipated correctional needs until the year 2000, without changing their correctional practices. Unfortunately, they can only afford a facility of 45 beds.

In order to try to figure out options that might be effective in reducing their jail population, the planning group elected to review the Inmate Profile Data Collection to determine potential segments of the jail population which might be appropriate for alternatives to incarceration. The data collection was based on a sample of more than 600 cases collected over a three month period. You are the Sheriff (who has responsibility for running the jail in this state) who is a member of the planning group. You review the Report from the Inmate Profile Data Collection and begin to leaf through the pages. The first table that catches your attention is this one.

RESIDENT STATUS	% / NUMBER
COUNTY RESIDENT	84.7 % / 574
IN-STATE, NON-COUNTY RESIDENT	11.5 % / 78
OUT OF STATE RESIDENT	3.8 % / 26

TABLE 18: RESIDENT STATUS OF PERSONS DETAINED

WHAT INFORMATION WOULD YOU EXTRACT FROM THIS TABLE?

The Sheriff was pleased to find that most of the people detained in the jail are county residents. This meant that there was a good chance that some people detained in the jail might be candidates for release on bond. Finding a much larger proportion of out of state residents would have been very unusual. Most jails detain local residents.

This encouraged the Sheriff to look a little further. This was the next table in the Inmate Profile Data Collection.

SEX OF PRISONER	% / NUMBER
MALE	75.5 % / 513
FEMALE	24.2 % / 165
TOTAL	100.0 % / 678

TABLE 19: SEX DISTRIBUTION OF PERSONS DETAINED

WHAT DOES THIS TABLE SUGGEST?

This table puzzled the Sheriff. The information displayed in this table was quite inconsistent with national patterns of incarceration. Although the number of females arrested has increased over the past few years, the number of females in custody is still relatively small (usually 10% or less of the jail population). About one quarter of the inmate population of this jail was female, and this was distinctly different from national patterns. The Sheriff wondered if this was an important clue to something unusual in the system's practices and stored this information away for future reference. The next table in the study is shown below.

AGE GROUP	% / NUMBER
UNDER 18	14.5 % / 98
18 - 21	27.4 % / 186
22 - 24	12.7 % / 86
25 - 27	7.7 % / 52
28 - 29	5.3 % / 36
30 - 34	13.0 % / 88
35 - 39	6.5 % / 44
40 - 44	7.1 % / 48
45 - 49	3.2 % / 22
OVER 50	2.7 % / 18
TOTAL	100.0 % / 678

TABLE 20: AGE DISTRIBUTION OF PERSONS DETAINED

WHAT DOES THIS TABLE SUGGEST?

This table didn't seem at all out of the ordinary. While about one-third of the jail population was over thirty (which may make it very slightly "older" than many jails today), this wasn't very different from what the Sheriff had expected. And the Sheriff know that it didn't make much difference in this analysis either since national statistics indicate that age is not a good indicator of whether or not an individual will fail to appear if released on bond.

The Sheriff recognized that this table represented one of the big problems in analyzing information. All the information available doesn't pertain to the problem. One of the critical tasks in interpreting the results of data collections is to sort out the information that <u>does</u> make a difference from the other information that is generated. Data collections that are processed on a computer frequently suffer from "information overload" in which <u>too much</u> information is processed and presented for the analysts to comprehend. The Sheriff had learned to sort out the things that were unusual or unexpected.

The next table (Table 21) in the Report of the Inmate Profile Data Collection was this one.

LEGAL STATUS	% / NUMBER
PRE-TRIAL	63.1 % / 428
SENTENCED	13.6 % / 92
HOLDS	23.3 % / 158
TOTAL	100.0 % / 678

TABLE 21: LEGAL STATUS OF PERSONS DETAINED

WHAT DOES THIS TABLE SUGGEST?

This table indicated that 23.3% of the people booked at the jail were detained on some kind of Hold. Depending on what kind of holds were involved, the Sheriff realized this could be either very good news or very bad news for the planning group. If a large number of holds were discretionary (i.e., some types of alcohol and mental health detainers, as well as some Parole or Probation holds in some states), this could be a area where people could be diverted from the jail. However, if the holds were primarily on persons who are wanted by other jurisdictions with plans to extradict, then holds would continue to be a major part of the jail population. In this case, the Sheriff suspected that if the jail could work to reduce the amount of TIME that people spend in jail while they are held for another jurisdiction, they could reduce the jail's population.

Fortunately, in this study, information about the types of holds had been gathered. The Sheriff had insisted on it in spite of the fact that the Jail Planning committee hadn't thought it would be important. It's not unusual to find that information thought to be unimportant when designing the data collection will be extremely useful when the study is interpreted. Be cautious about paring down the Inmate Profile Data Collection further for that reason. Table 22 displays information about Hold Types.

HOLD TYPE	% / NUMBER
HOLD FOR OTHER COUNTY	8.3 % / 56
HOLD FOR PAROLE, PROBATION	.3 % / 2
HOLD FOR IMMIGRATION	1.5 % / 10
HOLD FOR JUVENILE PROBATION	11.2 % / 76
HOLD FOR STATE CORRECTIONS	3.5 % / 24
HOLD FOR MILITARY (AWOL)	.3 % / 2
HOLD FOR OTHER FEDERAL AGENCY	.9 % / 6
PROTECTIVE CUSTODY (OTHER COUNTY)	.3 % / 2
NO HOLDS	73.7 % / 500
TOTAL	100.0 % / 678

TABLE 22: EXAMPLE 1 - DISTRIBUTION OF HOLD TYPES

WHAT DOES THIS TABLE SUGGEST?

The Sheriff thought this was a bit confusing because of the large number of cases (73.7%) in the "No Holds" category. The Sheriff through it might make things a little bit clearer to construct a frequency table that listed ONLY those cases that were holds. The results are shown in Table 23.

HOLD TYPE	% / NUMBER
HOLD FOR OTHER COUNTY	31.5 % / 56
HOLD FOR PAROLE, PROBATION	1.1 % / 2
HOLD FOR IMMIGRATION	5.6 % / 10
HOLD FOR JUVENILE PROBATION	42.7 % / 76
HOLD FOR STATE CORRECTIONS	13.5 % / 24
HOLD FOR MILITARY (AWOL)	1.1 % / 2
HOLD FOR OTHER FEDERAL AGENCY	3.4 % / 6
PROTECTIVE CUSTODY (OTHER COUNTY)	1.1 % / 2
TOTAL	100.0 % / 178

TABLE 23: EXAMPLE 2 - DISTRIBUTION OF HOLD TYPES

NOW WHAT DOES THIS TABLE SUGGEST?

Doesn't that make things clearer? The two largest "consumers" of the jail space for holds were other counties and the juvenile probation department. As a result of looking at this table, the Sheriff noted to be SURE that Juvenile Probation was involved in the planning process. Their policy decisions and procedures for detaining juveniles could have an impact on the jail population. If, speedier ways to process Juvenile Probation Revocations could be found, the Sheriff thought that the Juvenile Detention Area in the jail could be smaller.

It was also evident that there were a substantial number of holds from other jurisdictions. The Sheriff knew that it would be important to consider the amount of time that these individuals spent in the jail. He noted that the county should continue to work toward developing cooperative agreements with other counties about returning prisoners to other counties in a timely way. The next table (Table 24) noted by the Sheriff displayed charge status.

CHARGE STATUS	% / NUMBER
FELONY	35.1 % / 238
MISDEMEANOR	33.3 % / 226
TRAFFIC	17.4 % / 118
OTHER	14.2 % / 96
TOTAL	100.0 % / 678

TABLE 24: CHARGE STATUS OF PERSONS DETAINED

WHAT DOES THIS TABLE SUGGEST?

The Sheriff found quite a bit to be encouraged about in this table. Only about 35% of the jail population were charged with felonies (often the hardest and least desirable people to divert from jail) and the Sheriff recognized that it was most difficult to speed felony court procedures. Thirty-three percent were misdemeanants; 17.4% were charged with traffic offenses; and there were 14.2% who are charged with other offenses. The "other" category interested the Sheriff, who realized "Other" frequently contains people who are not charged with new offenses, i.e., probation and parole offenders. The Sheriff made a note to ask for a print out of the charges on which people in that "Other" category were detained. The next table (Table 25) in the Report was this one.

EMPLOYMENT STATUS	% / NUMBER
EMPLOYED FULLTIME	41.3 % / 280
EMPLOYED PART-TIME	.9 % / 6
UNEMPLOYED	48.4 % / 328
NEVER WORKED	8.8 % / 60

TABLE 25: EMPLOYMENT STATUS OF PEOPLE DETAINED

WHAT DOES THIS TABLE SUGGEST?

The Sheriff suspected that this was a mixed blessing. There were a substantial number of people who were employed when they were arrested. However, the majority of people who were booked at the jail were either unemployed, underemployed, or had never worked. The Sheriff recognized that employment is frequently used as a criteria for release on recognizance, and there was a rather large part of the jail population that would be potential candidates (depending on a number of other categories). But the Sheriff also saw there was a larger part of the jail population that would be hurt by deciding that fulltime employment was a pre-requisite for early release. The Sheriff noted that this would be an area where discretion should be used in making decisions about release - particularly since unemployment was high in the jurisdiction. The next table (Table 26) displayed information about the charges on which people were booked at the jail.

TYPE OF CRIME (MOST SERIOUS CHARGE)	% / NUMBER
CRIMES AGAINST PERSONS	5.5 % / 37
CRIMES AGAINST PROPERTY	29.3 % / 200
CRIMES AGAINST CHILDREN, FAMILY	.9 % / 2
SEX CRIMES	2.9 % / 21
CRIMES OF FORGERY, FRAUD	21.4 % / 146
WEAPONS, DRUG & ALCOHOL OFFENSES	8.4 % / 58
TRAFFIC OFFENSES	17.4 % / 118
MISCELLANEOUS	14.2 % / 96
TOTAL	100.0 % / 678

TABLE 26: CHARGE DISTRIBUTION OF PERSONS DETAINED

WHAT DOES THIS TABLE SUGGEST?

The Sheriff was astounded! There were A LOT of people ir the jail population who are charged with crimes of forgery and fraud - and also a lot of property offenders and "miscellaneous" offenders. The Sheriff noted that if there were no additional information about these people in the Report, this would definitely be an area about which you need some more data. Fortunately, in turning the page, the Sheriff found that the Report had more information, like the table below. Table 27 is a crosstabulation of two data elements, type of charge and charge status.

CHARGE	FELONY	MISDEMEANOR	TRAFFIC	OTHER	TOTAL
CRIMES AGAINST PERSONS	18	19	0	0	37
CRIMES AGAINST PROPERTY	144	56	0	0	200
CRIMES AGAINST CHILDREN, FAMILY	0	2	0	0	2
SEX CRIMES	21	0	0	0	21
CRIMES OF FORGERY, FRAUD	33	113	0	0	146
WEAPONS, DRUG & ALCOHOL OFFENSES	22	36	0	0	58
TRAFFIC OFFENSES	0	0	118	0	118
MISCELLANEOUS	0	0	0	96	96
TOTAL	298	226	118	36	678

TABLE 27: CHARGE STATUS BY CHARGE

WHAT DOES THIS TABLE SUGGEST?

The Sheriff thought that this was beginning to look very interesting and recorded the following notes:

1. 113 (77.4%) of the persons charged with forgery and fraud offenses are misdemeanor offenders;

2. none of the persons charged with Miscellaneous offenses are felons, misdemeanants, or traffic offenders;

3. while many of the property offenders are charged with felonies (72% to be exact), 28% are misdemeanants; and

4. there are a lot of traffic offenders who could potentially be diverted from the jail.

The criteria for diversion from the jail were to divert non-violent, minor offenders that posed the least risk to the community, and the Sheriff suspected that these individuals might meet that criteria. However, the Sheriff recognized that something could make this unlikely: if the likely candidates for diversion were sentenced or on a hold for some other jurisdiction. Table 28 provided some information about that.

CHARGE	PRE-TRIAL	SENTENCED	HOLD	TOTAL
CRIMES AGAINST PERSONS	28	1	8	37
CRIMES AGAINST PROPERTY	127	41	32	200
CRIMES AGAINST CHILDREN, FAMILY	2	0	0	2
SEX CRIMES	21	0	0	21
CRIMES OF FORGERY, FRAUD	136	10	0	146
WEAPONS, DRUG & ALCOHOL OFFENSES	36	14	8	58
TRAFFIC OFFENSES	86	18	14	118
MISCELLANEOUS	0	0	96	96
TOTAL	428	92	158	678

TABLE 28: LEGAL STATUS BY CHARGE

WHAT DOES THIS TABLE SUGGEST?

The Sheriff decided that this table revealed a great deal about WHO went to jail in Forest County. There were a number of possibilities for both diversion and alternative sentencing programs. These are some of the Sheriff's notes.

1. There are a fairly significant number of property offenders, persons convicted of crimes of forgery and fraud, weapon, drug and alcohol offenders, as well as traffic offenders who are sentenced to the jail. Questions to ask the judiciary include:

   - Would alternative sentences, such as community service or restitution, be acceptable punishments for this group of prisoners?

   - Are these prisoners candidates for work release - and could that program be operated at a facility other than the jail?

2. By far the largest group are the 146 persons charged with crimes of forgery and fraud, 77% of whom are misdemeanor offenders. This is a large group who fit the criteria for pre-trial diversion. Once again, the Sheriff noted a question for the analyst:

   - "How many jail days does this group account for?

   - "Would diverting this group drop the bed space needs by 15 beds?

   The Sheriff thought that this was the most promising area in which to begin diversion attempts.

3. There also are a significant number of pre-trial detainees who are charged with traffic offenses. Depending on how many jail days this group accounts for and what they are charged with, this group could be good candidates for diversion through increased use of summons and citation in lieu of arrest.

4. A large part (96 or 61%) of the miscellaneous offenders are Holds with no other charges pending. It's becoming more evident that the agencies for whom the jail detains these individuals must become part of the planning process.

Although the Sheriff now knew something about these groups which potentially met the criteria for diversion from the jail, some additional information about the particular types of charges on which they were arrested was critical. Initially, a complete listing of all the charges on which persons were arrested would probably have been a little bit too much information to absorb at one time. Now that the analysis had moved forward a bit, the Sheriff decided that it would be very helpful.

The Report of the Inmate Profile Data Collection (Table 29) on the following page provided a summary of all charges.

WHAT ARE THE IMPLICATIONS OF THIS TABLE?

CHARGE	TOTAL
Murder	5
Aggravated Assault	6
Unarmed Robbery	7
Minor Assault	19
CRIMESAGAINSTPERSONS	37
Larceny	2
Auto Theft	10
Burglary	48
Arson	4
Theft	78
Criminal Mischief	47
Trespassing	11
CRIMES AGAINST PROPERTY	200
Non-support	2
CRIMES AGAINST CHILDREN, FAMILY	2
Forcible sex acts	13
Unnatural sex acts	6
Illegal sexual relations	2
SEX CRIMES	21
Forgery	3
Deception	1
Uttering	4
Issuing (bad check)	132
Receiving stolen property	6
CRIMES OF FORGERY, FRAUD	146
Weapons violation	1
Narcotics violation	36
Disorderly conduct	21
WEAPONS, DRUG & ALCOHOL OFFENSES	58
Moving violation	10
Standing violation	3
Driving w/o a license	31
Eluding	7
Drunk driving	67
TRAFFIC OFFENSES	118
Parole/probation violation	75
Illegal alien	21
MISCELLANEOUS	96
TOTAL	678

TABLE 29: CHARGES OF PERSONS DETAINED

A close look at Table 29 (in conjunction with the Table 28 which displayed information about Legal Status) convinced the Sheriff that a greater impact on the jail population could be made through changes in pre-trial release practices than through changes in sentencing practices.

1. The group that appeared to be the best candidates for diversion were the 132 pre-trial detainees who were charged with bad check offenses. For this size county, this was a VERY high proportion of "bad check" offenses which resulted in jailing. And 77% of them were misdemeanor offenses. The Sheriff suspected that several things could have resulted in this type of situation:

   a. someone had a very strict policy about "bad check writing"; or

   b. CASH bonds were required and those arrested or these charges didn't have cash, especially considering the large % of people who were unemployed.

   The Sheriff also suspected that with some additional analysis, this group would account for the higher than normal proportion of female prisoners in the jail.

2. There were 67 pre-trial detainees charged with drunk-driving offenses and 31 pre-trial detainees charged with driving without a license. The Sheriff suspected that these individuals might be candidates for diversion or reduced bonds. Given present attitudes toward DUI and DWAI offenses, the Sheriff suspected that these offenders would receive some sentenced jail time unless there are alternative programs, such as a work program, or community service. The Sheriff decided that it might make some sense to try to reduce the amount of time they spend in jail as pre-trial detainees (when they can't work because of case law regarding the rights of pre-trial detainees) and focus on good sentencing alternatives in the community since these people are generally not high risk people except when they're drunk and behind the wheel of a car.

3. There were a number of misdemeanor property offenders in the jail. There were altogether 136 people who were charged with theft, criminal mischief and tresspass. These charges MIGHT have been misdemeanors (only 56 of the 200 people who fell into the "Crimes Against Property" category were misdemeanor offenders); some might have been sentenced (about 41 of the 200 in this category were sentenced prisoners). The Sheriff noted that some of these individuals might meet the criteria for release on a summons and citation or some other form of early release.

4. There were 19 persons charged with minor assault. The Sheriff noted that this was another group that MIGHT be candidates for reduced bond, depending upon the circumstances of their arrests.

This was all the information that the Initial Report on the Inmate Profile Data Collection provided (with the exception of more tables on race, educational level, employment status, and release status which would occupy a lot more space in this case study without contributing more information). The Sheriff was able to draw some conclusions about potential candidates for diversion or early release. However, the Sheriff noted that one major piece of information was not available.

WHAT WAS MISSING?

The population of the jail is related to TWO factors:

1. the number of people who come into the system; and

2. the number of days they spend in the jail.

The Sheriff noted that the Initial Report of the Inmate Profile Data Collection focused on the number of people who came to jail, not HOW LONG THEY STAYED. This information was needed to determine if the criminal justice system can bring the jail population within the limits that the county can afford. The Sheriff knew that changes in criminal justice system policy and practices have the most immediate effect on the number of people in jail.

In this particular situation, the local criminal justice system (through a planning group which represented all the key actors) had additional questions following the Initial Report. Interpreting data is really an interactive process in which seeing the data sparks additional questions. If data collection has been carefully structured, it should be possible, for example, to select out just the prisoners who are charged with misdemeanor "bad check" offenses, calculate how many days they spend

in the jail and identify other criteria which could be used to evaluate their appropriateness for early release or diversion.

For this Forest County, initiating the use of summons and citation or a Release on Recognizance bond for misdemeanor "bad check" writers was enough to significantly reduce the pre-trial population of the jail. The bond schedule also was reviewed and the use of a Release on Recognizance bond for certain property and traffic offenders also helped to bring the jail population within the limits the county could afford.

Forest County took several additional steps that will help to keep the jail within those limits. First, the courts and the community strongly supported some type of work or community service program for some sentenced prisoners, primarily traffic and minor property offenders. A joint effort of the County Highway Department, the Sheriff's Department and the Probation Department brought those programs into being. The District Attorney's Office also became interested in developing a restitution program.

Second, the criminal justice system made a commitment to continue monitoring its jail population so that they could be sure that:

1. they were doing what they had agreed to do; and

2. the jail population was not changing significantly (which would make their programs inappropriate, etc.).

Third, the key actors in the criminal justice system agreed to meet regularly to discuss common problems, policies and procedures. They believed that this would provide an opportunity to work toward long-term solutions to common problems and to increase the effectiveness of the entire system.

CONCLUSION:

Interpreting jail or criminal justice system data is best done by a group of people who know something about how the system works. In this situation, good analysts will present the data, identify things which seem unusual, locate targets for change, and perhaps point out potential alternatives. Analysts, however, can not make the decision. This is why Sheriffs and Jail Administrators (and their counterparts in other parts of the criminal justice system) must take an active role in deciding what the information generated in reports means. Unless the working managers in the system take part in the analysis, reports sit on shelves and gather dust - no matter how accurate or well done they are.

Sometimes, while collecting the data or calculating the statistics, it's possible to forget WHY we are doing this. The data collections that discussed here aren't research projects; they aren't academic excursions into a practitioner's world. They are tools that managers have used to make better decisions about their organizations. They also provided a tremendous opportunity to improve the functioning of the criminal justice system.

There is one more critical part to data collection that has been "glossed over". The best information can still be hidden or discounted if it isn't displayed effectively. That's what Chapter 8 is about.

CHAPTER EIGHT:

HOW TO SHARE INFORMATION WITH OTHERS

INTRODUCTION:

The final step in collecting and analyzing data is to share the results with others. The true test of a good analysis, then, is if someone else can understand it and use the data to solve problems or make decisions. Sometimes, analysts make it difficult for even the most determined people to use their data. Information may be:

- buried in too many figures; or
- displayedso ineffectively that the meaning is lost.

Much of the material in this Chapter will be second nature to persons who have taken drafting courses. However, entirely too often, good information is displayed so poorly that it is discounted or disregarded because it is too difficult to interpret. This manual has provided methods by which Sheriffs and Jail Administrators can improve their data collection and analysis efforts. The good data generated after such an effort merits the time and attention required to display it clearly and effectively. This Chapter provides help in this area by:

1. explaining why displaying data is important;
2. describing and illustrating methods that can be used to display data;
3. offering guidelines for displaying data;
4. developing "good" and "bad" examples of data that has been displayed; and
5. providing a few tips about easy to use graphic materials and supplies.

WHY PICTURES ARE WORTH A THOUSAND NUMBERS:

As Chapter 6 suggested, statistics have TWO results:

- a number(s) which summarizes the information; and
- a graphic representation of the data.

Then, the next two Chapters focused on the numbers, as if the "pictures" in the data weren't important. That <u>may</u> be backwards, because displaying the data is often an essential part of its analysis. Sometimes, the only thing that makes the data clear is to plot it out, point by point.

Displaying data effectively is critical for a number of other reasons.

1. Most people don't think in numbers. The non-mathematically minded, person can't conceptualize what "an increase of 937 net bookings over the previous year" really means. Pictures provide a way of making that point very, very clear.

2. When people try to remember things, they often try to visualize what it is they are trying to remember. Data that is displayed well provides just such an image.

3. Carefully displayed data can highlight the critical points that analysts want to get across to the audience. A well-contructed graphic will draw the eye of the viewer to exactly what analysts want them to remember.

4. Rows and rows are very, very boring - unless the audience is an atypical group that finds numbers more interesting than words or images. Well-displayed data can make reading about data more interesting.

METHODS FOR DISPLAYING DATA:

Statistical jargon sometimes makes it difficult to figure out what is being said about displaying data. Analysts talk about frequency polygons, histograms, cumulative frequency graphs and other complicated terms for some very simple concepts.

There are four basic ways in which statistics can be displayed:

1. tables, in which the numbers themselves are placed in columns and rows that have titles;

2. bar charts, in which the height, order and sometimes the width of the bars represent the size of one value or group in the data;

3. pie charts, in which the size of the piece of the pie represents the number of cases in one of the categories of the data element; and

4. line graphs, in which a line connects all related data points in a series.

These descriptions actually make a good case for the use of graphic examples, because the words just don't make it as clear as a picture can. As a result, an illustration is provided with each of the following sections.

TABLES:

Tables are figures for displaying data in which the numbers themselves are placed in columns and rows that are titled. Table 3C provides an example of a "tabular display of data".

REASON FOR TRANSPORT	PERCENT / FREQUENCY
Emergency Room Treatment	14 % / 60
Scheduled Medical Appointment	18 % / 76
Court Appearance +	8 % / 36
Transport to State Institution	9 % / 39
Transport to State Hospital	3 % / 13
Transport to Treatment Facility ++	13 % / 56
Pick-up on Metro County Warrant	16 % / 70
Court Ordered	13 % / 58
Return to Other Jurisdiction	4 % / 16
Other	2 % / 11
1980 TOTAL TRANSPORTS	100 % / 435

KEY: + = Court transports outside the Justice Center
++ = Placements at community-based treatment centers

TABLE 30: EXAMPLE OF A TABLE

Tables are used all the time when numerical information is listed. Tables are useful ways to store data that's already been collected so that it will be easy to use again. Generally, tables make it very clear what the actual numbers are. Although other figures may show the relationships between categories of the data or two data elements better, they are harder to read. As a result, most other figures will require tables to clarify and present the exact numbers.

The following steps can improve the appearance of most tables.

1. Label the columns and the rows. The data displayed may be perfectly clear to you - but a mystery to anyone else.

2. Draw lines between each row and each column. People usually remember to draw lines between the columns and forget about the rows. Having a line to separate each row orients the reader and makes it easier to use the table. This should be very evident in the bad examples provided later in this Chapter.

3. Don't try to put all the data into one table. The results LOOK overwhelming. Most people have a tendency to "skim" the tables in a report. This tendency can be counteracted by making the tables short, neat, and to the point.

4. If the table displays all the categories of a data element (like the example above), be sure to total the columns. If the table is a crosstabulation (a frequency distribution of TWO data elements), total BOTH the columns and the rows.

Tables help to organize data, but they don't help to create an image of the data. The other techniques which follow do that.

BAR CHARTS:

Bar charts are graphic figures in which the height, order and sometimes the width of the bars represent the size of one value or group in the data. Figure 19 takes the same data that was recorded in Table 30 and displays it in a bar chart.

```
          **************************************************************************
R         Emergency Room Treatment          XXXXXXXXXXXXX
E    T    Scheduled Medical Appointment     XXXXXXXXXXXXXXXXX
A    R    Court Appearance                  XXXXXXXX
S    A    Transport to State Institution    XXXXXXXXX
O    N    Transport to State Hospital       XXX
N    S    Transport to Treatment Facility   XXXXXXXXXXXXX
     P    Pick-up on Metro County Warrant   XXXXXXXXXXXXXXXXX
F    O    Court Ordered                     XXXXXXXXXXXXX
O    R    Return to Other Jurisdiction      XXXX
R    T    Other                             XX
          **************************************************************************
          PERCENT                                    1    1    2    2
                                    0    5    0    5    0    5
                                    %    %    %    %    %    %
```

FIGURE 19: TRANSPORT REASONS DISPLAYED IN A BARCHART

Bar charts are some of the most commonly used (and abused) methods to display data. The reasons should be obvious:

1. They are very easy to read and understand.

2. They can make it very clear what the major point of the data is.

3. They are very easy to construct.

In fact, by turning this bar chart sideways, it can be done on a typewriter or a word processor.

Bar charts can be used with data at ANY level of measurement by following a few simple rules.

1. With NOMINAL DATA (data elements that are divided into categories, like ethnicity or the data we displayed above), the bars shouldn't touch. Only the relative heights of the bars are important.

2. With ORDINAL DATA (data elements that have groups that are ranked from low to high, good to bad, etc., but the groups aren't measured in equal units), the bars should be in order. The heights have meaning.

3. With INTERVAL/RATIO DATA (data elements that are measured in equal units), the area inside the bars should be proportional to the number of cases in each group (which gives meaning to the height AND the width), and the bars should touch. By doing this, the bar chart actually begins to resemble the real-life frequency distribution of the data.

With practice, making bar charts will be elementary. Charts and graphs are oriented around two straight lines, one horizontal and one vertical. Statisticians call each line an "axis". The horizontal line is called the "X axis", and the vertical line is called the "Y axis". These lines orient people to the chart. Each line represents something. In the bar chart, the X Axis just tells what the categories of the data element are. The Y Axis, however, tells how many cases, or what percent of cases are in each category. As a result, the Y Axis must be divided into equal units. In other words, a scale must be developed for the Y Axis.

A few helpful hints can make the process of developing bar charts easier.

HINT #1: USE GRAPH PAPER.

"10 x 10" graph paper, on which the graph is built in units of ten, seems easiest to use for most jail data. Each small square can represent one, ten, one hundred, or whatever the most appropriate number is of the items being counted. Graph paper also comes in what is called "non-xeroxing blue" so that the graph lines on the paper don't show up when it is xeroxed.

HINT #2: CALCULATE THE HEIGHT OF THE TALLEST BAR FIRST.

The height of the tallest "bar" will determine how tall the Y Axis has to be since the Y Axis should be at least a bit taller than the highest bar.

HINT #3: CONSIDER DIFFERENT SCALES.

The scales on graphs are just like scales on maps in which one inch represents so many miles. In this case, each small square (like the inch on the map) will represent a fixed number of cases. The easiest way to do this is to figure out how many small squares there are on the paper from top to bottom (or side to side). Then take a look at the largest category. Make sure that the scale that is selected will accomodate the bar that represents the largest category. The scale that's used often determines how much impact the graph has. This Chapter will discuss how to select a good scales a little later.

HINT #4: DETERMINE THE WIDTH OF THE BARS.

Decide both how wide and how far apart the bars will be. Mark them on the X Axis. An aesthetic note: don't make tall, skinny bars, because they look like they're going to fall down. If there are so many categories that the width of the paper dictates that the bars be skinny, consider turning the paper around so that the Y Axis can be longer than the X Axis. If that creates problems because the bars are now too tall for the paper, think about using another scale or use bigger paper, and make xerox reductions of the chart.

HINT #5: DRAW EACH BAR IN PENCIL.

Using the scale on the Y Axis, make a pencil line where the top of each bar will be. Now turn the paper and, in pencil, draw in the rest of the bars. Check your work against the scale and the data. If everything checks out, use a pen or graphic tape (more on that later) to finish the bars.

HINT #6: LABEL THE CHART.

Put a title on the bar chart, label each of the categories, and mark the scale on the Y Axis.

HINT #7: CONSIDER COLOR OR SHADING THE BARS.

It's a nice touch to either shade or color the bars. This Chapter has a section which provides information about graphic arts touches like this.

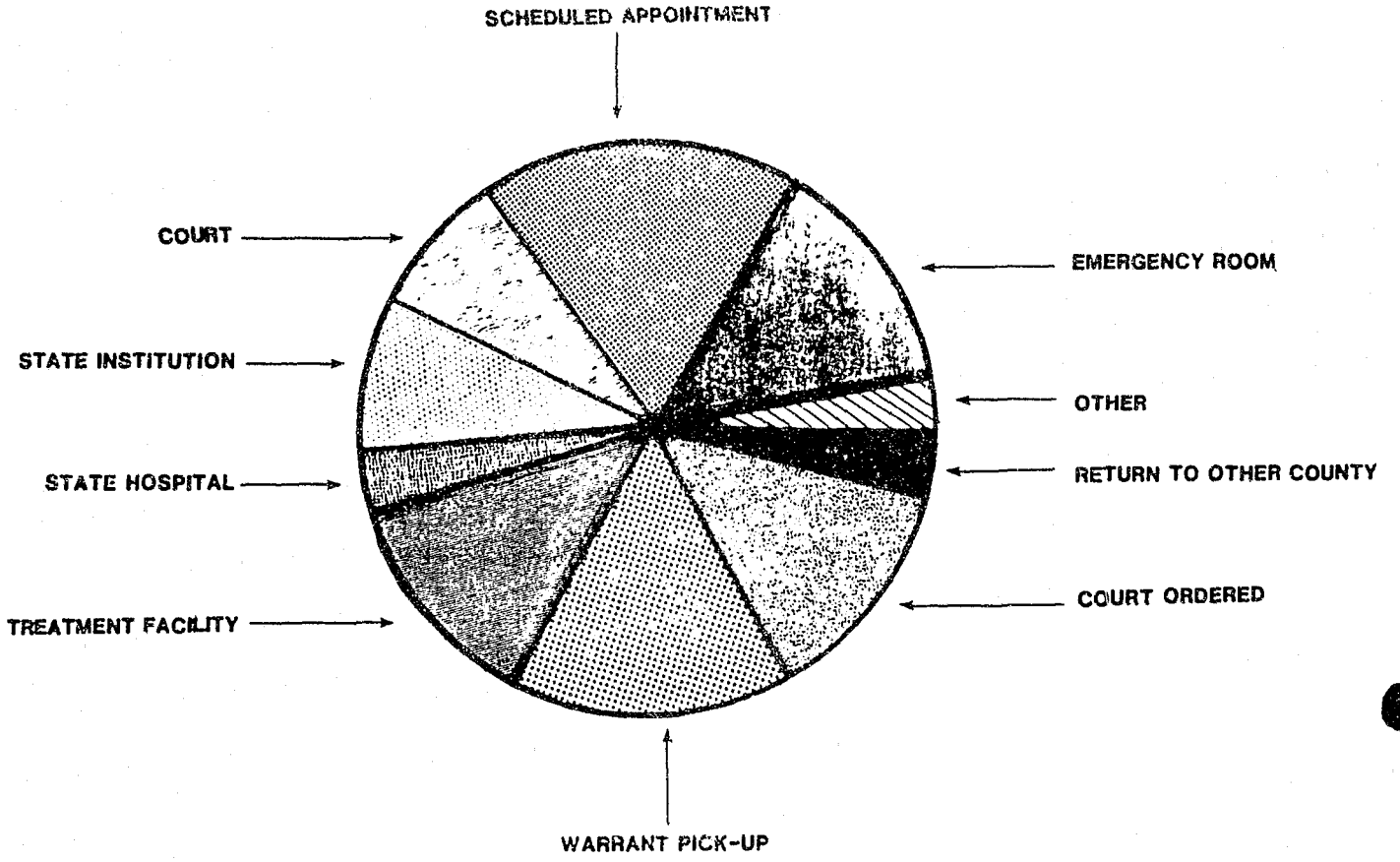
Bar charts are probably the most commonly used method for graphically displaying jail data, probably because most people can understand them. Another technique, the pie chart, is also easy to understand.

PIE CHARTS:

Pie charts are figures in which the size of the "piece of the pie" represents the number of cases in one of the categories of the data element. Pie charts can ONLY be used with data that is grouped into categories and totals to 100%. For example, while it makes good sense to display a data element like Ethnic Background of the Jail Population in 1980 in a pie chart, it makes very little sense to display Total Bookings at the Jail By Year (from 1970 - 1980) in a pie chart.

Pie charts can often be used to display the same data as bar charts, but they aren't as common. And the reasons will become very clear to you when you start making them. While it's actually <u>easier</u> to figure out how to display the data in a pie chart, drawing a neat pie chart is <u>MUCH</u> harder than drawing a neat bar chart. Circles are much harder to draw than straight lines. Figure 20 on the following page provides an example of a pie chart that is based on the same transport data that we showed you in Table 30 and Figure 19.

To use a pie charts for a change of pace, here are some helpful hints to make that a bit easier.



REASON FOR TRANSPORT

Figure 20

HINT #1: INVEST IN A DRAFTING COMPASS.

Use a compass to make a circle that will be the right size for the paper being using. In a pinch, a pie chart can be made with a glass, bowl - or anything else that is round. But it is more difficult to get a smooth even line around the outside of the circle without the proper equipment.

HINT #2: USE A XEROX COPY.

Make a xerox copy of the circle, and work on the copy. That way, when mistakes are made, it isn't necessary to start from the beginning.

HINT #3: CALCULATE THE SIZE OF EACH PIECE OF THE PIE.

Sometimes, this is really easy. If the category is expressed in a percentage and the values are 50%, 25% and 25%, it's pretty obvious that half a circle will represent 50%, etc. Often, it isn't so obvious. When in doubt, since there are 360 degrees in a circle and the total number of cases in each category is also known, it always possible to resort to algebra and geometry. To figure out how many degrees to include in the piece of pie that represents a particular category, let "X" stand for the number of degrees in the piece of the pie and substitute in the following formula:

$$\frac{X}{360} = \frac{\text{the number of cases in the category}}{\text{the total number of cases}}$$

So, if 14% of the cases fall into one category, then

$$\frac{X}{360} = \frac{14}{100}$$

OR

$$100(X) = (14)(360)$$

OR

$$100X = 5{,}040$$

OR

$$X = 50.4 \text{ or } 51 \text{ degrees}$$

Do this for each piece of the pie. Use a protractor to mark off the degrees on the circle. Don't just "guesstimate" what 51 degrees looks like.

HINT #4: LABEL THE CHART.

Label both the whole pie chart and each piece of the pie. Usually labels should be placed around the outside of the pie, with neatly drawn arrows leading to the section the label represents. Another approach is to develop a key beneath the pie chart to show what each shading or color on the pie represents.

Pie charts are difficult at first, but after trying one or two, they should come easier. So don't be discouraged if at first your "pies" don't come out.

LINE GRAPHS:

Line graphs are figures for displaying data in which a single line connects all related data points in a series. Line graphs are very common ways of displaying data. Figure 21 provides an illustration of Jail Population Data displayed on a line graph.

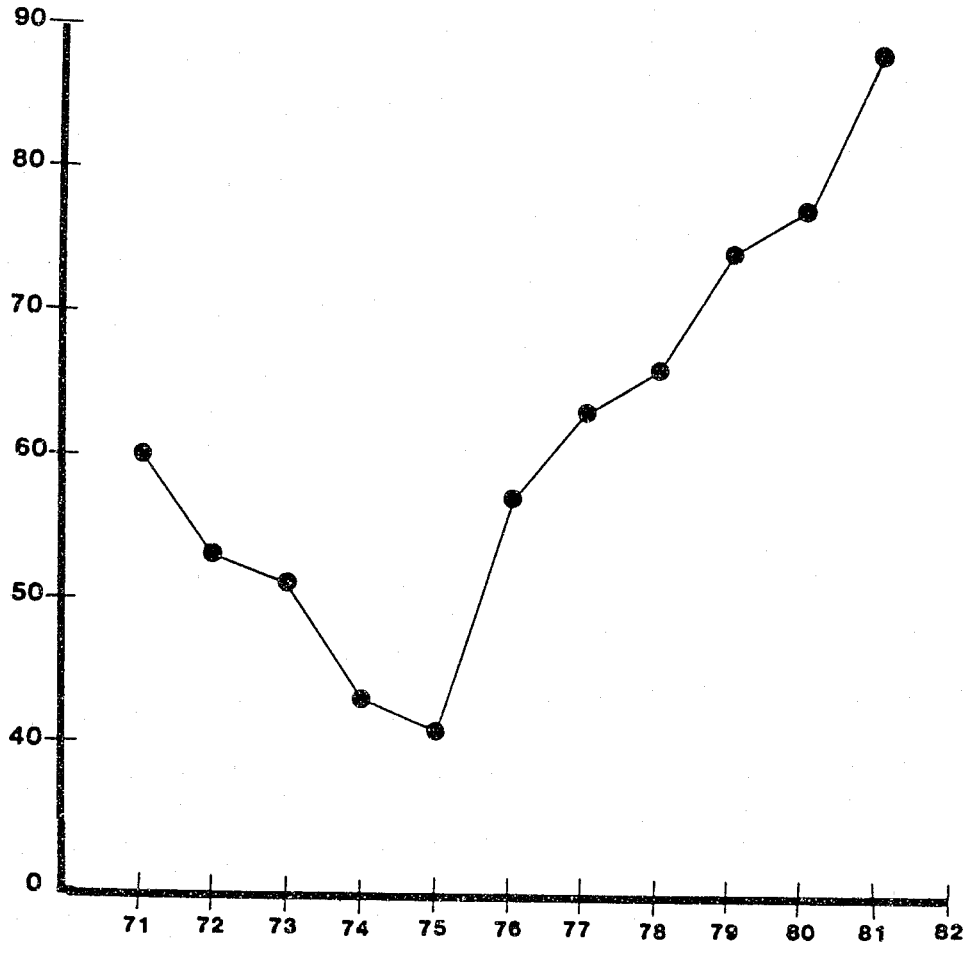


Figure 21

Line graphs reveal a <u>great deal</u> about the distribution of the data IF they are done properly. Line graphs should really only be done for INTERVAL/RATIO level data. Here are a few helpful hints about making line graphs. The process is very similar to making bar charts.

HINT #1: USE GRAPH PAPER.

Once again, "10 x 10" graph paper, on which the graph is built in units of ten, is easiest to use for most jail data.

HINT #2: DRAW IN THE "X" AND "Y" AXES.

Both the axes represent a data element in a line graph. In the case of the graph above, the X Axis represents time, divided into years; the Y axis represents the number of bookings.

HINT #3: DETERMINE THE RANGE OF VALUES TO BE DISPLAYED.

Identify the highest and lowest value of the data element to be displayed on the Y axis. In this case, 3,668 bookings is the lowest value, and 5,271 is the highest. This determines how tall the Y Axis has to be since the Y Axis should be at least a bit taller than the highest value.

HINT #4: REPEAT THE PROCESS FOR THE X AVIS.

In many cases, in jail data, all that will be required is to divide the X Axis into equal sections to represent the number of years, months, days, etc. that will be included on the graph. If there are actually two data elements, like height and weight, a scale also will be needed for the X Axis. Data like this is quite rare in jails, so this manual won't go into additional guidelines for doing that. If necessary, this information is provided in <u>How to Calculate Statistics</u>,

HINT #5: DETERMINE WHAT THE SCALE WILL BE.

This process is identical to developing a scale for a bar chart.

HINT #6: PLOT EACH DATA POINT.

Using the scale on the Y Axis, make a dot for each data point that you are going to display on the graph. This is called "plotting the data". Be sure to use a pencil and a ruler to make sure that the points are placed in the right spots. The farther that from the Y Axis, the easier it is to make mistakes. A ruler can help. Once the data points are plotted, turn the paper and, in pencil, connect the dots. Check your work against the scale and the data. If there are no errors, use a pen or graphic tape to finish the graph.

HINT #7: TITLE THE LINE GRAPH.

Put a title on the line graph, label each of the categories, and mark the scale on both the X and Y Axis.

Believe it or not, these are the basic tools for displaying virtually all data. What makes the difference frequently is not the technique itself, but <u>HOW</u> the technique is applied.

GUIDELINES FOR GOOD GRAPHICS:

In displaying data, just like in everything else, there are a number of "tricks of the trade". This manual will share with you as many of them as I've been able to discover.

1. KNOW YOUR LIMITATIONS.

   Some people have more talent in this area than others; they know what looks good, what's "balanced". If you don't have those skills, delegate this task to someone who DOES. Individuals with good clerical skills and an "eye for detail" may also be talented in these areas.

2. MAKE THE GRAPHIC ILLUSTRATE THE MOST IMPORTANT INFORMATION.

   Analysis and interpretation of the data should make the most important points to be gotten across clear. Put that information to use. If the point is that since 1976, the average daily population has steadily risen after a long period during which it declined, use an example like Figure 21 to make that point clearly and directly.

3. DECIDE WHAT THE BEST MEDIUM FOR SHARING THAT INFORMATION IS.

   The answer to this question depends on how the information is going to be shared. Most Sheriffs and Jail Administrators will find that they tell other people about data in one of three circumstances:

   A. in a report or other written document;

   B. in a small working meeting; or

   C. in a large public meeting.

   Information can be shared by:

   A. a verbal presentation alone;

   B. a written or typed handout;

   C. flipcharts (previously prepared OR done "on the spot");

   D. transparencies; or

   E. slides.

   Each of these has distinct advantages and disadvantages.

   A. Verbal presentations alone are probably the most informal. There are some <u>distinct</u> problems with verbal presentations:

      - The speaker should be accustomed to speaking in front of groups.
      - Second, the speaker has to be able to clearly and concisely make the points that he wants the audience to remember.

- People find it very difficult to concentrate on verbal presentations over extended periods of time. As a result, people don't remember much from verbal presentations, particularly the specifics. Sometimes that may be an important consideration.

B. Written or typed handouts can detract from the verbal presentation if they are given out first. People have a tendency to read ahead, resulting in rustling papers, which distracts the people who are listening. A general rule of thumb is, "If people should follow along, give them the handout first. If people should listen and use the handout for review, give them the handout last." If a summary of the presentation will be provided afterwards, do TELL the audience. People are often unhappy when a typed summary is handed out if they have gone to the trouble of taking notes.

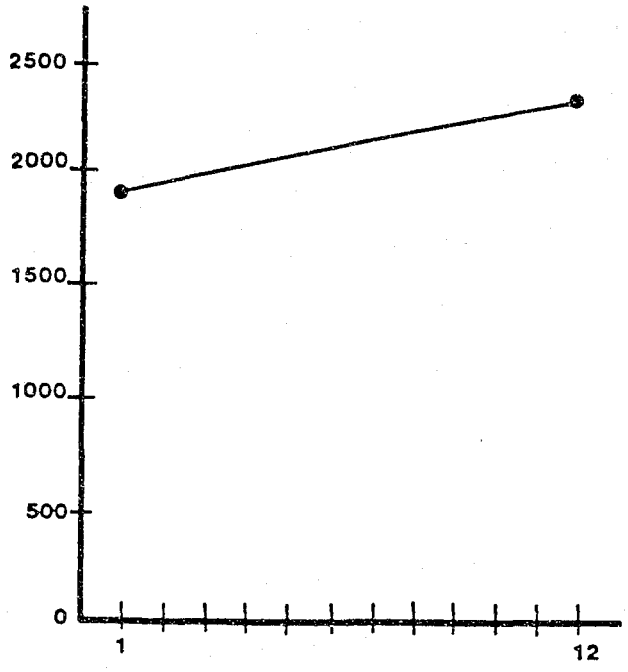
C. Flipcharts are large pads of either lined or unlined paper (usually 27" x 34"). They can be prepared before a presentation OR done "on the spot". Both have their advantages. Flipcharts done "on the spot" can make a presentation much more informal; and the major points can always be written on the chart in pencil (light enough for the presenter to see, but invisible to the audience). Flipcharts also make it easy to introduce color into a presentation. However, they can take quite a while to make up, and they tend to wrinkle easily, which detracts from their appearance.

D. Transparencies are clear 8 1/2" x 11" slides made of acetate that are shown on an overhead projector. Many xerox machines can copy onto this acetate from a white paper original. This would be wonderful IF typing showed up well when it is projected. Unfortunately, it doesn't. While there are a number of ways to compensate for this, all of them add to the preparation time. Transparencies DO make a presentation seem more professional, which can be a plus or a minus (depending on the audience). However, using transparencies requires certain equipment, i.e., the overhead projector and a screen. Whenever equipment is introduced, the possibility of technical difficulties, i.e., the bulb burns out are introduced, arises.

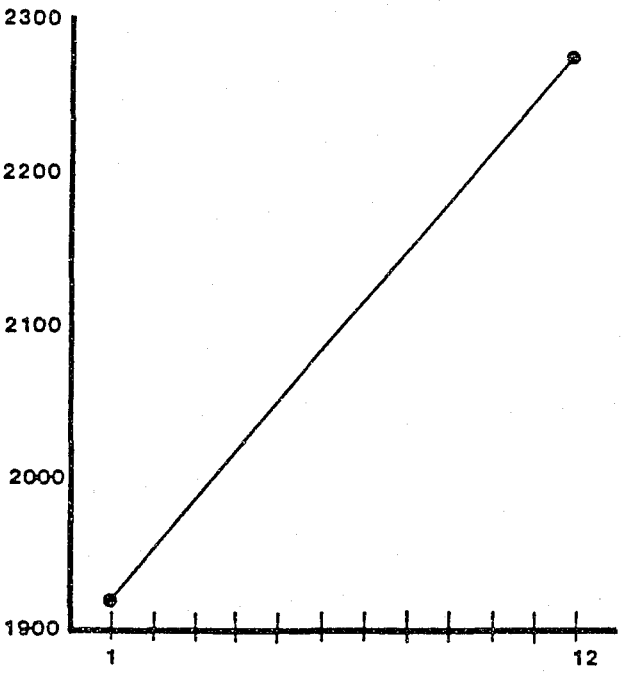
E. Slides are just regular slides of pictures that have been taken of the master copy of the graphic. Slides are less bulky than transparencies, but require that that the room be darkened, which can result in loosing contact with the audience; if the presentation happens to follow a meal, darkening the room frequently results in the majority of the audience sleeping through the presentation. Equipment failures with slides are even more disastrous than similar failures with transparencies. At least with transparencies, the presentation can be reconstructed. With the slides, even the "cheat sheets" are gone. Slides also require a considerable skill in preparation.

4. DECIDE WHAT SCALE WILL DISPLAY THE DATA BEST.

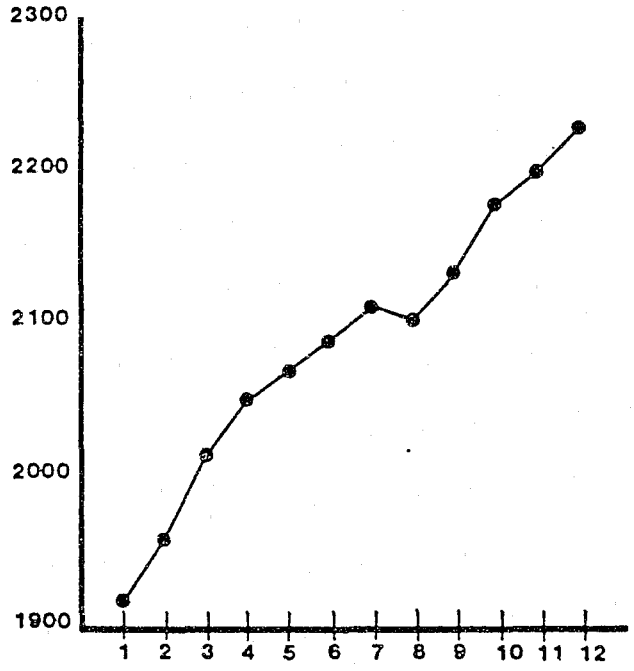
Not only are there technical problems in choosing a scale to display data; there are also some aesthetic and ethical problems in this area too. Figure 22 provides four graphs of the same data that are prepared on different scales.



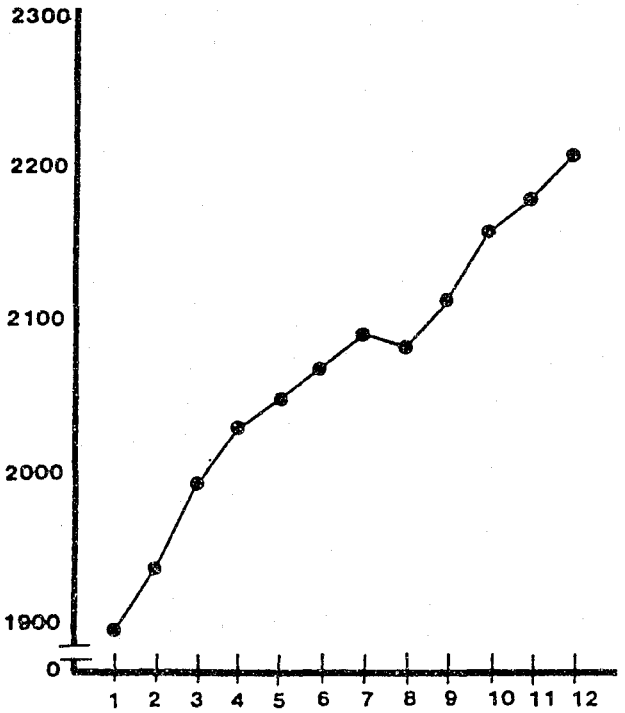
#1



#2



#3



#4

FIGURE 22

Example #1 illustrates both good practice (the scale starts at 0 and ends at the highest value) and bad practice (only the first and last data points are plotted, which doesn't reveal anything about variation). It is ethical, but it doesn't make much of the data.

Example #2 has all of Example #1's faults - and then some. Only the first and last data point are displayed, and the scale starts at 1900 with no attempt to point this out to the viewer. This makes the increase in the data from data point #1 to data point #12 very dramatic. All in all, this combination of faults makes this particular graph rather unethical.

Example #3 corrects one error of the previous examples: each of the data points are plotted. But the scale also starts at 1900, and when this is combined with the individual data points, the increase is astounding. This really makes the point, but is also really unethical. Most people never read the scale on graphs. They just look at the pictures. A message to the cautious statistical consumer: read the scale; don't just look at the pictures.

Example #4 represents a compromise between the need to make a point with the data AND be ethical. Notice the only difference between #3 and #4 is the break in the Y Axis. That's a cue to the eye that you've disturbed the scale.

5. DECIDE WHO THE AUDIENCE IS.

Display the data and make the presentation for the audience that you hope to reach. Just like the statisticians and researchers that this manual has criticized, people who work in corrections and law enforcement have a language of their own. It is incomprehensible to outsiders; there are a great many "pet terms" and even more abbreviations, like ROR, FTA, Part I Offenses, etc. If the audience includes people who aren't part of the system, make sure that all terms and abbreviations are explained. It's also important to gear the presentation to the interests and abilities of the audience. A presentation for the Commissioners is going to be markedly different from one done for the high school civic's class. Appendix O provides a sample of a briefing paper prepared for a Jail Advisory Board; the briefing paper combines text and tables to explain anticipated jail needs and to present a profile of the inmate population.

6. MAKE THE GRAPHIC PLEASING TO THE EYE.

At a minimum, the tables, charts and graphs developed should be neat, free of erasures, and positioned nicely on the page. Beyond that, here are some suggestions that may improve their over-all quality.

A. Draw the eye where you want it to go. Centering something on a page automatically does this. When that's not a possibility, an arrow can have the same effect. So can using a slightly bolder style of type. Type comes in various widths as well as heights. Figure 23 illustrates different widths of the same type.

HELVETICA LIGHT	IS THINNEST.
HELVETICA REGULAR	IS THICKER.
HELVETICA MEDIUM	IS EVEN THICKER.
HELVETICA BOLD	IS THICKEST.

FIGURE 23

B. The little rounded lines on type (like Style #1) are called serifs; since the serifs tend to be smaller than the rest of the letter, frequently they don't copy well. Use type that is "clean" and relatively free of "squiggles" (like Style #2 in Figure 24). Helvetica or Gothic type styles generally reproduce better than Elite or Courier styles. Generally, capital letters are more legible at a distance than mixed upper and lower case letters. This problems are particularly noticeable on transparencies or slides.

CENTURY SCHOOL BOOK	LOOKS NICE, BUT DOES'T DUPLICATE OR PROJECT WELL.
HELVETICA MEDIUM	IS RATHER PLAIN, BUT DUPLICATES AND PROJECTS WELL.

FIGURE 24

C. Choose a size that doesn't overpower the graphic. A type size which is slightly larger than the text of the graphic is best for titles. Figure 25 provides a directory of different type sizes.

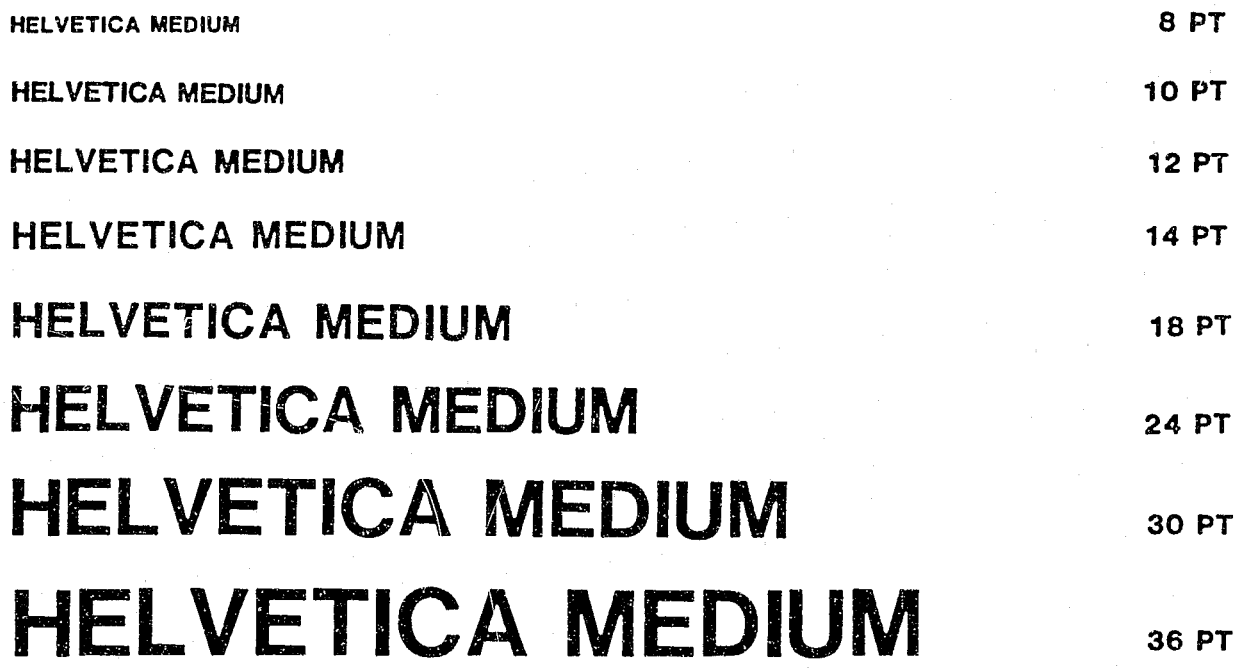


FIGURE 25

D. If possible, use color to send a message. While using color in graphics can take a bit more time and money (color xeroxing is expensive!), it can make a powerful (and often subliminal) statement. Generally, "hot" colors like reds and oranges send warning messages; "cool" colors like blues and greens send calming messages. Think a minute. Do you want the Commissioners to feel <u>calm</u> about the 70% increase in bookings in the last year? If you do, feel free to use a nice pastel blue for that particular bar on the bar chart. Primary colors are better than pastels; they stand out more, make a stronger point, and baby pinks and blues have connotations to be avoided. Also avoid "unusual" colors, like puce or fuschia; they evoke some very weird responses.

7. RESIST THE TEMPTATION TO SAVE MONEY BY PUTTING EVERYTHING ON ONE PAGE, TRANSPARENCY OR SLIDE.

   Not only does crowding make the graphic look messy, it reduces its effectiveness. People can process information in limited amounts. Don't display all the data in a single table and expect the audience to read it. Make one key point per graphic. This is particularly true with transparencies and slides. Limit the number of words or numbers to a bare minimum.

Perhaps the best advice in this whole business of displaying data effectively is simply this. Experiment. Try different ways of displaying the data until you find a style that works for you. Sometimes, it's helpful to see what people have done. The next section of this Chapter provides examples of what to do - and what not to do.

SOME EXAMPLES: THE GOOD, THE BAD, AND THE UGLY:

Tables 31-33 on the following three pages present the same data displayed in three different tables. Table 31 presents a tabular display of Jail Population Data for a period of three years. It was found in the Annual Report of Operations of a Sheriff's Department whose name has been changed to protect the guilty. In re-typing it to fit in this document, one of its worst faults was actually corrected. In its original form, it barely fit on standard sized paper. Not only is it crowded with too much information, it is hard to read.

Table 32 is actually just Table 31 reproduced, with a few lines added to make the rows easier to read and different type styles to set off the headings. It is easier to read, but it still has way too much information. And the reader still has to turn the Report around to read it. People tend to resent that.

Table 33 reduces the amount of basic information that is displayed by removing "book and releases" as a category. "Book and releases" are prisoners who are released directly from the Booking Room without ever entering General Population. Since Total Booking minus Net Bookings (people who are housed at the facility) equals "book and releases", no information is really lost. It also orients the table so that it will fit normally on an 8 1/2" x 11" page.

MONTHLY VOLUME OF BOOKINGS, BOOK-AND-RELEASES, AND NET BOOKINGS
1976-1978

1976

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	AVERAGE PER MONTH
Bookings	321	239	261	317	338	304	309	325	332	356	293	273	3,668	306
Book & Releases	140	103	110	150	134	96	126	119	139	139	104	116	1,476	123
Net Bookings	181	136	151	167	204	208	183	206	193	217	189	157	2,192	183

1977

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	AVERAGE PER MONTH
Bookings	306	329	323	300	341	264	298	299	327	310	297	294	3,688	307
Book & Releases	131	165	154	137	147	110	135	123	149	126	140	127	1,644	137
Net Bookings	175	164	169	163	194	154	163	176	178	184	157	167	2,044	170

1978

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	AVERAGE PER MONTH
Bookings	330	288	352	341	373	440	403	346	356	443	418	373	4,463	372
Book & Releases	157	129	161	157	157	207	191	132	158	200	169	159	1,977	165
Net Bookings	173	159	191	184	216	233	212	214	198	243	249	214	2,486	207

Table 31

MONTHLY VOLUME OF BOOKINGS, BOOK & RELEASES AND NET BOOKINGS

1976

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	AVERAGE PER MONTH
BOOKINGS	321	239	261	317	338	304	309	325	332	356	293	273	3,668	306
BOOK & RELEASES	140	103	110	150	134	96	126	119	139	139	104	116	1,476	123
NET BOOKINGS	181	136	151	167	204	208	183	206	193	217	189	157	2,192	183

1977

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	AVERAGE PER MONTH
BOOKINGS	306	329	323	300	341	264	298	299	327	310	297	294	3,688	307
BOOK & RELEASES	131	165	154	137	147	110	135	123	149	126	140	127	1,644	137
NET BOOKINGS	175	164	169	163	194	154	163	176	178	184	157	167	2,044	170

1978

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	AVERAGE PER MONTH
BOOKINGS	330	288	352	341	373	440	403	346	356	443	418	373	4,463	372
BOOK & RELEASES	157	129	161	157	157	207	191	132	158	200	169	159	1,977	165
NET BOOKINGS	173	159	191	184	216	233	212	214	198	243	249	214	2,486	207

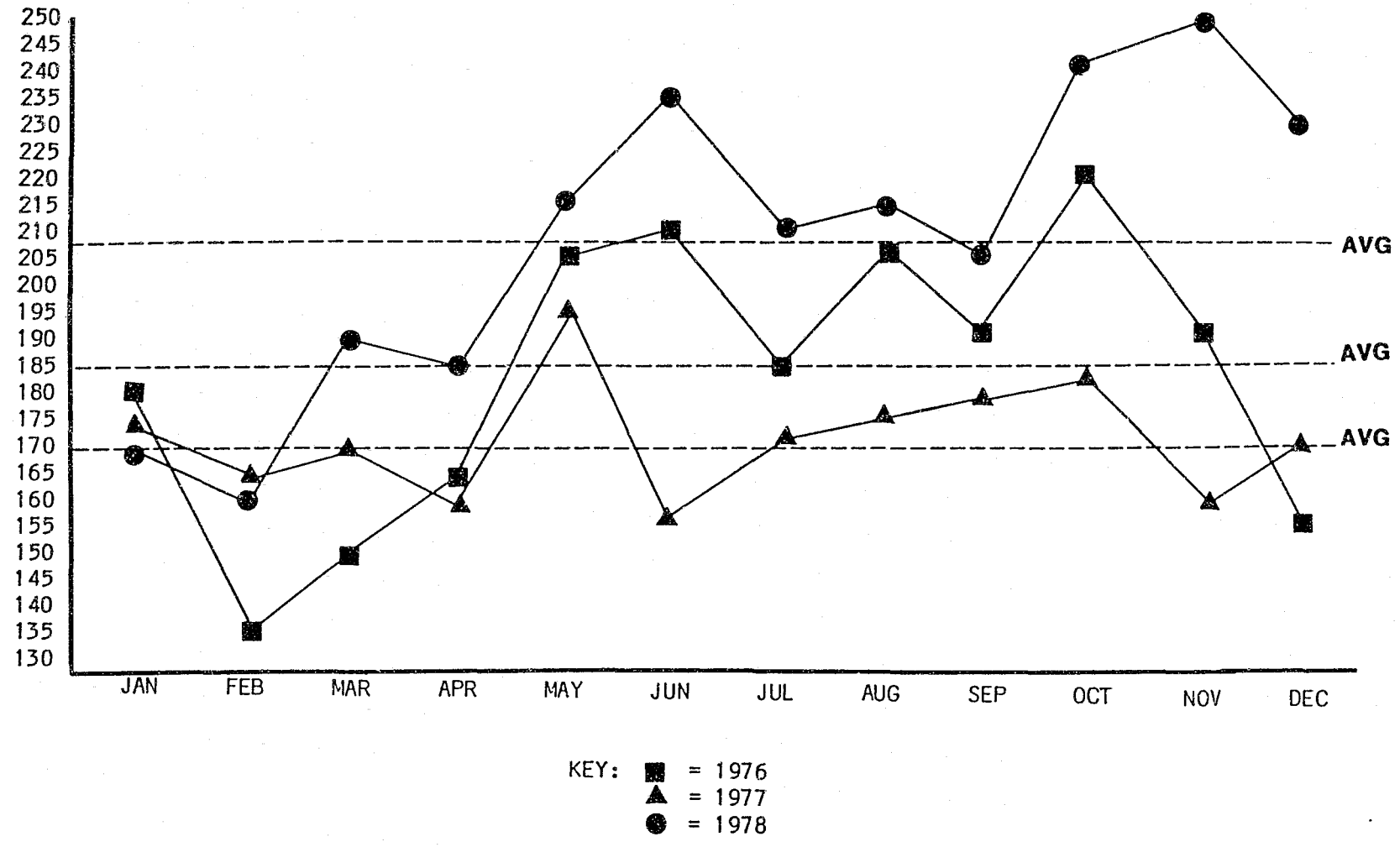
Table 32

MONTH	1976 TOTAL BOOKINGS	1976 NET BOOKINGS	1977 TOTAL BOOKINGS	1977 NET BOOKINGS	1978 TOTAL BOOKINGS	1978 NET BOOKINGS
January	321	181	306	175	330	173
February	239	136	329	175	288	173
March	261	151	323	169	352	191
April	317	167	300	163	341	184
May	338	204	341	194	373	216
June	304	208	264	154	440	233
July	309	183	298	163	403	212
August	325	206	299	176	346	214
September	332	193	327	178	356	198
October	356	217	319	184	443	243
November	293	189	297	157	418	249
December	273	157	294	167	373	214
TOTAL	3,668	2,192	3,688	2,044	4,463	2,486
AVERAGE PER MONTH	306	183	307	170	372	207

Table 33

Figures 26 - 28 on the next three pages display the same information using line graphs and (finally) a bar graph. Figure 26 is the original line graph, taken from the same source. This method does succeed in reducing the amount of information the reader has to cope with, but the result turns out to be even more cryptic than the table. There are all the little triangles, squares and circles to keep track of - and who can be certain what those dotted lines representing averages really mean! And there is a slight problem with the scale, which begins at 130.

Figure 27 takes the same information and uses a different approach. The three years are displayed in order. This makes the graph much clearer, and there is a break in the Y Axis that prompts the reader, but it still requires the reader to look rather closely. Figure 28 puts the same information in the simplest possible common denominator. I'd also bet that most people would understand this bar chart at a glance.



NET BOOKINGS BY MONTH (1976 - 1978)

FIGURE 16

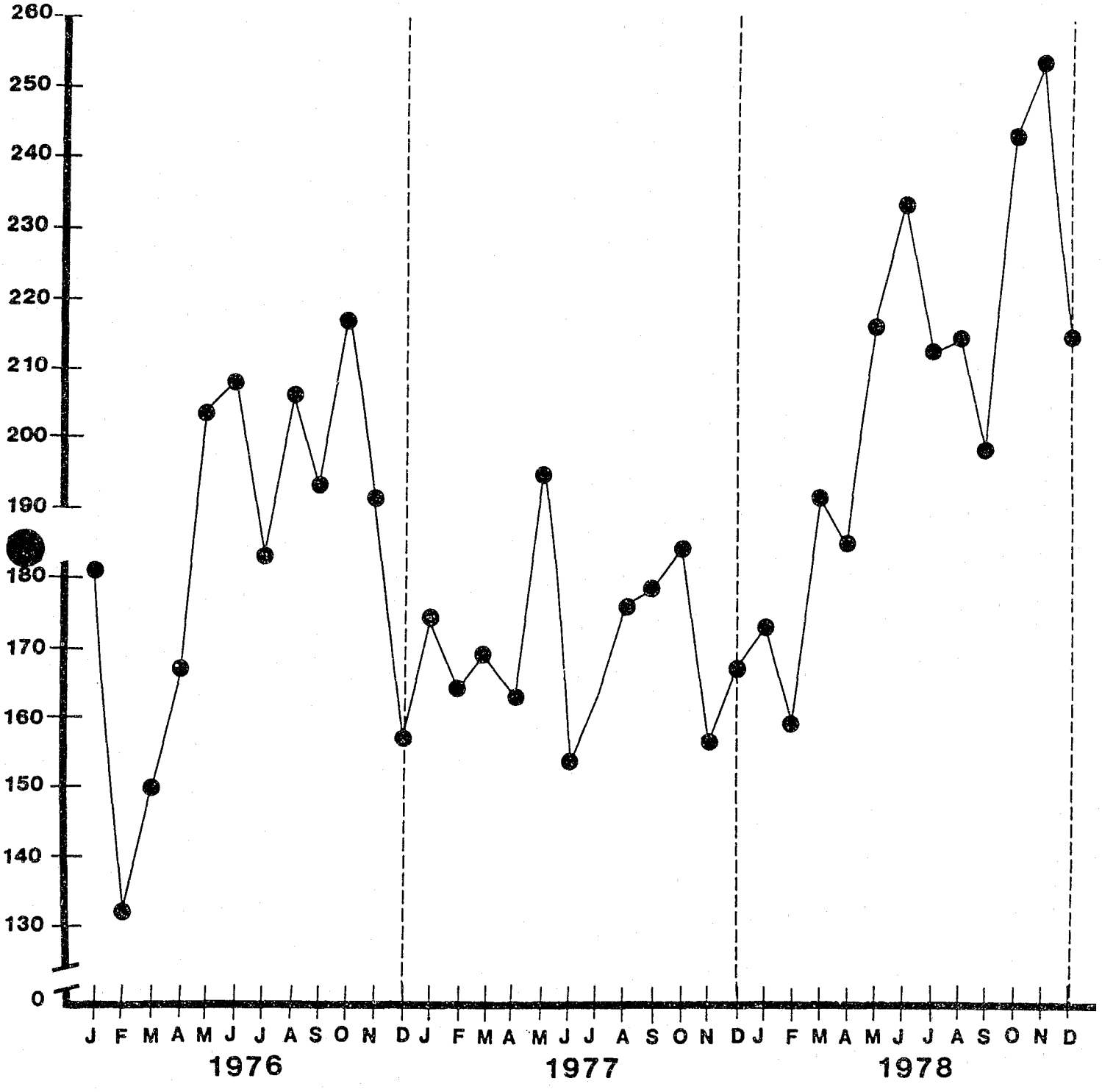

260
250
240
230
220
210
200
190
180
170
160
150
140
130
0
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1976
1977
1978

FIGURE 27

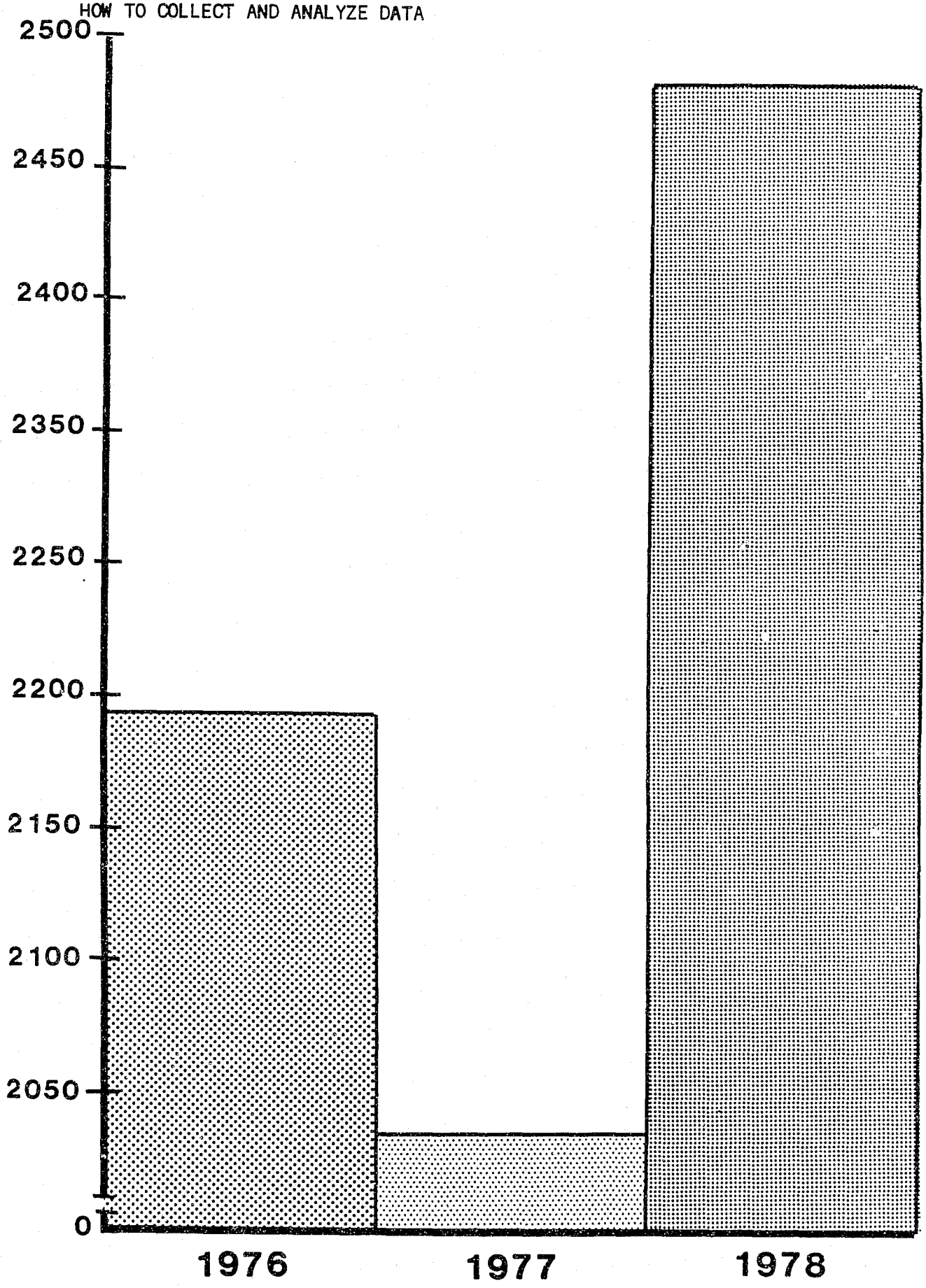


FIGURE 28

These examples should make it painfully clear how confusing tables, graphs and charts can be. Take the time to do them right! They're the best tool for getting information across.

GRAPHIC TOOLS:

This section isn't meant to be an advertisement for certain manufacturers of drafting equipment and graphics supplies. However, it's rather pointless to talk about graphic supplies and materials without identifying where to get them. The first stop should be a local store that sells drafting equipment and supplies. If there isn't one nearby, this material can be ordered by catalog. There are a number of equally good manufacturers. Two of them are:

CHARTPAK
Customer Service Department
One River Road
Leeds, Massachusetts 01053

LETRASET USA, INC.
33 New Bridge Road
Bergenfield, New Jersey 07621

There are some basics that will make working on graphics MUCH easier. While some Sheriffs and Jail Administrators may think this sounds like a substantial investment, many of these items are quite inexpensive, particularly when the cost of professionally done graphics are considered.

1. A PLACE TO WORK.

   A good place to work is essential, and while any flat surface like a desk or table will suffice, all former drafting students know the value of a drafting table. Many graphic artists work on a light board, a wooden box with a translucent glass top that is slanted at about 25 degrees. Inside the box is a fluorescent light. The light illuminates anything (like a grid or lined paper) under the paper being worked on. This makes it much easier to line things up. Commercial light boards are RATHER expensive, but they are quite easy and relatively inexpensive to build.

2. GOOD WRITING EQUIPMENT.

   There are a wealth of writing tools from which to select. At the most expensive (and most effective) end of the spectrum are technical or drafting pens, which come in different sizes and make lines of different widths. They now cost about $10+. Almost as good as the drafting pens are any of the fine-point markers, and they are much less expensive. Don't use a ballpoint pen. It just doesn't copy well, and it tends to leave little "blobs" of ink. Several good possibilities exist for making lines that shouldn't show on the final copy. The best is a non-xeroxing blue pencil, priced about the same as a regular colored pencil. However, it will leave a mark that is obvious on your original.

3. A GOOD STRAIGHT EDGE.

Resist the temptation to use the edge of a yellow pad. If a drafting table is available, a T Square is probably the best alternative, but a good ruler with a metal indented edge is equally effective. The indented edge prevents smearing when the ruler is picked up. Drafting tape is another excellent alternative. It comes in a variety of widths (from 1/64th of an inch to half an inch in width) and colors and makes very sharp lines. Dotted lines, dashes and other variations are also available. Drafting tapes vary in cost by width and start at around $1.10 per tape and will last you quite some time even if you do a lot of graphics.

4. A GOOD COMPASS AND PROTRACTOR.

A good compass and protractor are even more essential than a good straight edge for doing pie charts. Another alternative would be to use a template (a sheet of plastic or metal with geometric shapes punched out) you could use to trace circles. Unfortunately, these aren't big enough for most pie charts.

5. THE RIGHT KIND OF GOOD QUALITY PAPER.

There are even differences in paper. White, relatively smooth paper is preferable because it copies better and is easier to write on. Two special kinds of paper are worth mentioning here.

A. Non-xeroxing blue graph paper has lines which don't copy when xeroxed. However, it is necessary to lighten up the copy a bit.

B. Drafting paper that makes it difficult (but not impossible) to smear ink.

6. SOMETHING TO MAKE SYMBOLS.

Most people don't have handwriting that looks good enough to go into a document or on a nice graphic. Draftsmen and architects are a notable exception. Fortunately, there are many alternatives. Print from a good typewriter looks clean and really sharp and will work well in most report graphics. However, when projected, typewriter type is not large enough for people to read. Furthermore, the slightly larger or bolder titles and headings which will improve the appearance of most graphics can't be done on a typewriter.

The most reasonable alternative for people who will not be doing a lot of graphic work is "rub-on lettering". Both Letraset and Chartpak sell over a hundred different styles of rub-on lettering; each style comes in a variety of sizes. It's called rub-on lettering because it is very literally <u>rubbed</u> OFF the sheet it comes on and ONTO the sheet you want it on. If you try this, get a little wooden or metal tool that's called a burnisher. It gets the letter off the sheet much more smoothly than a pencil. The wooden ones cost about $.50. One problem with rub-on lettering is it takes a lot of care to evenly space the letters and get them all aligned. Rub-ons also come in a variety of symbols: circles, squares, triangles, arrows, checkmarks, etc. These are called "dingbats" and, like Edith Bunker, appear to come in very handy from time to time.

The absolute Cadillac of all options for making letters and some symbols is the Kroy Machine. The next time that an extra $1000 dollars in the budget that must be spent by next Tuesday, buy one. Kroy machines will let you print words, etc. on transparent tape which can then be positioned where it's wanted.

7. SOMETHING TO ADD COLOR.

Special marking pens are made to color on acetate (the material that transparencies are made of) in addition to the wide variety of pens and pencils to be used on paper. They're certainly the most reasonable, but all of them fail to provide an "even" color and as a result may detract from the finished product. Color will probably be added to only the most important graphics. If it's something special, the best alternative is to spend a little more money and do it right. The best alternative is something called "graphic film". This is a thin sheet of some mystical man-made material that is colored but remains translucent; it has adhesive on the back. It can be positioned over something that already has writing on it, for example a piece of a pie chart, and it will add the color or texture of your choice. Film is made for use on both paper and transparencies. It comes in 11" x 15" sheets which cost about $4.00 a sheet.

8. A GOOD ADHESIVE.

The days of rubber cement and scotch tape have gone by. Rubber cement is just too messy, and scotch tape always makes lines when copied. Mounting adhesive, which is essentially rubber cement in an aerosol can, is a much better alternative. It allows re-positioning of what's been sprayed. Often good graphics and neat reports amount to little more than "creative cut and paste" without the lines. Mounting adhesive also can reduce the amount of time spent typing, and re-typing the same document because someone changed something on page 4 of 27. A personal favorite is a Scotch product called Spraymount.

CONCLUSION:

With a little time, a little talent and a few dollars, most people can turn out some very creditable graphics. Graphics not only enhance the appearance of any report, but they also make it much easier to understand the data that has been gathered. Good graphics in the hands of someone who knows how to motivate the system can make the difference between a data collection that results in action and one that leads nowhere. Once Sheriffs and Jail Administrators have invested time and effort to gather the data, it is important to see that it is used effectively. Good graphics can help make the difference.

THE LAST WORD:

By now, so much time and space has been spent on the technicalities of collecting, analyzing and sharing data that a brief reminder about why we are doing all this might come in handy. Information is there to be used; it should lead to something. Sheriffs and Jail Administrators must take strongly leadership roles in using the wealth of information that is presently hidden in local jails to manage their organizations more effectively, to plan for necessary changes and to work with other officials to improve the criminal justice system.

Sheriffs and Jail Administrators must take proactive roles in criminal justice affairs. For entirely too long, the jail has served as a passive receptacle for the activity of the rest of the system. Only by using the information that in many cases it already has can the jail become a fuller partner in the criminal justice system. This won't happen by itself; Sheriffs and Jail Administrators have to make it happen.

For entirely too long, some Sheriffs and Jail Administrators were made to feel that they couldn't gather data themselves. This manual should have convinced you that that isn't so. It may feel strange at first; it may not always be easy; but it is rewarding. And it is a very powerful experience. Information, in the right hands, really is power. In working with systems that have gathered their own data, without exception, all have been surprised with how much they were able to do, how much they found out about their systems, and all were excited about how they could use the information. Try it - you won't regret it!

APPENDIX A:

A DICTIONARY OF STATISTICAL TERMS FOR NON-STATISTICIANS

AGGREGATION is a process of grouping data together The reverse is called "DISAGGREGATION". Experimenting with different ways to group data is one way in which analysis takes place.

ANALYSIS OF VARIANCE is an advanced statistical technique that can be used to determine if there are significant differences between three or more groups.

AXES are the vertical and horizontal lines that orient many charts and graphs. Statisticians call each line an "axis". The horizontal line is called the "X axis", and the vertical line is called the "Y axis". These lines orient people to the chart.

BARRIERS are conditions that make it difficult for you solve problems. They are obstacles that must be overcome.

BASIC is a commonly used computer language.

BIAS is built-in error. It usually comes from picking a bad sample - or from the perceptual bias of the person designing the study.

CASE can be a person, event, or object, about which information is being gathered.

CASE IDENTIFICATION NUMBER is a unique number assigned to each case.

CELL is the name given to each "box" in a contingency table.

CHI SQUARE is a statistical test that determines whether or not being a member of a particular category of one data element has anything to do with being a member of a particular category of another data element.

CLASSES are the groups into which the data is divided to calculate and display frequency distributions.

CLUSTER SAMPLE is a sample in which the population is clustered into specific areas or units, (i.e., housing units. Then the housing units to be sampled are selected randomly, and information collected about every individual in the housing unit).

CODE BOOKS are documents that translate the data elements and their categories (which are usually written words) into numbers so that computers can process them more quickly. Code Books identify the data elements, the categories for each data element, the number of digits in the code for each data element, and (if you're going to computerize the data collection), the keypunch column numbers for each data element.

COHORT SAMPLE is essentially the same as a cluster sample, but it is based on time periods, rather than physical or geographic areas, i.e., all prisoners arrested on a specific date that had been selected randomly would go into the sample.

COLUMNS are the vertical lines in statistical tables.

COMPUTER HARDWARE are the physical components of the computer.

COMPUTER SOFTWARE are the computer programs for processing information.

CONFIDENCE INTERVALS are statistical limits. In sampling, statisticians use probability theory to determine what the odds are of developing a statistically similar sample; they decide how many times out of a hundred their sampling scheme should pull a statistically similar sample out of the whole population that they are drawing from. Most statisticians want to be at least 95% certain that they would get similar results if they analyzed another sample - and some want to be 99% certain. In statistical jargon, they want to have either 95% or 99% confidence intervals around their samples.

CONTINGENCY TABLE is a chart which displays the relationship between <u>two</u> frequency distributions. They are used in calculating the Chi Square statistic and are often called crosstabulations.

CORRELATION is a statistic which measures the degree and direction of the relationship between two data elements. Correlations are positive if change in one direction in one variable causes change in the <u>same</u> direction in the other variable; the variables are said to have a <u>direct</u> relationship. Correlations are negative because if change in one direction in one variable causes change in the <u>other</u> direction in the other variables; the variables are said to have an <u>inverse</u> relationship.

CROSS-SECTIONAL DATA COLLECTIONS are those that are done only one time. Cross-sectional data collections can really only describe something.

CURVILINEAR RELATIONSHIPS are not uncovered by tests of correlation. A curvilinear relationship is found in the following types of situations. When taking tests, people who have either very low or very high anxiety levels tend to get low scores, but people who have moderate levels of anxiety get high scores.

DATA is another word for a specific piece of information.

DATA COLLECTION SHEETS are forms on which people record the information that is being collected; statisticians tend to call them "INSTRUMENTS or SURVEY INSTRUMENTS".

DATA ELEMENT is a piece of information. Statisticians and scientists call data elements "VARIABLES".

DATA POINTS or SCORES are the individual measurements for a single data element or variable.

DECISION TREE is a series of questions which funnel one to the only possible answer or conclusion.

DEGREES OF FREEDOM is a mathematical concept that measures the amount of information that is available in normally distributed data.

DEPENDENT VARIABLES are the variables researchers are trying to explain (indicated by 'X').

DESCRIPTIVE STATISTICS are statistics that summarize information about with a population or a sample.

EMPIRICAL RULE is a statistical law or theorum. If the data is distributed in a normal or bell-shaped curve, in the space created by adding and subtracting one standard deviation to the mean, 68% of ALL the cases will be found. If two standard deviations are added to and subtracted from the mean, 95% of all cases will be found in the interval (this is that famous 95% confidence interval). If three standard deviations are added to and subtracted from the mean, then ALL (or nearly all) of the cases will be contained in that interval.

"EXTERNAL VALIDITY" is a research problem that stems from having information about part of a population. The question that arises is whether or not the information discovered in the research about part of the population is equally applicable to the whole population. This is often phrased in terms of the relative ability (or inability) to generalize the results to the whole population.

FREQUENCY DISTRIBUTION is a statistic in which the responses to a data element are categorized and the number of responses in each category are expressed in percentages.

GOALS are end results to be achieved.

HYPOTHESIS is an educated guess about what may be involved with or what may cause the problem. It is often expressed as a question and is what researchers try to prove (or disprove) in a sense. Researchers complicate this by a series of complex logical moves that allow one to accept or reject something called the "null hypothesis" - which is really just the opposite of the statement just defined. For our purposes, just think of the hypothesis as an educated guess.

INDEPENDENT VARIABLES are variables that researchers think may cause or have some sort of relationship with 'X' (the dependent variable). Independent variables are indicated by 'Y'.

INFERENCE, in a statistical sense, means that you assume that what has been discovered about the sample was true for the population. And, provided that the sample was collected randomly and is large enough to adequately represent the population, making inferences is very acceptable statistical practice - provided that the reliability of the inference is identified.

INFORMATION OVERLOAD is precisely that: so much information is presented at one time or on one document that people can't understand and process it. Computerized data collections are frequently guilty of information overload when variables are cross-tabulated without any thought to why a particular statistical operation is being done.

INFORMATION SYSTEMS are structurally or functionally related mechanisms and procedures which provide information to an organization, usually in summary form. They may be automated (computerized) or manual (on paper).

"INTERNAL VALIDITY" asks the question, "Is there any proof that what you did to change the situation REALLY CAUSED the change?"

INTERVENING VARIABLES are variables that act as a link between or interfere with the interaction of dependent and independent variables.

LEVEL OF MEASUREMENT refers to how different types of data elements can be measured. Data elements are divided into three basic categories. The first group of data elements (whose answers can be divided into a series of categories) are called NOMINAL data elements. The second group (whose answers can be ranked in order from good to bad, dirty to spotless - or whatever) are called ORDINAL data elements. The third group of data elements (whose answers were expressed in equal units) are called INTERVAL and RATIO data elements. Statisticians divide the third group into two subgroups, depending on whether or not there is a possible 0 response. The level of measurement of each data element determines the types of statistics that may be used to analyze it.

LINEAR RELATIONSHIPS usually occur when there is a strong correlation between two variables. If a graph is plotted to show all the data points, a strong positive or negative correlation will result in data that "clusters" together. A straight line can be drawn through the cluster to summarize how the data points lie in relationship to each other. When it is easy to draw a straight line like this, the relationship between the data elements is said to be "linear". This line is called the trend line and is used by statisticians for a special kind of correlation called population forecasting or trend analysis. In population forecasting, statisticians attempt to determine if there is a relationship between a Jail data element, such as average daily population, and time.

LOG BOOK is a chronological list of events or activities.

LONGITUDINAL DATA COLLECTIONS are those in which the same data is collected from year to year, allowing comparisons, documentation of change and possibly even the reasons for change.

MARGINALS are the numbers written around the outside of the contingency tables.

MATCHED GROUPS exist if each case in Group I is paired with a case in Group II with common characteristics. The most likely instance of "matched groups" in correctional research is when one group is compared before and after participation in a program (the classic "before" and "after" picture).

MEAN is a measure of central tendency in which all the measurements for a particular data element are added and the result divided by the total number of measurements in the set (the "mathematical average").

MEDIAN is the middle measurement when all of the measurements in the set are arranged according to size. If there are an odd number of measurements in the set, the median falls exactly on the middle measurement. If there are an odd number in the set, the median falls exactly halfway betweer the middle two measurements.

MODE is the measurement that occurs most frequently.

NORMAL or BELL-SHAPED CURVE is the most common or usual probability distribution. If the total area under the curve is set equal to 1, then the area within one standard deviation of the mean is approximately 0.68; within two standard deviations, 0.95. Normal probability distributions are symmetrical around the mean. The location and spread of the normal distribution will depend upon the values of the mean and standard deviation.

OBJECTIVES are concrete items which can be measured that will be present IF the goal is achieved. Researchers often link a series of objectives into a OPERATIONAL DEFINITION of a goal or concept.

OPERATING PROGRAM (in the case of SPSS - a statistical program we've mentioned before - the control deck) is the program that tells the computer how to "read" the information being provided and requests the statistical procedures.

POPULATION in a statistical sense means all the (people, items, events, etc.) from which a sample can be drawn.

"POPULATION" DATA ELEMENTS are variables for which information is kept on each person, event or object that is being studied (the whole population in a statistical sense). These are elements that should be kept on a routine basis.

PRE-TEST is a process in which the survey instrument is given to a small but similar group before the main data collection to determine if there are problems with it.

PROBABILITY is the mechanism that allows inferences about a whole population ro be made from a sample.

PROBABILITY LAWS (or PROBABILITY THEORUM) allow analysts to calculate what "the odds" of drawing a particular sample are.

PROBLEM STATEMENT is a description of the situation in words that are concrete enough to allow analysts to identify the pieces of information that are needed to determine causes and suggest solutions.

PROPORTIONAL RANDOM SAMPLE is one in which the population is divided into different groups, and cases are selected randomly from within the groups until the groups are in the same proportion in the sample as they are in the population, i.e., if the population was 70% felons and 30% misdemeanants, the sample would be also be 70% felons and 30% misdemeanants.

QUANTITATIVE RESEARCH METHODS rely on numbers to reveal something about an event or phenomenon (most commonly STATISTICS).

QUALITATIVE RESEARCH METHODS (most commonly INTERVIEWS and OBSERVATION) describe an event or phenomenon in words.

RANDOM means that each case has an equal chance of being selected for the sample.

RANDOM NUMBER TABLES are charts of numbers without any logical sequence.

RANK ORDERING is a procedure to arrange data elements from lowest to highest.

REASONS are why things happen. Often they are more strongly related to people's values than to facts.

RELIABILITY is a statistical concept which essentially asks, "How precise must the sample results be?" - or - "What are the chances if this were measured again that I would get the same results?".

ROWS are the horizontal lines in statistical tables.

SAMPLE is a specially selected PART of a population.

SAMPLING SCHEMES (or SAMPLING FRAMES or SAMPLING DESIGNS) are ways to determine which cases go into the sample.

SCALES for graphs are like the scales on maps in which one inch represents so many miles. In most cases, each small square on graph paper (like the inch on the map) will represents a fixed number of cases.

SCORES or DATA POINTS are the individual measurements for a single data element or variable.

SIMPLE RANDOM SAMPLE is a sample in which cases are selected randomly from a homogeneous population (usually by using a random number table, or a similar tool).

SKEWED DISTRIBUTION is a normal or bell-shaped distribution that "leans" more toward the one end of the scale than the other.

SOLUTIONS are ways of "fixing" problems. Every problem has more than one solution. If there is no solution or only one solution, the result is a constraint which limits how operations or choices.

SPSS (the Statistical Package for the Social Sciences) is a common statistical package computer program, found in most college and university settings as well as a surprising number of other public and private agencies.

SPURIOUS CORRELATIONS are those that are caused by chance. A favorite example in this area is a very strong positive correlation found between one state's prison population and the price of Hog Futures on a local commodity exchange.

SQUARE is a mathematical function in which a number is multiplied by itself.

STANDARD DEVIATION is the square root of the variance. It measures the degree of variation that is found in the data. See EMPIRICAL RULE.

STANDARD ERROR OF THE MEAN measures the similarity of the samples (how much variability exists in the data).

STATISTICAL SIGNIFICANCE describes whether or not a difference between the measures of a single data element in two groups is likely to stem from sampling differences or if the difference may be a "true" difference. If a score is outside the 2 standard deviations in either direction from the mean (the other score) that usually contain 95% of all the cases, the score that was different had to be in the other 5% of the cases; it is "statistically significant at the .05 level". To be "significant at the .01 level", the interval had to be plus and minus 2.68 standard deviations from the mean.

STATISTICS, as a field, is an area of mathematics. It uses numbers to make large or diverse amounts of information more understandable since most people can only remember very limited amounts of information at one time. Statistics can be used for four main purposes: to summarize information; to determine how seriously to take differences between groups of people or events; to determine how strongly pieces of information are related to each other; and to estimate future trends in important statistics.

STATISTICAL SAMPLING is a procedure that allows information to be gathered from a segment of the entire population in such a way that it is safe to apply what has been discovered about the sample to the entire population.

STRATIFIED RANDOM SAMPLE is a sample in which the population is divided into different groups, such as felons and misdemeanants, and cases are selected randomly from within the different groups so that equal numbers are selected from each group. In this kind of a sample, you would have an equal number of felons and misdemeanants.

SURVEY INSTRUMENTS are really just the forms on which people record the information to be collected.

SYMPTOMS are visible indications that indicate a deeper problem is present.

SYSTEMATIC SAMPLE is a sample in which information is collected about cases in a certain sequence until the number of cases required for the sample is reached, i.e., data is collected about every 3rd, 5th or 10th, etc. person booked until enough cases are reached.

TALLYSHEET is a piece of paper which lists all the categories for each data element and on which a check mark is made next to the appropriate category for each case.

TESTS OF SIGNIFICANCE are statistics that examine the differences between two or more groups.

VARIABILITY is a statistical concept that essentially asks the question, "How different the individuals cases that make up the entire population are from one another?".

APPENDIX B:

AN ANNOTATED BIBLIOGRAPHY

This bibliography has been divided into two sections:

- data collection or analysis documents that have been developed specifically for the criminal justice system (in general) and Jails (in particular); and
- documents that I have found useful both in preparing this manual and in learning about research methods and statistics. These are most assuredly not the only documents of this kind - just the ones that I've used. I've also identified documents that will, I think, be particularly helpful to people who aren't planners, researchers and statisticians.

Many of the criminal justice documents can be obtained from the NATIONAL INSTITUTE OF CORRECTIONS NATIONAL INFORMATION CENTER at 1790 30th Street, Boulder, Colorado 80301. Their telephone number is (303)-444-1101. In the case of other resources which would not be available from that source, each of the citations includes the name of the publishers. Local bookstores, with that information, should be able to order them for your.

RESOURCES FOR THE CRIMINAL JUSTICE SYSTEM:

The staff at the NATIONAL INSTITUTE OF CORRECTIONS NATIONAL INFORMATION CENTER, especially Eileen Conway, who searched the JURIS System for any signs that someone had developed materials about collecting data, and Larry Linke, who kept on looking for articles that <u>just might</u> have something to do with data, were both very helpful. Thanks to both of them, the following list of resources was uncovered.

CORRECTIONAL DATA ANALYSIS SYSTEMS. Charles M. Friel, Harriett J. Allie, Barbara L. Hart, and James B.Moore. Prepared for the Bureau of Justice Statistics, U.S. Department of Justice. Published at the Criminal Justice Center, Sam Houston State University, Huntsville, Texas in 1980.

This document provides a discussion of automated information systems that are presently used in correctional settings. Unfortunately for Jails, the information systems that are discussed in the document are all state level systems. Local criminal justice systems that are considering an information system should find sections of this book helpful, particularly the Chapter about "state of the art" demand information systems. These systems are much more sophisticated, integrated information systems than most jails (except very large facilities) will require. The concepts, however, are helpful. The materials are written in a relatively straightforward way, and once the reader becomes a little familiar with computer terminology, this is a good resource for those who are interested in finding out how information systems can work in state-level corrections.

CORRECTIONS PLANNING HANDBOOKS, BOOK 3 (COLLECT DATA). Prepared by Farbstein and Williams Associates for the California State Board of Corrections, 1981.

When California funded local Jail construction, they developed a needs assessment process which counties applying for funding had to follow. One step in the needs assessment process was to collect data about local Jail operations. The manual developed to assist counties with the data collection (Book 3) is an excellent resource for counties who are going to be involved in a major inmate profile data collection. Book 3 gives detailed, step by step instruction about how to profile the jail population, the existing programs, and current criminal justice system functioning, how to document trends in the justice system and jail population, and how to convert these projections to capacity and program needs. This approach allows for the integration of alternatives to incarceration in the planning process and provides excellent guidance in assessing criminal justice system functioning. This document is written in very understandable terms and is geared toward counties that do not have access to computers for processing data. One possible drawback to this otherwise super resource is the fact that it is based upon a given set of data elements and systems that want to collect other items may experience a little difficulty integrating them into the study. A word of caution about this manual. If you are going to use this approach, follow it step by step. Don't skip around! All in all, this is probably the most comprehensive resource that has been written for Jails. It is written in very understandable language; it is based upon a solid planning methodology; its potential for use in other areas besides California is high.

CRIMINAL JUSTICE ANALYSIS: AN INTRODUCTORY COURSE. Henry S.Dogin, Perry A.Rivkind, and Richard N. Ulrich. Prepared for a special seminar of the Law Enforcement Assistance Administration in 1978.

This document consists of the training material that was prepared for an LEAA Seminar. It consists of factsheets and exercises that were put together to train participants in using statistical information for criminal justice policy making and planning. If the seminar was as good as the materials, it was an excellent opportunity to practice the art of analysis. This document will not tell you HOW to analyze the information, though, or give you the answers to the exercises that are included. The major benefit to the seminar would have come from the interaction and discussions of the participants as they tried to determine what things meant.

GUIDE TO DATA COLLECTION AND ANALYSIS: JAIL OVERCROWDING/PRETRIAL DETAINEE PROGRAM. Jerome R.Bush. Prepared for the NATIONAL INSTITUTE OF CORRECTIONS in 1980.

This document was developed specifically for data collection that arose out of a need to reduce crowding in Jails and will be a very helpful document for those of you who find yourselves in that situation. It identifies the data elements (most of which are included in How to Collect and Analyze Data) that are of particular importance in understanding crowding. The section which describes charting the flow of the criminal justice system will be a useful tool for everyone who needs to clarify who has the authority to make which decisions in the system. This is a critical part of understanding how alternatives to incarceration "fit" into the criminal

justice system. Data collection sheets and code books are also included with this document.

STATISTICAL SAMPLING METHODS FOR CORRECTIONAL PLANNERS. Edward Lakner. Prepared at the NATIONAL CLEARINGHOUSE FOR CRIMINAL JUSTICE PLANNING AND ARCHITECTURE. Published by the University of Illinois at Urbana-Champaign, in 1976.

As the title of this book suggests, it is written for correctional planners. It is written in very, very technical language which makes it extremely difficult going for anyone who does not have a background in statistics (and even some of us who do). In spite of difficulty with the language, it is the only resource that I've been able to find that deals with problems that are specific to using samples to estimate Jail Population statistics. And in an area with very few resources, those that are available must be considered precious. For those who will be working with professional planners on data collections, this resource will be very helpful. For those of you who need more help to develop your sample than is available through this Manual, you might be better off to consult one of the basic statistics books mentioned in the other section of this annotated bibliography.

A POLICY-ORIENTED APPROACH TO POPULATION FORECASTING: AN ANALYTIC TOOL FOR LOCAL CORRECTIONS. Gail Elias. Prepared for Prison Population Forecasting: A National Workshop. January, 1982.

This document provides a step by step description of three ways in which local Jail populations can be forecast. Examples of each of the three methods are provided. This document provides help with a specific technique, describes problems which accompany the use of this technique, and offers some prescriptions for applying the technique. This document assumes that inmate population data is available.

OTHER RESOURCES:

EVALUATOR'S HANDBOOK. Lynn Lyons Morris and Carol Taylor Fitz-Gibbon. Published by Sage Publications, Beverly Hills, California in 1978.

This handbook is part of a series of books called the Program Evaluation Kit, which has eight manuals. I've only seen two of them but like both of them a great deal. It is very practical, takes a systematic step by step approach to evaluation, and best of all is written in common everyday English. An added benefit is the fact that this book is in paperback and costs less than $10. This particular book (which is the introduction to the Kit) explains what program evaluation is, differentiates between several kinds of evaluations, and then identifies the steps in each. Another nice touch is the use of lots of worksheets and similar tools that people can use in their own evaluations. For those who are interested in finding out how well Jail programs and services are doing, this is an excellent resource.

HANDBOOK IN RESEARCH AND EVALUATION. Stephen Isaac and William B. Michael. Published by Edits Publishers, San Diego, California, In 1971.

This handbook is one of the most frequently used texts in research methods courses. For the person who's has some exposure to these topics, this will proove to be a useful resource. The book is divided into short sections about specific research issues. So, if help is required in a specific area, it is easy to turn to that area, finc the answer and move on. As a guide regarding how to do research, this document leaves a bit to the imagination. It is also written in rather technical language, which makes it difficult for the layperson to understand. There are other resources in this area that will be more helpful for people not very familiar with research methods.

HOW TO CALCULATE STATISTICS. Carol Taylor Fitz-Gibbon and Lynn Lyons Morris. Published by Sage Publications, Beverly Hills, California In 1978.

This book is part of the Program Evaluation Kit. If there were only one book to give those who need to know how to calculate basic statistics, this should be it. It is written in English, not jargon, and takes the reader through calculating and displaying most of the statistics needed to use to analyze Jail data. The authors construct worksheets for readers to use in their calculations. These alone make the calculations much more understandable. The accompanying text clarifies most of the questions that statistical beginners might have.

HOW TO LIE WITH STATISTICS. Darrell Huff. Published by W. W.Norton & Company, New York, In 1954.

Although this book is nearly 30 years old, it is still a favorite. It does an excellent job of identifying common statistical misuses, abuses, and misrepresentations. It clearly identifies actions that statistical consumers can take to make sure that they aren't "duped" by statistics. This book is a tiny paperback that is easy, but informative reading. I think this should be required reading for anyone who ever reads a newspaper, listens to radio, or watches television

INFORMATION SYSTEMS AND NETWORKS. K. Samuelson, H. Borko and G. X. Amey. Published by the North-Holland Publishing Company, New York, In 1977.

This is a really nice overview of what information systems are, how they should be planned, how systems analysis fits into information system development, and problems associated with implementing information systems. It does not spend a lot of time describing the system documentation of already existing information system, but concentrates on the concepts and issues that are important to consider when designing a system. This book also reads very well - and is written in language that would be understood by people who have not been exposed to a lot of computer terminology. It is also relatively short. This is a good resource for anyone who is interested in learning about information systems.

PRACTICAL RESEARCH: PLANNING AND DESIGN. Paul D. Leedy. Published by Macmillan Publishing Company, New York, in 1974.

For those about to take their first plunge into research methods, this paperback text would be a good investment. It is relatively jargon free, spends a considerable amount of time on research planning (which is a critical element that's often underplayed), different research designs, and ways to present the results. For those who need help in writing a research reports, this manual does a good job in providing guidelines. Leedy uses a number of illustrations and examples that are particularly helpful in showing what research materials look like. Another added benefit is that the cost of this book is less than $10.

SOCIAL STATISTICS (2ND ED.). Hubert M. Blalock, Jr. Published by the McGraw-Hill Book Company, New York, in 1979.

This is one of the most frequently used statistics texts. It is sometimes difficult to read, primarily because of the highly technical language. If the reader has already had some statistics, this book would be an excellent resource, because of the exceptional detail included. Without a previous introduction to statistics, this book is likely to be an exercise in frustration and futility.

UNDERSTANDING STATISTICS (2ND ED.). William Mendenhall and Lyman Ott. Published by Duxbury Press, North Scituate, Massachusetts, in 1976.

For those who are ready to take a first plunge into statistics, this book would be a good resource. It is readable and uses a great many examples (which are often helpful when trying to learn something). It's probably the least confusing traditional statistics text I've ever encountered. It's basic - and thus doesn't have the detail that a text like Blalock offers. For beginners, that may be a bonus.

APPENDIX D:

METRO COUNTY SHERIFF'S DEPARTMENT
JAIL DIVISION

SHIFT ACTIVITY SHEET

IN:	OUT:
TIME ____________	TIME ____________
NAME ____________	NAME ____________
CHARGE ____________	RELEASE TO ____________
P. D. ____________	BOND ____________
TIME ____________	TIME ____________
NAME ____________	NAME ____________
CHARGE ____________	RELEASE TO ____________
P. D. ____________	BOND ____________
TIME ____________	TIME ____________
NAME ____________	NAME ____________
CHARGE ____________	RELEASE TO ____________
P. D. ____________	BOND ____________
TIME ____________	TIME ____________
NAME ____________	NAME ____________
CHARGE ____________	RELEASE TO ____________
P. D. ____________	BOND ____________
TIME ____________	TIME ____________
NAME ____________	NAME ____________
CHARGE ____________	RELEASE TO ____________
P. D. ____________	BOND ____________
TIME ____________	TIME ____________
NAME ____________	NAME ____________
CHARGE ____________	RELEASE TO ____________
P. D. ____________	BOND ____________

STATISTICAL SUMMARY BEGIN COUNT ________ END COUNT ________

FELONS ________ # MISDEMEANANTS ________ # TRAFFIC ________ # OTHER ________

PRE-TRIAL ________ # SENTENCED ________ # FEMALES ________ # JUVENILES ________

INMATE INFORMATION CARD

NAME _____ BOOK-IN DATE _____

BIRTHDATE _____ BOOK-OUT DATE _____

RACE _____ SEX _____ LENGTH OF STAY _____ (IN DAYS)

CHARGE(S) _____

___ FELONY ___ PRE-TRIAL ___ RELEASED AT BOOKING

___ MISDEMEANOR ___ POST-TRIAL

___ TRAFFIC ___ SENTENCED ___ HOUSED IN JAIL

___ OTHER ___ HOLD FOR _____

___ COUNTY RESIDENT RELEASED TO _____

___ STATE RESIDENT BOND TYPE _____

___ OUT OF STATE RESIDENT AMOUNT _____

#_____ EMPLOYED - FULLTIME ___ PARTTIME ___ UNEMPLOYED ___

APPENDIX E:

SAMPLE LOG SHEETS

METRO COUNTY SHERIFF'S DEPARTMENT
JAIL DIVISION

TRANSPORT LOG FORM

OFFICER

NAME _____ O. T. / COMP YES ____ NO ____

NAME _____ O. T. / COMP YES ____ NO ____

NAME _____ O. T. / COMP YES ____ NO ____

REASON

DATE _____

____ EMERGENCY ROOM TREATMENT

____ SCHEDULED MEDICAL APPOINTMENT

____ COURT APPEARANCE

____ WARRANT PICK-UP

____ RETURN TO OTHER JURISDICTION

____ TRANSPORT TO STATE INSTITUTION

____ TRANSPORT TO STATE HOSPITAL

____ TRANSPORT TO TREATMENT FACILITY

____ COURT ORDERED

____ OTHER _____

PRISONER **LOCATION**

NAME _____ FROM _____ TO _____

NAME _____ FROM _____ TO _____

NAME _____ FROM _____ TO _____

NAME _____ FROM _____ TO _____

NAME _____ FROM _____ TO _____

NAME _____ FROM _____ TO _____

NAME _____ FROM _____ TO _____

NAME _____ FROM _____ TO _____

NAME _____ FROM _____ TO _____

NAME _____ FROM _____ TO _____

NAME _____ FROM _____ TO _____

TIME DEPARTURE _____

RETURN _____

MEALS $ _____

$ _____

$ _____

VEHICLE ODOMETER START _____

ODOMETER END _____

____ VAN ____ CAR # _____

____ OTHER _____

CLEANLINESS GOOD FAIR POOR

MECHANICAL CONDITION GOOD FAIR POOR

$ COST _____ # GALLONS PURCHASED _____ # GALLONS TO FILL ON RETURN _____

PROBLEMS _____

_____

_____

METRO COUNTY SHERIFF'S DEPARTMENT

JAIL DIVISION

VISITOR LOG

DATE	TIME IN	TIME OUT	INMATE NAME	VISITOR NAME	RELATIONSHIP	CONTACT YES	CONTACT NO

METRO COUNTY SHERIFF'S DEPARTMENT

JAIL DIVISION

INCIDENT REPORT FORM

INMATE NAME _____ BOOKING NUMBER _____

HOUSING ASSIGNMENT _____

INCIDENT DATE _____ TIME _____ REPORTING EMPLOYEE _____

REPORT DATE _____ TIME _____ SUPERVISOR _____

LOCATION

____ HOLDING	____ VISITING
____ BOOKING	____ KITCHEN
____ INTAKE SALLYPORT	____ HOUSING UNIT #: 1
____ PERSONAL EFFECTS ROOM	____ " 2
____ ISOLATION	____ " 3
____ CORRIDOR	____ " 4
____ LIBRARY / CLASSROOM	____ " 5
____ EXERCISE	____ OTHER _____

REASON

____ SUICIDAL	____ ARSON
____ VIOLENT	____ PROTECTIVE CUSTODY
____ ILLNESS	____ CONTRABAND VIOLATION
____ ACCIDENTAL INJURY	____ ESCAPE ATTEMPT / RISK
____ CAUSING A DISTURBANCE	____ REFUSAL TO OBEY AN ORDER
____ HARMING / THREATENING STAFF	____ DESTRUCTION OF JAIL PROPERTY
____ HARMING / THREATENING INMATE	____ OTHER _____

INCIDENT DESCRIPTION (including who was involved, what happened, where the incident occurred, what caused it, etc.) _____

RULE VIOLATION MAJOR ____ MINOR ____ NO ____

IS A C. R. NEEDED? YES ____ # _____ NO ____

DISCIPLINARY ACTION

MAJOR VIOLATION

____ MOVE TO ISOLATION

____ MOVE TO MAXIMUM SECURITY

____ MOVE TO ADMINISTRATIVE SEGREGATION

____ MOVE TO _____

MINOR VIOLATION

____ NO ACTION

____ VERBAL REPRIMAND

____ 48 HOUR LOSS OF PRIVILEGE _____

____ 24 HOUR LOCK-DOWN

____ OVER 48 HOUR LOSS OF PRIVILEGE _____

____ OTHER _____

USE OF RESTRAINTS

____ NONE NEEDED

____ PHYSICAL

____ MECHANICAL

INJURY TO

____ STAFF

____ INMATE

____ OTHER _____

DISCIPLINARY REVIEW BOARD REQUIRED YES____ NO ____

DATE OF REVIEW BOARD _____

DATE NOTICE SERVED _____

GRIEVANCE FILED YES ____ NO ____

ADDITIONAL COMMENTS _____

_____

_____

_____

_____

_____

_____

_____

_____

ADMINISTRATIVE REVIEW AND APPROVAL

COMPLETED BY

CORRECTIONS OFFICER _____ DATE _____

SHIFT SUPERVISOR _____ DATE _____

JAIL ADMINISTRATOR _____ DATE _____

APPENDIX F:

METRO COUNTY SHERIFF'S DEPARTMENT
JAIL DIVISION

INMATE INFORMATION SYSTEM MONTHLY TALLY SHEET

AGE

18	34
19	35
20	36
21	37
22	38
23	39
24	40
25	41
26	42
27	43
28	44
29	45
30	46
31	47
32	48
33	49 OR OLDER

SEX

MALE
FEMALE

APPENDIX G:

INMATE PROFILE DATA COLLECTION

INMATE NAME _____

ID # ☐☐☐

BOOKING # ☐☐☐☐☐☐

RESIDENCY ☐

SEX ☐

DATE OF BIRTH ☐☐☐☐☐☐

RACE ☐

LEGAL STATUS ☐

HOLD TYPE ☐

CHARGE TYPE ☐

CHARGE 1 ☐☐

CHARGE 2 ☐☐

CHARGE 3 ☐☐

CHARGE 4 ☐☐

CHARGE 5 ☐☐

ARRESTING AGENCY ☐

OCCUPATION ☐☐

EMPLOYMENT STATUS ☐

MARITAL STATUS ☐

BOOKING DATE ☐☐☐☐☐☐

BOOKING TIME ☐☐☐☐

RELEASE DATE ☐☐☐☐☐☐

RELEASE TIME ☐☐☐☐

RELEASE STATUS ☐☐

BOND TYPE ☐☐

LAST GRADE ATTENDED ☐☐

MILITARY STATUS ☐

SECURITY STATUS ☐

=====END CARD #1=====

ID # ☐☐☐

PRIORS ☐☐

CONVICTIONS ☐☐

DAYS SERVED ☐☐☐☐

PRIOR VIOLENT ☐☐

PRIOR DRUG ☐☐

PRIOR ALCOHOL ☐☐

TRIAL DATE ☐☐☐☐☐☐

DATE OF SENTENCING ☐☐☐☐☐☐

CONTINUANCES ☐☐

COURT ☐☐

JUDGE ☐☐

OVER ➤➤

DOES THE SUBJECT HAVE HEALTH PROBLEMS WHICH REQUIRE IMMEDIATE TREATMENT? ☐

IS THE SUBJECT UNDER THE INFLUENCE OF DRUGS OR ALCOHOL? ☐

DOES THE SUBJECT EXHIBIT PSYCHOLOGICAL PROBLEMS WHICH REQUIRE IMMEDIATE TREATMENT? ☐

IS THE SUBJECT CURRENTLY UNDER DOCTOR'S CARE? ☐

IS THE SUBJECT CURRENTLY RECEIVING PSYCHIATRIC CARE? ☐

DOES THE SUBJECT HAVE A HISTORY OF ALCOHOL ABUSE? ☐

DOES THE SUBJECT HAVE A HISTORY OF TREATMENT FOR ALCOHOL ABUSE? ☐

TREATMENT TYPE ☐

DOES THE SUBJECT HAVE A HISTORY OF DRUG ABUSE? ☐

DOES THE SUBJECT HAVE A HISTORY OF TREATMENT FOR DRUG ABUSE? ☐

TREATMENT TYPE ☐

DOES THE SUBJECT HAVE A HISTORY OF MENTAL ILLNESS? ☐

DOES THE SUBJECT HAVE A HISTORY OF TREATMENT FOR MENTAL ILLNESS? ☐

TREATMENT TYPE ☐

INMATE PROFILE CODE BOOK

VARIABLE NAME:	CODES:	EXPLANATION:
ID #		a three digit number assigned to each case on which data is collected, i.e., 001, 002, 003, etc.
BOOKING #		a six digit number assigned to each case on which data is collected, i.e., 054371.
RESIDENCY	1	in-county
	2	in-state, out of county
	3	out of state
	9	unknown
SEX	1	male
	2	female
DATE OF BIRTH		a six digit number, i.e., 010141
RACE	1	white
	2	black
	3	spanish-american
	4	american indian
	5	asian
	6	other
LEGAL STATUS	1	pre-trial
	2	sentenced
	3	hold
	4	weekender
HOLD TYPE	1	hold for other county or state
	2	hold for parole/probation
	3	hold for immigration
	4	hold for AWOL
	5	_____
	6	_____
	7	_____
CHARGE TYPE	1	felony
	2	misdemeanor
	3	traffic
	4	other_____

VARIABLE NAME	CODE	EXPLANATION
CHARGE 1 - 5		List each charge on which person was booked separately.
		OFFENSES AGAINST PERSONS
	10	murder
	11	attempted murder
	12	manslaughter
	13	aggravated assault
	14	robbery, armed
	15	robbery, unarmed
	16	minor assault
	17	kidnapping
	18	menacing
	19	other offenses against persons
		OFFENSES AGAINST PROPERTY
	20	larceny (grand or petit)
	21	auto theft
	22	burglary (any type)
	23	breaking & entering
	24	arson
	25	theft (grand or petit)
	26	shoplifting
	27	criminal mischief, i.e. (destruction of property)
	28	trespassing
	29	other offenses against property
		OFFENSES AGAINST FAMILY OR CHILDREN
	30	non-support
	31	failure to provide
	32	desertion
	33	neglect
	34	bigamy
	35	adultery
	36	contributing to the delinquency of a minor
	37	violation of compulsory school law
	38	paternity offenses
	39	child beating

VARIABLE NAME	CODE	EXPLANATION
		SEXUAL OFFENSES
	40	forcible sex acts
	41	unnatural sex acts
	42	prostitution
	43	immoral acts
	44	promiscuity
	45	illegal sexual relations
	46	pornography
	47	soliciting;pandering
	49	other sexual offenses
		CRIMES OF FORGERY, FRAUD AND CONSPIRACY
	50	forgery
	51	fraud
	52	deception/embezzlement
	53	uttering fraudulent instrument
	54	issuing fraudulent instrument
	55	conspiracy
	56	blackmail, extortion
	57	receiving and concealing stolen property
	58	impersonation
	59	other forgery or fraud
		CRIMES OF WEAPONS, DRUGS AND ALCOHOL
	60	violation of weapons laws
	61	violation of liquor laws
	62	violation of narcotics laws
	63	violation of gambling laws
	64	drunk or drinking
	65	city ordinance violations except disorderly conduct
	66	disorderly conduct
	69	other weapon, drug or alcohol offense

VARIABLE NAME	CODE	EXPLANATION
		TRAFFIC VIOLATIONS
	70	moving violation
	71	standing violation
	72	operating a motor vehicle without a proper license or registration
	73	operating a motor vehicle under the influence of alcohol or drugs
	79	other traffic or motor vehicle law violations
		MISCELLANEOUS OFFENSES
	80	escape from custody
	81	interfering with enforcement of law, i.e., obstructing, resisting arrest
	82	habitual criminal
	83	automobile banditry
	84	cruelty to animals
	85	harboring a fugitive
	86	possession of burglary tools
	87	violation of community placement
	88	FTA/bond revocations
	89	appeals
	90	writs
	91	temporary holds
	92	probation/parole violation
	93	protective custody
	94	_____
	95	_____
	96	_____
	97	_____
	98	_____
	99	_____
ARRESTING AGENCY	1	County
	2	City of _____
	3	City of _____
	4	State Patrol
	5	other state agency
	6	Federal
	7	other county
	8	_____
	9	_____

VARIABLE NAME	CODE	EXPLANATION
OCCUPATION	01	professional, technical
	02	managerial, administrator
	03	sales
	04	clerical
	05	craftsmen
	06	operators, i.e.,machine operators and factory workers
	07	transportation equipment operators
	08	laborers, except farm
	09	farm labor
	10	service worker
	11	student
	12	no employment history
EMPLOYMENT STATUS	1	full time employed
	2	part time employed
	3	unemployed
	4	never employed
MARITAL STATUS	1	married
	2	single
	3	divorced
	4	separated
	5	common - law
	6	other
BOOKING DATE		date of booking, i.e.,010181
BOOKING TIME		time of booking, i.e., 2340 NOT 11:40 PM
RELEASE DATE		date of release, i.e.,010281
RELEASE TIME		time of release, i.e., 1850 NOT 6:50 PM
RELEASE STATUS	01	jail sentence completed
	02	acquitted;charges dropped
	03	transferred to state or federal prison
	04	transferred to probation
	05	transferred to parole
	06	bailed/bonded out
	07	released to other jurisdiction
	08	released to mental health facility
	09	released to medical facility
	10	released to special program
	11	deferred sentencing or prosecution
	12	escape or walk-away
	13	other
	14	fine paid

VARIABLE NAME	CODE	EXPLANATION
BOND TYPE	01	personal recognizance
	02	cash
	03	surety
	04	property
	05	10% bond
	06	PR w/cosigner
	07	PR w/conditions
	08	PR & surety
	09	PR & cash
	10	cash & surety
	11	PR & property
	12	bond reinstated
	13	_____
	14	_____
	15	_____
	16	_____
LAST GRADE		a two digit number which indicates the last grade completed
MILITARY STATUS	1	veteran
	2	non-veteran
SECURITY CLASS.	1	maximum
	2	medium
	3	minimum
	8	not applicable

==========End of Card #1==========

ID #	a three digit number assigned to each case on which data is collected, i.e., 001, 002, 003, etc. (repeat)
PRIOR	a two digit number that indicates the number of prior arrests in this county.
NCON	a two digit number that indicates the number of prior convictions in this county.
DAYSEN	a four digit number that indicates in days, the sentenced time served in this jail or in the state prison; 9999 indicates a life sentence.

VARIABLE NAME	CODE	EXPLANATION
NVIOLENT		a two digit number that indicates the number of arrests for the following charges which have been designated as violent offenses: _____ _____ _____ _____ _____ _____
NDRUG		a two digit number that indicates the number of arrests in this county jail for the following offenses designated as drug related: _____ _____ _____ _____ _____
NALC		a two digit number that indicates the number of arrests in this county jail for the following offenses designated as alcohol related: _____ _____ _____ _____ _____
TRIAL DATE		a six digit number that shows the date of trial, i.e., 010481.
SENTENCE DATE		a six digit number that shows the date of sentencing, i.e., 020581.
NCONTINUE		a two digit number that shows the number of continuances granted prior to trial on this charge.

VARIABLE NAME	CODE	EXPLANATION
COURT	01	
	02	
	03	
	04	
	05	
	06	
	07	
	08	
	09	
	10	
JUDGE	01	
	02	
	03	
	04	
	05	
	06	
	07	
	08	

THE FOLLOWING VARIABLES MAY ALL BE ANSWERED BY A "YES" OR "NO" RESPONSE. FOR ALL OF THE FOLLOWING,

1	yes
2	no

HEALTH PROBLEMS	Does the subject have health problems which require immediate treatment?
INTOXICATED?	Is the subject under the influence of drugs or alcohol?
PSYCH PROBLEMS	Does the subject exhibit psychological problems which require immediate treatment?
DOCTOR'S CARE	Is the subject currently receiving medical treatment?
PSYCH CARE	Is the subject currently receiving psychiatric treatment?
HISTORY ALCOHOL	Does the subject have a history of alcohol abuse?
HISTORY ALCOHOL TREATMENT	Does the subject have a history of alcohol treatment?

VARIABLE NAME	CODE	EXPLANATION
TREATMENT TYPE	1	In-patient
	2	Out-patient
	3	Alcoholics Anonymous
	4	_____
HISTORY DRUG		Does the subject have a history of drug abuse?
DRUG TREATMENT		Does the subject have a history of treatment for drug abuse?
TREATMENT TYPE	1	In-patient
	2	out-patient
MENTAL PROBLEMS		Does the subject have a history of mental illness?
MENTAL TREATMENT		Does the subject have a history of treatment for mental illness?
TREATMENT TYPE	1	In-patient
	2	out-patient

All "8" = not applicable.
All "9" = unknown.

SPSS INMATE PROFILE PROGRAM DOCUMENTATION

This program is written for SPSS Version 8. As SPSS is continually refined, there may be improvements that can be made to make this program more effective, simple and powerful. For example, those who have a "report generator" option may find that to be useful. This program can be run on earlier versions of SPSS except for the variables which compute jail days. Since these are very important aspects of the data collection, if the SPSS available can not calculate the number of days between dates, two courses of action are possible:

- use another algorithm to calculate this; or
- change the data collection sheet, code book, and computer program so that a coders calculate the period of time in question. NOTE! This will require altering the remainder of the SPSS program.

```
         1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
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```
RUN NAME        Initial Run of Inmate Profile Data Collection

VARIABLE LIST   IDNO,BOOKNO,RESIDE,SEX,BMO,BDAY,BYEAR,RACE,LSTAT,HOLD,CHSTAT,
                CHARGE1,CHARGE2,CHARGE3,CHARGE4,CHARGE5,ARREST,OCC,EMPSTAT,MSTAT,
                BOOKMO,BOOKDAY,BOOKYEAR,BOOKTIME,RELMO,RELDAY,RELYEAR,RELTIME,
                RELSTAT,BOND,GRADE,MILSTAT,SECURE,PRIOR,NCON,DAYSEN,NVIOLENT,
                NDRUG,NALC,TRYMO,TRYDAY,TRYYEAR,SENMO,SENDAY,SENYEAR,NCONTINU,
                COURT,JUDGE,HEALTHP,DRUNK,PSYCHP,DOCTOR,PSYCHC,ALCHIST,ALCTREAT,
                TREAT1,DRUGHIST,DRGTREAT,TREAT2,MENHIST,MENTREAT,TREAT3

N OF CASES      UNKNOWN

INPUT MEDIUM    CARDS

INPUT FORMAT    FIXED(F3.0,F6.0,2F1.0,3F2.0,4F1.0,5F2.0,F1.0,F2.0,2F1.0,3F2.0,
                F4.0,3F2.0,F4.0,3F2.0,2F1.0/3X,2F2.0,F4.0,18F2.0,14F1.0)

MISSING VALUES  IDNO TO TREAT3(BLANK)

COMPUTE         CCHARGE1=CHARGE1

COMPUTE         CCHARGE2=CHARGE2

COMPUTE         CCHARGE3=CHARGE3

COMPUTE         CCHARGE4=CHARGE4

COMPUTE         CCHARGE5=CHARGE5

COMPUTE         JBOOK=YRMODA(BOOKYEAR,BOOKMO,BOOKDAY)
```

```
        1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
COMPUTE         JREL=YRMODA(RELYEAR,RELMO,RELDAY)

COMPUTE         JAILDAYS=JREL-JBOOK

COMPUTE         REBKTYIME=BOOKTIME

COMPUTE         RERETIME=RELTIME

COMPUTE         JAILHOURS=RERETIME-REBKTIME

COMPUTE         JBIRTH(BMO,BDAY,BYEAR)

COMPUTE         AGE=(JBOOK-JBIRTH)/365

COMPUTE         REAGE=AGE

COMPUTE         JTRIAL=YRMODA(TRYYEAR,TRYMO,TRYDAY)

COMPUTE         JSENT=YRMODA(SENYEAR,SENMO,SENDAY)

COMPUTE         TIMETRY=JTRIAL-JBOOK

COMPUTE         TIMEPSI=JSENT-JTRIAL

COMPUTE         REJLDAYS=JAILDAYS

RECODE          CCHARGE1 TO CCHARGE5 (10 THRU 19=1)(20 THRU 29=2)(30 THRU 39=3)
                (40 THRU 49=4)(50 THRU 59=5)(60 THRU 69=6)(70 THRU 79=7)
                (80 THRU HI=8)/REBKTIME,RERETIME (0000 THRU 0059 =1)
                (0100 THRU 0159=2)(0200 THRU 0259=3)(0300 THRU 0359=4)
                (0400 THRU 0459=5)(0500 THRU 0559=6)(0600 THRU 0659=7)
                (0700 THRU 0759=8)(0800 THRU 0859=9)(0900 THRU 0959=10)
                (1000 THRU 1059=11)(1100 THRU 1159=12)(1200 THRU 1259=13)
                (1300 THRU 1359=14)(1400 THRU 1459=15)(1500 THRU 1559=16)
                (1600 THRU 1659=17)(1700 THRU 1759=18)(1800 THRU 1859=19)
                (1900 THRU 1959=20)(2000 THRU 2059=21)(2100 THRU 2159=22)
                (2200 THRU 2259=23)(2300 THRU 2359=24)/REAGE(LO THRU 17.99=1)
                (18 THRU 21.99=2)(22 THRU 24.99=3)(25 THRU 27.99=4)
                (28 THRU 29.99=5)(30 THRU 34.99=6)(35 THRU 39.99=7)
                (40 THRU 44.99=8)(45 THRU 49.99=9)(50 THRU HI=10)/REJLDAYS
                (8 THRU 30=8)(31 THRU 60=9)(61 THRU 90=10)(91 THRU 120=11)
                (121 THRU HI=12)/

VAR LABELS      IDNO,IDENTIFICATION NUMBER/BOOKNO,BOOKING NUMBER/RESIDE,RESIDENT
                STATUS/JBIRTH,BIRTHDATE/BMO,BIRTH MONTH/BDAY,BIRTH DAY/BYEAR,
                BIRTH YEAR/LSTAT,LEGAL STATUS/HOLD,HOLD TYPE/CHSTAT,CHARGE
                STATUS/CHARGE1,FIRST CHARGE/CHARGE2,SECOND CHARGE/CHARGE3,THIRD
                CHARGE/CHARGE4,FOURTH CHARGE/CHARGE5,FIFTH CHARGE/OCC,OCCUPATION/
                ARREST,ARRESTING AGENCY/EMPSTAT,EMPLOYMENT STATUS/MSTAT,MARITAL
                STATUS/JBOOK,BOOKING DATE/BOOKMO,MONTH OF BOOKING/BOOKDAY, DAY OF
                BOOKING/BOOKYEAR,YEAR OF BOOKING/BOOKTIME,TIME OF BOOKING/JREL,
                RELEASE DATE/RELMO,MONTH OF RELEASE/RELDAY,DAY OF RELEASE,RELYEAR
                YEAR OF RELEASE/RELSTAT,RELEASE STATUS/RELTIME,TIME OF RELEASE/
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         1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
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BOND,TYPE OF BOND/MILSTAT,MILITARY STATUS/GRADE,LAST GRADE ATTENDED/SECURE,SECURITY CLASSIFICATION/HEALTHP,IMMEDIATE HEALTH PROBLEMS/DRUNK,DRUG-ALCOHOL INFLUENCE/PSYCHP,IMMEDIATE PSYCHIATRIC TREATMENT/DOCTOR,UNDER DOCTORS CARE/PSYCHC,CURRENT PSYCHIATRIC TREATMENT/ALCHIST,HISTORY OF ALCOHOL ABUSE/ALCTREAT, HISTORY OF ALCOHOL TREATMENT/TREAT1,TREATMENT TYPE/DRUGHIST, HISTORY OF DRUG ABUSE/DRGTREAT,HISTORY OF DRUG TREATMENT/TREAT2, TREATMENT TYPE/MENHIST, HISTORY OF MENTAL ILLNESS/MENTREAT, HISTORY OF MENTAL TREATMENT/TREAT3,TREATMENT TYPE/CCHARGE1,FIRST CHARGE/CCHARGE2,SECOND CHARGE/CCHARGE3,THIRD CHARGE/CCHARGE4, FOURTH CHARGE/CCHARGE5,FIFTHCHARGE/REBKTIME,GROUPED BOOKING TIME/ RERETIME,GROUPED RELEASE TIME/JAILHOURS,HOURS IN JAIL/REAGE, GROUPED AGE/REJLDAYS,GROUPED JAIL DAYS/PRIOR,PRIOR ARRESTS/NCON, NUMBER OF CONVICTIONS/DAYSEN,SENTENCED TIME/NVIOLENT,NUMBER OF VIOLENT OFFENSES/NDRUG,NUMBER OF DRUG OFFENSES/NALC,NUMBER OF ALCOHOL OFFENSES/TRYMO,MONTH OF TRIAL/TRYDAY,DAY OF TRIAL/ TRYYEAR,YEAR OF TRIAL/SENMO,MONTH OF SENTENCE/SENDAY,DAY OF SENTENCE/SENYEAR,YEAR OF SENTENCE/NCONTINU,NUMBER OF CONTINUANCES/COURT,TRIAL COURT/JUDGE,TRIAL JUDGE/JTRIAL,TRIAL DATE/JSENT,SENTENCING DATE/TIMETRY,TIME FROM BOOKING TO TRIAL/ TIMEPSI,TIME FROM TRIAL TO SENTENCING/

VALUE LABELS RESIDE (1)IN-COUNTY (2)IN-STATE,NON-COUNTY (3)OUT OF STATE/SEX (1)MALE (2)FEMALE/RACE (1)WHITE (2)BLACK (3)SPANISH AMERICAN (4)NATIVE AMERICAN (5)ASIAN (6)OTHER/LSTAT (1)PRETRIAL (2) SENTENCED (3)HOLD/HOLD (1)OTHER COUNTY OR STATE (2)PAROLE OR PROBATION (3)IMMIGRATION (4)AWOL (5)JUVENILE PROBATION (6)STATE PRISON (7)PROTECTIVE CUSTODY (8)_____(9)_____/CHSTAT (1)FELONY (2)MISDEMEANOR (3)TRAFFIC (4)JUVENILE (5)OTHER/CHARGE1 TO CHARGE5 (10)MURDER (11)ATTEMPTED MURDER (12)MANSLAUGHTER (13)AGGRAVATED ASSAULT (14)ROBBERY,ARMED (15)ROBBERY,UNARMED (16)MINOR ASSAULT (17)KIDNAPPING (18)MENACING (19)OTHER OFFENSES AGAINST PERSONS (20)LARCENY,GRAND OR PETIT (21)AUTO THEFT (22)BURGLARY,ANY TYPE (23)BREAKING AND ENTERING (24)ARSON (25)THEFT,GRAND OR PETIT (26)SHOPLIFTING (27)CRIMINAL MISCHIEF (28)TRESPASSING (29)OTHER OFFENSES AGAINST PROPERTY (30)NON-SUPPORT (31)FAILURE TO PROVIDE (32)DESERTION (33)NEGLECT (34)BIGAMY (35)ADULTERY (36)CONTRIBUTING TO THE DELINQUENCY OF A MINOR (37)VIOLATION OF COMPULSORY SCHOOL LAW (38)PATERNITY OFFENSES (39)CHILD BEATING (40)FORCIBLE SEX ACTS (41)UNNATURAL SEX ACTS (42)PROSTITUTION (43)IMMORAL ACTS (44)PROMISCUITY (45)ILLEGAL SEXUAL RELATIONS (46)PORNOGRAPHY (47)SOLICITING, PANDERING (48)OTHER SEX OFFENSES (50)FORGERY (51)FRAUD (52)DECEPTION,EMBEZZLEMENT (53)UTTERING A FRAUDULENT INSTRUMENT (54)ISSUING A FRAUDULENT INSTRUMENT (55)CONSPIRACY (56)BLACKMAIL, EXTORTION (57)RECEIVING AND CONCEALING STOLEN PROPERTY (58)IMPERSONATION (59)OTHER FORGERY OR FRAUD (60)VIOLATION OF WEAPONS LAWS (61)VIOLATION OF LIQUOR LAWS (62)VIOLATION OF NARCOTICS LAWS (63)VIOLATION OF GAMBLING LAWS (64)DRUNK OR DRINKING (65)CITY ORDINANCE VIOLATIONS EXCEPT DISORDERLY CONDUCT (66)DISORDERLY CONDUCT (69)OTHER WEAPON,DRUG OR ALCOHOL OFFENSE (70)MOVING VIOLATION (71)STANDING VIOLATION (72)OPERATING A MOTOR VEHICLE WITHOUT LICENCE OR REGISTRATION (73)OPERATING A

```
0         1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
                MOTOR VEHICLE UNDER THE INFLUENCE (79)OTHER TRAFFIC OR MOTOR
                VEHICLE LAW VIOLATION (80)ESCAPE (81)INTERFERING WITH ENFORCEMENT
                OF THE LAW (82)HABITUAL CRIMINAL (83)AUTOMOBILE BANDITRY
                (84)CRUELTY TO ANIMALS (85)HARBORING A FUGITIVE (86)POSSESSION
                OF BURGLARY TOOLS (87)VIOLATION OF COMMUNITY PLACEMENT (88)FTA,
                BOND REVOCATION (89)APPEALS (90)WRITS (91)TEMPORARY HOLDS
                (92)PROBATION PAROLE VIOLATION (93)PROTECTIVE CUSTODY
                (94)CONTEMPT OF COURT (95)ILLEGAL ALIEN (96)ILLEGAL INTERSTATE
                TRANSPORTATION (97)_________ (98)_________ (99)_________/
                ARREST(1)COUNTY (2)CITY OF _________ (3)CITY OF _________
                (4)STATE PATROL (5)OTHER STATE AGENCY (6)FEDERAL (7)OTHER COUNTY/
                OCC (01)PROFESSIONAL,TECHNICAL (02)MANAGERIAL,ADMINISTRATIVE
                (03)SALES (04)CLERICAL (05)CRAFTSMEN (06)OPERATORS
                (07)TRANSPORTATION OPERATORS (08)LABORERS (09)FARM LABORERS
                (10)SERVICE WORKER (11)STUDENT (12)NEVER WORKED/EMPSTAT
                (1)EMPLOYED FULLTIME (2)EMPLOYED PARTIME (3)UNEMPLOYED (4)NEVER
                WORKED/MSTAT (1)MARRIED (2)SINGLE (3)DIVORCED (4)SEPARATED
                (5)COMMON-LAW (6)OTHER/RELSTAT (01)SENTENCED SERVED
                (02)ACQUITTED,CHARGES DROPPED (03)TRANSFER TO STATE DOC
                (04)PROBATION (05)PAROLED (06)BONDED OUT (07)TRANSFER TO OTHER
                JURISDICTION (08)TRANSFER TO MENTAL HEALTH (09)TRANSFER TO
                MEDICAL (10)TRANSFER TO SPECIAL PROGRAM (11)DEFERRED SENTENCE
                (12)ESCAPE,WALK-AWAY (13)OTHER/BOND (01)PR  (02)CASH (03)SURETY
                (04)PROPERTY (05)10% (06)PR & COSIGNER (07)PR & CONDITIONS (08)PR
                & SURETY (09)PR & CASH (10)CASH & SURETY (11)PR & PROPERTY
                (12)BOND REINSTATED/MILSTAT (1)VETERAN (2)NON-VETERAN/SECURE
                (1)MAXIMUM (2)MEDIUM (3)MINIMUM (4)WORK RELEASE/HEALTHP TO
                ALCHIST,DRUGHIST TO DRGTREAT,MENHIST,MENTREAT (1)YES (2)NO/
                TREAT1,TREAT2,TREAT3 (1)IN-PATIENT (2)OUT-PATIENT (3)AA (4)OTHER/
                CCHARGE1 TO CCHARGE5 (1)OFFENSES AGAINST PERSONS (2)OFFENSES
                AGAINST PROPERTY (3)OFFENSES AGAINST FAMILY AND CHILDREN (4)SEX
                OFFENSES (5)FORGERY,FRAUD OFFENSES (6)WEAPONS,DRUG & ALCOHOL
                OFFENSES (7)TRAFFIC OFFENSES (8)MISCELLANEOUS OFFENSES/REAGE
                (1)UNDER 18 (2)18 THRU 21 (3)22 THRU 24 (4)25 THRU 27 (5)28
                THRU 29 (6)30 THRU 34 (7)35 THRU 39 (8)40 THRU 44 (9)45 THRU 49
                (10)50 & ABOVE/REJLDAYS (1)1 DAY (2)2 DAYS (3)3 DAYS (4)4 DAYS
                (5)5 DAYS (6)6 DAYS (7)7 DAYS (8)1 WEEK-1 MONTH (9)1-2 MONTHS
                (10)2-3 MONTHS (11)3-4 MONTHS (12)4 MONTHS OR MORE/REBKTIME,
                RERETIME (1)MIDNIGHT-1AM (2)1AM-2AM (3)2AM-3AM (4)3AM-4AM
                (5)4AM-5AM (6)5AM-6AM (7)6AM-7AM (8)7AM-8AM (9)8AM-9AM
                (10)9AM-10AM (11)10AM-11AM (12)11AM-NOON (13)NOON-1PM
                (14)1PM-2PM (15)2PM-3PM (16)3PM-4PM (17)4PM-5PM (18)5PM-6PM
                (19)6PM-7PM (20)7PM-8PM (21)8PM-9PM (22)9PM-10PM (23)10PM-11PM
                (24)11PM-MIDNIGHT/

ASSIGN MISSING CCHARGE1 TO CCHARGE5,JBOOK TO REJLDAYS(BLANK)

FREQUENCIES     GENERAL=RESIDE,SEX,REAGE,RACE TO CHSTAT,ARREST TO MSTAT,REBKTIME,
                RERETIME,RELSTAT TO SECURE, JAILDAYS,REJLDAYS,BOOKMO,RELMO

STATISTICS      ALL

READ INPUT DATA
```

```
1         2         3         4         5         6         7         8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
FREQUENCIES     GENERAL=GRADE,AGE,JAILDAYS

OPTIONS         7

STATISTICS      ALL

CROSSTABS       TABLES=CHSTAT BY LSTAT,SEX,RACE,ARREST,OCC,EMPSTAT,MSTAT,RELSTAT,
                BOND/RELSTAT BY EMPSTAT,MSTAT,SEX,RACE/BOND BY SEX,RACE,EMPSTAT/
                REAGE BY LSTAT,CHSTAT,SEX,RACE,ARREST,EMPSTAT,MSTAT,RELSTAT,BOND

STATISTICS      ALL

MULTRESPONSE    GROUPS=CHARGE CHARGE ON ARREST (CHARGE1 TO CHARGE5(10,99))
                CCAHRGE GROUPED ARREST CHARGE (CCHARGE1 TO CCHARGE5(1,9))/
                VARIABLES=RESIDE(1,3)SEX(1,2)RACE(1,6)LSTAT(1,3)HOLD(1,7)
                CHSTAT(1,4)ARREST(1,7)OCC(01,12)EMPSTAT(1,4)MSTAT(1,6)
                RELSTAT(01,13)BOND(01,16)GRADE(0,22)MILSTAT(1,2)SECURE(1,3)
                REJLDAYS(0,10)/FREQUENCIES=CHARGE CCHARGE/TABLES=CCHARGE BY SEX
                RESIDE RACE LSTAT HOLD CHSTAT ARREST OCC EMPSTAT MSTAT RELSTAT
                BOND REJLDAYS

FINISH
```

APPENDIX H:

OVERCROWDING MODIFICATION

INMATE PROFILE DATA COLLECTION

INMATE NAME _____

ID # ☐☐☐

BOOKING # ☐☐☐☐☐☐

RESIDENCY ☐

SEX ☐

DATE OF BIRTH ☐☐☐☐☐☐

RACE ☐

LEGAL STATUS ☐

HOLD TYPE ☐

CHARGE TYPE ☐

CHARGE 1 ☐☐

CHARGE 2 ☐☐

CHARGE 3 ☐☐

ARRESTING AGENCY ☐

OCCUPATION ☐☐

EMPLOYMENT STATUS ☐

FTA ☐

MILITARY STATUS ☐

BOOKING DATE ☐☐☐☐☐☐

BOOKING TIME ☐☐☐☐

ORIGINAL BOND SET ☐☐☐☐☐

SECURITY STATUS ☐

RELEASE DATE ☐☐☐☐☐☐

RELEASE TIME ☐☐☐☐

RELEASE STATUS ☐☐

BOND TYPE ☐☐

BOND AMOUNT ☐☐☐☐☐

COURT CASE # ☐☐-
☐☐☐☐☐

ATTORNEY ☐

=====END CARD #1=====

CARD # ☐

ID # ☐☐☐

INITIAL COURT APPEARANCE ☐☐☐☐☐☐

JUDGE ☐

LAST PRE-TRIAL APPEARANCE ☐☐☐☐☐☐

TRIAL START ☐☐☐☐☐☐

TRIAL END ☐☐☐☐☐☐

DATE OF SENTENCING ☐☐☐☐☐☐

JUDGE ☐ PSI ☐

SENTENCE ☐,☐,☐,☐

LENGTH OF JAIL SENTENCE ☐☐/☐☐

SUSPENDED JAIL TIME ☐☐/☐☐

POST-CONVICTION RELIEF ☐

FINAL PLEA IN COURT ☐

CONTINUANCES ☐☐

PRIORS ☐☐

CONVICTIONS ☐☐

PRIOR VIOLENT ☐☐

PRIOR FELONIES ☐☐

PRIOR ALCOHOL ☐☐

PRIOR DRUG ☐☐

DID THE INMATE HAVE ANY SIGNS OF TRAUMA OR ILLNESS REQUIRING EMERGENCY CARE? ☐

DID THE INMATE APPEAR TO BE UNDER THE INFLUENCE OF DRUGS OR ALCOHOL? ☐

WERE THERE ANY SIGNS OF ALCOHOL OR DRUG WITHDRAWAL? ☐

DID BEHAVIOR SUGGEST RISK OF SUICIDE? ☐

DID BEHAVIOR SUGGEST RISK OF ASSAULT TO STAFF OR OTHER INMATES? ☐

WAS THE INMATE UNDER MEDICATION? ☐

HAD THE INMATE RECENTLY BEEN HOSPITALIZED OR RECENTLY SEEN A MEDICAL OR PSYCHIATRIC DOCTOR FOR ANY ILLNESS? ☐

INMATE PROFILE DATA COLLECTION

(OVERCROWDING MODIFICATION)

VARIABLE NAME:	CODES:	EXPLANATION:
ID #		a four digit number assigned to each case on which data is collected, i.e., 0001, 0002, 0003, etc.
BOOKING #		a four digit number assigned to each case on which data is collected, i.e., 4371.
RESIDENCY	1	in-county
	2	in-state, out of county
	3	out of state
	9	unknown
SEX	1	male
	2	female
DATE OF BIRTH		a six digit number, i.e., 010141
RACE	1	white
	2	black
	3	spanish-american
	4	american indian
	5	asian
	6	other
	9	unknown
LEGAL STATUS (at booking)	1	pre-trial
	2	sentenced
	3	hold
	4	weekender
HOLD TYPE	1	hold for other county or state
	2	hold for parole/probation (both state and federal)
	3	hold for immigration
	4	hold for AWOL
	5	hold for US Marshal
	6	bench warrant
	7	_____
	8	not applicable
CHARGE TYPE	1	felony
	2	misdemeanor
	3	traffic
	4	other

VARIABLE NAME	CODE	EXPLANATION
CHARGE 1 - 5		List each charge on which person was booked separately.
		OFFENSES AGAINST PERSONS
	010	murder
	011	attempted murder
	012	manslaughter
	013	aggravated assault
	014	robbery, armed
	015	robbery, unarmed
	016	minor assault
	017	kidnapping
	018	menacing
	019	other offenses against persons
		OFFENSES AGAINST PROPERTY
	020	larceny (grand or petit)
	021	auto theft
	022	burglary (any type)
	023	breaking & entering
	024	arson
	025	theft (grand or petit)
	026	shoplifting
	027	criminal mischief, i.e. (destruction of property)
	028	trespassing
	029	other offenses against property
		OFFENSES AGAINST FAMILY OR CHILDREN
	030	non-support
	031	failure to provide
	032	desertion
	033	neglect
	034	bigamy
	035	adultery
	036	contributing to the delinquency of a minor
	037	violation of compulsory school law
	038	paternity offenses
	039	child beating

VARIABLE NAME	CODE	EXPLANATION
		SEXUAL OFFENSES
	040	forcible sex acts
	041	unnatural sex acts
	042	prostitution
	043	immoral acts
	044	promiscuity
	045	illegal sexual relations
	046	pornography
	047	soliciting;pandering
	049	other sexual offenses
		CRIMES OF FORGERY, FRAUD AND CONSPIRACY
	050	forgery
	051	fraud
	052	deception/embezzlement
	053	uttering fraudulent instrument
	054	issuing fraudulent instrument
	055	conspiracy
	056	blackmail, extortion
	057	receiving and concealing stolen property
	058	impersonation
	059	other forgery or fraud
		CRIMES OF WEAPONS, DRUGS AND ALCOHOL
	060	violation of weapons laws
	061	violation of liquor laws
	062	violation of narcotics laws
	063	violation of gambling laws
	064	drunk or drinking
	065	city ordinance violations except disorderly conduct
	066	disorderly conduct
	069	other weapon, drug or alcohol offense
		TRAFFIC VIOLATIONS
	070	moving violation
	071	standing violation
	072	operating a motor vehicle without a proper license or registration
	073	operating a motor vehicle under the influence of alcohol or drugs
	079	other traffic or motor vehicle law violations

VARIABLE NAME	CODE	EXPLANATION
		MISCELLANEOUS OFFENSES
	080	escape from custody
	081	interfering with enforcement of law, i.e., obstructing, resisting arrest
	082	habitual criminal
	083	automobile banditry
	084	cruelty to animals
	085	harboring a fugitive
	086	possession of burglary tools
	087	violation of community placement
	088	FTA/bond revocations
	089	appeals
	090	writs
	091	temporary holds
	092	probation/parole violation
	093	protective custody
	094	failure to comply with court order
	095	other
	096	_____
	097	_____
	098	_____
	099	_____
	888	not applicable
ARRESTING AGENCY	01	County
	02	City of _____
	03	City of _____
	04	State Patrol
	05	other state agency
	06	Federal
	07	other county
	08	federal agency
	09	other
	99	unknown
OCCUPATION	01	professional, technical
	02	managerial, administrator
	03	sales
	04	clerical
	05	craftsmen
	06	operators, i.e.,machine operators and factory workers
	07	transportation equipment operators
	08	laborers, except farm
	09	farm labor
	10	service worker
	11	student
	12	no employment history
	99	unknown

VARIABLE NAME	CODE	EXPLANATION
EMPLOYMENT STATUS	1	full time employed
	2	part time employed
	3	unemployed
	4	never employed
	5	retired
	9	unknown
FTA		a one digit # that records the number of FTAs on this offense
MILITARY STATUS	1	active duty
	2	veteran
	3	non-veteran
	4	unknown
BOOKING DATE		date of booking, i.e.,010181
BOOKING TIME		time of booking, i.e., 2340 NOT 11:40 PM
ORIGINAL BOND SET		a five digit number designating the amount of bond set at the timne of booking/maximun amount of bond on the bond schedule
		All "0" = not eligible for bond
SECURITY CLASS.	1	maximum
	2	medium
	3	minimum
	8	not applicable
RELEASE DATE		date of release, i.e.,010281
RELEASE TIME		time of release, i.e., 1850 NOT 6:50 PM
RELEASE STATUS	01	jail sentence completed
	02	acquitted;charges dropped
	03	transferred to state or federal prison
	04	transferred to probation
	05	transferred to parole
	06	bailed/bonded out
	07	released to other jurisdiction with warrant or hold
	08	released to mental health facility
	09	released to medical facility
	10	released to special program
	11	deferred sentencing or prosecution
	12	escape or walk-away
	13	other
	14	fine paid
	15	weekender

VARIABLE NAME	CODE	EXPLANATION
BOND TYPE	01	personal recognizance
	02	cash
	03	surety
	04	property
	05	10% bond
	06	PR w/cosigner
	07	PR w/conditions
	08	PR & surety
	09	PR & cash
	10	cash & surety
	11	PR & property
	12	bond reinstated
	13	
	14	
	88	not applicable
BOND AMOUNT		actual amount of bond posted at time of release (amount paid at time of release or cash value of property or surety) All "0" = not applicable
COURT CASE #		a seven digit number assigned by the court; if 2#'s appear for same arresttime, take last #. All "8" = not applicable. All "9" = unknown.
ATTORNEY	1	private
	2	self/waived
	3	public defender
	4	appointed private
	8	not applicable
	9	unknown

==========End of Card #1==========

CARD #	Card 2
ID #	a four digit number assigned to each case on which data is collected, i.e., 0001, 0002, 0003, etc. (repeat)
INITIAL COURT APPEARANCE	six digit number indicating the date of the first court appearance, i.e., 102581 All "8" = not applicable All "9" = unknown

VARIABLE NAME	CODE	EXPLANATION
JUDGE	1	_____
	2	_____
	3	_____
	4	_____
	5	_____
	6	_____
	7	_____
	8	not applicable
	9	unknown
LAST PRE-TRIAL APPEARANCE		six digit number indicating the date of the last court appearance before trial All "8" = not applicable All "9" = unknown
TRIAL START DATE		six digit number indicating the date the trial started, i.e., 063082
TRIAL END DATE		six digit number indicating the date the trial ended, i.e., 071382
PRE-SENTENCE INVESTIGATION	1	yes
	2	no
	8	not applicable
	9	unknown
SENTENCING DATE		a six digit number designating the date of sentencing
JUDGE (AT SENTENCING)	1	_____
	2	_____
	3	_____
	4	_____
	5	_____
	6	_____
	7	_____
	8	not applicable
	9	unknown
PSI	1	yes
	2	no
SENTENCE	0	license suspended/surrendered
	1	prison
	2	jail
	3	probation
	4	fine
	5	restitution
	6	public service/community service
	7	no like violation for one year
	8	not applicable
	9	unknown

VARIABLE NAME	CODE	EXPLANATION
LENGTH OF JAIL SENTENCE		months/days, i.e., 06/00 All "8" = not applicable All "9" = unknown
POST CONVICTION RELIEF	1	appealed conviction overturned
	2	appealed conviction upheld
	3	sentence modified
	4	pardoned
	5	credit for pre-trial time served
	6	credit for treatment time
	8	not applicalbe
	9	unknown
FINAL DISPOSITION	1	guilty
	2	not guilty
	3	not guilty by reason of insanity
	4	guilty of lesser charge
	5	dismissed/dropped
	8	not applicable
	9	unknown
NCONTINUE		a two digit number that indicates the number of continuances in this case.
PRIOR ARRESTS		a two digit number that indicates the number of prior arrests in this county.
CONVICTIONS		a two digit number that indicates the number of prior convictions in this county.
NVIOLENT		a two digit number that indicates the number of arrests for charges which have been designated as violent offenses.
NFELONY		a two digit number that indicates the number of arrests for felony charges.
NALC		a two digit number that indicates the number of arrests in this county jail for offenses designated as alcohol related.
NDRUG		a two digit number that indicates the number of arrests in this county jail for offenses designated as drug related.

THE FOLLOWING VARIABLES MAY ALL BE ANSWERED BY A "YES" OR "NO" RESPONSE. FOR ALL OF THE FOLLOWING,

1	yes
2	no
9	unknown

TRAUMA	Did the inmate have any signs of trauma or illness requiring emergency care?
UNDERINF	Did the inmate appear to be under the influence of drugs or alcohol?
WITHDRAW	Were there signs of alcohol or drug withdrawal?
SUICIDE	Did behavior suggest the risk of suicide?
ASSAULT	Did behavior suggest the risk of assault to staff or other inmates?
MEDICATE	Was the inmate under medication?
RETREAT	Had the inmate recently been hospitalized or recently seen a medical or psychiatric doctor for any illness?

INCIDENT DATA COLLECTION MATERIALS

METRO COUNTY SHERIFF'S DEPARTMENT

JAIL DIVISION

INCIDENT REPORT FORM

INMATE NAME _____ BOOKING NUMBER _____

HOUSING ASSIGNMENT _____

INCIDENT DATE _____ TIME _____ REPORTING EMPLOYEE _____

REPORT DATE _____ TIME _____ SUPERVISOR _____

LOCATION

____ HOLDING	____ VISITING
____ BOOKING	____ KITCHEN
____ INTAKE SALLYPORT	____ HOUSING UNIT #: 1
____ PERSONAL EFFECTS ROOM	____ " 2
____ ISOLATION	____ " 3
____ CORRIDOR	____ " 4
____ LIBRARY / CLASSROOM	____ " 5
____ EXERCISE	____ OTHER _____

REASON

____ SUICIDAL	____ ARSON
____ VIOLENT	____ PROTECTIVE CUSTODY
____ ILLNESS	____ CONTRABAND VIOLATION
____ ACCIDENTAL INJURY	____ ESCAPE ATTEMPT / RISK
____ CAUSING A DISTURBANCE	____ REFUSAL TO OBEY AN ORDER
____ HARMING / THREATENING STAFF	____ DESTRUCTION OF JAIL PROPERTY
____ HARMING / THREATENING INMATE	____ OTHER _____

INCIDENT DESCRIPTION (including who was involved, what happened, where the incident occurred, what caused it, etc.) _____

RULE VIOLATION MAJOR ____ MINOR ____ NO ____

IS A C. R. NEEDED? YES ____ # _____ NO ____

DISCIPLINARY ACTION

MAJOR VIOLATION

____ MOVE TO ISOLATION

____ MOVE TO MAXIMUM SECURITY

____ MOVE TO ADMINISTRATIVE SEGREGATION

____ MOVE TO _____

MINOR VIOLATION

____ NO ACTION

____ VERBAL REPRIMAND

____ 48 HOUR LOSS OF PRIVILEGE _____

_____

____ 24 HOUR LOCK-DOWN

____ OVER 48 HOUR LOSS OF PRIVILEGE

_____

____ OTHER _____

USE OF RESTRAINTS

____ NONE NEEDED

____ PHYSICAL

____ MECHANICAL

INJURY TO

____ STAFF

____ INMATE

____ OTHER _____

DISCIPLINARY REVIEW BOARD REQUIRED YES ____ NO ____

DATE OF REVIEW BOARD _____

DATE NOTICE SERVED _____

GRIEVANCE FILED YES ____ NO ____

ADDITIONAL COMMENTS _____

_____

_____

_____

_____

_____

_____

_____

_____

ADMINISTRATIVE REVIEW AND APPROVAL

COMPLETED BY

CORRECTIONS OFFICER _____ DATE _____

SHIFT SUPERVISOR _____ DATE _____

JAIL ADMINISTRATOR _____ DATE _____

INCIDENT REPORT CODE BOOK

VARIABLE	CODE	EXPLANATION
BOOKING #		The six digit number which was assigned to the inmate during the booking process.
HOUSING ASSIGNMENT	11	Housing Unit #1 (maximum security)
	12	Housing Unit #2 (medium security)
	13	Housing Unit #3 (minimum security)
	14	Housing Unit #4 (work release)
	15	Housing Unit #5 (women's unit)
LOCATION OF INCIDENT	01	Holding
	02	Booking
	03	Intake sallyport
	04	Personal effects room
	05	Isolation
	06	Corridor
	07	Library/classromm
	08	Exercise
	09	Visiting
	10	Kitchen
	11	Housing Unit #1 (maximum security)
	12	Housing Unit #2 (medium security)
	13	Housing Unit #3 (minimum security)
	14	Housing Unit #4 (work release)
	15	Housing Unit #5 (women's unit)
	16	Other
	88	Not applicable
	99	Unknown
REASON	01	Suicidal
	02	Violent
	03	Illness
	04	Accidental injury
	05	Causing a disturbance
	06	Harming/threatening staff
	07	Harming/threatening inmate
	08	Arson
	09	Protective custody
	10	Contraband violation
	11	Escape attempt/risk
	12	Refusal to obey an order
	13	Destruction of Jail property
	14	Other
	88	Not applicable
	99	Unknown
RULE VIOLATION	1	Major
	2	Minor
	3	No
CR REQUIRED	1	Yes
	2	No

VARIABLE	CODE	EXPLANATION
MAJOR VIOLATION	1	Move to isolation
	2	Move to maximum security
	3	Move to administrative segregation
	4	Move to other
	8	Not applicable
	9	Unknown
MINOR VIOLATION	1	No action
	2	Verbal reprimand
	3	48 hour loss of privilege
	4	24 hour lock-down
	5	Over 48 hour loss of privilege
	6	Other
	8	Not applicable
	9	Unknown
PRIVILEGE	1	Contact visitation
	2	Exercise
	3	Library
	4	Program participation
	5	Television
	6	Non-attorney telephone
	7	Other
	8	Not applicable
	9	Unknown
USE OF RESTRAINTS	1	None needed
	2	Physical
	3	Mechanical
	8	Not applicable
	9	Unknown
INJURY TO	1	Staff
	2	Inmate
	3	Other
	8	Not applicable
	9	Unknown
REVIEW BOARD	1	Yes
	2	No
	8	Not applicable
	9	Unknown
DATE OF REVIEW		A six digit number which documents the date of the review board hearing.
DATE NOTICE SERVED		A six digit number which documents the date on which the inmate was served notice of the review board.
GRIEVANCE	1	Yes
	2	No
	8	Not applicable
	9	Unknown

METRO COUNTY SHERIFF'S DEPARTMENT
JAIL DIVISION

TRANSPORT LOG FORM

OFFICER

NAME _____ O. T. / COMP YES ____ NO ____
NAME _____ O. T. / COMP YES ____ NO ____
NAME _____ O. T. / COMP YES ____ NO ____

REASON

____ EMERGENCY ROOM TREATMENT
____ SCHEDULED MEDICAL APPOINTMENT
____ COURT APPEARANCE
____ WARRANT PICK-UP
____ RETURN TO OTHER JURISDICTION
____ TRANSPORT TO STATE INSTITUTION
____ TRANSPORT TO STATE HOSPITAL
____ TRANSPORT TO TREATMENT FACILITY
____ COURT ORDERED
____ OTHER _____

DATE _____

PRISONER / **LOCATION**

NAME _____	FROM _____ TO _____
NAME _____	FROM _____ TO _____
NAME _____	FROM _____ TO _____
NAME _____	FROM _____ TO _____
NAME _____	FROM _____ TO _____
NAME _____	FROM _____ TO _____
NAME _____	FROM _____ TO _____
NAME _____	FROM _____ TO _____
NAME _____	FROM _____ TO _____
NAME _____	FROM _____ TO _____
NAME _____	FROM _____ TO _____

TIME DEPARTURE _____
RETURN _____

MEALS $ _____
$ _____
$ _____

VEHICLE ODOMETER START _____
ODOMETER END _____

____ VAN ____ CAR # _____
____ OTHER _____

CLEANLINESS GOOD FAIR POOR

MECHANICAL CONDITION GOOD FAIR POOR

GAS COST _____ # GALLONS PURCHASED _____ # GALLONS TO FILL ON RETURN _____

PROBLEMS _____

TRANSPORT LOG CODE BOOK

VARIABLE NAME	CODE	EXPLANATION
OT/COMP	1	Yes
	2	No
	8	Not applicable
	9	Unknown
REASON	01	Emergency room treatment
	02	Scheduled medical, dental or other treatment appointment
	03	Court appearance outside of Justice Center
	04	Pick-up in another jurisdiction on Metro County warrant
	05	Return from Metro County to another jurisdiction on their warrant
	06	Transport to State Department of Corrections institution
	07	Transport to State Hospital
	08	Transport to treatment facility, including halfway house
	09	Court ordered
	10	Other
	88	Not applicable
	99	Unknown
LOCATION	01	Hospital
	02	Doctor's office
	03	Dentist's office
	04	Psychiatrist's office
	05	Mental health clinic
	06	Public health department
	07	Other health related transport
	08	State prison
	09	State reformatory
	10	State hospital
	11	Veteran's hospital
	12	Halfway house
	13	Other treatment placement
	14	County #1
	15	County #2
	16	County #3
	17	County #4
	18	County #5
	19	County #6
		etc.
	50	Civil Court
	51	District Court
	52	County Court
	53	Juvenile Court
	54	Municipal Court

VARIABLE NAME	CODE	EXPLANATION
	55	Other court
	88	Not applicable
	98	Your county Jail
	99	Unknown
DEPARTURE TIME		A four digit number on the 24 hour clock that designates the time officers left the Jail or the transport.
RETURN TIME		A four digit number on the 24 hour clock that designates the time officers returned to the Jail from the transport.
MEALS		A three digit number that indicates in dollars and cents the amount of money spent for food during the transport.
ODOMETER START		A six digit number that records the odometer reading on the vehicle at departure.
ODOMETER END		A six digit number that records the odometer reading on the vehicle on return from the transport.
TYPE	1	Van
	2	Car
	3	Other
	8	Not applicable
	9	Unknown
CAR NUMBER		A two digit number that documents the fleet vehicle number of the car used on the transport.
CLEANLINESS	3	Good
	2	Fair
	1	Poor
MECHANICAL CONDITION	3	Good
	2	Fair
	1	Poor
GAS COST		A four digit number that documents the amount of money in dollars and cents spent to purchase gasoline on the transport.
# GALLONS		A three digit number that documents the number of gallons of gasoline that were purchased on the transport.
# GALLONS TO FILL		A three digit number that records the number of gallons of gasoline that were required to refuel on return from the transport.

APPENDIX K:

TABLES FOR DETERMINING SAMPLE SIZE

This section is reprinted from Statistical Sampling Methods for Correctional Planners, by Edward Lakner, prepared at the National Clearinghouse for Criminal Justice Planning and Architecture and published by the University of Illinois at Urbana-Champaign, in 1976, pp. 68-71.

In this section, tables are presented of the sample sizes needed to estimate proportions in selected populations at the 95 and 99 percent confidence levels, with allowable errors of + & - 2,3, and 5%. By interpolating between the marginal values of the table (the expected rate of occurrence and the size of the population), approximate intermediate sample sizes may be found. Exact sample sizes for proportions and population sizes not listed in the tables can be found by the solution of Formulas (5.2) and (5.3). [These are listed in the text of this Manual.]

	EXPECTED RATE OF OCCURRENCE IN THE POPULATION					
POPULATION SIZE	5% or 95%	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
500	239	316	377	400	410	413
1,000	314	464	606	669	697	706
1,500	350	549	758	859	907	922
2,000	372	604	869	1,004	1,071	1,091
2,500	386	642	952	1,117	1,200	1,225
10,000	436	796	1,332	1,678	1,873	1,936
50,000	452	850	1,491	1,939	2,203	2,291
100,000+	456	863	1,532	2,009	2,294	2,390

TABLE 34: SAMPLE SIZE FOR RELIABILITY OF + - 2% AT THE 95% CONFIDENCE LEVEL

	EXPECTED RATE OF OCCURRENCE IN THE POPULATION					
POPULATION SIZE	5% or 95%	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
500	144	217	288	320	336	340
1,000	169	278	406	473	506	551
1,500	179	306	470	561	609	624
2,000	184	322	509	619	678	696
2,500	188	333	537	660	727	748
10,000	199	370	639	823	929	964
50,000	202	381	674	881	1,004	1,045
100,000+	203	384	682	895	1,023	1,065

TABLE 35: SAMPLE SIZE FOR RELIABILITY OF + - 3% AT THE 95% CONFIDENCE LEVEL

	EXPECTED RATE OF OCCURRENCE IN THE POPULATION					
POPULATION SIZE	5% or 95%	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
500	64	108	165	196	213	217
1,000	68	121	198	244	262	278
1,500	70	126	211	269	297	306
2,000	70	130	219	278	312	322
2,500	71	131	224	286	322	333
10,000	72	136	240	313	356	370
50,000	72	137	245	432	367	381
100,000+	73	138	246	322	369	384

TABLE 36: SAMPLE SIZE FOR RELIABILITY OF + - 5% AT THE 95% CONFIDENCE LEVEL

	EXPECTED RATE OF OCCURRENCE IN THE POPULATION					
POPULATION SIZE	5% or 95%	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
500	305	374	420	437	444	446
1,000	441	598	725	776	798	804
1,500	517	748	957	1,047	1,087	1,099
2,000	565	855	1,138	1,267	1,328	1,346
2,500	599	935	1,284	1,451	1,531	1,901
10,000	731	1,299	2,098	2,5843	2,848	2,932
50,000	776	1,450	2,520	3,257	3,688	3,830
100,000+	787	1,489	2,640	3,460	3,950	4,113

TABLE 37: SAMPLE SIZE FOR RELIABILITY OF + - 2% AT THE 95% CONFIDENCE LEVEL

	EXPECTED RATE OF OCCURRENCE IN THE POPULATION					
POPULATION SIZE	5% or 95%	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
500	206	285	351	378	390	393
1,000	260	399	541	607	638	647
1,500	284	460	661	761	788	826
2,000	298	498	742	873	939	959
2,500	307	414	801	955	1,036	1,061
10,000	338	662	1,055	1,341	1,504	1,556
50,000	348	655	1,152	1,502	1,709	1,778
100,000+	350	663	1,177	1,544	1,763	1,836

TABLE 38: SAMPLE SIZE FOR RELIABILITY OF + - 3% AT THE 95% CONFIDENCE LEVEL

	EXPECTED RATE OF OCCURRENCE IN THE POPULATION					
POPULATION SIZE	5% or 95%	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
500	101	162	230	263	280	285
1,000	112	194	298	358	389	399
1,500	116	207	331	407	447	460
2,000	119	214	350	436	483	498
2,500	120	219	363	457	508	525
10,000	124	234	407	528	599	622
50,000	125	239	421	551	629	655
100,000+	126	240	424	557	636	663

TABLE 39: SAMPLE SIZE FOR RELIABILITY OF + - 5% AT THE 95% CONFIDENCE LEVEL

APPENDIX L:

SIMPLE RANDOM SAMPLING

This Appendix is taken directly from Practical Research: Planning and Design, by Paul D. Leedy, published by MacMillan Publishers, 1974, pp. 93-99. simple random sampling theory and practice is described in considerable detail.

TYPES, METHODS AND PROCEDURES OF SAMPLING

One basic rule holds whenever a researcher is considering methodology in relation to data - it matters not whether this methodology concerns sampling, a statistical procedure, or any other type of operation, and that one basic rule is: Look carefully at the nature, the characteristics, the quality of the data. After the researcher sees this clearly, he can then more intelligently select the proper methodology for the treatment of those data.

The composition of the sample is derived by selecting the sample units from those of a much larger population. In survey studies the manner in which the sample units are selected is very important. Generally, the components of the sample are chosen from the population universe by a process known as randomization. Such a sample is a random sample. The two elements that are more important than any others in survey research are randomization and bias. We shall discuss randomization here....

Randomization means selecting a part of the whole population in such a way that the characteristics of each of the units of the sample approximate the broad characteristics inherent in the total population. Let's explain that. I have a beaker which contains 100 cc. of water. I have in another container a concentrated solution of 10 cc. of acid. I combine the water and the acid in proportions of 10 to 1. After thoroughly mixing the water and the acid, I should be able to extract 1 cc. from any part of the solution and find in that 1-cc. sample a mixture of water and acid in precisely a 10:1 proportion. Just so, if we have a conglomerate population with variables such as differences of race, wealth ,education, and other factors, and if I have a perfectly selected random sample (a situation which is more theoretical than practical), I will find in the sample those same characteristics of race, wealth, education, and so forth that exist in the larger population universe.

A sample is no more representative of the total population, therefore, than the validity of the method of randomization employed in selecting it. There are, of course, many methods of random selection. We shall look at merely a few of the more common ones.

The Roulette Wheel Method. If the population is small -- fifty to seventy-five individuals -- each individual may be assigned a number in some orderly sequence: alphabetically by surname, by birth date (youngest to oldest or the reverse), by the respective weight of each individual, or by any other systematic arrangement. Corresponding numbers are on a roulette wheel. A spin of the wheel and its fortuitous stopping at a particu-

lar number selects the individaul assigned to that number as a unit of the sample. The process of spinning the wheel and selecting the sample unit goes on until all the individuals needed to compose the sample have been chosen.

The Lottery Method. In the lottery method the population again is arranged sequentially and assigned a numerical identification. Corresponding numbers are marked on separate tabs and put into a revolving drum or closed container. The numbers are tossed so that they are thoroughly intermixed. Then one tab bearing a number is selected from the total number of tabs in the container without the selector seeing the pool. The number is recorded and the tab is then tossed back into the tab pool. This is an important feature of the lottery method. It ensures that every individual has the same chance of being chosen as every other individual. If, for example, we are selecting fifty units out of a population of 100 and we do not cast each tab back after it has been selected, we will have an ever-diminishing population from which to make the choices. And whereas the first choice would have one in 100 chances of being selected, the last unit chosen would have one in fifty chances of being selected or, in other words, his chances of being selected would be twice as great as those of the first individual.

In the event of the same number being drawn twice, the second drawing is ignored; the number is returned to the pool; the entire mass of numbers is tumbled again, and another drawing is made. Drawing and tumbling go on until fifty tabs have been selected purely by chance.

The Table of Random Numbers Method. The table of random numbers method is perhaps the most frequently used method for the random selection of a sample. Following is a part of a table of random numbers. We may employ this table in any manner in which we choose to use it. Generally the researcher enters the table according to some predetermined method.

Entrance into the table may, in fact, be accomplished in many ways. One fundamental principle must be kept in mind, however: the purpose of randomness is to permit blind chance to determine the outcomes of the selection process to as great a degree as possible. Hence, in determining a starting point for the selection of random numbers, chance must be given free reign.

Consider the following tables of random numbers (Tables 40-43). Considering the second table (Table 41) as a continuation of the first table (Table 40), and counting from left to right, there are five blocks of random numbers in the horizontal arrangement. Vertically there are ten blocks from top to bottom of the table.

TABLE 40

Table of Random Numbers (I)

03 47 43 73 86	36 96 47 36 61	46 98 63 71 62	33 26 16 80 45	60 11 14 10 95
97 74 24 67 62	42 81 14 57 20	42 53 32 37 32	27 07 36 07 51	24 51 79 89 73
16 76 62 27 66	56 50 26 71 07	32 90 79 78 53	13 55 38 58 59	88 97 54 14 10
12 56 85 99 26	96 96 68 27 31	05 03 72 93 15	57 12 10 14 21	88 26 49 81 76
55 59 56 35 64	38 54 82 46 22	31 62 43 09 90	06 18 44 32 53	23 83 01 30 30
16 22 77 94 39	49 54 43 54 82	17 37 93 23 78	87 35 20 96 43	84 26 34 91 64
84 42 17 53 31	57 24 55 06 88	77 04 74 47 67	21 76 33 50 25	83 92 12 06 76
63 01 63 78 59	16 95 55 67 19	98 10 50 71 75	12 86 73 58 07	44 39 52 38 79
33 21 12 34 29	78 64 56 07 82	52 42 07 44 38	15 51 00 13 42	99 66 02 79 54
57 60 86 32 44	09 47 27 96 54	49 17 46 09 62	90 52 84 77 27	08 02 73 43 28
18 18 07 92 46	44 17 16 58 09	79 83 86 19 62	06 76 50 03 10	55 23 64 05 05
26 62 38 97 75	84 16 07 44 99	83 11 46 32 24	20 14 85 88 45	10 93 72 88 71
23 42 40 64 74	82 97 77 77 81	07 45 32 14 08	32 98 94 07 72	93 85 79 10 75
62 36 28 19 95	50 92 26 11 97	00 56 76 31 38	80 22 02 53 53	86 60 42 04 53
37 85 94 35 12	83 39 50 08 30	42 34 07 96 88	54 42 06 87 98	35 85 29 48 39
70 29 17 12 13	40 33 20 38 26	13 89 51 03 74	17 76 37 13 04	07 74 21 19 30
56 62 18 37 35	96 83 50 87 75	97 12 25 93 47	70 33 24 03 54	97 77 46 44 80
99 49 57 22 77	88 42 95 45 72	16 64 36 16 00	04 43 18 66 79	94 77 24 21 90
16 08 15 04 72	33 27 14 34 09	45 59 34 68 49	12 72 07 34 45	99 27 72 95 14
31 16 93 32 43	50 27 89 87 19	20 15 37 00 49	52 85 66 60 44	38 68 88 11 80
68 34 30 13 70	55 74 30 77 40	44 22 78 84 26	04 33 46 09 52	68 07 97 06 57
74 57 25 65 76	59 29 97 68 60	71 91 38 67 54	13 58 18 24 76	15 54 55 95 52
27 42 37 86 53	48 55 90 65 72	96 57 69 36 10	96 46 92 42 45	97 60 49 04 91
00 39 68 29 61	66 37 32 20 30	77 84 57 03 29	10 45 66 04 26	11 04 96 67 24
29 94 98 94 24	68 49 69 10 82	53 75 91 93 30	34 25 20 57 27	40 48 73 51 92
16 90 82 66 59	83 62 64 11 12	67 19 00 71 74	60 47 21 29 68	02 02 37 03 31
11 27 94 75 06	06 09 19 74 66	02 94 37 34 02	76 70 90 30 86	38 45 94 30 38
35 24 10 16 20	33 32 51 26 38	79 78 45 04 91	16 92 53 56 16	02 75 50 95 98
38 23 16 86 38	42 38 97 01 50	87 75 66 81 41	40 01 74 91 62	48 51 84 08 32
31 96 25 91 47	96 44 33 49 13	34 86 82 53 91	00 52 43 48 85	27 55 26 89 62
66 67 40 67 14	64 05 71 95 86	11 05 65 09 68	76 83 20 37 90	57 16 00 11 66
14 90 84 45 11	75 73 88 05 90	52 27 41 14 86	22 98 12 22 08	07 52 74 95 80
68 05 51 18 00	33 96 02 75 19	07 60 62 93 55	59 33 82 43 90	49 37 38 44 59
20 46 78 73 90	97 51 40 14 02	04 02 33 31 08	39 54 16 49 36	47 95 93 13 30
64 19 58 97 79	15 06 15 93 20	01 90 10 75 06	40 78 78 89 62	02 67 74 17 33
05 26 93 70 60	22 35 85 15 13	92 03 51 59 77	59 56 78 06 83	52 91 05 70 74
07 97 10 88 23	09 98 42 99 64	61 71 62 99 15	06 51 29 16 93	58 05 77 09 51
68 71 86 85 85	54 87 66 47 54	73 32 08 11 12	44 95 92 63 16	29 56 24 29 48
26 99 61 65 53	58 37 78 80 70	42 10 50 67 42	32 17 55 85 74	94 44 67 16 94
14 65 52 68 75	87 59 36 22 41	26 78 63 06 55	13 08 27 01 50	15 29 39 39 43
17 53 77 58 71	71 41 61 50 72	12 41 94 96 26	44 95 27 36 99	02 96 74 30 83
90 26 59 21 19	23 52 23 33 12	96 93 02 18 39	07 02 18 36 07	25 99 32 70 23
41 23 52 55 99	31 04 49 69 96	10 47 48 45 88	13 41 43 89 20	97 17 14 49 17
60 20 50 81 69	31 99 73 68 68	35 81 33 03 76	24 30 12 48 60	18 99 10 72 34
91 25 38 05 90	94 58 28 41 36	45 37 59 03 09	90 35 57 29 12	82 62 54 65 60
34 50 57 74 37	98 80 33 00 91	09 77 93 19 82	74 94 80 04 04	45 07 31 66 49
85 22 04 39 43	73 81 53 94 79	33 62 46 86 28	08 31 54 46 31	53 94 13 38 47
09 79 13 77 48	73 82 97 22 21	05 03 27 24 83	72 89 44 05 60	35 80 39 94 88
88 75 80 18 14	22 95 75 42 49	39 32 82 22 49	02 48 07 70 37	16 04 61 67 87
90 96 23 70 00	39 00 03 06 90	55 85 78 38 36	94 37 30 69 32	90 89 00 76 33

From Ronald A. Fisher and Frank Yates, *Statistical Tables for Biological, Agricultural, and Medical Research* (New York: Hafner, 1963).

TABLE 41
Table of Random Numbers (II)

53 74 23 99 67	61 32 28 69 84	94 62 67 86 24	98 33 41 19 95	47 53 53 38 09
63 38 06 86 54	99 00 65 26 94	09 82 90 23 07	79 62 67 80 60	75 91 12 81 19
35 30 58 21 46	06 72 17 10 94	25 21 31 75 96	49 28 24 00 49	55 65 79 78 07
63 43 36 82 69	65 51 18 37 88	61 38 44 12 45	32 92 85 88 65	54 34 81 85 35
98 25 37 55 26	01 91 82 81 46	74 71 12 94 97	24 02 71 37 07	03 92 18 66 75
02 63 21 17 69	71 50 80 89 56	38 15 70 11 48	43 40 45 86 98	00 83 26 91 03
64 55 22 21 82	48 22 28 06 00	61 54 13 43 91	82 78 12 23 29	06 66 24 12 27
85 07 26 13 89	01 10 07 82 04	59 63 69 36 03	69 11 15 83 80	13 29 54 19 28
58 54 16 24 15	51 54 44 82 00	62 61 65 04 69	38 18 65 18 97	85 72 13 49 21
34 85 27 84 87	61 48 64 56 26	90 18 48 13 26	37 70 15 42 57	65 65 80 39 07
03 92 18 27 46	57 99 16 96 56	30 33 72 85 22	84 64 38 56 98	99 01 30 98 64
62 95 30 27 59	37 75 41 66 48	86 97 80 61 45	23 53 04 01 63	45 76 08 64 27
08 45 93 15 22	60 21 75 46 91	98 77 27 85 42	28 88 61 08 84	69 62 03 42 73
07 08 55 18 40	45 44 75 13 90	24 94 96 61 02	57 55 66 83 15	73 42 37 11 61
01 85 89 95 66	51 10 19 34 88	15 84 97 19 75	12 76 39 43 78	64 63 91 08 25
72 84 71 14 35	19 11 58 49 26	50 11 17 17 76	86 31 57 20 18	95 60 78 46 75
88 78 28 16 84	13 52 53 94 53	75 45 69 30 96	73 89 65 70 31	99 17 43 48 76
45 17 75 65 57	28 40 19 72 12	25 12 74 75 67	60 40 60 81 19	24 62 01 61 16
96 76 28 12 54	22 01 11 94 25	71 96 16 16 88	68 64 36 74 45	19 59 50 88 92
43 31 67 72 30	24 02 94 08 63	38 32 36 66 02	69 36 38 25 39	48 03 45 15 22
50 44 66 44 21	66 06 58 05 62	68 15 54 35 02	42 35 48 96 32	14 52 41 52 48
22 66 22 15 86	26 63 75 41 99	58 42 36 72 24	58 37 52 18 51	03 37 18 39 11
96 24 40 14 51	23 22 30 88 57	95 67 47 29 83	94 69 40 06 07	18 16 36 78 86
31 73 91 61 19	60 20 72 93 48	98 57 07 23 69	65 95 39 69 58	56 80 30 19 44
78 60 73 99 84	43 89 94 36 45	56 69 47 07 41	90 22 91 07 12	78 35 34 08 72
84 37 90 61 56	70 10 23 98 05	85 11 34 76 60	76 48 45 34 60	01 64 18 39 96
36 67 10 08 23	98 93 35 08 86	99 29 76 29 81	33 34 91 58 93	63 14 52 32 52
07 28 59 07 48	89 64 58 89 75	83 85 62 27 89	30 14 78 56 27	86 63 59 80 02
10 15 83 87 60	79 24 31 66 56	21 48 24 06 93	91 98 94 05 49	01 47 59 38 00
55 19 68 97 65	03 73 52 16 56	00 53 55 90 27	33 42 29 38 87	22 13 88 83 34
53 81 29 13 39	35 01 20 71 34	62 33 74 82 14	53 73 19 09 03	56 54 29 56 93
51 86 32 68 92	33 98 74 66 99	40 14 71 94 58	45 94 19 38 81	14 44 99 81 07
35 91 70 29 13	80 03 54 07 27	96 94 78 32 66	50 95 52 74 33	13 80 55 62 54
37 71 67 95 13	20 02 44 95 94	64 85 04 05 72	01 32 90 76 14	53 89 74 60 41
93 66 13 83 27	92 79 64 64 72	28 54 96 53 84	48 14 52 98 94	56 07 93 89 30
02 96 08 45 65	13 05 00 41 84	93 07 54 72 59	21 45 57 09 77	19 48 56 27 44
49 83 43 48 35	82 88 33 69 96	72 36 04 19 96	47 45 15 18 60	82 11 08 95 97
84 60 71 62 46	40 80 81 30 37	34 39 23 05 38	25 15 35 71 30	88 12 57 21 77
18 17 30 88 71	44 91 14 88 47	89 23 30 63 15	56 34 20 47 89	99 82 93 24 98
79 69 10 61 78	71 32 76 95 62	87 00 22 58 62	92 54 01 75 25	43 11 71 99 31
75 93 36 57 83	56 20 14 82 11	74 21 97 90 65	96 42 68 63 86	74 54 13 26 94
38 30 92 29 03	06 28 81 39 38	62 25 06 84 63	61 29 08 93 67	04 32 92 08 09
51 29 50 10 34	31 57 75 95 80	51 97 02 74 77	76 15 48 49 44	18 55 63 77 09
21 31 38 86 24	37 79 38 86 24	37 79 81 53 74	73 24 16 10 33	70 47 14 54 36
29 01 23 87 88	58 02 39 37 67	42 10 14 20 92	16 55 23 42 45	54 96 09 11 06

Directions: Having enumerated the population (in whatever order they happen to be listed) (say, N = 582), select at random any three columns (so as to allow for all cases); say, Columns 6, 7, and 8. Reading from page 1, individuals No. 373, 467, 227, 599 . . . would be part of the sample; 635 would be ignored since no one was assigned that number. The process would be continued—going on to the next page or any other 3-digit block—until the required sample size had been obtained.

In a reduction of the first table (Table 42), for illustrative purposes, we have numbered the horizontal blocks as 1,2,3,4,5: and these blocks from top downward from 1 to 0. The table, therefore looks like this:

Table of Random Numbers (I)

	(1)	(2)	(3)	(4)	(5)
	03 47 43 73 86	36 96 47 36 61	46 98 63 71 62	33 26 16 80 45	60 11 14 10 95
	97 74 24 67 62	42 81 14 57 20	42 53 32 37 32	27 07 36 07 51	24 51 79 89 73
(1)	16 76 62 27 66	56 50 26 71 07	32 90 79 78 53	13 55 38 58 59	88 97 54 14 10
	12 56 85 99 26	96 96 68 27 31	05 03 72 93 15	57 12 10 14 21	88 26 49 81 76
	55 59 56 35 64	38 54 82 46 22	31 62 43 09 90	06 18 44 32 53	23 83 01 30 30
	16 22 77 94 39	49 54 43 54 82	17 37 93 23 78	87 35 20 96 43	84 26 34 91 64
	84 42 17 53 31	57 24 55 06 88	77 04 74 47 67	21 76 33 50 25	83 92 12 06 76
(2)	63 01 63 78 59	16 95 55 67 19	98 10 50 71 75	12 86 73 58 07	44 39 52 38 79
	33 21 12 34 29	78 64 56 07 82	52 42 07 44 38	15 51 00 13 42	99 66 02 79 54
	57 60 86 32 44	09 47 27 96 54	49 17 46 09 62	90 52 84 77 27	08 02 73 43 28
	18 18 07 92 46	44 17 16 58 09	79 83 86 19 62	06 76 50 03 10	55 23 64 05 05
	26 62 38 97 75	84 16 07 44 99	83 11 46 32 24	20 14 85 88 45	10 93 72 88 71
(3)	23 42 40 64 74	82 97 77 77 81	07 45 32 14 08	32 98 94 07 72	93 85 79 10 75
	62 36 28 19 95	50 92 26 11 97	00 56 76 31 38	80 22 02 53 53	86 60 42 04 53
	37 85 94 35 12	83 39 50 08 30	42 34 07 96 88	54 42 06 87 98	35 85 29 48 39
	70 29 17 12 13	40 33 20 38 26	13 89 51 03 74	17 76 37 13 04	07 74 21 19 30
	56 62 18 37 35	96 83 50 87 75	97 12 25 93 47	70 33 24 03 54	97 77 46 44 80
(4)	99 49 57 22 77	88 42 95 45 72	16 64 36 16 00	04 43 18 66 79	94 77 24 21 90
	16 08 15 04 72	33 27 14 34 09	45 59 34 68 49	12 72 07 34 45	99 27 72 95 14
	31 16 93 32 43	50 27 89 87 19	20 15 37 00 49	52 85 66 60 44	38 68 88 11 80
	68 34 30 13 70	55 74 30 77 40	44 22 78 84 26	04 33 46 09 52	68 07 97 06 57
	74 57 25 65 76	59 29 97 68 60	71 91 38 67 54	13 58 18 24 76	15 54 55 95 52
(5)	27 42 37 86 53	48 55 90 65 72	96 57 69 36 10	96 46 92 42 45	97 60 49 04 91
	00 39 68 29 61	66 37 32 20 30	77 84 57 03 29	10 45 66 04 26	11 04 96 67 24
	29 94 98 94 24	68 49 69 10 82	53 75 91 93 30	34 25 20 57 27	40 48 73 51 92
	16 90 82 66 59	83 62 64 11 12	67 19 00 71 74	60 47 21 29 68	02 02 37 03 31
	11 27 94 75 06	06 09 19 74 66	02 94 37 34 02	76 70 90 30 86	38 45 94 30 38
(6)	35 24 10 16 20	33 32 51 26 38	79 78 45 04 91	16 92 53 56 16	02 75 50 95 98
	38 23 16 86 38	42 38 97 01 50	87 75 66 81 41	40 01 74 91 62	48 51 84 08 32
	31 96 25 91 47	96 44 33 49 13	34 86 82 53 91	00 52 43 48 85	27 55 26 89 62
	66 67 40 67 14	64 05 71 95 86	11 05 65 09 68	76 83 20 37 90	57 16 00 11 66
	14 90 84 45 11	75 73 88 05 90	52 27 41 14 86	22 98 12 22 08	07 52 74 95 80
(7)	68 05 51 18 00	33 96 02 75 19	07 60 62 93 55	59 33 82 43 90	49 37 38 44 59
	20 46 78 73 90	97 51 40 14 02	04 02 33 31 08	39 54 16 49 36	47 95 93 13 30
	64 19 58 97 79	15 06 15 93 20	01 90 10 75 06	40 78 78 89 62	02 67 74 17 33
	05 26 93 70 60	22 35 85 15 13	92 03 51 59 77	59 56 78 06 83	52 91 05 70 74
	07 97 10 88 23	09 98 42 99 64	61 71 62 99 15	06 51 29 16 93	58 05 77 09 51
(8)	68 71 86 85 85	54 87 66 47 54	73 32 08 11 12	44 95 92 63 16	29 56 24 29 48
	26 99 61 65 53	58 37 78 80 70	42 10 50 67 42	32 17 55 85 74	94 44 67 16 94
	14 65 52 68 75	87 59 36 22 41	26 78 63 06 55	13 08 27 01 50	15 29 39 39 43
	17 53 77 58 71	71 41 61 50 72	12 41 94 96 26	44 95 27 36 99	02 96 74 30 83
	90 26 59 21 19	23 52 23 33 12	96 93 02 18 39	07 02 18 36 07	25 99 32 70 23
(9)	41 23 52 55 99	31 04 49 69 96	10 47 48 45 88	13 41 43 89 20	97 17 14 49 17
	60 20 50 81 69	31 99 73 68 68	35 81 33 03 76	24 30 12 48 60	18 99 10 72 34
	91 25 38 05 90	94 58 28 41 36	45 37 59 03 09	90 35 57 29 12	82 62 54 65 60
	34 50 57 74 37	98 80 33 00 91	09 77 93 19 82	74 94 80 04 04	45 07 31 66 49
	85 22 04 39 43	73 81 53 94 79	33 62 46 86 28	08 31 54 46 31	53 94 13 38 47
(0.)	09 79 13 77 48	73 82 97 22 21	05 03 27 24 83	72 89 44 05 60	35 80 39 94 88
	88 75 80 18 14	22 95 75 42 49	39 32 82 22 49	02 48 07 70 37	16 04 61 67 87
	90 96 23 70 00	39 00 03 06 90	55 85 78 38 36	94 37 30 69 32	90 89 00 76 33

From Ronald A. Fisher and Frank Yates, *Statistical Tables for Biological, Agricultural, and Medical Research* (New York: Hafner, 1963).

TABLE 42

The horizontal and vertical number of the columns gives us locational designations for determining intersecting axes and, thus, a starting point within the table. To determine the point of axial intersection and to get a starting point, you might engage in any one of several fortuitous activities. The purpose of any of these is to select two digits purely by chance. Here are some suggestions.

Use a telephone directory. Open a telephone directory at random. Take the last two digits of the first number in the first column on either the left-hand or right-hand page. Let the first digit of those chosen be the designating digit of the horizontal column of the table of random numbers; the second digit will, then, indicate the number of the vertical column. The intersection of the two columns will indicate the block where you will begin within the table to select your random numbers., either in an upward or in a downward succession along the vertical column.

Note a vehicle registration tag. Step outside and observe the first vehicle which passes. Note the last (or first) two digits of the registration tag. The first digit will give you the horizontal column designation; the second digit, the vertical column. Where they intersect is your place of beginning within the table.

Look at a dollar bill. Note the first two digits of the serial number in the lower left- or upper right-hand corner to determine the axial locations.

Check the stock quotations. Take any newspaper and turn to the stock quotation page. Take the first letter of your surname. The first stock which begins with that letter will be your predetermined stock; note its quatation for high and low. Disregard the fractional quotations. Take the first two digits in either the high or low quatation column; or if only one digit appears in each column, take the two digits together.

Having arrived at the digital block location, the next step is to determine the size of the proposed sample. If it is to be less than 100 individuals, we shall select only two-digit numbers; if it is to be less than 1,000, we shall need three digits to accommodate the sample size.

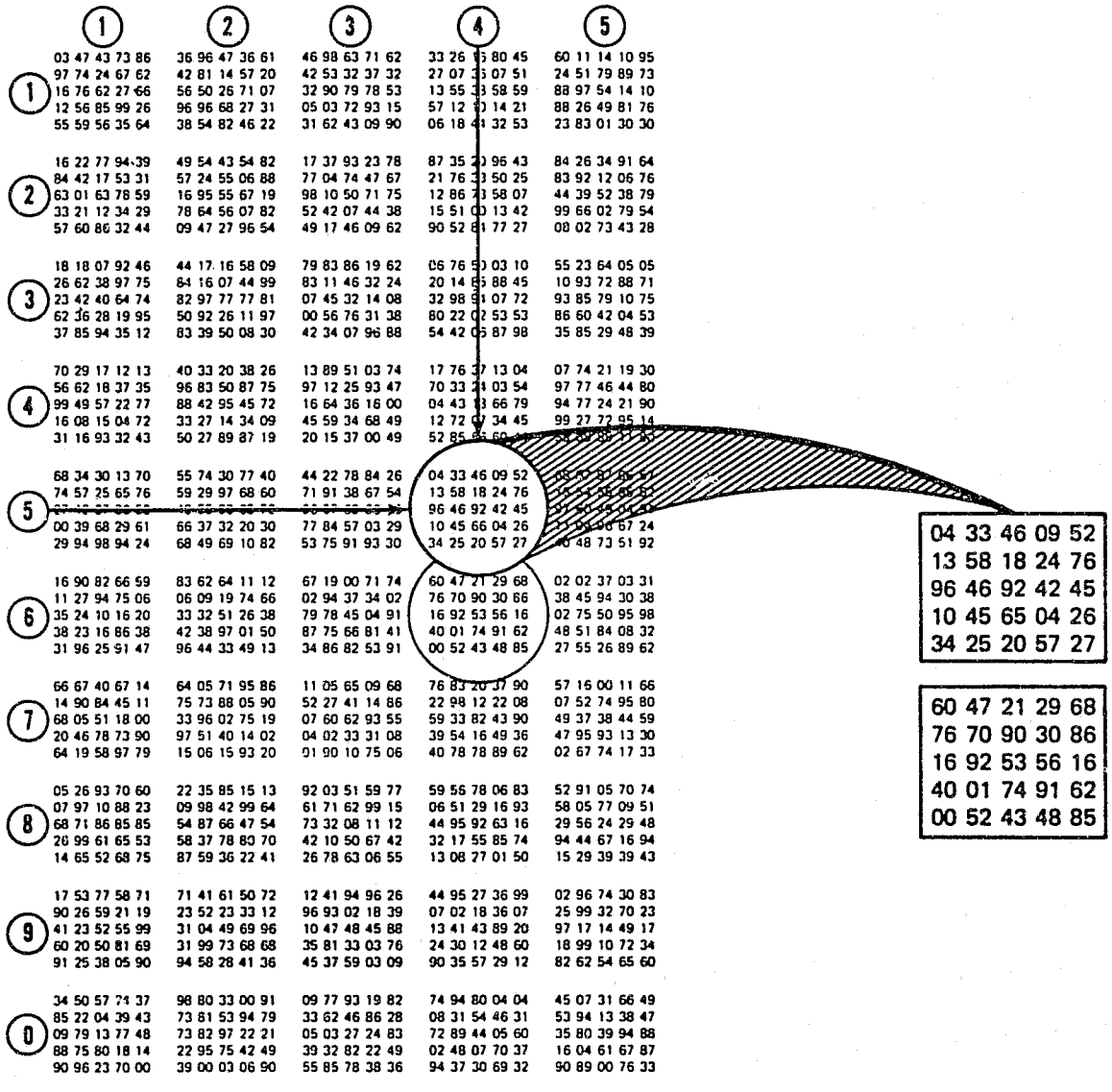
Let us go back to the total population for a moment and consider the total group from which the sample is to be drawn. It will be necessary to designate these individuals in some specific manner. It is, therefore, advantageous to arrange the individuals within the population in some systematic order (alphabetically, for example, by surname) and assign to each a serial number for identificaiton purposes.

Now we are ready for the random selection. We shall start with the upper left-hand digits in the designated block and work first downward in the column; if there are not enough digits for the total sample demand in that direction, we will return to the starting digits and proceed upward. Having exhausted all fifty digits in any one column, move to the adjoining columns and proceed as before until the sample requirement is filled. As each digit designation comes up, select the individual in the population who has been assiged that random number. Keep so selecting until the entire sample total is reached.

The following illustration recapitulates what we have been describing. We have pulled a dollar bill from our wallet and note that the first two digits are 4 and 5. These we shall use in locating the beginning block from which we will select the first random number for the sample. For purposes of illustration, we shall assume that the total population consists of ninety individuals from which we shall select a sample group of forty. We will need random numbers of two digits each.

Here again is a reduction of the first table of random numbers (Table 43), from which we have extracted the beginning block of digits which is at the intersection of the fourth horizontal block column and the fifth vertical block column:

Beginning now in the upper left-hand corner of the designated block, and remembering that there are only ninety individuals in the total population, we see that by going down the two leftmost columns of digits in the block we will choose from the total population individual number 4, and individual number 13. The next two digits --96-- do not apply, because there are only ninety individuals in the population, and so we will ignore this number. Our next choices will be 10, 34, 60, 76, 16, 40, and again we will ignore the 00 as well as the next number, 76 (the first set of digits in the third block), because we already have selected that number.



	1	2	3	4	5
1	03 47 43 73 86	36 96 47 36 61	46 98 63 71 62	33 26 16 80 45	60 11 14 10 95
	97 74 24 67 62	42 81 14 57 20	42 53 32 37 32	27 07 36 07 51	24 51 79 89 73
	16 76 62 27 66	56 50 26 71 07	32 90 79 78 53	13 55 38 58 59	88 97 54 14 10
	12 56 85 99 26	96 96 68 27 31	05 03 72 93 15	57 12 10 14 21	88 26 49 81 76
	55 59 56 35 64	38 54 82 46 22	31 62 43 09 90	06 18 44 32 53	23 83 01 30 30
2	16 22 77 94 39	49 54 43 54 82	17 37 93 23 78	87 35 20 96 43	84 26 34 91 64
	84 42 17 53 31	57 24 55 06 88	77 04 74 47 67	21 76 33 50 25	83 92 12 06 76
	63 01 63 78 59	16 95 55 67 19	98 10 50 71 75	12 86 73 58 07	44 39 52 38 79
	33 21 12 34 29	78 64 56 07 82	52 42 07 44 38	15 51 00 13 42	99 66 02 79 54
	57 60 86 32 44	09 47 27 96 54	49 17 46 09 62	90 52 84 77 27	08 02 73 43 28
3	18 18 07 92 46	44 17 16 58 09	79 83 86 19 62	06 76 50 03 10	55 23 64 05 05
	26 62 38 97 75	84 16 07 44 99	83 11 46 32 24	20 14 85 88 45	10 93 72 88 71
	23 42 40 64 74	82 97 77 77 81	07 45 32 14 08	32 98 94 07 72	93 85 79 10 75
	62 36 28 19 95	50 92 26 11 97	00 56 76 31 38	80 22 02 53 53	86 60 42 04 53
	37 85 94 35 12	83 39 50 08 30	42 34 07 96 88	54 42 05 87 98	35 85 29 48 39
4	70 29 17 12 13	40 33 20 38 26	13 89 51 03 74	17 76 37 13 04	07 74 21 19 30
	56 62 18 37 35	96 83 50 87 75	97 12 25 93 47	70 33 24 03 54	97 77 46 44 80
	99 49 57 22 77	88 42 95 45 72	16 64 36 16 00	04 43 18 66 79	94 77 24 21 90
	16 08 15 04 72	33 27 14 34 09	45 59 34 68 49	12 72 07 34 45	99 27 72 95 14
	31 16 93 32 43	50 27 89 87 19	20 15 37 00 49	52 85 [illegible]	[illegible]
5	68 34 30 13 70	55 74 30 77 40	44 22 78 84 26	04 33 46 09 52	[illegible]
	74 57 25 65 76	59 29 97 68 60	71 91 38 67 54	13 58 18 24 76	[illegible]
	[illegible]	[illegible]	[illegible]	96 46 92 42 45	[illegible]
	00 39 68 29 61	66 37 32 20 30	77 84 57 03 29	10 45 66 04 26	[illegible]
	29 94 98 94 24	68 49 69 10 82	53 75 91 93 30	34 25 20 57 27	[illegible]
6	16 90 82 66 59	83 62 64 11 12	67 19 00 71 74	60 47 21 29 68	02 02 37 03 31
	11 27 94 75 06	06 09 19 74 66	02 94 37 34 02	76 70 90 30 66	38 45 94 30 38
	35 24 10 16 20	33 32 51 26 38	79 78 45 04 91	16 92 53 56 16	02 75 50 95 98
	38 23 16 86 38	42 38 97 01 50	87 75 66 81 41	40 01 74 91 62	48 51 84 08 32
	31 96 25 91 47	96 44 33 49 13	34 86 82 53 91	00 52 43 48 85	27 55 26 89 62
7	66 67 40 67 14	64 05 71 95 86	11 05 65 09 68	76 83 20 37 90	57 16 00 11 66
	14 90 84 45 11	75 73 88 05 90	52 27 41 14 86	22 98 12 22 08	07 52 74 95 80
	68 05 51 18 00	33 96 02 75 19	07 60 62 93 55	59 33 82 43 90	49 37 38 44 59
	20 46 78 73 90	97 51 40 14 02	04 02 33 31 08	39 54 16 49 36	47 95 93 13 30
	64 19 58 97 79	15 06 15 93 20	01 90 10 75 06	40 78 78 89 62	02 67 74 17 33
8	05 26 93 70 60	22 35 85 15 13	92 03 51 59 77	59 56 78 06 83	52 91 05 70 74
	07 97 10 88 23	09 98 42 99 64	61 71 62 99 15	06 51 29 16 93	58 05 77 09 51
	68 71 86 85 85	54 87 66 47 54	73 32 08 11 12	44 95 92 63 16	29 56 24 29 48
	26 99 61 65 53	58 37 78 80 70	42 10 50 67 42	32 17 55 85 74	94 44 67 16 94
	14 65 52 68 75	87 59 36 22 41	26 78 63 06 55	13 08 27 01 50	15 29 39 39 43
9	17 53 77 58 71	71 41 61 50 72	12 41 94 96 26	44 95 27 36 99	02 96 74 30 83
	90 26 59 21 19	23 52 23 33 12	96 93 02 18 39	07 02 18 36 07	25 99 32 70 23
	41 23 52 55 99	31 04 49 69 96	10 47 48 45 88	13 41 43 89 20	97 17 14 49 17
	60 20 50 81 69	31 99 73 68 68	35 81 33 03 76	24 30 12 48 60	18 99 10 72 34
	91 25 38 05 90	94 58 28 41 36	45 37 59 03 09	90 35 57 29 12	82 62 54 65 60
0	34 50 57 74 37	98 80 33 00 91	09 77 93 19 82	74 94 80 04 04	45 07 31 66 49
	85 22 04 39 43	73 81 53 94 79	33 62 46 86 28	08 31 54 46 31	53 94 13 38 47
	09 79 13 77 48	73 82 97 22 21	05 03 27 24 83	72 89 44 05 60	35 80 39 94 88
	88 75 80 18 14	22 95 75 42 49	39 32 82 22 49	02 48 07 70 37	16 04 61 67 87
	90 96 23 70 00	39 00 03 06 90	55 85 78 38 36	94 37 30 69 32	90 89 00 76 33

04 33 46 09 52
13 58 18 24 76
96 46 92 42 45
10 45 65 04 26
34 25 20 57 27

60 47 21 29 68
76 70 90 30 86
16 92 53 56 16
40 01 74 91 62
00 52 43 48 85

TABLE 43

We have perhaps said enough with respect to the use of a table of random numbers; but because randomization is so often effected by the use of just such a table, the foregoing discussion is probably justified.

APPENDIX M:

CALCULATING THE STANDARD DEVIATION

Appendix M is for the compulsive calculator. In most cases, if data is processed on a computer, the computer will print out the standard deviation. However, there are several formulas for calculating the standard deviation. This one provides a few shortcuts.

$$s^2 = \frac{\Sigma (y - \bar{y})^2}{n - 1}$$

Shortcut Formula for Calculating $\Sigma (y - \bar{y})^2$

$$\Sigma (y - \bar{y})^2 = \Sigma y^2 - \frac{(\Sigma y)^2}{n}$$

Assume that the average (mean) number of prior arrests of a sample of the Jail population has been calculated. The standard deviation is needed to identify how much variation exists in the number of priors. Also, for the sake of time and space, assume that there are only 5 cases in the sample (In reality, a much bigger sample would be necessary).

Statisticians identify variables as "X" or "Y". They use "X" for variables they are trying to explain (called dependent variables) and "Y" for variables (called independent variables) that they think may cause or have some sort of relationship with "X". In this case, Prior Arrests is a Y. That means that the people performing this believe that prior arrests causes something, perhaps longer LOS. To calculate the standard deviation of Y (Prior Arrests), follow these steps.

STEP 1: List each measurement of Y (Prior Arrests).

Case #:	Column 1 Y
Prisoner #1	5
Prisoner #2	7
Prisoner #3	1
Prisoner #4	2
Prisoner #5	4
TOTAL	19

TABLE 44: MEASUREMENTS OF Y (PRIOR ARRESTS)

STEP 2: Square each measurement of Y (multiply each Y value by itself) and record in a second column.

Case #:	Column 1 Y	Column 2 Y2
Prisoner #1	5	25
Prisoner #2	7	49
Prisoner #3	1	1
Prisoner #4	2	4
Prisoner #5	4	16
TOTAL	19	95

TABLE 45: MEASURES OF Y AND Y SQUARED

STEP 3: Square the total of Column 1.

19 x 19 = 361

STEP 4: Divide the result of Step 3 by the number of cases in the sample.

361 / 5 = 72.2

STEP 5: Subtract the result of Step 4 from the Column 2 total.

95 - 72.2 = 22.8

STEP 6: Subtract one from the number of cases in the sample.

5 - 1 = 4

STEP 7: Divide the result of Step 5 by the result of Step 6.

22.8 / 4 = 5.7

(This is the variance.)

STEP 8: Using a calculator (or a square root table), find the square root of the result of Step 7. That's the standard deviation.

The square root of 5.7 = 2.39.

In this analysis, the "average" prisoner has 3.4 prior arrests. However, the standard deviation is 2.39, which suggests that there are major differences between the prisoners in the sample. Now, for the real shortcut! If the standard deviation isn't provided, and if there isn't sufficient time to calculate it, the standard deviation can be ESTIMATED by DIVIDING THE RANGE BY 4. Even if all the calculations are done, this is a good check on them.

APPENDIX N:

CALCULATING CHI SQUARE

Let's resurrect Sheriff #2 for another example. The Jail has experienced an increase in the number of incidents. Sheriff #2 is not pleased ONE BIT about this, not in the middle of an election year, and decides to explore the relationship between the number of incidents prisoners commit and the number of prior arrests they have. Sheriff #2 suspects that some more serious offenders are spending longer priods of time in the facility. Sheriff #2 calculates a chi Square to discover the nature of the relationship between these two data elements.

CALCULATING THE CHI SQUARE:

Calculating a Chi Square takes a little time, but is rather straightforward. Follow these steps to determine if there is a relationship between membership in a particular category of one data element and membership in another category of a different data element.

STEP 1: CONSTRUCT A CONTINGENCY TABLE FOR THE TWO DATA ELEMENTS.

Sheriff #2 carefully constructs a contingency table from tallysheets. On the tallysheet, the prisoners in the sample are divided into two groups: those who had been involved in incidents and those who had not. Then for each inmate, Sheriff #2 made a check mark by the category that identified their number of previous arrests. The results are shown in Table 46.

# OF PRIOR ARRESTS	GROUP #1 - INVOLVED IN INCIDENTS	GROUP #2 - NOT INVOLVED IN INCIDENTS
More than 5	30	15
3-5	25	20
0-2	25	65

TABLE 46: A CONTINGENCY TABLE

This is a contingency table that shows the OBSERVED FREQUENCIES.

STEP 2: TOTAL THE COLUMNS AND THE ROWS AND WRITE THE TOTALS AROUND THE OUTSIDE OF THE CONTINGENCY TABLE.

# OF PRIOR ARRESTS	GROUP #1 - INVOLVED IN INCIDENTS	GROUP #2 - NOT INVOLVED IN INCIDENTS	
More than 5	30	15	45
3-5	25	20	45
0-2	25	65	90
	80	100	180

TABLE 47: CONTINGENCY TABLE WITH MARGINALS

Researchers call lines of numbers "columns" if they are vertical and "rows" if they are horizontal; the numbers written around the outside of the contingency tables are called "marginals", probably because they're written in the margin.

STEP 3: CALCULATE THE EXPECTED DISTRIBUTION IF THERE WERE NO RELATIONSHIP BETWEEN THE TWO DATA ELEMENTS.

Of the 180 inmates in Sheriff #2's sample, half of the inmates (90) had from 0-2 prior arrests, while one quarter of the inmates (45) had from 3-5 prior arrests, and a final quarter (45) had more than five prior arrests. Of the 180 inmates, 80 were involved in incidents at the Jail; 100 were not. If there were no relationship between the number of prior arrests and committing incidents at the Jail, the arrest pattern within the two groups based on incident status should be the same as the pattern for all the inmates. The expected distribution then would look something like this.

# OF PRIOR ARRESTS	GROUP #1 - INVOLVED IN INCIDENTS	GROUP #2 - NOT INVOLVED IN INCIDENTS	
More than 5	20	25	45 = A
3-5	20	25	45 = B
0-2	40	50	90 = C
	80 = M	100 = N	180 = T

TABLE 48: CONTINGENCY TABLE WITH EXPECTED DISTRIBUTION

This is a contingency table that shows the EXPECTED FREQUENCIES.

Sometimes, the patterns are not quite so clear as in this example. When that's the case, a formula can be used to calculate the expected frequency of each "box" in the contingency table. Statisticians call each "box" a "cell".

Expected frequencies for Group #1 would equal:

M x (A / T) or 80 x (45 / 180) = 80 x .25 = 20
M x (B / T) or 80 x (45 / 180) = 80 x .25 = 20
M x (C / T) or 80 x (90 / 180) = 80 x .50 - 40

Expected frequences for Group #2 would equal:

N x (A / T) or 100 x (45 / 180) = 100 x .25 = 25
N x (B / T) or 100 x (45 / 180) = 100 x .25 = 25
N x (C / T) or 100 x (90 / 180) = 100 x .50 = 50

STEP 4: ASSIGN A NUMBER TO EACH CELL IN THE CONTINGENCY TABLE.

When this is done, the contingency table will look something like Table 49.

# OF PRIOR ARRESTS	GROUP #1 - INVOLVED IN INCIDENTS	GROUP #2 - NOT INVOLVED IN INCIDENTS	
More than 5	CELL 1 20	CELL 4 25	45 = A
3-5	CELL 2 20	CELL 5 25	45 = B
0-2	CELL 3 40	CELL 6 50	90 = C
	80 = M	100 = N	180 = T

TABLE 49: CONTINGENCY TABLE WITH ASSIGNED CELL NUMBERS

This is just to make sure that you identify each cell and avoid confusion.

STEP 5: FOR EACH CELL, COMPUTE THE FOLLOWING FORMULA.

$$(O - E)^2 / E$$

OR

(OBSERVED FREQUENCY - EXPECTED FREQUENCY)^2 / EXPECTED FREQUENCY

So, for Cell #1, substituting in the formula the results would be:

$$(30 - 20)^2 / 20$$

OR

$$(10)^2 / 20$$

OR

$$100 / 20 = 5$$

Taylor Fitz-Gibbon and Morris suggest developing a worksheet (Figure 29) for each of the items in the formula to make sure that nothing is overlooked.

COLUMN #:

1 CELL	2 O	3 E	4 O-E	5 $(O-E)^2$	6 $(O-E)^2 / E$
1	30	20	10	100	5.000
2	25	20	5	25	1.250
3	25	40	-15	225	5.625
4	15	25	-10	100	4.000
5	25	20	5	25	1.250
6	65	50	15	225	4.500

FIGURE 29: CONTINGENCY TABLE WORKSHEET

STEP 6: THE TOTAL OF COLUMN #6 IS THE CHI SQUARE.

In this case, the Chi Square equals 21.625.

STEP 7: CALCULATE THE NUMBER OF DEGREES OF FREEDOM IN YOUR CONTINGENCY TABLE.

"Degrees of freedom" is a mathematical concept that measures the amount of information available in normally distributed data. While this may be hard to explain, it's very easy to do. Block out one row and one column of your contingency table; count the remaining cells. The result looks like Figure 30.

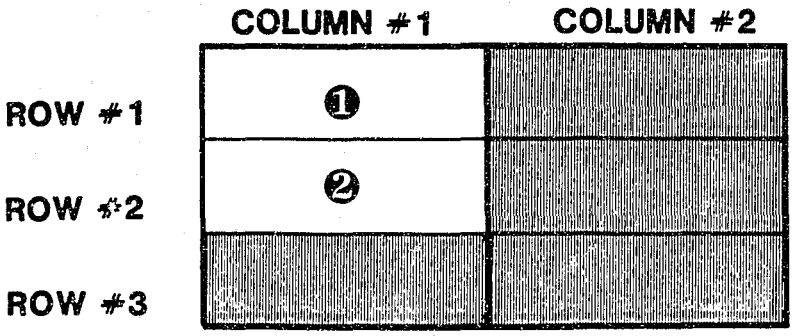


Figure 30

In this case, there are only two cells left. Therefore, this contingency table has only 2 degrees of freedom.

STEP 8: CHECK THE CHI SQUARE TABLE IN A STATISTICS BOOK TO FIND OUT WHAT THE CHI SQUARE AT A PARTICULAR SIGNIFICANCE LEVEL IS FOR CONTINGENCY TABLES WITH THE SAME DEGREES OF FREEDOM AS YOUR.

At the .05 level, with two degrees of freedom, Chi Square = 5.99.

STEP 9: IF THE CHI SQUARE THAT YOU CALCULATED IS LARGER THAN THE CHI SQUARE THAT YOU FOUND IN THE TABLE, THEN THERE IS A STATISTICALLY SIGNIFICANT RELATIONSHIP BETWEEN THE TWO VARIABLES.

Since the Chi Square = 21.625 and the Table value of Chi Square = 5.99, Sheriff #2 is certain that there is a significant relationship between the number of prior arrests and being involved in incidents while in Jail.

APPENDIX O:

MOUNTAIN COUNTY JAIL USE - HISTORICAL PERSPECTIVE AND FUTURE OUTLOOK

PREPARED FOR:

THE MOUNTAIN COUNTY JAIL ADVISORY BOARD

SECTION 1: JAIL POPULATION COMPONENTS

Within limitations established by demographics, local jail population is largely a function of local criminal justice system policy. There are two major policy issues:

- who goes to jail?
- how long do people stay in jail?

POLICY ISSUE #1: WHO GOES TO JAIL?

Key policy makers involved in this issue include:

- state and local law enforcement, who, through their skill and arrest practices, determine the number of individuals who will be booked; and
- local courts, particularly the judges and prosecutors, who determine the number of individuals who may be released from custody prior to a hearing.

The mechanisms which operationalize these policy issues include:

- law enforcement discretion at arrest, particularly the degree to which law enforcement agencies use a summons and citation in lieu of arrest;
- release at the time of booking through a variety of bonding options, including cash and surety bonds as well as release on recognizance.

The statistic which measures these mechanisms is the number of bookings. It is helpful to know both total and net bookings.

POLICY ISSUE #2: HOW LONG DO THEY STAY?

Key policy makers involved in this issue include:

- judges;
- prosecutors;
- the defense bar; and
- the probation department.

The mechanisms which operationalize these policy issues include:

- bond policies, including the types of bond available, levels at which bonds are set, and the criteria selected for release on bond;

- diversion from the system or deferred action through deferred prosecution, deferred sentencing, first offender programs, etc.; and

- sentencing alternatives, such as prison and/or jail time, work release, weekend sentencing, community service, restitution, fines, etc., alone or in conjunction with probation.

The statistics which measure these mechanisms are:

- length of stay;

- jail days;

- average daily population.

Other factors, including the legislative policy and social system levels, strongly influence the jail population.

At the legislative level, key policy makers include:

- national and state legislators;

- state agencies, such as the courts and the Department of Corrections; and

- special interest groups.

They exert control through mechanisms including:

- mandatory sentences;

- determinant sentences;

- changes in the structure of the criminal code.

At the social system level, major issues include:

- rapid, and therefore unanticipated, changes in demographics;

- economic conditions, particularly unemployment;

- court intervention;

- public issues and attitudes; and

- changes in other systems.

JAIL POPULATION FLUCTUATION

The jail population can increase or decreased based on changes which are measured by these statistics. Using # of bookings to represent the number of inputs to the jail and length of stay to represent the amount of time these inputs remain there, the jail population can fluctuate in the following ways:

CASE #1	# OF BOOKINGS	LENGTH OF STAY	CHANGE IN ADP
1	+	0	increase
2	0	+	increase
3	+	+	increase
4	-	0	decrease
5	0	-	decrease
6	-	-	decrease
7	0	0	none
8	+	-	?
9	-	+	?

KEY: + = increase
- = decrease
0 = no change

Case #3 most closely characterizes the current situation in Mountain County. The number of bookings has increased consistently over the past decade. Length of stay is also increasing, but far less consistently; length of stay fluctuates.

STATISTICAL TERMS AND FORMULAS

Statistically, the size of the jail population is a function of two factors which may be measured in several ways. The factors are:

- the number of bookings; and
- length of stay.

DEFINITION OF TERMS:

Total Bookings = all persons arrested and brought to the jail for processing

Net Bookings = all persons lodged at the jail following booking

Length of Stay = the number of days between booking and release (usually expressed as "average length of stay for a given period of time")

Jail Days = the total number of days spent in the facility by all prisoners over a given period of time, i.e. prisoner man days

OR

# of bookings * length of stay

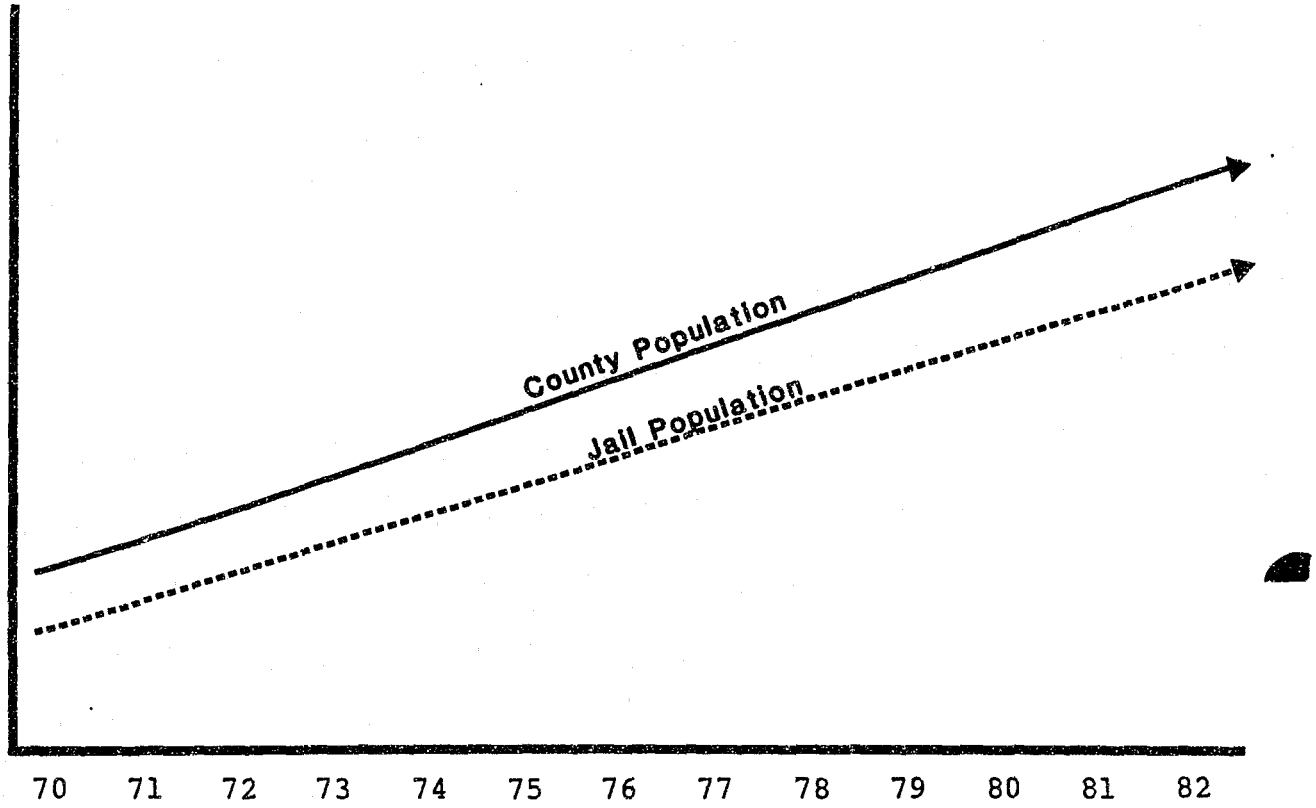
Average Daily Population (ADP) = the mean number of people housed at the facility over a given period of time

OR

$$\frac{\text{\# of bookings} * \text{length of stay}}{365 \text{ (Days)}}$$

SECTION 3: POPULATION RELATIONSHIPS

The relationship between Mountain County Resident Population and Jail Population is strong and direct.



r= +.8170

As a result, future Mountain County Resident Population should be a good predictor of future Mountain County Jail Population. Generally, county population is one of the better indicators of jail population.

SECTION 2: MOUNTAIN COUNTY HISTORICAL PERSPECTIVE

This section reviews past Mountain County Jail population trends for the period from 1971 through 1982. Total Bookings, Jail Days, Length of Stay, and Average Daily Population are considered.

YEAR	TOTAL BOOKINGS	JAIL DAYS	LENGTH OF STAY	AVERAGE DAILY POPULATION
1970	297	1,854	6.24	5.06
1971	256	1,202	4.69	3.29
1972	353	1,346	3.81	3.69
1973	476	2,407	5.06	6.59
1974	481	2,018	4.20	5.23
1975	599	2,276	3.80	6.23
1976	641	2,357	3.68	6.46
1977	924	2,410	2.61	6.60
1978	844	2,415	2.86	6.16
1979	972	3,387	3.48	9.27
1980	906	2,429	2.68	6.65
1981	1,016	4,370	4.30	11.97
1982	1,077	5,045	6.34	13.61

The total number of people booked has increased each year since 1977. Beginning in 1981, individuals who were released directly from the Mountain County Jail by posting a bond with cash they had in their possession at the time of arrest were not booked. This data has been re-captured and these individuals are included in total bookings. This group of persons released immediately upon posting cash bond comprises about 19% of all individuals booked at the Mountain County Jail.

The other statistics, which measure how long persons stay at the facility, also are increasing. However, they have fluctuated a great deal more than the number of bookings. This is particularly noticeable in length of stay. The increases in these statistics since 1980 are most dramatic.

SECTION 4: FUTURE EXPECTATIONS

FACT #1: INCARCERATION RATES VARY AS CRIMINAL JUSTICE PRACTICES CHANGE.

MOUNTAIN COUNTY INCARCERATION RATE

YEAR	JAIL POPULATION	COUNTY POPULATION	INCARCERATION RATE
1971	3.29	3,015	.001091
1972	3.69	3,289	.001122
1973	6.59	4,074	.001618
1974	5.53	4,722	.001171
1975	6.23	5,310	.001173
1976	6.46	5,476	.001180
1977	6.60	6,454	.001023
1978	6.12	7,095	.000863
1979	9.27	7,815	.001186
1980	6.65	8,848	.000752 (LOW)
1981	11.97	9,342	.001281
1982	13.61	9,835	.001384 (HIGH)

AVERAGE INCARCERATION RATE FOR THE DECADE = .001154

The highs and lows for the last 5 years are identified.

Mountain County incarceration rates have varied considerably over the past decade, with a very dramatic increase since 1981. In proportion to the county population, the jail is being used more now than in nearly any other time in the last twelve years. 1973 is the only year when jail use exceeded the current level.

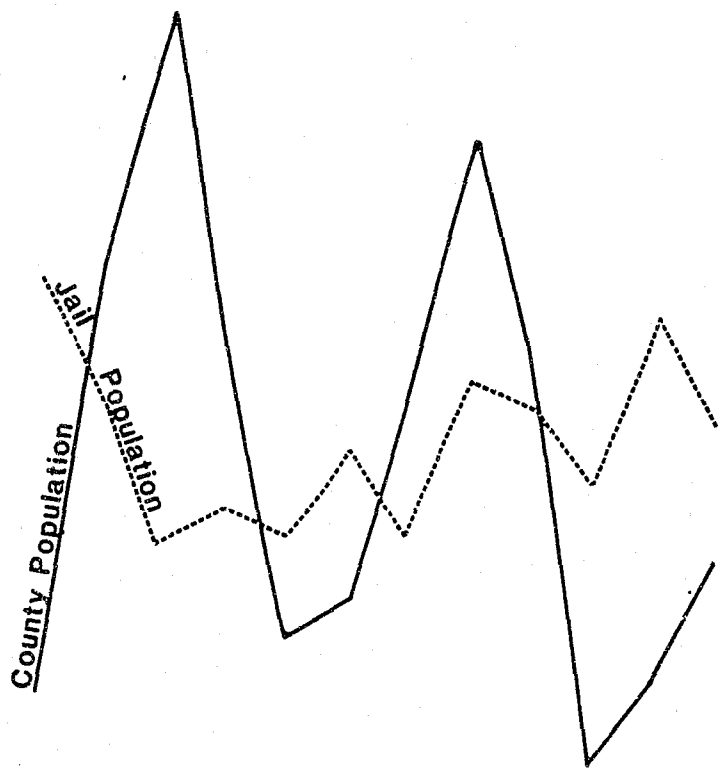
FACT #2: JAILS CAN NOT OPERATE AT 100% OF DESIGN CAPACITY.

1. Statutory requirements for sight and sound separation of certain classes of prisoners mandate that separate units exist for male and female adults and juveniles, but very few females or juveniles are detained. When they are detained, the other empty beds in that unit are no longer available to other general population prisoners. Thus the design capacity of the facility is reduced to a real or <u>functional</u> capacity.

2. For better prisoner management and for protection against civil actions, it is necessary to house other types of prisoners, i.e., those who have mental health problems, exhibit violent behavior, or who have have other special problems, in special areas away from general population. Those prisoners who are participating in special programs such as work release should also be separated from general prisoner population. This further reduces the facility's functional capacity.

3. The functional capacity of most jails is about 80% of design capacity (all available beds).

Because Mountain County is a one of a number of jurisdictions which experience considerable fluctuation in county population as a result of its exceptional recreational resources, it is important to consider the relationships between County Resident Population, Peak Impact Population and Jail Population over the course of one year.



CORRELATIONS:

County Resident Population and Jail Population	r = -.4881
County Peak Impact Population and Jail Population	r = -.4137
County Resident Population and Jail Bookings	r = -.2807
County Peak Impact Population and Jail Bookings	r = -.5029

County Resident Population and County Peak Impact Population generally have moderately strong and indirect relationships with the County Jail Population. When Mountain County population is highest, there are the fewest number of people in jail. This is probably not what most people would expect. The reasons why this is so should become clearer when the Mountain County Inmate Profile Data is considered.

SCENARIO 3: County population grows more slowly than in the previous decade as estimated by the Mountain County Planning Department. Incarceration practices return to a lower rate of jail use as in 1980.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	8.20
1990	10.44
1995	11.90
2000	13.36
2005	14.81

This scenario requires a design capacity of 18.

SCENARIO 4: County population growth continues at a somewhat slower rate than in the previous decade, as estimated by the U.S. Census. Incarceration practices continue with a high rate of jail use as in 1982.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	14.53
1990	19.10
1995	23.53
2000	27.96
2005	32.39

This scenario requires a design capacity of 39.

SCENARIO 5: County population growth continues at a somewhat slower rate than in the previous decade, as estimated by the U.S. Census. Incarceration practices moderate and approximate the average incarceration rate of the previous decade.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	12.12
1990	15.93
1995	19.62
2000	23.31
2005	27.00

This scenario requires a design capacity of 32.

4. In order to calculate design capacity based on jail population statistics, a peaking factor must be computed in order to allow for classification and separation of prisoners. The peaking factor also helps to compensate for the mathematical effects of averaging. Peaking factors are calculated by averaging the 36 highest daily counts over the period being studied. The average peak population in Mountain County was approximately 120% of average daily population.

Based on present practices, the following scenarios describe possible future options for the Mountain County Criminal Justice System.

SCENARIO 1: County population grows more slowly than in the previous decade as estimated by the Mountain County Planning Department. Incarceration practices continue with a high rate of jail use as in 1982.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	15.09
1990	19.22
1995	21.90
2000	24.58
2005	27.26

This scenario requires a design capacity of 33.

SCENARIO 2: County population grows more slowly than in the previous decade as estimated by the Mountain County Planning Department. Incarceration practices moderate and approximate the average incarceration rates of the previous decade.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	12.58
1990	16.02
1995	18.26
2000	20.50
2005	22.73

This scenario requires a design capacity of 27.

SCENARIO 12: County population growth continues to accelerate over that which occurred during the previous decade, as estimated by the U.S. Census. Incarceration practices return to a lower rate of jail use as in 1980.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	8.95
1990	11.81
1995	14.59
2000	17.37
2005	20.15

This requires a design capacity of 24.

SCENARIO SUMMARY:

In summary, twelve different scenarios emerge when four different estimates of county growth are considered in combination with three potential measures of incarceration practices. Resulting facilities, if planned to accommodate Mountain County's Jail population for approximately twenty years (until 2005), could range in size from 18 to 45.

The cells of the following matrix show anticipated design capacity of the new facility based upon the different possible population growth and incarceration rate scenarios.

	INCARCERATION RATE		
POPULATION GROWTH	LOW	MEDIUM	HIGH
1. Slower than previous decade*	18	27	33
2. Slower than previous decade**	21	27	39
3. Same as previous decade**	22	34	41
4. Faster than previous decade**	24	37	45

KEY: * = population estimates by Mountain County Planning
** = population estimates by U.S. Census, State Demographer

With regard to the incarceration rate, interview data suggests that it is likely that a high incarceration rate will continue. Both law enforcement and the courts anticipate that they will continue to use the jail as much as they have in the past - and perhaps more should more space be available.

With regard to population growth, Mountain County was the fastest growing county during the previous decade. With a population increase of 230% over 1970 levels, it seems likely that growth will moderate to some degree. Furthermore, there is some doubt with regard to the validity of the U.S. Census' projection model for Mountain County since 85% of Mountain's population growth can be explained by factors associated with the ski and mining industries, which are not considered by the U.S. Census' model. As a result, slower growth scenarios seem more likely.

This suggests that, based upon present practices, the design capacity of the facility should range between 33-39, with final capacity determined by design issues and classification needs.

SECTION 5: MOUNTAIN COUNTY INCARCERATION PRACTICES IN COMPARISON

This section compares Mountain County incarceration practices with those of other U.S. and Colorado counties. Incarceration practices can be compared across counties and states by using an incarceration rate per 100,000 county population.

INCARCERATION RATE = THE AVERAGE NUMBER OF PEOPLE IN JAIL FOR EVERY 100,000 PEOPLE IN THE JURISDICTION

JURISDICTION	RATE
U.S.	= 71/100,000
WEST	= 96/100,000
STATE	= 63/100,000
METROPOLIS	= 172/100,000
METRO COUNTIES	= 103/100,000
WOODY	= 84/100,000
PEREGRINE	= 71/100,000
MINING	= 62/100,000
1980 MOUNTAIN	= 75/100,000
1981 MOUNTAIN	= 126/100,000
1982 MOUNTAIN	= 138/100,000

Mountain County has an incarceration rate which is higher than the national, Colorado state, and Front Range counties averages. The Mountain County incarceration rate is also higher than those of other mountain counties which are experiencing similar rapid growth and are effected by tourism. Of those jurisdictions surveyed, only the City and County of Denver had a higher incarceration rate per 100,000 persons. This incarceration rate is most immediately effected by the policies of the local criminal justice system regarding the two issues identified earlier in this briefing paper:

- who will go to jail; and
- how long will they stay.

SCENARIO 6: County population growth continues at a somewhat slower rate than in the previous decade, as estimated by the U.S. Census. Incarceration practices return to a lower rate of jail use as in 1980.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	7.90
1990	10.38
1995	12.78
2000	15.19
2005	17.60

This scenario requires a design capacity of 21.

SCENARIO 7: County population growth continues at about the same rate as in the previous decade, as estimated by the U.S. Census. Incarceration practices continue with a high rate of jail use as in 1982.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	15.22
1990	20.07
1995	24.82
2000	29.62
2005	34.39

This scenario requires a design capacity of 41.

SCENARIO 8: County population growth continues at about the same rate as in the previous decade, as estimated by the U.S. Census. Incarceration practices moderate and approximate the average incarceration rate of the previous decade.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	15.22
1990	20.07
1995	24.82
2000	29.62
2005	34.39

This scenario requires a design capacity of 34.

SCENARIO 9: County population growth continues at about the same rate as in the previous decade, as estimated by the U.S. Census. Incarceration practices return to a lower rate of jail use as in 1980.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	8.27
1990	10.90
1995	13.50
2000	16.09
2005	18.69

This scenario requires a design capacity of 22.

SCENARIO 10: County population growth continues to accelerate over that which occurred during the previous decade, as estimated by the U.S. Census. Incarceration practices continue with a high rate of jail use as in 1982.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	16.47
1990	21.73
1995	26.85
2000	31.97
2005	37.09

This scenario requires a design capacity of 45.

SCENARIO 11: County population growth continues to accelerate over that which occurred during the previous decade, as estimated by the U.S. Census. Incarceration practices moderate and approximate the average incarceration rate of the previous decade.

YEAR	ANTICIPATED AVERAGE JAIL POPULATION
1985	13.73
1990	18.12
1995	22.39
2000	26.66
2005	30.93

This scenario requires a design capacity of 37.

SECTION 6: MOUNTAIN COUNTY INMATE PROFILE

In order to describe the persons who are lodged at the Mountain County Jail, a sample of approximately 50% (409) of the prisoners who were jailed between 11/1/81 and 10/30/82 was developed. Information was gathered about the following data elements.

RESIDENT STATUS: WHERE DO INMATES LIVE?

RESIDENT STATUS	% / #
County Residents	49% / 198
In-state, out of county	37% / 152
Out of State	13% / 55
"Transients"	1% / 3
Other	T / 1
TOTAL	100% / 409

SEX: WHAT SEX ARE PRISONERS?

SEX	% / #
Male	91% / 373
Female	9% / 36
TOTAL	100% / 409

AGE: HOW OLD ARE PRISONERS?

AGE	% / #
Under 18	2% / 10
18-21	18% / 75
22-24	20% / 81
25-27	17% / 70
28-29	9% / 37
30-34	13% / 54
35-39	9% / 37
40-44	5% / 20
45-49	3% / 12
Over 50	3% / 12
TOTAL	100% / 409

Prisoners average 28.77 years of age. The median age is 26.311 years.

RACE: WHAT RACE ARE THE PRISONERS?

RACE	% / #
White	93% / 373
Black	2% / 9
Spanish American	4% / 17
Native American	T / 2
Missing	1% / 8
TOTAL	100% / 409

LEGAL STATUS: WHAT IS THE LEGAL STATUS OF PERSONS JAILED?

LEGAL STATUS	% / #
Pretrial	70% / 288
Sentenced	24% / 95
Hold	6% / 26
TOTAL	100% / 409

CHARGE STATUS: ON WHAT KIND OF CHARGES ARE PERSONS JAILED?

CHARGE STATUS	% / #
Felony	13% / 51
Misdemeanor	27% / 108
Traffic	48% / 192
Municipal Violation	9% / 37
Other	3% / 14
Missing	/ 7
TOTAL	100% / 409

ARRESTING AGENCY: WHO ARRESTS PRISONERS?

ARRESTING AGENCY	% / #
Mountain County Sheriff	45% / 184
City #1 PD	14% / 55
City #2 PD	6% / 24
State Patrol	18% / 72
Other County	1% / 3
Missing	/ 3
TOTAL	100% / 409

JAIL DAYS: HOW MANY DAYS DO PRISONERS SPEND IN CUSTODY?

JAIL DAYS	% / #
Less than 1 day	40% / 164
1 day	26% / 108
2 days	11% / 46
3 days	3% / 13
4 days	2% / 7
5 days	3% / 11
6 days	1% / 1
1 week - 1 month	7% / 27
1-2 months	4% / 16
2-3 months	1% / 3
3-4 months	1% / 3
More than 4 months	1% / 5
TOTAL	100% / 409

The average length of stay for these prisoners is 7.692 days, with a standard deviation of 29.850 days.

MOST SERIOUS CHARGE: WHAT WERE THE MOST SERIOUS CHARGES ON WHICH PERSONS WERE ARRESTED?

MOST SERIOUS CHARGE	% / #
Aggravated assault	1% / 3
Armed robbery	T / 2
Minor assault	3% / 10
Kidnapping	T / 1
Menacing	2% / 6
Other, i.e. vehicular assault	1% / 3
CRIMES AGAINST PERSONS	7% / 25
Auto theft	1% / 5
Burglary	1% / 5
Breaking & entering	1% / 3
Theft	11% / 45
Shoplifting	1% / 4
Criminal mischief	2% / 6
Trespassing	2% / 9
Other	T / 1
CRIMES AGAINST PROPERTY	19% / 78
Forcible sex acts	1% / 3
Other, i.e., Indecent exposure	T / 1
SEX OFFENSES	1% / 4

Forgery	2% / 8
Issuing bad check	T / 1
Conspiracy	T% / 2
Receiving stolen property	2% / 12
FRAUD	
Narcotics violations	3% / 11
City ordinance violations	1% / 3
Disorderly conduct	6% / 25
DRUG & ALCOHOL OFFENSES	10% / 39
Moving violations	8% / 31
Driving w/o license	5% / 19
Drunk driving	33% / 133
Other vehicle	2% / 6
TRAFFIC OFFENSES	48% / 189
Contempt	3% / 11
Obstructing/resisting	1% / 4
FTA	8% / 30
Temporary holds	1% / 5
Probation/parole violation	T / 1
OTHER	13% / 51
Missing	/ 11
TOTAL	100% / 409

MEDICAL ISSUES: WHAT IS KNOWN ABOUT PRISONERS' MEDICAL AND PSYCHOLOGICAL STATUS ON INTAKE?

MEDICAL ISSUES	% / #
Prisoners requiring immediate medical treatment	7% / 29
Prisoners under the influence of drugs or alcohol	41% / 167
Prisoners w/psychiatric problems	1% / 3
Prisoners under doctor's care	3% / 13
History of alcohol abuse	6% / 26
History of alcohol treatment	2% / 10
History of drug abuse	4% / 15
History of drug treatment	1% / 4
History of mental illness	2% / 9
History of mental health treatment	1% / 5

OCCUPATION: WHAT KIND OF WORK DO PERSONS JAILED DO?

OCCUPATION	% / #
Professional, technical	5% / 17
Managerial, administrative	5% / 15
Sales	4% / 13
Clerical	T / 1
Craftsmen	21% / 69
Operators	4% / 12
Transport Operators	5% / 16
Laborers	24% / 77
Farm Laborers	2% / 5
Service Workers	18% / 57
Students	2% / 6
Never Worked	10% / 31
Military	1% / 3
Missing	/ 87
TOTAL	100% /409

EMPLOYMENT STATUS: ARE PERSONS JAILED WORKING?

EMPLOYMENT STATUS	% / #
Employed fulltime	72% / 228
Underemployed	T / 1
Unemployed	26% / 82
Retired	1% / 2
Never Worked	1% / 3
Missing	/ 93
TOTAL	100% / 409

MARITAL STATUS: WHAT IS THE MARITAL STATUS OF PERSONS JAILED?

MARITAL STATUS	% / #
Married	22% / 68
Single	71% / 224
Divorced	4% / 13
Separated	2% / 6
Common-law	T / 1
Other	1% / 2
Missing	/ 95
TOTAL	100% / 409

SHIFT ACTIVITY: DO DIFFERENT BOOKING PATTERNS OCCUR ON THE THREE SHIFTS?

TIME	BOOKING % / #	RELEASE % / #	PEAK ACTIVITY % / #
Midnight-8AM	25% / 101	20% / 80	22% 181
8AM-4PM	34% / 138	47% / 192	40% 330
4-Midnight	41% / 170	33% / 137	38% 307
TOTAL	100% / 409	100% / 409	100% / 818

RELEASE STATUS: HOW ARE PEOPLE RELEASED FROM JAIL?

RELEASE STATUS	% / #
Sentence served	27% / 111
Acquitted, charges dropped	3% / 11
Transferred to state institution	T / 2
Placed on probation	T / 1
Paroled	T / 1
Released on bond	61% / 242
Transferred to other jurisdictions	6% / 23
Transferred to mental health facility	T / 2
Transferred to special program	T / 2
Deferred sentence	T / 1
Other	2% / 7
Paid fine	1% / 3
Missing	/ 3
TOTAL	100% / 409

BOND TYPE: WHAT TYPES OF BONDS ARE USED?

BOND TYPE	% / #
Personal Recognizance	8% / 19
Cash	45% / 109
Surety	47% / 114
All bonds	100% / 242
Not released on bond	/ 167
TOTAL	100% / 409

LOS, LEGAL STATUS & CHARGE STATUS: HOW ARE THESE RELATED?

LEGAL & CHARGE STATUS	% / #	JAIL DAYS	LOS
Pretrial	70% / 287	1929	6.7213
Felony	11% / 45	1243	27.6222
Misdemeanor	18% / 75	489	6.5200
Traffic	32% / 128	168	1.3125
Municipal Offense	8% / 36	28	.7778
Other	1% / 3	1	.3334
Sentenced	22% / 89	981	11.0225
Felony	0	0	0
Misdemeanor	6% / 26	291	11.1923
Traffic	16% / 62	689	11.1129
Municipal Offense	T / 1	1	1.0000
Hold	6% / 26	162	6.2308
Felony	1% / 6	18	3.0000
Misdemeanor	2% / 7	29	4.1429
Traffic	T / 2	3	1.5000
Hold	3% / 11	112	10.1818
Missing Cases	2% / 7		
TOTAL POPULATION	100% / 409	3072	7.6418