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Documentation and Assessment of Transit Security Data Reporting and Its Utilization

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UMTA Technical Assistance Program

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16. Abstract

The report documents and assesses transit security reporting systems in use by transit police and security departments in several cities. The report discusses the division of responsibility for security between local law enforcement agencies and transit police and security departments. The data needs of the operational, support, management, and decision making functions of transit police and security departments are addressed. The report describes the data collection, processing and analysis techniques currently in use at twenty three transit agencies. Three alternative reporting systems were identified: one appropriate for a one or two person security department; one for a larger security department without sworn police officers; and one for a transit police department with sworn officers. The report discusses ways in which transit police and security departments can increase the usefulness of their information systems, using both manual and computerized techniques.

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PREFACE

This report, prepared by Mandex, Inc. for the Urban Mass Transportation Administration's (UMTA) Office of Technical Assistance, Safety and Security Staff, provides an assessment of transit security information systems. It documents a variety of transit security information systems currently in use in municipalities across the country and identifies three alternative systems. It also suggests ways in which transit police and security departments can increase the usefulness of the data they collect, process and analyze.

The authors wish to acknowledge the UMTA Safety and Security Staff for the guidance and support provided by Lloyd G. Murphy and Gwendolyn R. Cooper and the general direction for the performance of the study by Roy Field. We wish to thank the twenty-three Chiefs of Transit Security and Police Departments and their staff for their cooperation during the data collection phase of the study.

We also thank William T. Hathaway, Nancy A. Cooney, and Ronald A. Mauri, TSC Safety and Security Division; Dr. Yoshio Akiyama, the FBI Uniform Crime Reporting Program; and Jack Schnell, American Public Transit Association (APTA); who provided valuable information and comments.

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EXECUTIVE SUMMARY

The purpose of this project was to review transit related Federal, State and local crime reporting systems, document and assess security data reporting systems in use by transit police and security departments, and propose alternative transit security information systems based on data needs for different types of transit police and security departments.

The first phase of this study consisted of a review of literature on existing Federal, State and local reporting systems for crime, security and related applications which was supplemented by discussions with experts in the area of crime reporting. The second phase consisted of fact gathering interviews conducted at 23 transit agencies to find out how transit security is organized and to document what transit security reporting systems are in use. Data needs of transit police and security departments were defined and alternative transit security information systems were proposed. The analysis of the facts gathered in the site visits is based on the assumption that the purpose of transit security information is to enhance the management and performance of security functions. The following terminology was adopted to assist in analyzing the division of responsibility and the relationship between security functions and information:

Sworn Officers: officers authorized to exercise police powers and make arrests.

Non-sworn Officers: security officers who do not have police powers and cannot make arrests.

Transit Police Departments employ sworn officers.

Transit Security Departments employ only non-sworn officers.

The transit security reporting systems were analyzed from three perspectives: 1) division of responsibility for security operations between local law enforcement agencies (LLEA) and transit police and security departments; 2) the link between security functions and data requirements; 3) various methods of collecting, processing and using data.

The executive summary first presents the findings from the literature review and the site visits, the need for transit security data, and then identifies the three alternative types of information systems. Finally the conclusions and recommendations are presented.

FINDINGS FROM THE LITERATURE REVIEW

- Six important criteria are directly applicable to transit security reporting systems: completeness, quality, timeliness, flexibility, comparability (over time), and cost.

- Standard texts are available (see Appendix A) which describe in detail how to set up and operate a police reporting system.

- The International Association of Chiefs of Police saw a need for a uniform crime reporting system. In the 1920's they developed what is now known as the Uniform Crime Reporting (UCR) system administered by the Federal Bureau of Investigation. The UCR does not distinguish transit crime.

SITE VISITS

In some cities, transit security functions are performed solely by the LLEA, in some by a transit police department, and in some the responsibility is shared by the LLEA and a transit police or security department. The security data reporting system used by a transit police or security department depends on what functions are the responsibility of the department.

To facilitate the analysis, the transit police and security departments at the sites visited were divided into five groups on the basis of the scope of their authority, jurisdiction, and the security operations performed. (Refer to Table 2.4.1 and Section 2.5 for details.)

Group I: Only one or two security personnel who are the liaison between the transit vehicle operators and the LLEA.

Group II: Non-sworn officers who perform some patrol operations.

Group III: Sworn officers who share jurisdiction over the transit system with the LLEA.

Group IV: Sworn officers who have sole jurisdiction over the transit system.

Group V: LLEA units that are dedicated to transit crime.

DATA NEEDS OF TRANSIT POLICE AND SECURITY DEPARTMENTS (Section 3)

Transit police and security departments have three distinct types of data needs: data essential for performance of security functions; data needed for the support and management functions of security operations; and management data needed for decision making.

DATA NEEDS OF SECURITY FUNCTIONS

The data collected by a transit police or security department will depend on which functions are performed. The principal security functions and the data required to perform them are listed below.

- Responding to Calls for Service. Information on the location of an incident and availability of officers on duty

is needed when a LLEA, transit police or security officer is dispatched to the location of a passenger or operator requesting assistance.

- Random Patrol. To perform random patrols, officers need summaries of the types of crimes, frequency of crime by location, time of day, day of week.

- Directed Patrol. Directed patrol requires more data than random patrol--profiles of incidents that are likely to occur and general descriptions of suspects.

- Apprehension-Oriented Patrol. Apprehension of a suspect requires detailed information on the suspect, potential victims, and property that might be involved.

- Community Relations Programs. Programs to educate operators and passengers in self-protection and in the measures taken to improve their security and to discourage students from vandalizing transit property, require data on the types of incidents, and frequencies by location, time of day and day of week.

DATA NEEDS OF SUPPORT AND MANAGEMENT FUNCTIONS

- Investigation. Investigation of incidents to solve crimes and support the apprehension of suspects uses all available data.

- Policymaking/Budgeting. Evaluation of the effectiveness of operations requires information on the number and severity of incidents and their locations in relation to changes in security operations and changes in non-transit crime.

- Administration. To ensure that the security reporting system is properly maintained, a unique control number will usually be assigned to each incident and files reviewed to ensure that all appropriate reports are completed. Data collected by the reporting system are also used in officer evaluations.

DATA NEEDS OF TRANSIT AGENCIES

Although security operations are not a primary function of transit agencies, personal security is an essential aspect of the service and is expected by the public. For an agency to monitor its security needs, it must have a minimum amount of data--usually the frequency of incidents and the financial loss to crime. If this data indicates that crime is a significant problem, additional data may be needed to make security related decisions.

THREE ALTERNATIVE TRANSIT SECURITY INFORMATION SYSTEMS

Three alternative information systems are identified, each appropriate for a different type of transit police or security department.

- Security Monitoring System. This type of system is used to keep track of frequencies of security incidents that occur on the transit system so that management can be either assured that security problems are under control or alerted to developing problems that need attention. This system produces reports on the numbers of each type of incident.

- Security Management Information Systems. This type of system is based on incident reports supplied by transit operators, security and local police officers and is used to support incident analysis and assignment of patrols. It does not support suspect apprehension-related functions.

- Transit Police Information Systems. This is a comprehensive information system which supports all transit security and law enforcement functions, including suspect apprehension. It includes files of signed crime reports, descriptions of suspects, arrest reports, records of charges and court disposition.

The requirements of a department's reporting system depend on its size and the security functions it performs. It is often overlooked, however, that to collect more data than the department can process, analyze or use wastes resources. To ensure that resources are being used effectively, security reporting systems should be reviewed periodically.

CONCLUSIONS AND RECOMMENDATIONS

Security information systems are critical to effective security and law enforcement management. The areas most in need of attention by transit police and security departments are: liaison with local law enforcement agencies and operator reporting practices.

- o Need for Liaison with Local Law Enforcement Agencies: Local law enforcement agencies in cities which have transit are necessarily involved in transit security. Even in cities where the transit police have sole responsibility for law enforcement within the transit system, local law enforcement agencies are always involved to some degree. Liaison is needed:

  - To avoid duplication between the LLEA and transit police if they have overlapping responsibilities;

  - To ensure that the transit police or security department is informed of incidents involving transit security that have been dealt with by the local police;

  - To ensure that reports by the local police on important incidents include relevant transit-related data (route, run number, etc.).

- o Incident Classification Systems: There seems to be limited advantage and no necessity for developing a new uniform transit incident classification system. The UCR Part I, Part

II and Southeast Michigan Council of Governments' (SEMCOG) vandalism systems together seem to be adequate for the purposes of a uniform system: they permit a transit police or security department to compare the incidence of serious crime in its own transit system and in other transit and non-transit jurisdictions locally and nationally and to compare the incidence of less serious incidents in its own and other transit systems. However, wider use of these classification systems would benefit the departments themselves as well as assist UMTA in monitoring transit crime rates and assessing the impacts of crime, thus enabling it to provide the most appropriate and effective support to transit agencies.

- Operator Reporting Practices: Most crime-related incidents are first reported by operators. Unfortunately, deficiencies in operator reporting hamper efforts to maintain security and enforce the law in transit systems of every size. Approaches recommended to improve the usefulness of operator reporting are:

  - Operators should be informed of the final disposition of incidents they report, be made aware of the usefulness of their reports, or given other incentives to report incidents;

  - A security officer interviewed the operator reporting an incident and an account by the officer;

  - Operator training which emphasizes the importance of reporting and instructions in the preparation of reports;

  - Make operator reporting forms easier to use;

  - Use of controls to ensure timely, full and accurate incident reporting.

- Recommendations for the Urban Mass Transportation Administration

1) Security Information System

UMTA could assist transit police and security departments in adapting their information systems to their requirements as their functions and responsibilities continually change. An effective way would be to provide guidelines for the development of information system components that could be used by police and security departments. For example:

a) Reporting and Processing Procedures and Forms

Guidelines for effective reporting procedures and forms, and for information processing.

b) Computer Systems

UMTA could prepare guidelines for meeting software requirements of the three types of information systems identified earlier in this section: security monitoring systems, security management information systems and transit police information systems. These guidelines could be used by departments that are interested in acquiring a computer but have no computer expertise or by departments that are already computerized which could benefit from the experience of others in selecting and using additional software and hardware in security applications.

2) Operator Reporting Handbook

UMTA could assist transit police and security departments by preparing materials to assist in improving this important component of security information systems.

3) Exchange of Information

UMTA could facilitate the exchange of information on the incidence and modus operandi of transit crime, and information on proposed and tried countermeasures and their effectiveness.

As part of this effort UMTA could encourage adoption of a standard transit incident classification system. A suitable system would be based on the FBI's Uniform Crime Reports code for Part I and II incidents and SEMCOG's vandalism categories.

DOCUMENTATION AND ASSESSMENT OF TRANSIT SECURITY DATA REPORTING AND ITS UTILIZATION

Section 1

INTRODUCTION

Transit agencies differ widely in how their security functions are organized and performed. Some large urban transit agencies, like the Bay Area Rapid Transit (BART) in San Francisco, have their own internal police force staffed by sworn officers. Some transit agencies, like the Detroit Department of Transportation (D-DOT), have special arrangements with the local law enforcement authorities to provide transit-specific security services. Some agencies have a police or security department which supplements the police work performed by the local police force. The Kansas City Area Transit Association (KCATA) had a security department which investigates transit crime, particularly against operators, and obtains the assistance of the Kansas City Police Department if an arrest is made, or deals directly with the offender when an arrest is not necessary. Because security operations are organized in many different ways, it was assumed that they would, therefore, differ widely in their security information requirements. Recognizing the value of information on security and crime to the transit industry, the Urban Mass Transportation Administration (UMTA) provides technical assistance to transit authorities in the area of security information. In order to direct its assistance where it is most useful, UMTA must assess the crime reporting practices of transit agencies, and to make optimum use of limited resources, UMTA must assess the benefits and costs of alternative approaches to transit security data reporting.

The goal of this project is to document and assess transit security data reporting and its utilization. The objectives of the project are to:

- Investigate existing transit security data reporting systems by reviewing related Federal, state and local crime and security reporting systems.

- Assess the benefits and costs of alternative approaches to transit security data reporting, collection and utilization based on the needs of the Government and the transit industry.

The following tasks were performed during this project:

- Review of existing literature on reporting systems designed for security, crime and other related application areas emphasizing lessons learned by these agencies in acquiring useful security data. (Section 2.1);

- Assessment of the needs of the transit industry in reporting, collecting and using security data (Section 3);

- Assessment of UMTA's requirements for transit security data (Section 3.5);

- Documentation of what transit security data is reported and how it is collected and used. (Section 4);

- Identification of alternative methods of transit security data reporting, and the conditions in which each alternative would likely be preferred for a transit agency's police or security department and criteria for evaluating its usefulness. (Section 5);

- Recommendations for enhancement of existing transit security reporting systems;

- Determination of the potential role of UMTA in the implementation of effective transit security reporting systems (Section 6).

1.1 DEFINITION OF TERMS

To avoid confusion, the following terms are clarified in this section: sworn, and non-sworn officers, local law enforcement officers and transit police and security departments.

- Sworn officers have been commissioned by their state to exercise police powers and make arrests. These officers are also referred to as transit police officers or local law enforcement officers.

- Non-sworn officers have not been commissioned with police powers. In this study, they are also referred to as security officers.

- Local law enforcement officers refers to city police officers or county sheriffs and their deputies. Police and county sheriffs' departments are referred to as local law enforcement agencies (LLEA's).

- Transit police departments are operated by transit agencies and employ sworn officers or are units of the local law enforcement agencies which are dedicated to transit crime. Transit security departments are operated by transit agencies and employ non-sworn officers. When referred to collectively, they are called transit police and security departments.

1.2 OVERVIEW OF METHODOLOGY AND APPROACH TO ANALYSIS

The results of this study arise from two phases of activity: examination of existing security data reporting practices and an assessment of transit crime data reporting alternatives. The first phase of activity consisted of the review of literature on existing Federal, state and local reporting systems for crime, security and related applications and the subsequent documentation of the approaches, types of data collected and uses of the systems. The review of literature was supplemented by discussions with experts in the area of crime reporting, to learn from first hand experience about systems such as the Federal Bureau of Investigation's (FBI)'s Uniform Crime Reporting (UCR) system.

On the basis of the lessons learned from the literature review, the second phase was performed: fact gathering interviews at more than twenty transit agencies to find out how transit security is organized and to document what transit security reporting systems are in use. The transit agencies ranged from small to very large, were located in cities of various sizes across the country, and included bus, heavy rail, light rail and funicular (cable car) modes. (The site selection methodology is discussed in Section 2). At each agency, data was obtained on how transit security is organized, the types of security information being generated, how the information is processed, and how it is used.

The analysis of the resulting data is based on an important assumption which the literature and site visits indicate is widely accepted as fact in the law enforcement field and upon two conclusions reached after examining the data obtained from the site visits.

Assumption: The purpose of transit security information is to enhance the management and performance of security functions.

Depending on the transit agency, these functions may range from dispatching patrols in response to emergency calls, to deciding how many patrol cars to budget for next year. Between these extremes, information is needed for such crucial decisions as how to allocate security resources over a large system and how to deploy patrols each day. Information is needed to decide what actions should be taken and to evaluate the effectiveness of the countermeasures as an aid to future decisionmaking.

Conclusion 1: Inasmuch as the same principal security functions are performed in each city, what differs between transit agencies is how responsibility for these functions is divided between the transit agency's own police or security department, and the local law enforcement agencies.

Conclusion 2: Whether a security function is performed by a transit department or by a local law enforcement agency, it requires substantially the same types of information.

The analysis is organized around three issues: an organizational review of transit agencies emphasizing the operations and functions of transit police and security departments, an analysis of the link between data requirements and security functions, and an analysis of the methods of collecting, processing and using crime data. Based on the analysis, three alternative approaches to transit security data reporting are presented and the recommended conditions for their successful implementation are discussed.

1.3 ORGANIZATION OF THIS REPORT

This report emphasizes what has been learned in the project rather than how the project was performed. However, it is important for the reader to know how transit agencies were selected as sources of data, and to have some basic data on these agencies; therefore, the site selection phase of the methodology is discussed in detail.

Section 2 describes the selection criteria, provides brief notes on the transit agencies visited, and describes how transit security is organized in each agency. Following this, it identifies five groups of transit police and security departments distinguished by differences in how transit security functions are divided between the departments and the local law enforcement agencies.

Section 3 identifies and describes the principal security functions performed by transit police and security departments. The data required and generated by each of these functions is described. A particular transit police or security department performs some or all of these functions. Generally, transit police and security departments that are in the same group (of the five groups mentioned above) perform a similar range of functions. The section also discusses the particular crime data requirements of transit officials and of UMTA.

Section 4 describes data flows into and through transit security information systems, that is, collection and processing of data and the products of data analysis. The similarity between agencies visited and the data required and generated by each security function has already been discussed. However, the methods of processing the data varied greatly and ranged from manual methods through use of a word processor, to microcomputers and mainframes.

Section 5 presents three alternative transit security reporting systems based on the analyses of Sections 3 and 4 which identify the information requirements of each of the five groups of transit police and security departments and describe the information flow. The section also outlines considerations affecting the applicability of alternative forms of information processing.

Section 6 summarizes the basic observations resulting from the study, the inferences drawn from them, and suggested actions to be taken. The section also discusses the potential role of UMTA in transit security data reporting.

Appendix A lists the most useful literature reviewed and sources of crime reporting system software. Appendix B lists the relevant contact persons at the transit agencies.

The analysis results have been organized in three dimensions:

- By Group so that different types of transit police and security departments can focus quickly on factors that relate to their objectives;
- By Function, because the functions are the impetus for the reporting process; and
- By Types of Data, the products of the reporting process.

To use this report most effectively, the reader should:

- Refer to section 2 to read about how this project was performed;

- Refer to section 3 to learn about the need for data to conduct transit security operations;

- Refer to sections 4.1 and 4.2 for information on collection and processing methods, respectively;

- Refer to section 4.3 for types of analysis and their use;

- Refer to section 5 for three alternative information systems, the analyses and data required to perform the various security functions, and criteria for evaluating information systems;

- Refer to section 6 for the importance of liaisons with local law enforcement agencies, incident classification systems, operator reporting practices, and suggestions for possible UMTA assistance in the area of transit security information systems.

Section 2

REPRESENTATIVE TRANSIT SECURITY INFORMATION SYSTEMS

Twenty-three transit security departments were visited and data on their information systems was obtained. The data was then analyzed to determine in what ways the information systems differ and how the differences in information systems may relate to differences in operations of the security departments.

Section 2.1 presents conclusions drawn from the review of literature on crime data reporting and discussions with experts in the area. Section 2.2 presents the criteria used to select agencies that would represent the widest possible variety of transit police and security departments. Section 2.3 briefly describes the transit police and security departments visited. After the site visits, characteristics of the departments were examined to determine common as well as uncommon characteristics. The departments with common characteristics fell into five groups. Section 2.4 describes the five groups:

2.1 LITERATURE REVIEW

Since transit police and security departments are only one of many agencies which have crime reporting systems, the literature review included general works on crime reporting as well as the limited literature available on transit crime. The general works on crime reporting systems were reviewed to ensure the study did not ignore common crime reporting conventions or practices that might not be evident from the transit security literature. In addition to reviewing written literature, the study team interviewed people working with the Federal Bureau of Investigation's (FBI) Uniform Crime Reporting (UCR) system and Virginia's Accident Reporting system.

Nevertheless, this study did not attempt to evaluate the state-of-the-art crime control literature and questions surrounding evaluation of traditional countermeasures like apprehension. Three subsections of Section 2.1 address the three areas in which the general crime reporting literature was most useful:

(1) Development of criteria to assess crime reporting systems;
(2) Special issues in crime reporting systems like treatment of juvenile records;
(3) The Federal Bureau of Investigation's Uniform Crime Code.

Appendix A and B respectively list the most useful literature reviewed and persons contacted. Section 2.1.4 briefly discusses the literature available on transit security.

2.1.1 Assessment Criteria

The literature reviewed stressed the importance of good record keeping to the operation of the law enforcement agency. Good recordkeeping ensures that the information collected is accurate and available for use in police and security operations. As the "official memory" of the law enforcement agency, a reporting system is more than an accumulation of individual facts, it represents the cumulative experience and knowledge of the contributors. The criteria for assessing this "memory" ensure good input, maintenance of the system, and useful output.

In Police Records Administration, Hewitt emphasizes the need for the reporting system to be honest, accurate and complete. With an honest reporting system, the reporting of information will be objective, not modified to present a particular point of

view. Accurate observation is not natural and must be learned; officers must be trained to provide accurate data to the reporting system. Incomplete records can destroy the usefulness of the data that is collected because they do not represent the real situation.

Additional issues were discussed in Crime Analysis in Support of Patrol: timeliness and validity. Timeliness is the "turnaround" time or the speed at which data put into the system becomes available for use and is disseminated to the end users. Long range planning, annual budgeting etc. do not require an immediate turnaround because crime patterns do not vary greatly from year to year. In the daily deployment and operations of a law enforcement agency, the timeliness of the data is important. Up-to-date information on incidents and suspects increase the possibility of solving and preventing crime. The speed at which crime frequencies change is an approximation of the speed needed for timely turnaround of data. For example, if crime incidents are always most frequent at a particular intersection, daily turnaround may not be necessary; however, where the situation changes rapidly such as densely populated urban areas, daily turnaround is important. The ultimate in timeliness is a "real time" system in which data is available for use as soon as it is reported. The issue of validity addresses a very different aspect of crime reporting: whether the crimes reported represent all of the crimes committed since victims and witnesses do not always report criminal activities to the police. Surveys of randomly selected samples of passengers can be used to obtain additional information on the frequency and circumstances under which these passengers were victims of crime. The use of victimization survey data has been recommended, but these surveys are rarely used in a systematic fashion.

Another set of criteria were examined in A Uniform Transit Safety Records System for the Commonwealth of Virginia. Their

criteria are similar to those already discussed, but include two new areas, flexibility and cost. Their six criteria were:

- o completeness
- o quality
- o comparability
- o timeliness
- o flexibility
- o cost

Flexibility was discussed in terms of responsiveness to user demands, and while user demands may not change frequently, minor changes should not require redesign of the entire system. Cost, or economy, is a fact of life and must be considered in the design and implementation of reporting systems.

Assessment criteria and their application to transit crime reporting systems are discussed more thoroughly in Section 5.4.

2.1.2 Special Issues in Crime Reporting Systems: Juveniles

Information on incidents involving juveniles is very important to transit police and security departments because much of the vandalism and minor crime committed on transit systems is attributable to juveniles. Special problems arise in the management of juvenile records because the treatment of juveniles focuses on rehabilitation and re-education. This special treatment usually provides the juvenile with a clean slate and no record of arrest or conviction of a crime. Each state has its own regulations on the management of juvenile records but the most common management controls require that:

- The names of juveniles (victims as well as suspects) not be released to the media or the public.

- Files on juveniles be purged regularly.

- Files on juveniles be kept separate from those on adults.

- Records on juveniles be kept to a minimum.

This study does not usually distinguish between records on incidents involving adults and those involving juveniles, but it is assumed that transit police departments will be required by their respective states to comply with similar controls. Transit security departments will be less restricted but still may treat juvenile records with somewhat more assurance of privacy than it treats records on adults.

2.1.3 FBI's Uniform Crime Reporting System

The Uniform Crime Reporting system is dealt with here for two reasons: to familiarize the reader with its classification system and to discuss its origins and the perceived need for a uniform crime code. The UCR classification system distinguishes between serious crimes, Part I offenses, and minor crimes, Part II offenses, and it precisely defines each crime. State criminal code classifications differ from state to state and may not be consistent with the UCR definitions of crime classifications. Briefly, Part I crimes include:

- Criminal homicide: murder, non-negligent and negligent homicide except for traffic fatalities;

- Forcible rape: carnal knowledge of a female forcibly and against her will;

- Robbery: taking or attempting to take something from a person by force;
- Aggravated assault: attack for the purpose of inflicting severe bodily injury often by use of weapons;
- Burglary: breaking and entering to commit a felony or a theft;
- Larceny-theft: unlawful taking of property except motor vehicles;
- Motor vehicle theft: unlawful taking of a motor vehicle;
- Arson: willful or malicious burning of property of another person.

Part II offenses include:

- Simple assault
- Forgery and counterfeiting
- Fraud
- Embezzlement
- Buying, receiving or possessing stolen property
- Vandalism
- Carrying or possessing weapons
- Prostitution and commercialized vice
- Sex offenses not included elsewhere
- Drug abuse violations
- Gambling
- Offenses against family or children
- Driving under the influence

- o Violation of state or local liquor laws
- o Drunkenness except driving under the influence
- o Disorderly conduct
- o Vagrancy

As listed, none of these offenses are specifically transit related and the UCR does not distinguish transit-related incidents.

Vandalism is a serious problem for most transit police and security departments, but the Part II classification does not indicate factors which are important such as whether the object was a vehicle or facility.

The history of uniform crime reporting goes back to the 1920's when several articles and treatises were written on police records and crime reporting, (See Police Records Administration, William H. Hewitt, pp. 9-20). In 1929, the International Association of Chiefs of Police (IACP) published a book on police records entitled Uniform Crime Reporting. In the same year, the IACP initiated the first voluntary nationwide collection of crime statistics based on a uniform classification system because it felt there was a need for nationwide statistics. The next year, 1930, Congress instructed the FBI to administer the UCR program. The FBI still edits, reviews, and compiles nationwide statistics and now also conducts training in police records and crime reporting systems.

2.1.4 Literature on Transit Security

The literature on transit security deals primarily with descriptions of countermeasures and programs in effect at various transit agencies. The need for better and more extensive data on transit crime and security is recognized in the literature, and several sources recommend use of a uniform

crime classification Systems (See An Assessment of Crime and Policing Responses in Urban Mass Transit Systems, Siegal et al p. 99; Transit Security: A Description of Problems and Countermeasures, Mauri et al p.96; National Conference on Mass Transit Crime and Vandalism: Compendium of Proceedings pp. 151-152; Vandalism and Passenger Security, Snell, et al pp. 35-36).

The interdependence of transit police and security departments and local law enforcement agencies was described in Case Studies of Transit Security on Bus Systems. Its conclusions on policing of transit systems noted it was essential for obtaining the cooperation from and coordinating with local law enforcement agencies (See p. 108). This interdependence had been implicitly recognized in the National Conference on Mass Transit Crime and Vandalism's fifteenth recommendation that transit agency management consult with law enforcement agencies on plans for transit security (See p. 153). The potential benefits for both law enforcement and transit police and security departments was the subject of a section in Vandalism and Passenger Security (See pp.VII-C-1 to VII-C-4). The transit police and security department's official relationship with the local law enforcement agency was an important factor in this study's characterization of the departments and their reporting system.

2.2 SELECTION CRITERIA

The selection process began with a list of 88 transit agencies having a peak requirement of 100 or more vehicles and agencies with a lower peak requirement but which responded to the Southeast Michigan Council of Governments' (SEMCOG) 1981 survey of transit security and crime. Other agencies with a peak requirement of less than 100 vehicles were assumed to have

relatively little crime or need for crime reporting systems. This assumption was verified by telephoning several of the smaller agencies during the preliminary screening of potential sites to visit. Sources used to identify transit agencies included SEMCOG's 1981 Survey of Transit Security and Crime, and the Urban Mass Transportation Administration's 1981 Directory of Regularly Scheduled, Fixed route, Local Public Transportation Service in Urbanized Areas Over 50,000 Population.

The 88 transit agencies on the list compiled were then telephoned and asked for general information about their crime data reporting systems. This additional information was used to characterize their transit police and security departments. These characteristics included the size of transit agency, the modes of transportation represented, the type of police or security department, geographic location, type of data collected, volume of data collected, analysis techniques, and system automation.

Existence of Security Reporting System

To be included in this study, the transit system had to have an established reporting system or have plans to establish one. If a transit agency contacted was found not to have specific reporting procedures, the reasons for not having such procedures were noted. Generally, they fell into three categories:

- o crime was negligible;
- o a crime reporting system was desirable, but infeasible due to limited resources; or
- o crime data was collected by local law enforcement agencies.

Of the 88 agencies that were contacted, 27 had established security reporting systems and one transit agency was planning to implement one within six to eight months. Twenty-three agencies were selected for site visits on the basis of the following criteria.

Size of Transit Agency

The size of a transit agency is a major determinant of its data requirements. Generally, the size of the agency determines the volume of crime data it must deal with; therefore, crime reporting procedures which are adequate for small agencies with relatively few incidents to report would probably be inadequate for large transit agencies. Transit agencies were selected from the large, medium, and small categories to insure coverage of a wide range of data requirements.

Agency with Responsibility for Policing Transit System

In many cases, the agency responsible for policing the transit system also sets the standards for data collection and analysis. In some cases, transit agencies provide transit police or security personnel, but do not compile their own crime statistics. The crime analysis in these cases is conducted by other agencies such as local law enforcement agencies or other local government agencies. Examination of data obtained from preliminary telephone interviews indicated that methods of policing transit systems fell into four major categories:

- Transit police departments with sworn officers;
- Transit security departments with non-sworn officers;
- Systems with a combination of sworn and unsworn personnel

- Officers from local law enforcement agencies who have been detailed to patrol the transit system.

The transit agencies without specific methods for policing their systems usually were found to call on local law enforcement agencies as needed.

Mode

The agencies selected represent all modes. Crime patterns differ from mode to mode, and a comprehensive study must include all modes.

Geographic Location

To avoid introducing bias due to differences in regional attitudes toward crime or other regional characteristics, transit agencies were selected to provide broad geographic representation.

Type of Data

The type of data collected varies from system to system. Some transit agencies have established procedures specifically to collect transit crime data, whereas others report crime data as part of a system which is used primarily to collect other information, usually data on unusual incidents of any kind. The type of data collected will determine the classification scheme that is required. For example, a large transit agency which collects a large volume of crime reports is more likely to use a classification scheme similar to that of the Uniform Crime Reporting Program than is a smaller transit agency which primarily collects data on vandalism. Agencies were selected to illustrate both of these classification schemes.

Volume of Data

Transit agencies that operate in low as well as high crime areas were selected. Cities with a high incidence of crime will be a source of information on the handling of large volumes of data, and cities with a low crime rate should help determine what are perceived as the minimum reporting requirements.

Reporting System Automation

The reporting systems differ in the extent to which their procedures are automated. Some systems are either partially or fully automated, while others were in the process of being automated. Some of the automated systems were being expanded or upgraded. The agencies selected for visits illustrate a broad range of automation.

Nineteen transit agencies were selected for visits initially. However during the course of the site visits four additional agencies were visited because they were located convenient to selected systems and provided additional data for very little additional cost. As a result, the selected agencies include two in Northern New Jersey, two in Philadelphia and four in the San Francisco Bay Area. Of the 23 systems nine had over 100 million passengers (in 1980), eleven had between 20 million and 100 million, and three had fewer than 20 million.

2.3 TRANSIT AGENCIES SELECTED FOR VISITS

The following are the transit agencies selected for site visits.

NYCTA

New York City Transit Authority was selected because it is the largest of the transit agencies considered. As such, its

security reporting system exemplifies the most complex problems, some of which other agencies are also likely to encounter. NYCTA has separate security programs for its bus and rail operations. The NYCTA Transit Police are responsible for security and law enforcement on the rail system, and a small unit has bus security responsibilities. Generally the New York City Police Department is responsible for security on the bus system. The transit police force has 11 divisions which utilize a computerized crime reporting system. Data from 31,049 crime reports were collected in 1983.

NJT

New Jersey Transit operates two transit systems: New Jersey Transit Bus Operations, Inc. in Maplewood, N.J., and New Jersey Transit Rail Operations, Inc. in Newark.

N.J. Transit Bus was selected because although it is a large agency, it operates a small security department. The local law enforcement agencies have primary responsibility for transit security. N.J. Transit Bus operates a large bus fleet and the 4 1/2 mile Newark City Subway which is protected by the Port Authority Police. N.J. Transit Bus has a manual reporting system and uses the UCR crime classifications where applicable. In 1983, it processed 11,264 incident reports for its rail operations and 1,391 for its bus operations.

N.J. Transit Rail was selected because it is one of few rail systems and was geographically well located for a site visit. It has established a transit police department which maintains a reporting system reflecting the format of the UCR system. In 1983, N.J. Transit Rail compiled manually statistics from 20,137 incident reports.

SCRTD

Southern California Rapid Transit District in Los Angeles was selected because it is the largest all bus transit system. SCRTD's transit police department shares responsibility for transit security with the local law enforcement agencies. It processes 250 crime reports per month and is automating its reporting system.

SEPTA

Southeastern Pennsylvania Transit Authority in Philadelphia which operates buses, subway, surface and commuter rail cars, and trolley cars, was selected because its transit police department shares responsibility for transit security with the local law enforcement agency which collects and analyzes transit crime data. The Philadelphia Police Department compiles computer generated statistics on over 200 incidents a month, while SEPTA, using its manual reporting system, processes less data.

MBTA

Metropolitan Boston Transit Authority operates buses and rail cars and has sole responsibility for transit security. MBTA was selected because the transit security reporting system had outgrown its existing automated system, and plans were in the works for a new, up-to-date system on a mini-computer.

WMATA

Washington Metropolitan Area Transit Authority in Washington, D.C. was selected because it is a large transit system operating buses and rail cars in two states and the District of

Columbia. WMATA's transit police share responsibility for transit security with LLEA's. Its computerized reporting system processed 1,256 crime reports in 1983. Because WMATA is located in Washington, D.C., it could be visited without much expense or inconvenience.

PAT

Port Authority of Allegheny County Transit in Pittsburgh was selected because of the variety of the modes it operates, including buses, light rail, trolleys, trains, and two funiculars. Its transit police department shares responsibility for transit security with the local law enforcement agencies, and it maintains a simple manual security data reporting system.

MARTA

Metropolitan Atlanta Rapid Transit Authority operates buses and railcars. Its transit police department shares responsibility for transit security with the local law enforcement agencies. MARTA was selected because it has recently instituted a transit crime reporting system which it is planning to automate. It processes an average of 180 reports per month.

METRO

Metro Transit Authority operates a bus system in Houston serving 20-100 million passengers a year. METRO's transit police department has sole responsibility for transit security. METRO was selected because it maintains a computerized transit security reporting system on which it conducts extensive analysis of its incident data and participates in the FBI UCR program. METRO collected and analyzed data from 6,000 reports in 1983.

MCTS

Milwaukee County Transit System is a bus system serving fewer than 20 million passengers a year, and it relies on the local law enforcement agencies for transit security; however, it has security officers who collect data on transit crime. MCTS was selected because although it processes only 200 reports a year, it produces a broad range of statistical analysis.

RTD

The Regional Transportation District operates a bus system in Denver serving fewer than 20 million passengers a year. RTD relies on the local law enforcement agency for transit security; however, it employs a security officer and collects transit crime data using a computerized reporting system. RTD was selected because the study team wanted to learn more about why RTD concluded that the FBI's UCR classification scheme was not suited to its data requirements.

BART

The Bay Area Rapid Transit in San Francisco operates a rapid rail system serving between 20-100 million passengers a year. It has sole responsibility for the security of its vehicles and facilities. BART was selected because it maintains a computer-aided dispatch system (CADS), automated reporting system, and participates in the FBI UCR program.

AC Transit

The Alameda-Contra Costa Transit Disctrict in Oakland operates a bus fleet in the San Francisco Bay Area. It has a transit security department which works in conjunction with the local law enforcement agencies to protect its vehicles and facilities.

AC Transit was selected because it is a large agency that is in the process of developing a computerized transit crime reporting system.

SCCTD

The Santa Clara County District operates a bus agency serving between 20 and 100 million passengers a year. It has established a transit security department which works in conjunction with the local law enforcement agencies to provide transit security. SCCTD was selected because it maintains a manual transit crime reporting system which it plans to computerize in the near future in collaboration with other San Francisco Bay Area transit agencies.

Golden Gate

Golden Gate Bridge, Highway and Transportation District in San Rafael, California, operates buses and ferries, the security of which fall under the jurisdiction of the local law enforcement agencies. Golden Gate has two security officers but no dedicated transit crime reporting system. The agency was selected because of its plans to develop a crime reporting system in collaboration with other San Francisco Bay Area transit agencies.

TRI-MET

Tri-County Metro District of Oregon in Portland, Oregon operates a bus system which serves less than 20 million passengers a year. TRI-MET has a small police department with approximately six sworn officers which shares jurisdiction over the transit system with the LLEA. TRI-MET was selected because of its plans to automate its reporting system to better accomodate its increasing volume of data.

SEMTA/D-DOT

Southeast Michigan Transit Authority provides bus service to commuters going into the city of Detroit and Detroit Department of Transportation serves the intra-city passengers. The Bluebirds unit of the Detroit Police Department provides special security services to D-DOT. The passengers served by D-DOT and SEMTA number less than 20 million per year. SEMTA and D-DOT were selected because their reporting is done through a federally funded project by the Southeast Michigan Council of Governments (SEMCOG).

KCATA

The Kansas City Area Transit Authority operates a bus system serving fewer than 20 million passengers a year with 10 to 20 incidents reported per month. KCATA was selected because it is a very small transit agency with a partially automated crime reporting system.

RTA

The New Orleans Public Service Regional Transportation Authority provides bus service to fewer than 20 million passengers a year. Security services are provided by a dedicated unit of the New Orleans Police Department. RTA was selected as an example of a transit system which adopted the SEMCOG transit crime reporting system.

TARTA

Toledo Area Regional Transit Authority operates a bus system which serves less than 20 million passengers a year. The local police provide security services and the Director of Claims

keeps records on vandalism and acts as a liaison with the LLEA and the schools. TARTA was selected because it illustrates how the data requirements of a very small transit system are met with a manual crime data reporting system.

PATCO

The Port Authority Transit Corporation in Camden, NJ, operates commuter rail cars serving fewer than 20 million passengers annually. PATCO's transit police department shares responsibility for transit security with the local law enforcement agency. PATCO was selected to represent the rail transportation mode used smaller transit agencies. It maintains a manual reporting system supplemented by a computerized monthly fare evader report. PATCO processes approximately 500 reports including fare evasions each month.

PATH

The Port Authority of New York and New Jersey was created to administer port affairs. The Port Authority operates airports, bridges and tunnels, container ports and marine terminals, rail transit, transportation centers, and The World Trade Center Terminal. PATH operates a rapid rail system covering 13.5 route miles and carries approximately 20-100 million passengers per year. Eighty-three of PATH's 1200 police officers have primary responsibility for transit security. PATH was selected because it is one of few rail systems and PATH operates a computerized transit crime reporting system.

2.4 SITE VISITS

At each of the sites visited, general information to characterize the transit agency was collected including the modes operated, the numbers of vehicles used and the area

served. Information collected from each transit police or security department included the number of years it had been in operation, a description of its legal jurisdiction and how data was collected, compiled, and used.

The selected transit agencies included rail systems, bus systems, rail/bus systems, and two agencies with less conventional modes: light rail in Boston and Pittsburgh's funiculars (cable cars). The largest rail system visited was NYCTA which uses 6,500 rail cars. The newer rail systems, BART, WMATA and MARTA, have only 437, 298 and 120 rail cars, respectively. When an underground rail system is employed, the rail portion of the system was usually of greatest concern to the security division: reportedly passengers feel insecure when using underground transit.

The largest all bus system is SCRTD with 2,900 buses. Several medium-sized bus systems were visited including TRI-MET with 660 buses and RTD with 744 buses. SCRTD has its own sworn police force. TRI-MET, has a small force of sworn police officers and RTD has a single security officer. Because their security systems are very different, their crime reporting systems also differ greatly. TARTA and Golden Gate had the smallest systems with approximately 270 vehicles each. TARTA's security personnel consists of one person, part-time. Most of the transit systems serve more than one law enforcement jurisdiction.

Most of the transit police and security departments were formed in the last 15 years, although PATH and NYCTA are served by transit police departments which began 63 and 48 years ago respectively. New York has the largest force, with 3500 sworn officers. WMATA has the next largest with 234 sworn officers. Many of the police departments are assisted by non-sworn security officers or local law enforcement officers. SEPTA has

133 sworn officers and is assisted by a transit unit of the Philadelphia police with 250 officers. The work of MBTA's 111 sworn officers is supplemented by the efforts of 250 non-sworn security officers. The smallest "departments" visited were single individuals in Toledo and Denver.

These very large and very small departments operate differently from each other and their reporting systems also differ greatly. The departments with one or two officers cannot operate regular patrols of uniformed officers. In fact, none of these very small departments has sworn officers, so they cannot make arrests or enforce the law. What they can do is identify where transit crime is a problem, investigate these problems to determine their sources, and obtain assistance from the local law enforcement agency. Where the problems consist of minor vandalism, often committed by juveniles, these very small security departments go to schools or community groups with programs to control the problems. In addition to these activities, the slightly larger departments without sworn officers respond to operators' calls for assistance by dispatching a security officer to the scene and by calling the local law enforcement agency if necessary. The departments with sworn officers operate as would a conventional police force of similar size: they respond to calls for police assistance, patrol their jurisdiction, investigate crimes, and use community relations programs where appropriate.

The security reporting systems reflect these differences in operations. The very small departments depend almost exclusively on operator reports of incidents. Police departments with sworn officers use a multitude of forms to collect data. Some of these forms may be required by the state and others by the local law enforcement agency which provides detention facilities. A representative list of the various forms used by departments with sworn officers is provided in

Table 2.3.1 These forms were obtained from BART in San Francisco.

Table 2.3.1

LIST OF BART TRANSIT POLICE REPORTING FORMS

Field Interrogation Card

Bay Area Rapid Transit District Police Department Misdemeanor/Incident Report

Bay Area Rapid Transit District Crime Report

San Francisco Bay Area Rapid Transit District Crime Report

Bay Area Rapid Transit District Police Department Statement

Alameda County Consolidated Arrest Report

Contra Costa County Booking Authority

San Mateo County Arrest Report/Booking Sheet

San Francisco Bay Area Rapid Transit District Uniform Juvenile Citation and Notice to Appear at County Probation Department

Bay Area Rapid Transit District Police Department Statement Pursuant to Sections 821 and 822 P.C.

Delivery of Custody of Minor to the Probation Officer of Alameda County.

Alameda County Juvenile Intake Disposition Report Affidavit In Support of Request to File Petition Under Section 602 W&I

Police Department Bay Area Rapid Transit District - Application for Emergency Psychiatric Detention - Mental Illness

Bay Area Rapid Transit District Police Department Report of Non-Release - Misdemeanor Arrest

Bay Area Rapid Transit District Police Services - Certificate of Release

Police Department - San Francisco Bay Area Rapid Transit District - Arrest - Investigation Report

Officer's Statement, Section 13353 Vehicle Code

A transit police or security department may be responsible for security at some or all of the transit agency's facilities. In a few agencies, such as Houston's METRO, the police department is also responsible for traffic violations in the Automated Vehicle Lanes (AVL). In any system with heavy rail, the police or security department is always responsible for the rail vehicles and the entire subway facility. Passenger parking lots may or may not be the security department's responsibility. Police and security departments for bus systems may or may not be specifically responsible for bus stops, bus terminals and the management offices of the transit agency.

The transit police departments may have sole jurisdiction over the transit system or they may share it with the local law enforcement agencies. For two agencies, D-DOT and RTA, the local law enforcement agency instituted a special transit unit with a mission to control transit crime. In these cases, the entire transit system is under the local law enforcement agency's jurisdiction, but the law enforcement agency's transit

unit is more likely than its other units to be present on the transit system. Some transit security departments, like those at SCRTD and SEPTA, share jurisdiction over the transit system with local law enforcement agencies: the local law enforcement agencies may respond to calls for police assistance when the transit security department has no officers available or when the incident is closer to the its officers than to the transit police officers. In some cases, a local law enforcement agency will handle all serious crimes and the transit police will handle the more frequent minor incidents like vandalism and criminal mischief. The transit police departments of five systems, BART, METRO, NYCTA, PATH, and MBTA, have sole jurisdiction over the transit systems. Therefore if someone calls the New York City Police to report an incident that occurred on the subway, the call will be transferred to the transit police. However, having sole jurisdiction does not mean that the transit security department has no contact with the local law enforcement agencies. On the contrary, the transit police and local law enforcement agencies usually work very closely regardless of whether the transit system is a shared jurisdiction or solely the jurisdiction of the transit police.

2.5 GROUPINGS OF TRANSIT POLICE AND SECURITY DEPARTMENTS

To facilitate the project analysis and illustrate the different reporting systems used, the transit police and security departments were divided into five groups. These groups are distinguished by whether their security officers are sworn or not; if they have sworn officers whether they have sole jurisdiction over the transit system; the number of officers; and whether they are part of the transit authority or part of a local law enforcement agency. The characteristics of the five groups are summarized on Table 2.4.1, and the classification of the systems visited is shown on Table 2.4.2.

Table 2.4.1: Types of Transit Security Organizations

Features of Transit Security Organization	Group I	Group II	Group III	Group IV	Group V
Personnel	Non-sworn security coordinator	Non-sworn security officers	Sworn police officers	Sworn police officers	LLEA officers
Relationship with Local Law Enforcement Agencies	Depend on LLEA for Police Functions	Depend on LLEA for Police Functions	Overlapping jurisdiction with LLEAs	Limited interaction with LLEAs	Transit Unit of LLEA
Primary Enforcement Responsibilities	Enforcement of state penal codes, City ordinances, Transit regulations by LLEAs.	Enforcement of state penal codes, City ordinances, Transit regulations by LLEAs.	For serious state penal code violations, shared with LLEA. Enforcement of city ordinances and transit regulations by transit police officers.	Enforcement of state penal codes, city ordinances, and transit regulations by transit police officers.	Enforcement of state penal codes, City ordinances, Transit regulations by LLEAs.
Reporting Practices	Collect standard data types in limited detail	Collect standard data types in limited detail	Collect standard data types in extensive detail	Collect standard data types in extensive detail	Collect standard data types in extensive detail
	Generate summaries by type	Generate summaries by type, and location and time-of-occurrence.	Generate summaries by type, and location and time-of-occurrence.	Generate numerous reports and in-depth crime patterns analysis	Generate summaries by type, and location and time-of-occurrence.
	No routine ad hoc reporting	No routine ad hoc reporting	Generate limited ad hoc reports	Routinely generate ad hoc reports	Generate limited ad hoc reports

TABLE 2.4.2: TRANSIT SYSTEM SITE VISITS

SYSTEM NAME	LOCATION	AREA SERVED	VEHICLES OPERATED	YEARS IN OPERATION	SECURITY PERSONNEL
Group I					
Golden Gate Bridge Highway and Transportation District	San Rafael, CA	2 counties	273 buses 4 ferries	N/A	2 Security Officers
KCATA Kansas City Area Transit Authority	Kansas City, MO	7 counties in MO and KS	300 buses	N/A	2 Security Officers Contracted Security Officers
RTD Regional Transit District	Denver, CO	5 counties	744 buses	7	1 Security Officer
MCTS Milwaukee County Transit Service, Inc.	Milwaukee, WI	1 county	500 buses	9	2 Security Officers
TARTA Toledo Area Regional Transit Authority	Toledo, OH	9 municipalities	278 buses	N/A	1 Security Liaison

TABLE 2.4.2: TRANSIT SYSTEM SITE VISITS

SYSTEM NAME	LOCATION	AREA SERVED	VEHICLES OPERATED	YEARS IN OPERATION	SECURITY PERSONNEL
Group II					
AC Transit Alameda and Contra Costa Transit Authority	Oakland, CA	2 counties	850 buses	N/A	13 Contracted Security Officers
NJ Transit Bus Operations, Inc.	Maplewood, NJ	21 counties NJ(statewide) NY, and PA	2000 buses 350 rail cars 25 diesel and electric locomotives	2-1/2	12 Security Officers
SCCTD Santa Clara County Transit District	San Jose, CA	1 county 11 municipalities	640 buses 400 buses	4	18 Security Officers 5 Security Officers
Group III					
PAT Port Authority Transit	Pittsburgh, PA	3 counties 132 municipalities	1000 buses 80 trolleys 10 commuter rail cars 2 funiculars	10	13 Sworn Officers 10 Sheriffs' Deputies Contracted Security Guards
SCRTD Southern California Rapid Transit District	Los Angeles, CA	5 counties 27 municipalities	2900 buses	6	69 Sworn Officers 66 Security Officers 19 Part-time Sworn Officers
TRI-MET Tri-County Metropolitan Transportation District of Oregon	Portland, OR	3 counties	660 buses	10	13 Sworn Officers

TABLE 2.4.2: TRANSIT SYSTEM SITE VISITS

SYSTEM NAME	LOCATION	AREA SERVED	VEHICLES OPERATED	YEARS IN OPERATION	SECURITY PERSONNEL
Group III (continued)					
WMATA Washington Metropolitan Area Transit Authority	Washington, DC	Tri-State area	1720 buses 298 trains	8	234 Sworn Officers
MARTA Metropolitan Area Transit Authority	Atlanta, GA	2 counties 2 municipalities 17 jurisdictions	755 buses 120 rail cars	6	38 Sworn Officers 13 Security Officers 22 Civilian CCTV Monitors 18 Facility Attendants
NJ Transit Rail Operations, Inc.	Newark, NJ	21 counties NJ(statewide), NY, and PA	744 rail cars 86 locomotives	1-1/2	67 Sworn Officers
PATCO Port Authority Transit Corp. of PA and NJ	Camden, NJ	2 counties	121 rail cars	15	26 Sworn Officers
SEPTA Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	5 counties	1400 buses 110 trolley cars 630 rail cars 360 commuter rail cars	4	133 Sworn Officers 250 Philadelphia Police Officers (Transit Unit) Contracted Security Officers

TABLE 2.4.2: TRANSIT SYSTEM SITE VISITS

SYSTEM NAME	LOCATION	AREA SERVED	VEHICLES OPERATED	YEARS IN OPERATION	SECURITY PERSONNEL
Group IV					
BART Bay Area Rapid Transit Authority	Oakland, CA	4 counties 20 cities	437 rail cars	12	133 Sworn Officers 60 Security Officers
METRO Metropolitan Transit Authority	Houston, TX	5 counties 14 municipalities 39 jurisdictions	750 buses	2	41 Sworn Officers 27 Security Officers
NYCTA New York City Transit Authority	New York, NY	1 municipality	6500 rail cars	48	3600 Sworn Officers
PATH Port Authority Trans Hudson	Jersey City, NJ	2 states 3 counties 5 municipalities	280 rail cars	63	83 Sworn Oficers
MBTA Massachusettes Bay Transportation Authority	Boston, MA	79 municipalities	987 buses 100 street cars 125 light rail vehicles 354 rapid transit cars 50 trackless trolleys	15	111 Sworn Officers 250 Security Officers

TABLE 2.4.2: TRANSIT SYSTEM SITE VISITS

SYSTEM NAME	LOCATION	AREA SERVED	VEHICLES OPERATED	YEARS IN OPERATION	SECURITY PERSONNEL
Group V					
RTA Regional Transit	New Orleans, LA	single jurisdiction	488 buses	1	New Orleans Police Department Transit Unit
D-DOT/SEMTA Detroit Department of Trans., Southeastern Michigan Transit Authority	Detroit, MI	1 city (D-DOT) 7 counties (SEMTA)	799 buses (D-DOT) 381 vehicles (SEMTA)	7	Detroit Police Department Transit Unit

Group I

The transit security departments in Group I usually consist of one or two non-sworn security coordinators who provide liaison between the transit operators and the local police. Major objectives of these security coordinators are to augment the efforts of the police and to reassure operators and patrons that the transit authority is concerned about their security. They compile and analyze complaints so as to draw police attention to transit crime problems and to develop information on countermeasures. The security coordinators also investigate some of the less serious transit-related incidents since the police rarely have enough manpower resources to investigate all incidents.

Group II

The transit security departments in Group II are staffed with non-sworn security officers. Many of them have had some police experience and some police academy training. Many have served in the military or in university campus security, and most have received some transit-specific on-the-job training. However, the primary responsibility of Group II departments is to supplement the local law enforcement agency's policing of the transit system. Their officers cannot issue summonses or make arrests. Enforcement of state penal codes, city ordinances, and transit regulations is the responsibility of the local law enforcement agencies.

The Group II security departments generally do whatever they can to promote compliance with these laws and regulations without the use of police powers. They respond to operator and passenger complaints; in many cases, they provide non-mobile

responses (i.e., they resolve situations by telephone or by mail); in some cases they patrol problem areas and investigate incidents; and some departments provide crowd control services during various community events. But when transit-related crimes and incidents require emergency responses, Group II security departments call the local law enforcement agency as well as dispatch their own security officers to the scene, and the law enforcement officers make all arrests and issue any summonses and citations.

Group III

The transit police departments in Group III are authorized by their states to exercise police powers; however, these powers are limited to when the officers are on duty and within the transit system. If a Group III officer encounters a crime or incident in progress outside the transit system, he may only make a citizen's arrest. The police powers of Group III officers are not restricted during the course of routine patrol duties; nevertheless when serious crimes are committed, they depend more on the local law enforcement agencies than do Group IV departments. ("Serious crimes" refers to those classified by the FBI Uniform Crime Reporting program as Part I crimes.)

Because Group III transit police departments share jurisdiction over the transit system with other local law enforcement agencies they must have formal or informal agreements outlining procedures for coordinating these operations. The agreements usually address the physical locations for which each is responsible, and how to handle incidents in which officers from both the transit police department and the local police force respond. Frequently the investigation of all serious crimes is assigned to the local force. For example, the Metropolitan Atlanta Regional Transit Authority (MARTA) transit police have primary responsibility on trains, in stations, and in areas

between stations, while the Atlanta Police Department has primary responsibility in areas just outside stations and in their parking lots. Serious crimes that occur within the transit police jurisdiction become the responsibility of the Atlanta Police. Generally, arrests are made by the first officer on the scene, and officers of the local police force assist where necessary in transporting arrestees to the appropriate detention facilities. Both Group III transit police departments and the local law enforcement agencies they work with are authorized to issue citations or summonses and to make arrests for misdemeanor offenses in the transit agency's facilities. Nevertheless, transit police departments usually take primary responsibility for enforcing transit regulations and responding to other misdemeanor offenses, while the local agencies tend to give low priority to violations of transit regulations.

Group IV

The transit police departments in Group IV have also been authorized by their respective states to employ police powers, and they have sole jurisdiction over the transit systems. Other local law enforcement agencies rarely answer calls for service or patrol the transit system. However, few transit police departments have detention and evidence examination facilities so they usually book their arrests through other local law enforcement agencies. Although their officers have been hired specifically to protect the transit system, they are empowered to perform all police functions at all times; therefore they may make arrests for incidents that occur outside of the transit system. As a rule only when officers encounter incidents that require immediate action do they make arrests off the transit system.

Group V

The transit police departments in Group V are comprised of units of a local non-transit law enforcement agency which are assigned to respond to incidents on the transit system and to patrol transit systems as their primary responsibilities. They are staffed with sworn police officers who report to the chief of police. Their assigned beats are generally confined to the transit system which brings them into frequent contact with transit operators and management officials. In some cases, these transit police units may be dispatched to non-transit related incidents. In these cases, the priority they give to transit crime depends on details of the arrangement between the transit system and the law enforcement agency.

Section 3

TRANSIT SECURITY OPERATIONS AND DATA

3.1 RELATIONSHIP BETWEEN SECURITY REPORTING SYSTEMS AND TRANSIT POLICE AND SECURITY DEPARTMENTS

The purpose of a transit security reporting system is to provide data required to support the decision-making process of transit police and security departments. The goals of the departments are to prevent crime and create in the public the perception of a secure transit system. To do this, transit police and security departments respond to emergency calls for service, conduct patrols to prevent and deter crime by protecting people and property, apprehend suspects, recover property, conduct community relations programs to increase citizen satisfaction, and maintain order. Security departments accomplish this by performing operational and support functions: patrol, community relations activities, investigation, and data processing. To this end, they make management decisions on policy, deployment and allocation of resources.

Deployment is used here to refer to the short-range strategic placement of officers and equipment within identified problem areas to prevent or deter crime, apprehend suspects, create a sense of security for operators and patrons, etc. This definition of deployment includes the dispatch of patrol units to provide emergency response to calls for service. Allocation is used to refer to the longer range assignment of officers, equipment and other resources to patrol tactics, time periods, locations, and other operational functions. Deployment decisions are generally revised daily, weekly, and monthly, while allocation decisions are revised monthly, quarterly, and annually.

The patrol and community relations functions are the major elements of policing and security work because they accomplish the primary objective of transit security departments: provide a secure environment for operators and passengers. Therefore, this analysis of transit police and security departments and their information systems begins with the discussion of the operational functions -- response to calls for service, other patrol functions, community relations activities, and the flow of information associated with each of these functions; beginning with the types of processed data that are used in each function, how they are used, and what data they generate. The analysis continues with the discussion of the support functions -- investigation, and data processing -- and management functions.

The relationship between transit police and security department functions and their security information system is illustrated in Figure 3.1. There are five principal sources of information: dispatch responses to calls for service, random patrol, directed patrol, apprehension-oriented patrol and community relations programs.

The data collected consists of three basic types: offense, arrest, and administrative. An exhaustive discussion of the individual data elements is not attempted here but will be presented in Section 4. The basic types of data are:

- Offense data -- information about incidents including crime and non-crime-related complaints against juveniles, and traffic related incidents that occur on the transit system. For example: what happened, when, where, how, who was involved, the method of operation (M.O.), descriptions of property stolen, lost recovered, or damaged; etc.

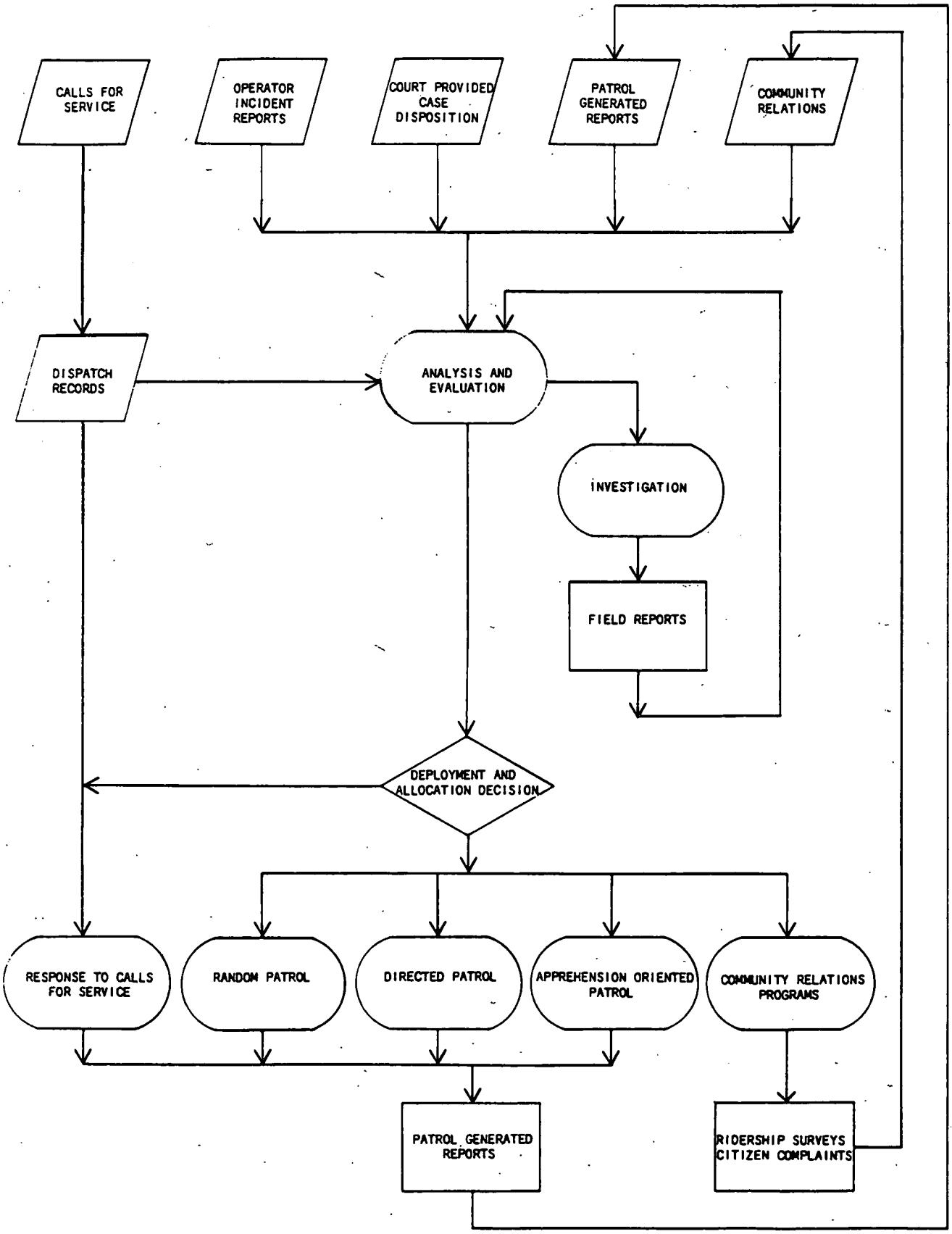


Figure 3.1
MODEL TRANSIT SECURITY INFORMATION SYSTEM

- Arrest data -- information about who was arrested or issued a summons in lieu of arrest, when and where arrestees are detained, details about the detention and release of juveniles.

- Administrative Data -- information necessary for management: dispatch records, workload figures, property and evidence management records, details about how cases using arrests are resolved, and the disposition of cases which go to court.

3.2 OPERATIONAL FUNCTIONS

Much of a department's daily operations are patrol functions in which officers, having detailed knowledge of areas under the department's jurisdiction, are "out on the street" rather than in the department facilities. The purpose of having officers out in the department's jurisdiction is to enable them to respond quickly to the scene of incidents to aid victims or apprehend suspects, and through their frequent and timely presence, to deter or prevent criminal incidents. The law enforcement literature classifies patrol activities as:

- Calls for Service -- officers respond immediately and go to the scene of crime and non-crime related incidents when notified of the incident by telephone or radio communications, or signals from other electronic devices (alarms).

- Random patrol -- officers move randomly over their beats when not responding to calls for service. The purpose is to prevent and deter crime by demonstrating the presence of the police as well as to observe and respond

to crimes in the process of being committed. Officers make contact with the public and vehicle operators to increase their sense of security while riding or working on the transit system.

- Directed patrol -- when not responding to calls for service, officers go to those areas where crime analysis has indicated that crimes are especially likely to occur. Officers are first briefed on the types of crimes that are likely to occur and on the identities of suspects.

- Apprehension-oriented patrol -- officers' primary purpose is to apprehend suspects who have been previously identified by name or general description.

- Community relations -- officers conduct training sessions in schools and community organizations to deter crime, to teach self-protection techniques, and to educate the public about the security department's crime prevention activities.

All police and security departments perform some patrol and community relations activities. For departments staffed by sworn officers, patrol will comprise the majority of their operations. The departments without police powers do relatively little patrol work, but they perform extensive community relations activities. The various operational functions, the types of police and security departments which perform these activities, and the data required to perform them are discussed in the following section.

The operational functions of police and security departments are driven by the deployment and allocation decisions arrived at through the analysis of offense, arrest, and to a limited

degree, dispatch data. Deployment for random, directed, and apprehension-oriented patrol involves the assignment of officers to geographic areas within which crime problems exist. Allocation for community relations activities is based on the analysis of work load data. Directed and apprehension-oriented patrol require, in addition, in-depth analysis of offense and arrest data to develop profiles of crimes and suspects. Any of these operational activities can be interrupted, at the discretion of the dispatcher, to divert patrol units to the scenes of emergency situations, that is, to respond to crime- and non-crime-related calls for service.

3.2.1 Responding to Calls for Service

Transit police and security departments are informed of the occurrence of incidents on the system in numerous ways. One is through telephone- or radio-transmitted requests for emergency security assistance. These requests are received by dispatchers who immediately send department officers and/or local law enforcement officers and/or route supervisors to the scene of the incident. The dispatcher must determine which unit is available (in service) and able to arrive at the scene most quickly.

Dispatchers for departments that prioritize calls for service according to urgency must determine such factors as whether the incident is in progress or has just occurred, whether the suspects are present, and whether there is threat to human life, etc.

The dispatcher uses offense data collected during the call for service to determine its apparent urgency, and dispatch data collected during calls made just prior to the current call to determine whether a patrol unit is available to respond immediately or whether a unit must be diverted from another

activity. In the later situation, the dispatcher consults the patrol schedule to determine the location of the patrol unit nearest the scene of the incident. Having considered all of these factors, the dispatcher sends a patrol unit to the scene of the incident.

Group IV transit police departments are responsible for responding to all calls for service received by the transit system (as well as those received by the local law enforcement agency.) Group III and V police departments share jurisdiction over the transit system with local law enforcement agencies, and an agency's response to a particular call depends on the location of the caller and officer availability. The non-sworn security departments, Groups I and II, respond to calls for service on a limited basis. The standard approach for these departments is to dispatch one of their security officers to handle non-emergency calls such as when an operator reports that a passenger refuses to pay the appropriate fare but will not leave the vehicle. The security officer tries to resolve the situation without calling the local law enforcement agency, but the local law enforcement agency is usually asked to assist in all emergency calls that seem likely to require an officer with the authority to make an arrest. The Group I departments, with only one or two people on staff, often learn of incidents only after the operators have filed their reports at the end of a shift, and these departments are the least likely to respond immediately to calls for service.

To further illustrate how the different police and security departments handle calls for service, the procedures used by six departments, two from Group III and one from each of the other groups, will be described. The METRO Police, a representative Group IV police department, developed a "Master District Plan" to indicate where its patrol officers are located and where calls for service originate. A map of their transit

jurisdiction is laid out with five master districts each with sectors and beats. When the dispatcher must send an officer to respond to a call for service he uses a three part code. The first number indicates the district; the second, the grid section; the third incorporates the beat which distinguishes between the inner and outer loops and the shift to which the officers are assigned. Unlike many transit security departments, METRO police stress identification of incidents by beat rather than by transit route.

TRI-MET and MARTA were both classified as Group III systems, but their procedures to response to calls for service are dissimilar because MARTA includes a heavy rail system and TRI-MET is primarily a bus system. MARTA equipped its rail stations with telephones for passenger assistance. These telephones are color-coded to indicate their purpose. Blue phones are to be used for police emergencies, red phones for fire emergencies and white phones for passenger assistance. Telephone calls are prioritized by dispatchers with the highest being police emergencies followed by fire and passenger-related problems respectively. MARTA police are usually dispatched to handle the calls, but occasionally the local law enforcement agency may be asked to respond.

The transit police at TRI-MET are the first to be called if an operator requests assistance. If they do not have the personnel to respond, the local law enforcement agency, usually the Portland Police Department, is requested to provide assistance. The Portland Police respond to all incidents of serious crimes. In those instances when the Portland Police need assistance, they may call TRI-MET police. TRI-MET has a special program to respond to calls involving vandalism. A hot line is maintained, and if a call indicates that the act of vandalism is in progress, TRI-MET police respond immediately. If a suspect is caught, a reward of 10 percent up to $200 is provided to the

caller. Currently the files on vandalism and callers are kept on handwritten cards and are analyzed manually. TRI-MET also maintains records on minor crimes and vandalism which are of little interest to the Portland Police Department.

The security departments of MCTS and New Jersey Transit Bus represent Groups I and II respectively. Neither of them have sworn officers so in a police emergency, the local law enforcement agencies are called. MCTS supplements the efforts of their two security supervisors with those of 24 route supervisors, and it tries to respond to all calls for service by sending a MCTS representative. The New Jersey Transit Bus security department also tries to respond by sending a representative to all calls for service.

D-DOT provides transit for the city of Detroit, and the Bluebird division of the Detroit Police Department provides special security and police services for D-DOT. When an incident occurs on a bus or at a bus stop, the Bluebirds are contacted first. If they do not have officers available to respond, then the precinct where the incident occurred will be notified. Data on transit-related incidents which are handled by the precinct officers are tallied with the Bluebird transit incidents to provide a more complete measure of transit-related crime than is used in many cities.

In general, dispatchers collect offense data and response times for crime and non-crime-related incidents that require emergency responses. They analyze data collected prior to a call for service to make decisions to deploy officers to respond to the call. These data are also analyzed weekly, monthly, quarterly and annual intervals to support the allocation of resources for all security functions.

The data used to deploy officers to respond to calls for service are:

Type of offense
Time of occurence
Date of occurrence
Location
Time call was received
Time patrol unit was dispatched
Time patrol unit arrived
Time patrol unit cleared the scene
and returned to service

The data generated from calls for service patrol are:

FORMS
Dispatch Cards
Incident Reports
- o crime-related
- o non-crime-related
- o traffic
- o complaints against juveniles

Arrest Reports
Property Reports
Officer's Daily Activity Reports
REPORTS
Response Times

3.2.2 Random Patrol

This traditional police activity requires the officers to randomly patrol within a certain beat when not responding to calls for service. The difference between random and directed patrol is that the former does not involve activities planned for the officers nor is it dependent on crime analysis.

Officers review 24-hour crime summaries before going on duty and use their discretion in patrolling their beats, but they are not assigned to patrol specifically those locations on their beat where crime is likely to occur nor are they to focus their activities on a particular type of crime.

Random patrol includes officer-initiated patrol activities which are specific actions undertaken on the officer's own initiative to prevent or deter crime. Examples of such actions include the inspection of transit facilities and vehicles and field interrogations in which officers stop, question, and sometimes search persons whom they suspect of having committed a crime or who they suspect is about to commit a crime.

Several Group III and Group IV transit police departments use random patrol tactics, usually in conjunction with selective enforcement in which officers concentrate on enforcement of selected laws and regulations. Officers on random patrol for MBTA, a Group IV police department, submit reports on suspicious activities that provide a record that might be useful at a later date. MARTA, a Group III security department, employs three security guards through a contract security service to randomly ride its buses. These guards, anonymous even to the Chief of the MARTA Police Department, monitor bus operators' fare collection practices.

New Jersey Transit Bus Operations, Inc., a Group II security department that serves a large urban transit-dependent population with a high volume of crime, implemented a "Stop and Board" program as a means of increasing the presence of uniformed officers on its buses. Originally, local law enforcement officers were just invited to ride the system's buses free when in full uniform, but as the result of an agreement between the Security Department and the Newark, Jersey City and Atlantic City Police, officers patrol the buses on

their beats. Pairs of officers follow buses along their routes. At bus stops, they board the buses, one from the front, the other from the rear. Officers on foot patrol randomly board buses which run along their beats. The officers walk through the buses, checking for signs of misconduct or criminal threats. If criminal activity is discovered, the officers take the necessary actions, and submit the required reports. If no danger is apparent, the officers leave the bus and document the bus inspection activity at the end of their shift. This practice may delay buses for up to approximately three minutes; however, the patrons seem to welcome the sense of security this practice has inspired and have even cheered the officers on occasion. The public's receptiveness to this practice has been so gratifying that other local law enforcement agencies plan to participate in the program. The program has received favorable media attention, and it seems to reinforce the public's perception of security on the transit system.

In addition to bus inspections, New Jersey Transit Bus Operations' security officers conduct random fare card checks in which they approach patrons who use fare cards to board the bus. The officers exchange cards with patrons to determine the authenticity of the cards used by the patrons. NJ Transit's fare cards are coated with a special iridescent finish which make counterfeit cards easy to identify. Patrons using cards that are clearly counterfeit are held for questioning by the police.

Officers submit a wide variety of reports about their activities during patrol, the most common of which is an incident report, describing in detail the type of incident; the time and location of occurrence; the suspects, victims, and witnesses involved; injuries; property loss and damages; actions taken by officers; and administrative data such as the case number assigned, the officers (or other persons reporting) who were involved, what,

if any, supplemental reports were submitted. These data can be collected on a single form or on any combination of forms depending on the design of the reporting system.

The data used in patrol are the results of analysis of data collected during previous patrols and to some degree during other functions.

The data used to deploy officers for random patrol are:

FILES
Type of Crime
Location of Crime
Juvenile
REPORTS
Incident Summaries
Incident Frequencies by Type
Incident Frequencies by Route/Station
Incident Frequencies by Time of Day
Incident Frequencies by Day of Week
Incident Frequencies by Facility
Workload Distributions
Projected Number of Calls for Service

The data generated from random patrol are:

FORMS
Incident Reports
- o Crime
- o Non-crime
- o Complaints Against Juveniles
- o Traffic

Field Reports
Arrest Reports
Property Reports
Officers Daily Activity Reports

3.2.3 Directed Patrol

Directed patrol is used in place of or in addition to random patrol. Directed patrol attempts to maximize the impact of officers by assigning them to areas where crimes are likely to occur and briefing them on those crimes and probable suspects. Unlike random patrol, directed patrol requires crime analysis. "To be effective directed patrol must be closely linked to crime analysis and must have equal priority with calls for service as a patrol function." [emphasis omitted] Improving Patrol Productivity Volume I "Routine Patrol," National Institute of Law Enforcement and Criminal Justice, July 1977, p. 7.

Directed patrol is used to some degree by all transit police and security departments because they do not have the resources to evenly cover the entire transit system. The smaller departments primarily use directed patrol while larger departments use both directed and random patrol. The use of directed patrol by three departments -- MBTA, Southeast Michigan Council of Governments and the Bluebirds in Detroit, and New Jersey Transit Bus -- is described below to illustrate how directed patrol uses analysis of reported data.

The MBTA transit police officers receive written instructions on where to be at certain times during their shift. Reports summarizing the month's incidents are examined to determine the effects of any changes in patrol and daily police operations. The frequency of incidents and the methods of operation used are analyzed to determine during what hours of the day, what days of the week and at what stations incidents are most frequent. The desk sergeant uses this data and a summary of the previous day's activity to deploy the MBTA officers, and the chief reviews the plan for deployment. The briefing officers also review the daily summary and brief the officers on what has been happening during the past 24 hours and whom to look for.

The MBTA transit police have developed a reporting system that tracks officer activity as well as calls for service and reports of incidents. Although not completely implemented at the time of the site visit, they had already used the data reported on officer activity and incidents to determine the relative value of directed and random patrols. Their findings indicated directed patrol to be more effective. Their reporting system compiles information reported by the public, bus dispatchers and operators, Boston Police officers and their own officers. Analysis of the transit crimes in Boston indicates that most of their problems are on their rapid transit system. The most serious bus crimes occur in the core area and on the lines to the beach during the summer.

In Detroit, the Southeast Michigan Council of Government's Public Safety Division collects, analyzes and distributes data on transit crime. Analysis of the data indicates the three precincts with the largest number of crimes at bus stops, and the computer prints maps which indicate the street location of these crimes. The frequency of crime is analyzed by time of day, day of week, location, victim and offender characteristics. While other factors such as availability of officers will affect deployment decisions, the transit crime analysis data is used for routine surveillance assignments at bus stops. The effectiveness of this directed patrol of bus stops has been illustrated by arrests at the bus stops within a two week period of three suspects wanted for the commission of crimes on the transit system.

New Jersey Transit Bus, a Group II system, assigns its security officers to ride buses on routes on which the operators have reported problems. Operator reports describe the extent of incidents that have occurred and indicate whether police assistance was required. Bus operators file "unenforced rule

reports" when they have problems with passengers such as non-payment of fare and playing radios loudly. Often these less serious problems can be resolved without police assistance.

Officers collect offense, arrest and other data about incidents that have occurred while on patrol. Crime analysts use offense and arrest data from previous days, weeks, and months to produce daily, weekly, and monthly reports to support decisions for deployment of officers for random and directed patrols. They use offense, arrest and dispatch data from previous months, quarters and years to produce monthly, quarterly, and annual reports to support allocation decisions related to the use of all types of patrol, community relations, and other security functions.

The data used to deploy officers for directed patrol is similar to that for random patrol deployment; however additional data is required to provide more detail. The following are used for directed patrol deployment.

FILES
Type of Crime
Location of Crime
Juvenile

REPORTS
Incident Frequencies by Type
Incident Frequencies by Route/Station
Incident Frequencies by Time of Day
Incident Frequencies by Day of Week
Incident Frequencies by Facility
Workload Distributions
Projected Number of Calls for Service
Crime Profiles
Trends

The data generated from directed patrol are:

FORMS

Incident Reports
- o Crime
- o Non-crime
- o Complaints Against Juveniles
- o Traffic

Field Reports

Arrest Reports

Property Reports

Officers Daily Activity Reports

3.2.4 Apprehension-Oriented Patrol

Apprehension-oriented patrol is recommended when a crime pattern has been so well established as to become predictable, increasing the chances of interrupting an occurrence while in progress, when a suspect has been identified and associated with a location where he/she might be found. Under such conditions physical or electronic stake-outs, covert surveillance of suspects or specific locations either by officers or by electronic equipment, are appropriate. When a victim profile has been associated with a crime pattern, a decoy operation is feasible using covert surveillance of areas where officers have been set up as potential "victims" for criminal attack.

Officers in transit police departments have the authority and the responsibility to issue summonses and to make arrests when necessary. Consequently, apprehension-oriented patrol is a prominent element in their operations. These officers rely on stake-outs, decoy operations and extensive use of electronic equipment. For example, PAT is a Group III police department which organized a stake-out at a site where patrons board one of

its funiculars. A PAT officer, disguised as a balloon salesperson, was assigned to monitor fare collection activity. The officer observed that the attendant was pocketing some of the fares collected, and the attendant was apprehended. BART, MBTA, and PATH, all with Group IV police departments, and PATCO, MARTA, WMATA, all with Group III police departments, are among those that use closed circuit TV cameras and two-way radios to monitor activity in their rail stations.

Crime analysts use data from incident and arrest reports and other intelligence to compile analyses from which to deploy officers for apprehension-oriented patrol. The aim of apprehension-oriented patrol is to arrest suspects; therefore arrest reports should be generated in higher proportions here than during other types of patrol. Because stake-out or decoy operations do not always result in apprehensions, and because the narrow aim of apprehension-oriented patrol generally precludes other patrol activities, it is likely that some apprehension-oriented patrol activities generate only the Officers Daily Activity Reports. On occasion, officers submit field reports about situations they observe that could be of interest but could not be classified as incidents.

The data used to deploy officers for apprehension-oriented patrol are:

FILES
Master Name
Type of Crime
Location of Crime
Criminal History
Arrests
Juvenile

REPORTS

Incident Frequencies by Type
Incident Frequencies by Route/Station
Incident Frequencies by Time of Day
Incident Frequencies by Day of Week
Incident Frequencies by Facility
Workload Distributions
Projected Number of Calls for Service
Crime Profiles
Suspect Profiles
Crime Forecasts
Victim Profiles
Vehicle Descriptions
Property Descriptions
M.O. Intelligence

The data generated by apprehension-oriented patrol are:

FORMS

Arrest Reports
Field Reports
Incident Reports
- o Crime
- o Non-crime
- o Complaints against juveniles
- o Traffic

Property Reports
Officer's Daily Activity Reports

3.2.5 Community Relations

Community relations often involve contact with the persons for whose protection transit police and security departments are responsible: transit vehicle operators, other employees, and passengers. The departments accomplish this by training

operators in self-protection, educating patrons on the availability and use of security measures available in the transit system and publicizing the impact of their crime prevention techniques. The PAT police department presents to its operators a 20-minute movie titled "Never A Dull Moment" which suggests ways of handling life-threatening situations which result from criminal activity. The departments of WMATA, MARTA, and New Jersey Transit Bus Operations work with schools and community groups to educate the public about security and safety features in the stations, buses, and throughout the system.

All transit police and security departments perform community relations functions to reassure the public of the transit system's concern for their safety, and they frequently emphasize the importance of keeping operators informed of security actions taken in response to their complaints. WMATA also encourages informal calls from its operators to security and operations officials to discuss the crime problems that they encounter, the solutions that WMATA prescribes, etc. MCTS responds systematically to operators' complaints, informing them in writing of how situations that concern them have been resolved. Security departments, having no arrest powers nor enforcement responsibilities, rely heavily on community relations activities. New Jersey Transit Bus Operations prints pamphlets explaining there is to be no smoking on the bus, which its officers give to violators after requesting that they not smoke. AC Transit has established a program in which it hires gang members to rehabilitate defaced buses. Consequently, the gang members feel responsible for the condition of the buses and dissuade other juveniles from vandalizing them again.

Transit systems conduct surveys designed to measure citizen satisfaction about issues including service, operations, and security. This and other data from incident, arrest reports,

etc., are analyzed to support the selection and implementation of crime countermeasures, of which community relations programs are one. The data are used to identify target audiences, to determine which methods would be effective and to develop program content.

The data used to develop community relations activities are:

FILES
Type of Crime
Location of Crime
Juvenile
REPORTS
Incident Frequencies by Type
Incident Frequencies by Route/Station
Incident Frequencies by Day of Week
Incident Frequencies by Facility
Incident Frequencies by Operator
Property Descriptions
Crime Profiles
Victim Profiles

The data generated by community relations activities are:

Ridership surveys
Patron complaints, commendations, and comments

3.3 SUPPORT FUNCTIONS

The support functions are ancillary to the operational functions, but they are essential to providing security. The support functions are described below.

- Investigation -- officers collect data from suspects, witnesses, victims, and others to supplement data collected on initial crime/incident reports. These data are used to compile analyses that lead to the apprehension and prosecution of suspects.

- Data processing and analysis -- data are organized, reorganized, and examined to determine the existence of patterns. For example crime rates for particular locations would be calculated.

3.3.1 Investigation

Investigation supports patrol by providing data for detailed crime analysis which lead to solving crimes, apprehending criminals, recovering property, and prosecuting suspects. Although all security departments follow up on complaints received, not all of them supplement initial incident reports with additional data. Only the departments with transit police, engage in routine systematic examination and inquiry into incidents that might ultimately lead to the apprehension of suspects. Before gathering additional data, officers review files and reports that have already been compiled. All data that has ever been collected might be relevant to an investigation. Usually, the data reviewed would include raw data files on incidents, frequency data generated from these files, criminal history files on suspects, and field reports. The frequency data includes the frequency of incident by type, route or station, street location, transit facility, time of day, day of week and method of operation. Criminal history files are examined to develop a list of all the incidents attributed to a suspect. In some cases the files are searched by suspect identification data; for example, all incidents which were committed by a male suspect six feet tall with a tattoo on

the left arm would be listed. Officers record the data they collect during an investigation on field reports which are also used by officers on patrol to record noteworthy occurrences which cannot be classified as incidents.

BART has a staff of detectives, each of whom concentrates on investigating specific classifications of crimes i.e., assaults, robberies, sex crimes, etc. The Records Officer distributes about 80 crime reports among nine detectives daily. MARTA has one detective and New Jersey Transit Rail has two detectives who work in conjunction with the local law enforcement agencies to investigate major crimes on their systems. They have sole investigative responsibility for less serious and transit-specific crimes.

Internal crimes are usually designated a responsibility of the transit police or security department. In some departments, investigations are conducted by officers on patrol between responses to calls for service. Such is the case at PAT, where officers spend some of their uncommitted patrol time investigating crimes. Although PAT officers get assistance with some patrol functions from a small contingent of local Sheriff's deputies, they are exclusively responsible for the investigation of internal crimes. The New Orleans Police Department's transit unit are exclusively responsible for investigation of internal RTA crimes. These investigations rarely result in an arrest because the policy is to resolve internal crime administratively rather than through criminal charges. As a unit of the New Orleans Police these officers have access to the computerized UCR database. To check internal theft, MBTA compares revenue generated in each area to determine if any area is generating less money than comparable areas. For example, comparison of the revenue generated at parking lots suggested a significant loss of funds at one lot. SEPTA shares jurisdiction with the Philadelphia Police Department, which investigates all serious crimes on the system except those involving internal theft. The latter are investigated by SEPTA's detectives.

Group I and II security departments rely on the cooperation of local law enforcement agencies to solve many of their cases, but they may conduct some investigations. For example, TARTA, RTD, and KCATA conduct preliminary investigations of transit crimes to obtain the information necessary to enlist the assistance of the local law enforcement agency. These departments try to maintain a reputation for following up incidents when the local law enforcement agency is called to handle an incident. KCATA and TARTA both have policies of filing charges and prosecuting offenders whenever the local police are called. Group I and II security departments may also do investigative work to determine which juveniles were responsible for vandalism of transit vehicles or facilities. After identifying them, the department may go to the school or parents rather than the police to obtain restitution and discourage any additional vandalism.

Investigation uses the outputs of the analysis and evaluation function. The outputs of the investigation function, including M.O. intelligence and field reports, are feedback, into the analysis and evaluation function as inputs.

Writing reports is of most importance to Groups III, IV and V police departments because as police reports, they form the official record of the incident used in court. In some cities, Group III department reports are not the official record because they share responsibility for the transit system with the local law enforcement agency whose reports are the official record. In these cases, the transit police file a copy of the report with the local law enforcement agency which then becomes the official record. This distinction may be a minor one, but if a suspect is tried for an offense, his attorneys may subpoena the official records which must go through the local law enforcement agency. Because their reports comprise the official record, transit police departments emphasize the need for their officers to file

complete and easily understood reports. A simple check off form cannot provide the detail needed if the case goes to court. Group I and II security departments are very dependent on operator reports, but operators, who are not trained in police reporting, are less likely to fully explain an incident than reports filed by sworn officers.

The data used to investigate incidents are:

FORMS

Incident Reports
- Crime
- Non-crime
- Complaints against juveniles
- Traffic

Arrest Reports

Field Reports

Property Reports

M.O. Intelligence

REPORTS

Incident Frequencies by Type

Incident Frequencies by Station/ Route

Incident Frequencies by Facility

Incident Frequencies by Time of Day

Incident Frequencies by Day of Week

Incident Frequencies by M.O.

Incident Frequencies by Suspect Profile

Incident Frequencies by Victim Profile

Incidents by Offender

Incidents by Offender's Physical Description

The data generated by the investigation function are:

Field Reports
M.O. Intelligence

3.3.2 Data Processing

Data processing is the function during which raw data are processed to produce information used to evaluate the performance of officers and other staff, to evaluate the effectiveness of countermeasures that have been implemented to prevent and deter crime, to make resource deployment and allocation decisions, to make daily decisions on patrol tactics and assignments, and to establish and monitor administrative controls. Police and security departments analyze response times to determine how quickly officers arrive at the scenes of incidents, how much time they require to resolve incidents, and how long and for what reasons officers are unavailable to respond to calls. They measure the number of arrests made by individual officers and use the as indicators of officer performance. They examine departmental performance by evaluating the effectiveness of countermeasures, that is, the impact they appear to have on subsequent levels of reported crime.

Data processing consists of organizing and manipulating data to produce new information. For example, with the number of incidents and their locations, analysis can produce the frequency with which incidents occur at various locations. The data used in processing may include any or all the data gathered by the reporting system. The forms used to collect this data are:

Dispatch Cards
Incident Reports
- o crime-related
- o non-crime-related
- o complaints against juveniles

Arrest Reports
Property Reports
Officer's Daily Activity Report
Field Reports
Operator Reports
Citizen Complaints
Surveys

The data processing function generates the following:

FILES
Master Name
Type of Crime
Location of Crime
Case
Criminal History
Arrests
Juvenile
Daily Dispatch Logs
Daily Bulletins

REPORTS
Incident Summaries
Incident Frequencies by Type
Incident Frequencies by Route/Station
Incident Frequencies by Time of Day
Incident Frequencies by Day of Week
Incident Frequencies by Facility
Workload Distributions
Projected Number of Calls for Service
Crime Profiles

Suspect Profiles
Victim Profiles
Crime Forecasts
Vehicle Descriptions
Property Descriptions
Incident Frequencies by M.O.
Incident Frequencies by Suspect Profile
Incident Frequencies by Victim Profile
Incidents by Offender
Incidents by Offender's Physical Description

Data processing will be more thoroughly discussed in Section 4.2.

3.4 MANAGEMENT FUNCTIONS

The transit security management functions will be shared by the security department and the transit agency management. The distribution of the functions will depend on the size of the department and the organizational structure. The management functions are policy making/budgeting and administration.

3.4.1 Policy Making/Budgeting

Policy making consists of evaluating operations, and departmental budgeting consists of making resource allocation decisions based on those evaluations.

All transit security departments evaluate the effectiveness of their operations; however, this evaluation may not be a formal evaluation but an informal review of summary data. The NYCTA Transit police's need for formal evaluation was reflected in their stated need to constantly evaluate new types of operations that are developed to deal with new methods of crime. (There is no such thing as a new crime, but new problems

constantly arise on the NYCTA subway--gold chain snatching and stealing of eye glasses are recent examples.) METRO has had problems with cars being stolen from its patron parking lots, so it implemented several security measures, each at different parking lots. On one lot, they assigned a full time security guards to maintain a uniformed presence. At another, they put up a fence and a gate which prevented anyone from getting in late at night. At other lots, they assigned security guards to randomly check the lots to see if there were any suspicious activities occuring.

Transit police and security departments use evaluation results to plan their operations. Because they cannot fully cover all locations at all times, they use the results to determine what percentage of their officers should be on each shift, where these officers should be deployed, what the officers should be looking for when they are out on patrol, etc.

Resources are required to implement the policy decisions. To obtain resources, a transit police in security department will probably have to justify its budget to a larger transit management group. Data from the crime reporting system can be used to demonstrate the size of the security problem with incident frequencies or dollar losses due to vandalism and other crime, or the performance of the department with various measures such as number of arrests and summonses issued or decreases in operator and passenger assaults. Having obtained the resources, the department makes allocation decisions to implement the policies chosen.

All available processed data is used in the determination of security policy and allocation of resources--essentially the output or product of the analysis function does not produce data, but decisions; therefore no data input and outputs are listed here.

3.4.2 Administration

The administration functions may be performed by the department, by the transit agency administration or the responsibility may be shared. Maintenance of employee records, payroll and bookkeeping must be performed, but the data required for three information systems are not specific to crime reporting systems. Because there are many sources of literature on these systems, only those aspects which are particular to police and security departments will be discussed here--administrative controls for crime reporting systems and staff evaluation.

An important facet of any crime reporting system is its internal administrative controls to insure that no data has been deleted and all necessary reports have been filed. In some cases the focus of auditing reports is to insure operator reports have been filed, in others, it is to ensure that all police data are being properly maintained.

Some departments such as NYCTA Transit Police have been formally audited by outside firms to ascertain whether all cases are appropriately closed and unresolved cases are properly accounted for. NYCTA Transit Police assign each incident a control number when a call is received and all records reference this number. MBTA's new computerized reporting system will provide a complete audit trail; once an incident is entered, it will not be possible to delete it. Dispatch files are often used to audit operator reports. In those instances when an operator calls for assistance, he is expected to file a report on that incident. Although many security departments audit dispatch records for this reason, many operators interviewed for this and other projects do not file the required reports. Other departments like TRI-MET audit their own reports to ensure that operators have filed the necessary reports.

The New York City Transit Police have contracted with MCAUTO Systems Group, Inc. for new data processing hardware and software. The new system will handle all of the department's administrative functions including personnel and equipment records, and it will allow them to examine officer performance data such as number of arrests by officer. The data processing section also envisions using the employee data base to determine which officer has the most experience in drug undercover operations or who speaks a foreign language like Japanese. MBTA in Boston is also implementing a new reporting system using new hardware and software, which will enable them to perform similar analyses of officer performance. Currently data is available on the number of arrests made by each officer, and two officers are responsible for almost half of the arrests made by the MBTA transit police.

3.5 NEEDS AND REQUIREMENTS FOR TRANSIT SECURITY DATA COLLECTED BY TRANSIT SECURITY REPORTING SYSTEMS

There are three primary users of transit crime data: transit police and security departments, transit agencies; and the Urban Mass Transportation Administration. Transit police and security departments require transit crime data to perform daily functions. Less evident perhaps, are the needs of transit agencies and UMTA.

3.5.1 Transit Police and Security Departments' Data Needs

The primary objective of transit police and security departments is protection of transit passengers, personnel and property from injury, loss and damage. A secondary but important objective is to provide the public with a sense of security when using the transit system. Transit crime reporting systems provide a process for collecting, analyzing and reporting the information

necessary to accomplish these objectives. The functions of the department determine the exact data needs and requirements, as discussed previously in this section.

It is also important that the transit police and security departments be able to put their data in perspective. Transit crime is only part of the larger picture of crime in the city, and data on crime in the areas where the transit system operates can be used to provide some of this perspective. Another aspect of this perspective is the changes that the department itself may have undergone. Budget cutting may have reduced the department's personnel or additional equipment may have been obtained. A log of department policy and resources will also contribute to understanding the data collected by the transit crime reporting system.

3.5.2 Data Needs of Transit Agencies

Transit agencies have become increasingly involved in law enforcement and security work as crime has increased on the street and transit systems. Although providing security services is not a primary function of transit agencies, personal security while on the transit system affects ridership and is expected by the public. Since most transit agencies are public corporations, passenger's may expect an evener high level of security. Although it may seem self evident that the local law enforcement agency, not the transit agency, is responsible for security on the transit system within the local law enforcement agency jurisdiction, the public may not distinguish between the two agencies when demanding a secure transit environment.

Transit agencies also face significant direct financial losses from crimes committed on their system including expenditures to repair vandalism, losses due to fare evasion, theft, counterfeiting of passes and transfers, as well as crimes

committed against operators. The needs and requirements of a transit agency, with or without a security program, are based on the importance to the agency of providing a secure transit environment and controlling financial losses.

For an agency to judge its security needs, it must have a minimum amount of data on the extent of its crime problem--usually the frequency with which various crimes are committed and how large are its financial losses to crime. If either of these data items indicate that crime is a significant problem for the transit system, additional data will be needed to make security-related decisions.

3.5.3 Data Needs of UMTA

For UMTA to allocate its limited resources, it needs to identify the areas where resources are needed and this requires data. To determine the relative importance of security to transit agencies, it needs some information on the extent of crime on the nation's transit systems and the nature of this crime. Like transit agencies, UMTA needs national information on the frequencies of various crimes, and the financial losses due to crime. To allocate resources targeted for transit security, UMTA's Safety and Security staff need additional information on the conditions surrounding high frequencies of crime and financial losses. For example, the need to know what modes are most affected, what are effective countermeasures, what size of system is most severely affected, etc.

Section 4

SECURITY INFORMATION SYSTEMS

The relationship between transit police and security department functions and security information was illustrated in Figure 3.1. To reiterate, there are five operational functions: responses to calls for service, random patrol, directed patrol, apprehension-oriented patrol and community relations programs; two support functions: data processing and analysis and investigation; and two management functions: policy making/ budgeting and administration. There are three principal sources of information: dispatch records, incident reports (filed by operators, patrol officers, and patrons), and court reports of case disposition. Some departments obtain additional information during investigations. The raw data is processed and analyzed. The products support policy making/budgeting and administration and in turn, produce management decisions on deployment and allocation of resources.

Transit police departments collect, process and use their data differently than transit security departments. The primary responsibility of transit security departments is to supplement the LLEA's policing of the transit system. Transit security departments are infrequently required to handle serious crimes or provide immediate responses to operator or passenger calls for service. Security departments do relatively little criminal investigative work, and then only with less serious crimes. Their resources are allocated for identification of crime problem areas, obtaining LLEA support, and using non-police methods and organizations to deal with less serious incidents such as vandalism.

Transit police departments are responsible for protecting people

and property on the transit system and preventing and detering crime through response to calls for service, high visibility through uniformed patrols and covert patrol of the system. They are also responsible for investigating and solving some or all of the crimes that have occurred in their jurisdiction.

These differences in daily operations between transit police departments and transit security departments are reflected in their reporting systems, particularly in the level of detail required. The following sections discuss the collection, processing, and analysis of data by transit police departments and by transit security departments, and the products thereof.

4.1 COLLECTION OF DATA

The data collected by transit police and security departments may be limited to operator incident reports or may include the numerous reports filed by sworn officers who apprehend and arrest suspects involved in criminal activity. Generally, transit police departments collect more detailed data than do transit security departments. Obviously, security departments without police powers do not use arrest forms, and they are relatively free to develop their own data collection forms and procedures, while those having police powers must conform to Federal practices regarding police reports and the state reporting requirements.

Table 4.1 illustrates the data elements that are frequently collected on the most commonly used forms. The forms used by the transit police at METRO and BART are representative of the forms used by most transit police departments. Officer's Daily Activity Reports and Dispatch Cards (or logs) record what the officer or dispatcher did during work hours. Although these reports may contain substantive data on incidents, they are usually used for monitoring the filing of incident reports and the substantive data which comprises the official record is reported on incident report forms.

TABLE 4.1

EXAMPLES OF FORMS USED BY HOUSTON METRO AND BART

	ADMINISTRATIVE	
	Officer's Daily Activity Report	Dispatch Cards
IDENTIFICATION		
Dispatchers		x
Operators		x
Officers	x	x
Other Transit Employees		x
Arrestees		
Suspects		
Victims		
Complainant (if not transit employee)		x
Witnesses		
Parents		
Other		
Vehicles	x	x
DESCRIPTIONS		
Arrestees	x	
Suspects	x	
Victims	x	
Complainant (if not transit employee)	x	
Property		
Vehicles		
INCIDENTS*		
Type of Incident	x	x
Transit/Non Transit		
Location (Route/Run)	x	x
Date Reported	x	
Time Reported	x	
Date of Occurrence		x
Time of Occurrence		
Day of Occurrence		x
Method of Operation (M.O.)		
Environmental Factors (Location of Transit Coach, number of witnesses and passengers, weather conditions, other)		x
Injury/Damages		
Synopsis of Incident		

TABLE 4.1 (continued)

EXAMPLES OF FORMS USED BY HOUSTON METRO AND BART

	ADMINISTRATIVE	
	Officers Daily Activity Report	Dispatch Cards
CASE DISPOSITION		
Action taken	x	x
Warning		
Summons		
Arrest		
Other		
Charges Files		
Date of Arrest		
Reports Filed		x
Case Status		x
Final Disposition		
ADMINISTRATIVE		
Control Numbers	x	x
Response Times		x
Hours Worked	x	
Supplemental Reports		x
Assistance from Other (Police, ambulance, fire, tow, etc.)		
Mileage	x	
Vehicle Inspection	x	
Shift	x	
Property Management Information		
How Report Received		x
Distribution of Report		x
Place of Detention		

TABLE 4.1 (continued)

EXAMPLES OF FORMS USED BY HOUSTON METRO AND BART

	INCIDENT REPORTS		
	Crime	Non-Crime	Complaints vs. Juveniles
IDENTIFICATION			
Dispatchers	x	x	
Operators	x	x	
Officers	x	x	x
Other Transit Employees	x	x	
Arrestees	x		
Suspects	x		x
Victims	x	x	
Complainant (if not transit employee)	x		
Witnesses			
Parents			x
Other			
Vehicles	x		
DESCRIPTIONS			
Arrestees			
Suspects			
Victims			
Complainant (if not transit employee)			
Property			
Vehicles			
INCIDENTS*			
Type of Incident	x	x	x
Transit/Non Transit	x		
Location (Route/Run)	x	x	
Date Reported	x		
Time Reported	x		
Date of Occurrence	x	x	
Time of Occurrence	x	x	
Day of Occurrence	x		
Method of Operation (M.O.)	x		
Environmental Factors (Location of Transit Coach, number of witnesses and passengers, weather conditions, other)			
Injury/Damages	x		
Synopsis of Incident	x		

*Crime, Non-Crime, Interviews, Arrest Forms

TABLE 4.1 (continued)

EXAMPLES OF FORMS USED BY HOUSTON METRO AND BART

	INCIDENT REPORTS		
	Crime	Non-Crime	Complaints vs. Juveniles
CASE DISPOSITION			
Action taken	x		
Warning			
Summons			x
Arrest	x		
Other			
Charges Filed			
Date of Arrest			
Reports Filed	x		
Case Status	x		
Final Disposition			
ADMINISTRATIVE			
Control Numbers	x	x	x
Response Times		x	
Hours Worked			
Supplemental Reports			
Assistance from Others (Police ambulance, fire, tow, etc.)			
Mileage			
Vehicle Inspection			
Shift	x	x	
Property Management Information	x		
How Report Received		x	
Distribution of Report	x	x	
Place of Detention			

TABLE 4.1 (continued)

EXAMPLES OF FORMS USED BY HOUSTON METRO AND BART

	INCIDENT REPORTS		
	Traffic	Property	Field Reports
IDENTIFICATION			
Dispatchers			
Operators	x		
Officers	x	x	x
Other Transit Employees	x		
Arrestees			
Suspects	x		
Victims	x	x	
Complainant (if not transit employee)	x	x	x
Witnesses	x		
Parents			
Other			
Vehicles	x		x
DESCRIPTIONS			
Arrestees			
Suspects			
Victims			x
Complainant (if not transit employee)			x
Property	x	x	
Vehicles	x		x
INCIDENTS*			
Type of Incident	x		
Transit/Non Transit			
Location (Route/Run)	x		x
Date Reported	x		
Time Reported			
Date of Occurrence	x		
Time of Occurrence	x		
Day of Occurrence			
Method of Operation (M.O.)			
Environmental Factors (Location of Transit Coach, number of witnesses and passengers, weather conditions, other)	x		
Injury/Damages	x		
Synopsis of Incident	x		

*Crime, Non-Crime, Interviews, Arrest Forms

TABLE 4.1 (continued)

EXAMPLES OF FORMS USED BY HOUSTON METRO AND BART

	INCIDENT REPORTS		
	Traffic	Property	Field Reports
CASE DISPOSITION			
Action taken			
Warning			
Summons			
Arrest			
Other			
Charges Filed			
Date of Arrest			
Reports Filed			
Case Status			
Final Disposition			
ADMINISTRATIVE			
Control Numbers	x	x	x
Response Times			
Hours Worked			
Supplemental Reports			
Assistance from Others (Police ambulance, fire, tow, etc.)			
Mileage			
Vehicle Inspection			
Shift			
Property Management Information		x	
How Report Received			
Distribution of Report			
Place of Detention			

TABLE 4.1 (continued)
EXAMPLES OF FORMS USED BY HOUSTON METRO AND BART

	CASE DISPOSITION	
	Arrest Reports	Case Disposition
IDENTIFICATION		
Dispatchers		
Operators		
Officers	x	
Other Transit Employees		
Arrestees	x	x
Suspects		
Victims		
Complainant (if not transit employee)		
Witnesses		
Parents	x	
Other		
Vehicles		
DESCRIPTIONS		
Arrestees	x	
Suspects		
Victims		
Complainant (if not transit employee)		
Property	x	
Vehicles		
INCIDENTS*		
Type of Incident		
Transit/Non Transit		
Location (Route/Run)		
Date Reported		
Time Reported		
Date of Occurrence		
Time of Occurrence		
Day of Occurrence		
Method of Operation (M.O.)		
Environmental Factors (Location of Transit Coach, number of witnesses and passengers, weather conditions, other)		
Injury/Damages	x	
Synopsis of Incident	x	

*Crime, Non-Crime, Interviews, Arrest Forms

TABLE 4.1 (continued)

EXAMPLES OF FORMS USED BY HOUSTON METRO AND BART

	CASE DISPOSITION	
	Arrest Reports	Dis-position
CASE DISPOSITION		
Action taken		
Warning		
Summons		
Arrest		
Other		
Charges Filed	x	
Date of Arrest		
Reports Filed		x
Case Status		
Final Disposition		x
ADMINISTRATIVE		
Control Numbers	x	x
Response Times		
Hours Worked		
Supplemental Reports		
Assistance from Others (Police ambulance, fire, tow, etc.)		
Mileage		
Vehicle Inspection		
Shift		
Property Management Information		
How Report Received		
Distribution of Report		
Place of Detention	x	

Some departments use one form for criminal incidents and another for non-criminal incidents. When the same forms are used, many of the data fields are not completed for non-criminal incidents. When special forms are used for complaints against juveniles, they are usually not as detailed as crime reports because the juveniles are treated differently from adults and are rarely arrested. Traffic forms are essentially specialized incident report forms. Property forms accompany property that was stolen or will be used as evidence. Field reports are filed by officers investigating an incident or observing unusual activity while on routine patrol. When additional information is required on an incident, it is important that the control number for the original incident be referenced. Arrest report forms and case disposition forms must also reference the control number.

Groups II, III, IV and V departments usually collect data from three principal sources: dispatch records, incident reports, filed by officers, operators and patrons, and external sources like courts. Group I departments are likely to depend entirely on dispatch records and operator reports. Dispatchers and transit operators are rarely trained to observe and report crimes, so the level of detail and completeness of their reports are often less than that desired by security departments.

4.1.1 Dispatch Data

Transit police and security departments receive calls for service by radio from bus operators, subway personnel, officers on their beats, and patrons. Some agencies like MARTA have installed emergency telephones in their rail stations for passengers to use when they need assistance. Dispatchers record information about the calls for service that are received. Transit police or security dispatchers document only calls for

security assistance, while dispatchers for all transit operations record all calls for service including requests for maintenance and non-emergency assistance.

Many transit police and security departments use dispatch records to audit their report process and ensure that all of the required reports have been submitted. One way of doing this is to have the dispatcher assign the case number to the incident. Under this system officers ready to clear the scene of a call for service contact the dispatchers who assign case numbers.

Some departments use the dispatchers' daily logs, 24-hour summaries of the dispatchers' incident descriptions, to prepare police units for the situations they might encounter when on patrol. Other departments noted that the descriptive data collected by dispatchers, especially those that are civilians, may be incomplete or inaccurate and cannot always be relied on. However, the dispatch log is often used to audit the officer reports to ensure that official reports exist for all incidents. It also serves as a back up record of incidents that have been reported.

MBTA has extended the responsibilities of its dispatchers to include the actual filing of incident reports. When a call is received, the dispatcher keys the usual call for service data into the computer and dispatches an officer. When the incident is over, the officer calls the dispatcher back and verbally reports the offense and arrest data about the incident. No paper report is ever filled out by the officer. This process eliminates the duplicate recording of information by the dispatcher and the responding officer and reduces the amount of the officer's time spent completing reports.

The data elements recorded in dispatch logs differ from system to system, but some items are usually included by all systems:

Bus Number
Operator Employee Identification Number
Operator Name
Route Number
Location
Time Called In
Time Unit Dispatched
Time Unit Arrived at the Scene
Problem Code or Incident Classification (i.e. Theft)
Officer and Vehicles Responding
Action Taken
Time Unit Cleared the Scene
Dispatcher Identification Number

Dispatch records for a department with sworn officers will probably also include the following items:

Time Officer Arrived
Complainant's Name and Address (if not transit employee)
Indicator of What Reports Will Be Filed (Incident, Arrest, Supplemental Reports, Warrant Served, Warning, etc.)

4.1.2 Data Collected by Officers on Patrol

Patrol officers report data about the incidents they handle, describing the events, conditions, persons involved, actions taken, officers responding, etc. The actual data collected by a department depend on the intended uses of the data, which in turn depend on the operations it performs.

Group IV security departments collect reports for all incidents in their jurisdiction, and since their officers are the primary sources of these reports, it is relatively easy for them to maintain files on all incidents. Inevitably some transit-related incidents are handled by the LLEA. For example, the transit police may not have officers available to respond or the transit police may request LLEA backup. When reports on transit-related incidents are filed with the LLEA, the transit police must obtain the relevant reports or copies to ensure their files are complete.

Group III departments may encounter many problems with duplication and gaps in their reporting because they share their jurisdiction over the transit system with LLEA's whose reporting of transit crime is, in some cases, inconsistent. When officers from the transit security department as well as local law enforcement agencies respond to an incident, officers from both organizations are required to file reports. If the LLEA sends a copy of its report to the transit security department, there is a risk that the incident will be included twice in the summary statistics. Consistent use of internal control numbers can alleviate this problem. If the LLEA officers respond to an incident, but the transit police do not, copies of the LLEA reports should be forwarded to the transit security department; however, this procedure is not consistently followed. Several transit police departments indicated that they probably do not receive all of the transit-related LLEA reports.

Reports from Group V departments are compiled as part of the LLEA records but are also usually comprise a separate transit file. Group V transit files may suffer the same problems with completeness and duplication as Group I and II files because transit-related incidents handled by officers other than those in the transit unit may not be included in the separate transit file.

The data elements reported will vary from system to system depending on the operations performed by the transit police or security departement. The data usually collected on incident and arrest forms include:

- Case Number
- Classification of Incident
- Date Reported
- Time Reported
- Time of Occurrence
- Complainant (Operator, Adult, Juvenile, etc.)
  - Name
  - Address
  - Telephone
  - Date of Birth
  - Sex
  - Race
  - Age
- Weapon Used
  - Type of Weapon
- Transit or Non-transit Incident
- Victim Status
- Suspect
  - Name
  - Address
  - Telephone
  - Date of Birth
  - Sex
  - Race
  - Age
- Arrest Made, Warning Issued
- Vehicle of Complainant and Suspect
- Property Description
  - Value

Serial Number
Property Tag (If Confiscated)
Synopsis
Case Status
Officers Reporting

Transit police departments collect detailed suspect identification data such as name, age, height, weight, race, and date of birth as well as data on distinguishing physiological features such as color of hair and eyes, scars, and tatoos. Their police officers usually have been trained to note unusual characteristics such as foreign accents.

Transit police records detail the M.O. of assorted crimes including location, time, weapons used, and peculiarities such as "the suspect grabbed the victim's hat through the open window as the train pulled out." Location data usually include transit specific information such as the route and train or bus number as well as geographic description indicating street location. Time data usually consist of time of day, day of week, month and day of month. Transit police departments require this level of detail in order to identify and apprehend offenders, a major part of their operations which are not performed by transit security departments.

Arrest reports and booking information are collected where appropriate by sworn officers. The only new information on these forms that is not found on incident forms is usually information on parents or relatives and identification numbers assigned by other law enforcement agencies. Sworn officers may also fill out reports on confiscated controlled substances (drugs), missing persons, etc. The reports used by BART that were listed in Section 2 are representative of the many forms used by departments with sworn officers. The arrest data usually includes booking data on where the suspect is being

held, identification of the suspect, and records of summons issued. If the transit police department turns apprehended suspects over to the LLEA for processing, it may not keep the booking data.

Some data is collected for administrative rather than operational purposes, for example data on property taken from arrested offenders and evidence collected. Good records are necessary to ensure evidence can be used in court cases and to reduce the department's liability for arrestees' property.

Data is also collected to monitor the status of cases handled by the department and prosecuted in the courts. Cases are considered cleared when no more effort need be put into apprehending the suspect. Court disposition data clears cases with trial results. When an officer issues a summons instead of arresting an offender, this summons data indicates how the case was cleared. Sometimes arrest and disposition data are used to measure the performance of the security department. Cases may also be considered cleared if the suspect is arrested for another crime, but not charged with the case in question.

Transit police departments must keep separate records for offenses committed by juveniles because state and federal regulations restrict access to their police records. The data on their records is similar to adult records; however, special care is taken to ensure the confidentiality of data on juveniles.

Traffic data is not usually collected by transit police departments, but many of them collect accident data. In some cases, the police department is responsible for investigation of accidents involving transit vehicles. The offense data collected by officers of security departments are less detailed than that collected by transit police officers. Because they do

not participate in the Uniform Crime Reporting Systems, security departments rarely use the UCR incident classification system. Their crime classifications are usually broad generic terms such as "assault" rather than "aggravated assault" or "simple assault." Only minimal details are collected on the identification of suspects because they cannot apprehend suspects. Security departments often collect only name, age and race of the suspect. Some M.O. data is always collected so the departments can identify the time and place that incidents tend to occur. Nevertheless, security departments frequently maintain criminal history files on suspects because they find a small number of offenders are responsible for many misdemeanors and much vandalism on the transit system. They examine M.O. data to determine whether the same suspect is being sought for several crimes.

Security departments' collection and maintenance of information on juveniles is not restricted like that of transit police departments because their records do not constitute official police records. In fact, security departments may keep more detailed records on juveniles than police departments because juveniles are frequently responsible for the minor offenses which are the primary responsibility of these security departments.

4.1.3 Operator Reports

Transit police and security departments collect operator incident reports to record, in an abbreviated form, the operator's account of the incident, particularly if court litigation may result. Very few systems have special forms for security related incidents, although some of the systems like RTD in Denver and KCATA use the backs of the operator incident forms for security specific information.

Transit security departments rely heavily on operators and route supervisors to provide data on security problems that occur on their systems. Security officers may file additional reports, but the operators provide the data used to develop summary statistics on the number of incidents. Operators usually fill out incident forms at the end of their shifts so as to minimize disruption of their schedules. To encourage complete and accurate reporting by operators, most transit agencies pay operators at their regular rate for approximately 20 minutes for each report submitted. Nevertheless, operator reports do not provide as comprehensive and complete data as police or security officer reports. There are several reasons for the lack of comprehensive and complete crime files that rely on operator reports. First, operators do not always witness entire incidents because the incidents occur while they are driving; their reports in such instances are necessarily incomplete. Second, the primary duty of transit operators is to transport passengers; report writing is an ancillary responsibility that is relatively unimportant to operators. Operators at several transit agencies professed to be unaware of their responsibility to file written reports of crime incidents. Third, operators do not usually receive training in report writing and may avoid filing reports because they find writing difficult.

Operator reports are usually reviewed by field superintendents before the copies are forwarded to the transit security department, and one to three days may elapse between the occurrence of an incident and the receipt of the report by the department. As a result of this time lapse, the department's identification of security problems on the system may be hindered. This delay may reduce the actual and perceived effectiveness of the security department. None of the security departments have compared the effectiveness of security operations associated with incidents reported within 24 hours

with those reports delayed more than 24 hours, but this comparison may be worth investigating.

The types of data elements usually included on operator reports are similar to those on police and security officer reports, but less detail is required. Representative data elements include:

- Operator Name
- Operator Identification Number
- Route Number
- Block Number
- Run Number
- Number of Passengers
- Number of Witnesses
- Date of Occurrence
- Time of Occurrence
- Weather Conditions
- Road Conditions
- Were Police at Scene?
- Who Was Ticketed?
- Description of Occurrence
- Other Parties
  - Name
  - Address
  - Telephone

Some data elements are included on all forms. Control numbers provide the primary structure for organizing the information gathered by the crime reporting system. The other most common elements are the transit employees involved--operators, police or security officers etc.

4.1.4 Community Relations Data

Transit police and security departments conduct activities to increase the sense of security by operators and patrons. These community relations activities include educational programs in various forms and promotion of communication between the public and the transit police and security departments. Although community relations activities are not primarily information-producing, they may feed back complaints from citizens which are usually handled by customer service departments. Customer service departments may also forward complaints concerning security-related issues to police and security departments. When these complaints document incidents that have not previously been reported, they are analyzed like other incident reports. Another way in which security departments, often in conjunction with transit operations, collect data is through ridership surveys, generally administered to patrons while riding on the systems. Patrons answer questions about their perception of security on the system as well as of the quality of overall service provided by the transit system.

4.1.5 Externally Provided Data

Transit police and security departments use data gathered or created by external sources, primarily courts and local law enforcement agencies. Police departments often to record whether or not an arrested offender is convicted for a crime to keep track of whether the offender is free to commit additional crimes or is in jail. The data can also be used to evaluate the quality of arrests made. If the police officers have not thoroughly documented the crime, there may not be enough evidence to convict the offender. An important use of the data collected by police crime reporting systems is to prosecute the offender.

Transit police and security departments information is augmented by information from the LLEA. LLEA data on incidents contributes to the department's understanding of the security problems it faces, just as the department's own incident data does.

4.2 DATA PROCESSING

After data is collected, it is processed for analytical purposes and to create summary reports of security department activities. The processing of the data can be performed manually, or if the data are in machine readable form, the processing can be automated. A manual system is a reasonable alternative when the number of incidents is small and the data collected very limited. Section 4.2.1 discusses the manual systems, and automated systems are described in section 4.2.2.

4.2.1 Manual Security Reporting Systems

Manual processing of incident reports involves taking the most significant data directly off incident reports or transferring the data to an intermediate file, such as 3 x 5 cards, and compiling daily and or monthly statistics directly from the reports or from the cards.

TARTA uses 3 X 5 card records of offenders who vandalize transit property and the data are used to obtain restitution from offenders. The data are obtained from the operator's report of vandalism and includes the offender's name, address, report number, date, where it occurred, what occurred, and whether restitution has been made. TARTA's policy is to follow up and press for restitution regardless of the amount lost to

vandalism. Review of these cards tells who are the principal offenders, usually juveniles, what was the cost of vandalism to TARTA, and how much of that cost was reimbursed through restitution.

SCCTD does not perform the intermediate step of distilling information from incident reports to cards. Their system of compiling summary statistics is comprised of three steps. The officers' daily activity reports and incident reports from the previous day are reviewed every morning. One line summaries of crime incidents are transfered to their Transit Crime Daily Abstract. The summaries include time of occurrence, block, bus number, incident report file number, beat, location, disposition, which of their officers responded, the time they responded, their case number, whether the police responded, if there was an arrest, the police case number, and notes. Once a month, the Daily Abstracts are reviewed to create a monthly report which summarizes the incidents by type and time of day, and presents the totals of the current month, previous month, current year to date and previous year to date. A second report summarizes the number of incidents by line number and time of day with the same monthly and yearly totals.

4.2.2 Automated Security Reporting Systems

Three basic types of automated systems were encountered in this project: word processor based, microcomputer using spreadsheet or relational data base software, mainframe computer. The use of a word processor was unique to SCRTD transit police, and they are in the process of implementing a new system on an IBM Personal Computer. Nevertheless, their word processing system will be discussed because other transit security departments may to consider such a system as an alternative.

Word Processors

The word processor available to the SCRTD Transit Police was Micom software on a Phillips Information Systems 2002 computer. Their reporting system used the form letter capabilities of the word processor to create images of 3 X 5 cards on the computer. The data on the cards is be printed out, and the data base is manipulated to provide special information such as whether John Doe had been involved in any transit crimes. Because the space available for the data base records is very limited, codes are used extensively; the day of the week is coded with 1 = Sunday, 2 = Monday, etc. A very brief narrative describes the crime, or incident--"suspect arrested for assault with a deadly weapon". The card references the original incident report filed by the responding officer which has with more detailed descriptions of the incident and suspects. The fields for the data base are:

Arrestee
Suspect
Date of Birth for Suspect or Arrestee
Victim
Date of Birth for Victim
Witness
Date of Birth for Witness
Date of Occurrence
Day of Week
Time of Occurrence
RTD Driver Number
Reporting District
Line or Type of Location
Address of Occurrence
Reference Number
Arresting Officer or Department
Narrative of Incident

Weapon
Penalty Assessment
Non-related
Crime
Rule Violation
Bus Stop

Representation of a prepared card is presented in Table 4.2.1

TABLE 4.2.1
Example of SCRTD File Card from Word Processing File

S-Boozeman, Ibeen A. 030146

V-Citizen, Joe 010248

W-Nobody, Seen 090847
Awle, Saw It 100225
D-040482 2/2210 83-99999-4201
L-888
RD-83-999 999 Non-Related
C-245 PC
Weapon-Knife

Suspect arrested for assault with a deadly weapon on victim. Minor Injuries.

Although the use of a word processing system may not be as efficient as a computer with data base or accounting software, it is a viable means of keeping track of crime data, sorting the data and examining groups of incidents. In a manual system, searching for all incidents that had involved Ibeen A. Boozeman would be very tedious and time consuming if there were a great many records.

Microcomputer Systems

Several transit security departments are developing or using microcomputers with spreadsheet applications software to manage the data collected by their security reporting system. Spreadsheet software require the data to be put into a matrix and limit manipulation of the records to matrix functions. Separate files are created for different types of reports and records cannot be moved between files. For example, a spreadsheet system may have a file for employees which records any traffic or criminal charges filed against the employee and a file on incidents which occur. If a bus operator runs a red light and hits a car, a record would be entered into the employee file and one would be entered into the incident file. The disadvantages of spreadsheet systems are that there may be a need to put some information in twice and in the above case, the incident record cannot be accessed directly from the employee file. Nevertheless, the records in these files can be sorted on various fields and summary data can be generated to compute such things as the number of robberies in a month.

The number of files used in a spreadsheet system will depend on how broadly defined the fields are and how specialized the use of the file. For example, a file that is organized around the name of the person involved in a crime will require a field to indicate that the person was a suspect, victim, witness, etc. There could be several records for one incident, a separate record for each person involved. An alternative organization system would have a record for each incident and a separate field for suspects, victims, witnesses, etc.

SCRTD is in the process of developing and implementing a reporting system on an IBM Personal Computer using Lotus 1-2-3 software. Currently four files are planned: a case file, a Department of Motor Vehicles file on employees, a master name file, and a miscellaneous file. The case file has the following fields:

Report Number
Transit Police District
Classification of Incident
Date
Weekday
Time
Bus Line
Type of Location (Bus, Street, Office, etc.)
Location (Cross Streets or Addresses)
Local Police Reporting District
Class of Person Involved (Operator, Passenger, etc.)
Victim's Sex
Victim's Race
Victim's Age
Suspect's Sex
Suspect's Race
Suspect's Age
Suspect's Height
Suspect's Weight
Type of Property Taken
Value of Property
SCRTD Bus Number
Incident Description
Weapon Used
Related to Transportation of Passengers (Yes, No, Operator)
Documents Filed
Type of Team Submitting Report (Undercover, Detective, Etc.)

The spreadsheet is set up so that columns are assigned for each field of information. The width of the column varies according to the number of characters required for the data. The spreadsheet has instructions indicating in which column the information is input, the name of the field and the codes, if any, that are used.

Using the spreadsheet files, the SCRTD microcomputer can calculate the number of types of crimes in the given time period, the value of property stolen, the average age of transit crime victims, the average age of transit crime suspects, what kind of weapon is most frequently used, and the commonly used frequency data on when and where crimes are occurring.

Microcomputers can also be used with relational data base software which is more flexible than spreadsheets in the way that the data is entered, displayed and manipulated. A matrix format is not required for input or for display purposes. Records for different files are kept together and can be accessed together. Taking the example used earlier of a bus operator running a red light, only one record would be needed to contain with all of the information about the incident and the operator. The computer could calculate the number of incidents driver had been involved in compared with the average for all of the system's operators, and it could also calculate the number of incidents involving running red lights by both bus and other vehicle operators.

An example of a system using a microcomputer with a relational data base is SEMCOG's system in Detroit which is used to compile crime data from D-DOT, SEMTA, and the Detroit Police Department's Bluebird (transit crime) Unit and Crime Analysis (major crimes) Unit. The SEMCOG data processing system also incorporates a mapping function which prints out pin maps of the incidents reported. The system is implemented on an IBM Personal Computer with 256K of memory but can run on other MSDOS computers with 256K. SEMCOG has written an applications package specifically for transit accidents and crime incidents information systems using a commercial relational data base package, R-BASE-4000. It can do univariate descriptive statistics, two-way cross tabulations, frequency distributions,

histograms, pie charts, and time series analysis as well as print full color maps of incident locations and maps with shaded geographical units.

Enabling the program to produce maps illustrating the comparative crime rates in different areas of the city required a significant amount of one time input which digitized the geographic area served by the transit system. Street intersections were given eight digit codes using an existing system of four digit codes for each street. The bus routes were then located on a map with the coded intersections, and the sequence of coded intersections for each route were entered in the computer program. The same process coded the police precinct and scout car boundaries. A digitizer was used to link the eight digit codes with X - Y map coordinates, and a program written to translate the X - Y coordinates into the Michigan State Plane Coordinate System which is used for all computer mapping tasks at SEMCOG. As incident records are entered into the system, the computer assigns the State Plane Coordinates. A separate program produces the maps. The mapping program allows the user to select the scale, area, map type, color shading, symbol selections, title, and data screening and range. An example of the pin maps and shaded geographic area maps that the program generates are presented in Figure 4.2.2.

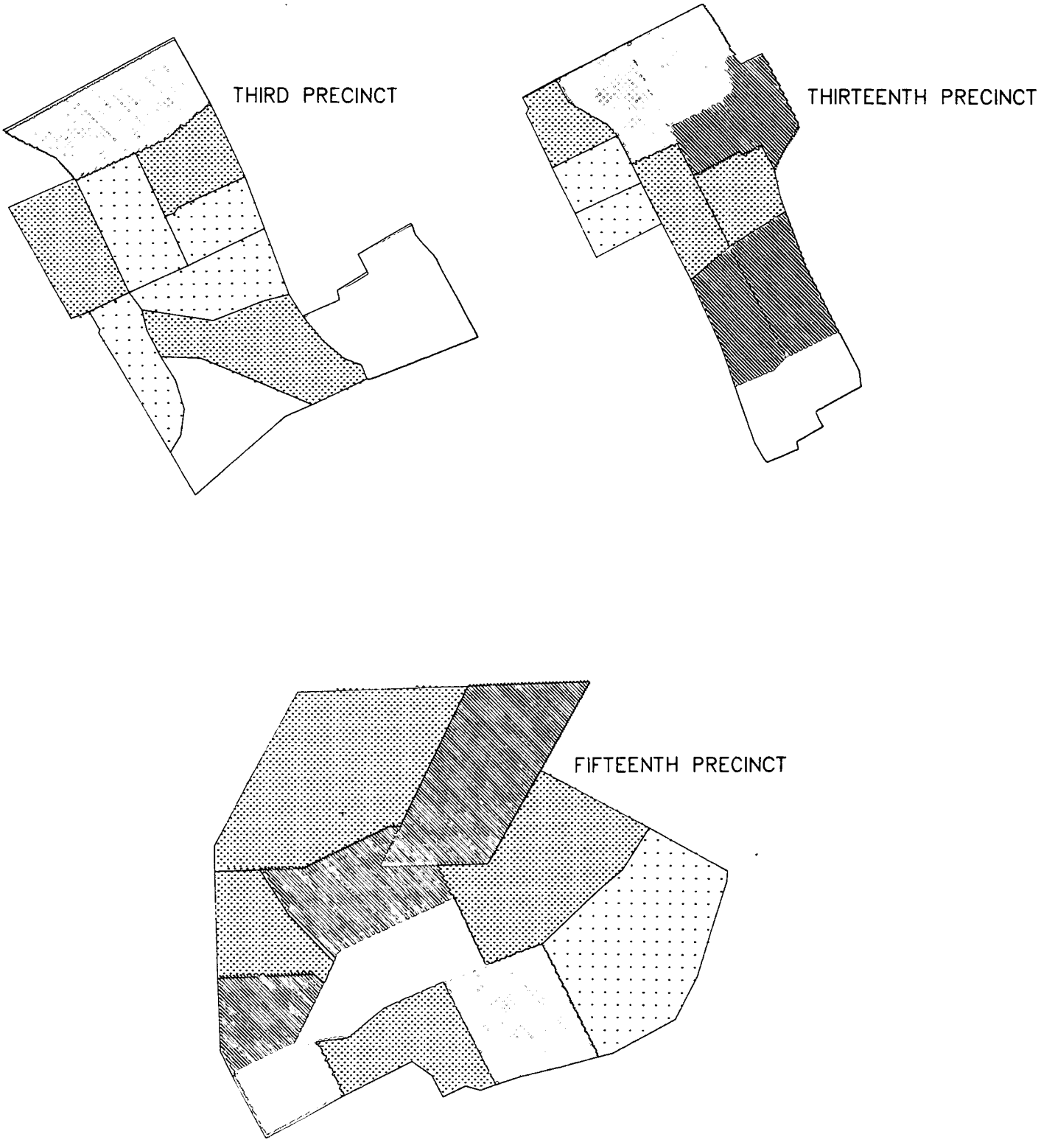
Mainframe Computer

Mainframe computers can handle much larger data bases than can microcomputers, and they are usually multi-user so several people can be putting data in or analyzing data at the same time.

Mainframes are used by both large and small transit police and security departments. The largest department, the NYCTA Transit Police has a mainframe computer solely for its own use. Other

COACH STOP CRIMES

Figure 4.2.2



departments, both large and small, make use of mainframes which also handle other transit agency or metropolitan government data processing. For example, both Houston METROS' sworn police department and KCATA's small two person department make use of a mainframe computer that serves their transit agency. For most mainframe reporting systems, the officer completes a written report and submits it to a data entry person who puts the data in the computer. Sometimes the data must be coded before input. Usually a numeric code is assigned to classify the incident rather than typing in terms like "burglary under $500." At one transit agency, MBTA, the officers do not fill out forms, but give the information to the dispatcher over telephone or radio, and the dispatcher puts the information into the computer.

The data in a mainframe is usually organized as a large relational data base, but it can be structured as separate and distinct files. When a single data base is used, it is usually indexed to provide quick access to certain types of data. For example, the METRO transit police used a main frame accounting program, MAPPER, to develop data base of transit security and reported crime information. The computer is programmed to generate the following reports:

U. C. R. Crime Report Log
Monthly Summary of Offenses
Arson
U. C. R. Arrest Statistics, Adult
U. C. R. Arrest Statistics, Juvenile
Property Loss by Type and Value

The data is indexed and the computer programmed to produce a number of files which can then be searched for specific information. These files include:

Master Arrest Index
Case Disposition, Adult
Case Disposition, Juvenile
Criminal History
Evidence Record
Property Record
Modus Operandi File
Physical Description File
Personnel Records
Training Records
Delinquent Offense/Incident Report
Vehicle Towing Record
Inventory Control
Calls for Service
Transit Police Citation Record
Master Vehicle Index
Wants and Warrants
Master Name Index, Adult
Master Name Index, Juvenile
Citation Disposition Record
Map Grid Locations

The use of these files can be exemplified by considering a situation in which an officer responds to an operator call for assistance because a passenger will not pay his fare. When the officer responds and gets the person's name, he can call the dispatcher and ask that a search of the criminal history file be made to see if this person has a history of not paying the required fare. If indeed this is the case and the person has a history of other transit crimes, the officer may decide to arrest him. On the other hand, the person may have no record with the transit security department, and in this case the officer may decide to issue a citation rather than arresting the person. When investigating a crime, an officer may search the modus operandi file to see if other similar crimes have been committed.

Transit security departments that use mainframe computers usually process large amounts of data, and one of their difficulties is delays in the process of putting in data, particularly for real time computer systems. Real time systems are set up to be continuously updated and can be used to generate reports like reports of the previous day's activities which many transit police chiefs review every morning to monitor crime problems. Several transit police departments including those in New York City and the Washington, D.C. metropolitan area have such systems, but too many incidents occur for the data to be updated during the day. Incident reports must wait until someone is free to put the data in the computer, and often the work is performed by the night shift which is usually less busy than the day shift. Although the computerized system is set up to provide current data, the input process does not always get current data into the computer.

4.3 PRODUCTS OF DATA PROCESSING AND ANALYSIS

The products of data processing and analysis can be as simple as data summaries like annual dollar value of vandalism and restitution that TARTA generates. At the complex end of the scale is the NYCTA transit police department whose new data processing system will generate 34 monthly reports. The types of analysis fall into five categories: summaries by incident classification, incident frequencies, crime pattern analysis, suspect and location identification and evaluation of performance and countermeasures.

4.3.1 Summaries by Incident Classification

Transit security departments collect data on many types of

incidents which are classified using the Uniform Crime Reporting system, a system required by the state, a system developed by the transit security department or several of these systems. The UCR does not adequately provide for misdemeanors like criminal mischief and vandalism, so many security departments use additional categories for minor incidents. Transit police departments which are authorized to issue citations for transit related offenses use those offense classifications. For example, METRO issues citations for and classifies incidents by the following offenses:

Smoking on Bus
Eating on Bus
Playing Loud Radio on Bus
Illegal Parking
Littering on Bus
Other City Traffic Violation
Drinking on Bus

METRO also uses SEMCOG's codes and classifications for vandalism:

01 - Broken Window(s), object thrown, no injuries
02 - Broken Window(s), object thrown, injuries
03 - Broken Window(s), pushed from inside coach
04 - Broken Window(s), cause unknown, no injuries
05 - Broken Window(s), cause unknown, injuries
06 - Broken Window(s), gunshot, injuries
07 - Broken Window(s), gunshot, no injuries
08 - Exterior/interior coach damage, injuries
09 - Exterior/interior coach damage, no injuries
10 - Broken Bus Mirrors/destination glass
11 - Metro property other than buses
12 - Employee property
13 - Patron property

14 - Other Property
15 - Object thrown, no damage, no injuries
16 - Object thrown, no damage, injuries
17 - Damage to seats reported by facility

All security departments calculate, manually or with a computer, the number of incidents which occur in a given time period but they do not all use the same classification system. Several of the transit security officials interviewed indicated that a uniform crime code would be useful to them because they could identify systems with similar problems and exchange information on potential solutions to problems.

It is important that any classification system be applied consistently over time so that changes in the rate of occurence can be correctly interpreted. At the same time the classifiction system should be flexible so it can provide the data that is needed. For example, the NYCTA transit police have added subcategories for types of crime that the media or public developed an interest in. Summaries by incident classification are used by departments to identify and understand their most serious crime.

4.3.2 Incident Frequencies

Transit police and security departments develop statistics on the frequencies of crime at certain locations and times. These analyses are used to deploy officers and to determine what types of operations these officers will perform. For example, D-DOT in Detroit experiences its highest rate of crime between 2 pm and 6 pm, and officers are assigned accordingly. SEMCOG, which collects and processes the crime data in Detroit, also identified the three precincts with the biggest crime problem and worked with the respective precinct captains to identify more specifically where and what the crime occurred.

Incident frequencies are usually processed for time parameters including time of day, day of week, month, and day of month. The location parameters depend on the system's modes; security reporting systems for rail will indicate station and line, those for bus systems will indicate line and bus number. These time and location parameters are analyzed with other data and incident classifications. The most frequently used analyses are:

Number of incidents by:
- time of day
- 1, 2, or 4 hour period
- day of week
- month
- bus line
- run
- subway station
- subway line
- LLEA precinct
- street location

Number of incidents by time of day by:
- bus line
- subway station
- day of week
- street location

4.3.3 In-depth Crime Pattern Analysis

In-depth crime pattern analysis is used to conduct security operations, particularly to prevent crime. Crime pattern analysis includes developing profiles of the types of crimes, suspects, victims, and property stolen.

Crime Profiles

Profiles of crime are developed by analyzing crimes to determine what elements they have in common such as the location, time of day, day of week etc. With this data, the transit police or security department can assign uniformed or plain clothes officers to patrol the targeted location during the time that crime is most frequent, or they can develop specialized operations appropriate to the crime's M.O. Some departments, like NYCTA transit police, keep specific files with M.O. data for crime pattern analysis. To keep the file manageable, only data on serious crimes are put into the file.

Suspect and Victim Profile

Identification, criminal history and names files are usually kept on suspects. The names file, or Master Name file, refers to all people asociated with an incident including suspects, witnesses, victims, officer responding, etc. Suspects names cannot be listed as part of a file of convicted or arrested persons because this implies guilt by association, and suspects are presumed innocent until proven guilty.

Another restriction on the use of a file of individuals suspected or convicted of a crime is that records of juveniles must be kept separate and their names cannot be made available in any data compilations. These restrictions apply to transit police departments which must conform to the laws that govern all law enforcement agencies. A Master Name file will often be cross indexed with aliases and different spellings of the same name.

As a result of having a single file on all people involved in incidents, many police and security departments use the names

file to develop profiles of all types of people involved in incidents including victims. Victim information is used in public relations programs to educate the public about self-protection as well as to develop special operations to apprehend offenders who are responsible for crimes that victimize certain population groups such as elderly women.

The identification data allows the security department to examine incidents grouped by suspect characteristics and to investigate the possibility that they were committed by the same person. This data can also be used to generate suspect profiles, based on average characteristics such as height, weight, etc. Some police departments, like NYCTA Transit Police, also keep a photo file of offenders. The names and criminal history files are used to identify and apprehend specific suspects.

Stolen Property Profile

Profiles of stolen property are analagous to victim profiles, they enable the department to target their operations on crimes against similar types of property. Often transit police and security departments use this kind of analysis to handle crimes involving counterfeit passes and transfers.

4.3.4 Suspect Specific Analysis

More detailed analysis identifies the suspect, possibly by name, and is used to apprehend him. Although the names file contains the names of all people involved in reported incidents, it can be used to see if "John Doe" is suspected of having committed other crimes or has been convicted of such crimes. Many of the transit police departments also have access to the local police file.

The criminal history file may also be used to determine who a suspect is and where he might be found. It is organized by name of offender not suspect; the difference being the offender has at some time been convicted. The criminal history file may physically be a part of the master name file as long as there is no indication that the persons without criminal records are presumed to be guilty. The variety of possible suspect analysis that is done can be illustrated by the three additional reports that the NYCTA Transit Police' new computer system will generate:

Summary list of arrests and summonses by offender age
Photo file of offenders arrested
List of persons arrested three or more times

This data is used to identify the suspect usually by name or alias and to locate him. The criminal history and names files may contain information on where he lives, works, or has been encountered by police officers.

4.3.5 Analyses for Evaluation of Performance and Countermeasures

The evaluation of the success of a single police operation may be determined by whether it is successful in its objective, for example, apprehending the suspect. Evaluation of the success of larger policies and the effectiveness of the department require analysis of crime trends and performance measures like number of arrests made, response time, workload distributions, number of arrests, summons and cleared crimes, and quality of arrests. Within the department, the performance of individual officers can also be evaluated with these measures.

Trend Analysis

Trend analysis is used to compare how the crime rate has changed over time with the transit police or security department's operations. The crime rate is usually measured by the numbers of each type of incident, arrests, complaints, citations, etc. during a time period. Trend analysis often compares statistics of a month with the same month of the previous year and current year-to-date with the previous year-to-date statistics. Over longer periods of time, from five to ten years, only the number of major types of incidents are tracked. Since changes in the crime rate are not solely determined by police or security department operations, it is important that other relevant factors be noted in any trend analysis. For example, all other things being equal, an increase in the crime rate of the area served by the transit agency will be accompanied by an increase in the rate of transit crime. Some of the transit officials interviewed indicated that these relevant factors could never be sufficiently identified to allow evaluation of the performance of the department to be based on the rate of transit crime. Nevertheless, under narrowly defined conditions, changes in the crime rate are used to evaluate the performance of specific operations. For example several local law enforcement agencies and transit police departments have tried joint saturation operations with the objective of preventing all crime in a small, well defined area. These operations have not been successful because, to paraphrase one officer: there is always someone out there that hasn't gotten the word. On the other hand, deployment of officers to the areas with the worst crime rate can temporarily reduce the crime rate for that area. Trend analysis is primarily used as a rough indicator of how the crime problem has changed relative to transit police or security operations.

Some departments use just the overall crime rate to demonstrate the magnitude of the crime problem to transit management. In those instances where the cost of crime is easily expressed as a dollar amount, the cost of crime like vandalism is used during the year to support the police or security department budget requests. In some instances, the department may have goals set by transit management that are described by analysis of trends in department operations. For example, the SCRTD Transit Police had the following objectives for the second quarter of 1984:

- Maintain a level of 2,200 service inspections per month,
- Realize no increases over 1983 in violent crimes aboard transit vehicles,
- Increase random transit police boardings by 2 percent,
- To provide training for its officers,
- To provide transit related training to other local police agencies,
- Develop in-house training programs,
- Participate in security planning efforts.

Workload Distribution

Workload distribution refers to the distribution of percentages of resources, usually labor, that are allocated to the various functions of the transit police or security department. Literature on law enforcement suggests that this workload distribution correspond to some measure of the departments's work requirement, such as the number calls for service. For example, consider the distribution of a LLEA department's calls for service in Table 4.3.5.

As the number of calls for service increase, the number of officers assigned should increase; approximately half of the available officers should be assigned to the evening watch which experiences 47 percent of the calls for service. As changes occur in the work requirements, the number of officers assigned to different shifts should change.

Response Time Analysis

Response time analysis uses the time between when a call for service is received and when an officer arrives at the scene to evaluate the performance of the police or security department. A department may set goals in terms of improving response time and tailor its operating procedures to enable immediate response to emergency situations. Under these circumstances, the department may prioritize calls for service so that it is not overloaded trying to respond immediately to the less urgent calls for service. A quick response time can also be used by departments when dealing with the media's or the public's questions about transit security.

Examining the distribution of response times can also be used in officer assignments. In this situation officers would be reassigned from the time periods where the response times are very low to those periods with high response times to equalize the service available.

Table 4.3.5

24 HOUR DISTRIBUTION OF CALLS FOR SERVICE

HOUR	# OF CALLS	HOURLY DISTRIBUTION	4 HOUR DISTRIBUTION	8 HOUR DISTRIBUTION
1	235	4.3%	13.5%	Night Watch 20%
2	202	3.7%		
3	180	3.3%	737 calls	
4	120	2.2%		
5	93	1.7%	6.5%	1093 calls
6	71	1.3%		
7	77	1.4%	356 calls	
8	115	2.1%		
9	153	2.8%	13.6%	Day Watch 33%
10	180	3.3%		
11	197	3.6%	743 calls	
12	213	3.9%		
13	235	4.3%	19.3%	1797 calls
14	246	4.5%		
15	256	4.7%	1054 calls	
16	317	5.8%		
17	306	5.6%	23.8%	Evening Watch 47%
18	328	6.0%		
19	344	6.3%	1300 calls	
20	322	5.9%		
21	328	6.0%	23.5%	2584 calls
22	328	6.0%		
23	311	5.7%	1284 calls	
24	317	5.8%		
TOTAL	5,474	100.0%	100.0%	100.0%

Source: Prescriptive Package: Improving Patrol Productivity, William G. Gay, Theodore H. Snell, Stephen Schack under grant Number 76-NI-99-0055 for the Office of Technology Transfer, National Institute for Law Enforcement and Criminal Justice, U.S. Department of Justice

Number of Arrests, Summons and Cleared Crimes

The number of arrests, summons, and cleared crimes are used to evaluate the performance of the transit police or security departments and individual officers. These evaluations are not just simple comparisons of the number of arrests etc. performed by each officer or a department, but comparisons of the number of arrests by officers or departments in similar circumstances. These types of analyses must include examinations of any other factors which might have affected the measure to avoid misinterpreting the data. For example a department may make fewer arrests in a particular year, but if the crime rate decreased also, its performance may have improved resulting in an increase in the number of cases cleared by arrests.

One operational objective of transit police and security departments is to clear or "solve" crimes. A crime is usually cleared when an offender is identified and arrested. Under certain circumstances, the case may be cleared even though the offender is not arrested. These circumstances include:

- o suicide of offender
- o double murder
- o confession
- o offender killed by police or citizen
- o offender prosecuted elsewhere for different crime or not extradited.

Security department officers are not authorized to make arrests and may consider cases cleared when the offender has been positively identified. The percentage of cases cleared is considered indicative of how well a department is performing relative to previous performance. This type of analysis like the analysis of numbers of arrests must account for the all factors affecting case clearance.

Section 5

ALTERNATIVE TRANSIT CRIME REPORTING SYSTEMS

This section presents three alternative systems for collecting and processing transit security information. The alternative appropriate to any transit agency's needs depends on the division of police and security responsibilitites between the transit department and the local law enforcement agency. The three alternatives range from a minimal reporting system to a comprehensive police reporting system:

Transit Security Monitoring System

Transit Security Management Information System

Transit Police Information System.

The Transit Security Monitoring System is appropriate for small transit security departments which do not patrol the transit system and depend on the local law enforcement agency to respond in emergencies and to apprehend suspects. The Transit Security Management Information System is more comprehensive and provides for collection of data to support patrol but not apprehension of suspects. The Transit Police Information System is appropriate for police departments because it does support the apprehension function.

These alternative reporting systems differ in their sources of data, the extent to which the department must rely on resource outside of the department for data, the complexity of analyses and uses of the data.

This section describes the three alternatives in subsections 5.1, 5.2 and 5.3. The data and analyses needed to perform the various security functions are described in section 5.4 to assist departments in reviewing their own information systems and how these systems support their security functions. The criteria for evaluating security information systems are presented in section 5.5.

5.1. TRANSIT SECURITY MONITORING SYSTEMS

A transit security monitoring system is appropriate for Group I transit security departments. Although they are not authorized to enforce laws, the Group I security departments provide information about transit crime to local law enforcement agencies, to assist in the apprehension of suspects and they develop programs to prevent crime through means other than apprehension of suspects. Group I departments sometimes participate in public information campaigns designed to educate potential victims about self-protection techniques or to deter potential offenders from acts such as vandalism. Group I departments also need to report on their activities, and if possible, on the effectiveness of these activities to justify support of their operations and their request for funds.

These functions require, at a minimum, summaries of incident frequencies illustrating the types and magnitudes of problems that exist and when and where the incidents have ocurred. No security department should collect less data than the types of incident and the locations, dates and times of incidents. Table 5.1 presents the minimum data elements that should be collected.

TABLE 5.1

MINIMAL DATA ELEMENTS REQUIRED

Incident Data
Type of Incidents (Classification)
Description of Incident
Location of Occurrence
Route/Run Number
Date of Occurrence
Time of Occurrence

Administrative Data
Control (Case) Number
Local Law Enforcement Agency Responding
Cost of Property Damage

What distinguishes the Transit Security Monitoring System is its almost total dependence on data collected outside the security department. These departments rely on outside sources because their personnel are not adequate to cover and report on the incidents that occur. Group I security departments supplement their information with data collected by other departments of the transit system: operator reports, dispatcher logs, and maintenance records. Additional information is also obtained through follow up investigations by security department personnel.

The transit security monitoring system reporting procedure consists of:

Collection, review, classification, analysis and dissemination of data by the Transit Security Officer.

Analysis may be performed manually or with a computer.

Summaries of incident frequencies should be tabulated at least biweekly to inform security officers of the incidents that have occurred. Daily summaries are unnecessary because of the relatively small volume of incidents. These summaries would be compiled monthly and annually and used to allocate resources and to measure crime trends. Summaries of property damage costs would also be tabulated monthly and annually and used to evaluate countermeasures, allocate resources, evaluate department performance and support budget requests.

This reporting system can be enhanced by establishing a procedure to encourage operator reporting of transit crime incidents and by exchange of information with local law enforcement agencies.

5.2 TRANSIT SECURITY MANAGEMENT INFORMATION SYSTEM

The Transit Security Management Information System meets the data system requirements of Group II transit security departments. Group II security departments maintain a staff of non-sworn officers to patrol the transit system. More data than that provided by the monitoring system is needed to make deployment decisions for patrol operations than respond to emergency calls for service. Security departments cannot expect to provide physical protection for every vehicle and bus stop in their systems, so they must identify those which present the most serious and most frequent problems.

Group II security departments need summaries of incident frequencies for random patrol deployment, indicating what incidents have occurred when and where. For directed patrol units, whose operational objectives are more precisely defined, location and time-of-occurrence crime analyses are required to pinpoint the times and locations at which incidents occur. These

data summaries are also useful in designing community relations programs and identifying the appropriate recipients. The required data elements are listed in Table 5.2.

TABLE 5.2

STANDARD SECURITY DATA ELEMENTS REQUIRED

Identification Data
Suspects
Victims
Witnesses

Incident Data
Type of Incidents (Classification)
Description of Incident
Location of Occurrence
Route/Run Number
Date of Occurrence
Day of Week of Occurrence
Time of Occurrence

Administrative Data
Control (Case) Number
Local Law Enforcement Agency Responding
Cost of Property Damage

Security officers collect these data on incident report forms during their patrol and investigation of incidents. Security departments can supplement their data through maintenance records, dispatcher logs, operator reports and data from local law enforcement agencies.

The reporting procedure is as follows:

Security officer reports incidents.

Senior security officer collects, reviews, validates reports from security officers and operators.

Senior security officer classifies incidents.

Security Chief approves crime classifications.

Senior Security Officer or clerical staff tabulate data.

Clerical staff disseminate data summaries.

Analysis may be performed manually or with computer.

Summaries of incident frequencies should be compiled daily to inform officers of the incidents that occurred during the previous 24 hours. Summaries of incident frequencies as well as location and time-of-occurrence crime analyses should be compiled monthly for deployment purposes, and annually for allocation of resources and to measure crime trends. Summaries of property damage should be compiled monthly and annually to evaluate the effectiveness of security countermeasures, evaluate department performance and support budget requests.

This reporting system can be enhanced by establishing a procedure to encourage operator reporting of transit crime incidents and by encouraging the exchange of information with local law enforcement agencies.

5.3 TRANSIT POLICE INFORMATION SYSTEMS

Transit Police Information Systems are appropriate for Group III, IV and V transit police departments. Group III transit

police departments share responsibility for transit security with local law enforcement agencies. Group IV and V transit police departments are solely responsible for transit security. All three groups respond to emergencies and provide routine patrol of the system, investigate cases and apprehend suspects. They also engage in community relations programs. Group III, IV and V transit police departments allocate a large percentage of their resources to patrol and patrol related functions. Their objectives are to prevent and deter crime, protect people and property, recover property and apprehend suspects. These departments need summaries of incident frequencies, location and time-of-occurrence crime pattern analysis for random and directed patrol. For apprehension-oriented patrol, they need crime, suspect and victim profiles, property loss patterns, and analyses which reveals patterns of behavior associated with specific suspects. The data elements required for this alternative are listed in Table 5.3

TABLE 5.3

STANDARD POLICE DATA ELEMENTS

Identification Data
Dispatchers
Operators
Officers
Other Employees (Supervisors, station attendants, etc.)
Arrestees
Suspects
Victims
Complainants (if not transit employees)
Witnesses
Parents
Other Vehicles

TABLE 5.3 (continued)

STANDARD POLICE DATA ELEMENTS

Physical Description Data

Arrestees
Suspects
Victims
Complainants (if not transit employees)
Property
Vehicles

Incident Data

Type of Incident (classification)
Transit Police/LLEA Jurisdiction
Location
Route/Run, Line Number
Date of Occurrence
Time of Occurrence
Day of Week of Occurrence
M.O. Data
Type of Weapon
Location of Transit Vehicle (if off route)
Number of Passengers
Weather Conditions
Injury/Damages
Other

Case Disposition Data

Action Taken:
  Warning
  Summons
  Arrest
  Other
Date of Arrest

TABLE 5.3 (continued)

STANDARD POLICE DATA ELEMENTS

Charges Filed
Reports Filed
Case Status
Final Disposition

Administrative Data
Control (Case) Number
Response Time
Time Reported
Date Reported
Related Reports
Local Law Enforcement Agency Responding

Assistance from Other Agencies (Ambulance, Fire Department Tow truck, etc.)

Distribution of Incident Report
Place of Arrest
Place of Detention
Mileage of Vehicles
Vehicle Inspection

These data are collected on incident report forms by both transit police officers and local law enforcement officers. Some incidents are also reported by bus operators, other transit personnel and patrons. Sources of data for evaluation and planning include reports of property damage from maintenance departments, personnel attendance records from claims departments and incident reports from operators.

Group IV police departments have sole jurisdiction over the transit system, and they maintain the official records of transit-related cases. Their officers' incident reports are the primary source of data for crime analysis, although some data are provided by operators' incident reports. Dispatch records are a primary source of data for planning and management. Group III police departments share jurisdiction over the transit system with local law enforcement agencies. What distinguishes their information flow process from the Group IV and V departments is the inherently dual sources of its information, that is, both transit security officers and local law enforcement officers. As units of the local law enforcement agency, Group V departments have access to all of the data collected on transit crime and can compile data on all incidents.

The reporting procedure for Groups III, IV, and V is as follows:

Officer reports incident.

Sergeant collects reports from transit police officers, operators and local law enforcement officers.

Sergeant reviews and validates data.

Lieutenant or report officer reviews reports, classifies incidents, and analyzes data.

Clerical staff disseminate data summaries.

Analysis performed by computer.

Summaries of incidents should be tabulated daily to inform officers of the incidents that have occurred on their beats as well as the entire system within the previous 24 hours. They

should be compiled monthly and annually to measure crime trends. Location and time-of-occurrence crime patterns should be compiled monthly for deployment decisions and annually for allocation of all resources. Crime, suspect and victim profiles and property loss patterns should be compiled monthly for deployment of manpower, and monthly and annually for evaluation and selection of countermeasures and allocation of resources. The identification of suspects and precise location of anticipated incidents should be determined as needed to support apprehension-oriented patrol. Maintenance records should be tabulated monthly and annually to measure trends in vandalism and to evaluate and select countermeasures. To evaluate officer performance and countermeasures, Group III, IV and V police departments also need workload distributions, response time analysis, data on quality of arrests, crime trends and crime clearances. The fact that Group III police departments and local law enforcement agencies share jurisdiction over the transit system brings an additional dimension to the use of the collected data.

The usefulness of the data collected depends on consistent reporting of all transit-related incidents to both transit and non-transit police departments to prevent duplication and loss of data.

5.4 ANALYSES AND DATA REQUIRED BY SECURITY FUNCTIONS

The security functions performed by a transit police or security department structure the information needs of the department. As the title of this section indicates, the data collected are used in two forms. Some data are processed to generate various types of analysis, while other data are used in the original form, for example, the name and address of a suspect to be apprehended. To assist departments in more precisely specifying the data elements that should be collected in their reporting systems,

this section summarizes in a series of tables, the data and analyses required by each security function. Table 5.4 lists the principal security functions and indicates the types of analysis that support each function. Tables 5.5 through 5.8 match the types of analysis with the required data elements. A transit police or security department can identify the types of analysis it needs by looking up the security functions it performs. Table 5.9 presents a list of data elements that are useful in patrol, investigation and administration functions, but which are not used in analysis. Tables 5.5 through 5.9 can then be used to identify the individual data elements the information system should collect.

TABLE 5.4

CRIME ANALYSES USED IN SECURITY FUNCTIONS

SECURITY FUNCTIONS	INCIDENT FREQUENCY ANALYSIS		
	Incident Summaries	Location Patterns	Time of Occurrence Patterns
Calls for Service Random Patrol	x	x	x
Directed Patrol	x	x	x
Apprehension-Oriented Patrol	x	x	x
Community-Relations	x	x	x
Analysis & Evaluation	x	x	x
Investigation	x	x	x

	IN-DEPTH CRIME PATTERN ANALYSIS			
	Crime Profiles	Property Loss Patterns	Suspect Profiles	Victim Profiles
Calls for Service Random Patrol				
Directed Patrol	x	x		
Apprehension-Oriented Patrol	x	x	x	x
Community-Relations	x	x	x	x
Analysis & Evaluation	x	x	x	x
Investigation	x	x	x	x

TABLE 5.4 (continued)

ANALYSIS FOR EVALUATION AND PLANNING

SECURITY FUNCTIONS	Workload Distributions	Response Time Analysis	Arrest Summaries
Calls for Service	x	x	
Random Patrol	x		
Directed Patrol	x		
Apprehension-Oriented Patrol	x		
Community-Relations	x	x	
Analysis & Evaluation	x	x	x
Investigation	x	x	x

	Quality of Arrests	Crime Trends	Crime Clearances
Calls for Service			
Random Patrol			
Directed Patrol			
Apprehension-Oriented Patrol		x	
Community-Relations		x	
Analysis & Evaluation	x	x	x
Investigation	x	x	x

TABLE 5.5

DATA ELEMENTS USED IN INCIDENT FREQUENCY ANALYSIS

DATA ELEMENTS	Incident Summaries	Location Patterns	Time of Occurrence Patterns
INCIDENTS*			
Type of Incident	x	x	x
Transit/Non Transit	x	x	x
Location		x	
Route/Run		x	
Date of Occurrence	x		x
Time of Occurrence			x
Day of Occurrence			x
ADMINISTRATIVE			
Control Numbers	x	x	x

*Crime, Non-Crime, Interviews, Arrest Forms

TABLE 5.6

DATA ELEMENTS USED IN
IN-DEPTH CRIME PATTERN ANALYSIS

DATA ELEMENTS	Suspect Profiles	Victim Profiles	Crime Profiles	Property Loss Patterns
DESCRIPTIONS				
Suspects	x			
Victims		x		
Complainant (if not transit employee)		x		
Property				x
Vehicles				x
INCIDENTS*				
Type of Incident	x	x	x	x
Date of Occurrence	x	x	x	x
Time of Occurrence	x	x	x	x
Day of Occurrence	x	x	x	x
Method of Operation (M.O.)			x	x
Environmental Factors (Location of Transit Coach, number of witnesses and passengers, weather conditions, other)			x	

*Crime, Non-Crime, Interviews, Arrest Forms

TABLE 5.7

DATA ELEMENTS USED IN SUSPECT SPECIFIC ANALYSIS

DATA ELEMENTS	Individual Suspects	Precise Locations
IDENTIFICATION		
Suspects	x	
Victims	x	
Complainant (if not transit employee)	x	
Vehicles	x	
DESCRIPTIONS		
Suspects	x	
Victims	x	
Complainant (if not transit employee)	x	
Vehicles	x	
INCIDENTS*		
Type of Incident	x	
Date of Occurrence	x	x
Time of Occurrence	x	x
Day of Occurrence	x	x
Method of Operation (M.O.)	x	
Injury/Damages	x	
Synopsis of Incident	x	
ADMINISTRATIVE		
Control Numbers	x	x

*Crime, Non-Crime, Interviews, Arrest Forms

TABLE 5.8

DATA ELEMENTS USED IN ANALYSIS FOR EVALUATION AND PLANNING

DATA ELEMENTS	Workload Distribution	Response Time Analysis	Arrest Summaries
IDENTIFICATION			
Officers	x		x
Other Transit Employees	x		
INCIDENTS*			
Type of Incident			
Date Reported			
Time Reported			
Date of Occurrence	x	x	x
Time of Occurrence	x	x	
Day of Occurrence	x	x	
CASE DISPOSITION			
Date of Arrest			x
ADMINISTRATIVE			
Control Numbers	x	x	x
Response Times	x	x	x
Hours Worked	x	x	
Shift/Grid	x		
DESCRIPTIONS			
Suspects		x	
Victims		x	
Property		x	
Vehicles		x	
INCIDENTS*			
Type of Incident	x	x	x
Transit/Non Transit		x	
Location		x	
Date of Occurrence	x	x	x
Time of Occurrence		x	
Day of Occurrence		x	
Method of Operation (M.O.)		x	
Environmental Factors (Location of Transit Coach, number of witnesses and passengers, weather conditions, other)		x	
Injury/Damages		x	

TABLE 5.8 (continued)

DATA ELEMENTS USED IN ANALYSIS
FOR EVALUATION AND PLANNING

DATA ELEMENTS	Workload Distribution	Response Time Analysis	Arrest Summaries
CASE DISPOSITION			
Action taken (Warning, Summons Arrest, Other)		x	x
Charges Filed	x		
Date of Arrest	x		
Case Status			x
Final Disposition	x	x	x
ADMINISTRATIVE			
Control Numbers	x	x	x

*Crime, Non-Crime, Interviews, Arrest Forms

TABLE 5.9

DATA ELEMENTS FOR NON-ANALYTICAL USAGE

IDENTIFICATION

Dispatchers
Operators
Arrestees
Witnesses
Parents
Other

DESCRIPTIONS

Arrestees

CASE DISPOSITION

Reports Filed

ADMINISTRATIVE

Supplemental Reports
Assistance from Others (Police ambulance, fire, tow, etc.)
Mileage
Vehicle Inspection
Property Management Information
How Report Received
Distribution of Report
Place of Detention

5.5 CRITERIA FOR ASSESSING TRANSIT SECURITY REPORTING SYSTEMS

If transit police and security departments are to develop and operate transit security Reporting Systems that are reliable and useful, they must have a set of criteria upon which to evaluate such systems. There were six criteria essential to evaluate transit security reporting systems according to the literature and security officials interviewed: (1) completeness, (2) quality, (3) timeliness, (4) flexibility, (5) comparability, and (6) cost.

5.5.1 Completeness

For the data collected by a transit security reporting system to accurately represent the incidence of crime and the efforts of the transit police or security department, it must be complete. That is, all required forms must be submitted, all relevant data fields must be completed and the fields on the forms should include all relevant facts about the incidents.

To ensure reports have been received on all incidents, dispatchers often assign control numbers to reported incidents; the files for each number are reviewed to ascertain they are complete. Obtaining reports from transit employees outside the police or security department is more difficult than obtaining them from department personnel because there is little incentive for others to report incidents. To obtain reports on incidents from operators, many departments take special steps to assure the operators that the data is necessary and provide incentives for completion and submission of reports for all incidents. Operator reports may be compared with the incidents listed in the dispatch logs to determine if reports on incidents have not been filed.

Obtaining the necessary reports from the appropriate local law enforcement agency may be more difficult. As a practical matter transit police and security departments have little institutional leverage over these agencies, and obtaining reports will probably depend on the maintenance of cooperation and a good relationship.

Completeness can be ensured by carefully designed data collection forms and clear instructions on how to fill them out and a validation process during which supervisors review completed forms for clarity, accuracy and completeness. If the forms are not properly filled out, they are returned to the persons responsible for filling them out. The system should also include an audit device to prevent the omission of data during the encoding process, and entering omissions, if any, in the computer. Some security organizations have developed checklists to support this process.

5.5.2 Quality

The data collected should be accurate and address the transit police and security departments' operational needs. Accurate and relevant data is often referred to as quality data in law enforcement literature. The importance of accurate data is self-explanatory; however, the issue of relevance might not be so evident. The collected data should provide information that will contribute to the department's operation. For example, a transit police system which assigns officers to patrol subway lines will need data which refers to the line on which an incident occurred.

Concise use of vocabulary, careful syntactical constructions, accurate spelling, and neatness (promoted by typewritten reports) also contribute to the quality of the data since reports are used to prepare court testimony.

5.5.3 Timeliness

The transit crime data should be as up-to-date or timely as possible for use in police and security department daily operations to deploy personnel, to provide patrol officers with information and to provide data for investigations.

Where patrol operations are used, the data for officers' use and for deployment decisions should be updated daily. The exception to this is departments with a low volume and stable pattern of crime such that daily updates would not provide new information, but just restate what was already known. Similarly, apprehension and investigation operations need data updated on a daily basis.

5.5.4 Flexibility

Reporting systems should be capable of adapting to operational changes, advancements in technology, changes in crime levels, changes in program emphasis, user demands, increases and changes in resource availability, etc.

A reporting system should also be able to respond to changes in user needs. Although there is no such thing as a "new crime," the public may become concerned over a particular variation such as gold chain snatching. To analyze this specific variation, the reporting systems' crime classifications must be adaptable while maintaining original classifications to provide data that is comparable over time. Most crime reporting systems use some sort of numerical crime codes, and flexibility is achieved by creating subcategories to distinguish new types of crimes. For example, a reporting system may use a numeric code of 20 for robberies. When thefts of gold chains increase rapidly, a new numeric subcode of 203 is added to indicate robbery of gold chains.

As advancements in computer technology make computers and word processing equipment more accessible, more crime reporting systems are being computerized. When the transit police or security department contemplates such a change, the existing manual systems should continue to function while data are being coded for entry into the computer, while files and data bases are being designed, while programs for various functions are being written and tested, etc. so that a smooth transition to the computerized system can be achieved.

5.5.5 Comparability

The data collected by a transit police or security department should be consistently collected over time so that the data collected in any one period can be compared with that of other periods. If the jurisdiction of a department includes more than one mode, the data collected should enable some comparisons between modes qualified by the inherent differences between modes. For example, subway stations are dedicated transit property while bus stops are not, so crime at bus stops is not strictly comparable with crimes at subway stations.

Comparability requires that the data classifications not change arbitrarily, and if they do change, some means of referencing the previous classifications should be developed. Certainly, change occurs--the dollar amount distinguishing between larceny and grand larceny has been changed occasionally to reflect inflation in the price of goods. If a new crime category is needed, such as snatching of gold chains, subcategories of robbery indicating the type of property taken should be used so that the number of robberies before and after the institution of the new category can be compared.

Comparability also requires the maintenance of a thourough record of changes in the department's operations. The ability to determine if robberies have increased would be undermined if the department's jurisdiction had increased and the presentation of the data did not refer to the change. Ideally, records of the original jurisdiction would continue to be maintained, but this may not be feasible in all cases. Comparisons of crime data trends can be very useful but they must be done carefully.

5.5.6 Cost

There are three major categories associated with the cost of reporting systems: personnel, equipment, and overhead. The overall cost (as well as effectiveness) of a reporting system is affected by standards of completeness, timeliness and control to enforce those standards.

The cost of a data reporting system will vary with the volume and seriousness of the crimes, the size of the department and with its functions. Security departments comprised of only one or two people do not need an elaborate reporting system to aid in deployment decisions. They have a relatively low volume of crime which enables them to make operational decisions without extensive computer analysis. Departments that must analyze large volumes of data in a relatively short time may be unable to manage effectively without a sophisticated data collection and analysis system to enable them to monitor and compare the rate of crime in various locations. In those cases where a computer is already in use by transit management, the marginal cost of computerizing the crime data reporting system may be small.

SECTION 6

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Security information systems are critical to good security and law enforcement management. The areas most in need of attention by transit police and security departments are: liaison with local law enforcement agencies and operator reporting practices. UMTA could provide assistance to the departments with guidelines for development of reporting systems including information on computerization and an operator reporting handbook. Section 6.1 summarizes alternative security information systems. The need for liaison with local law enforcement agencies is discussed in Section 6.2. Section 6.3 summarizes the findings on the incident classification systems, and section 6.4 addresses operator reporting practices. The final section provides UMTA with suggestions for assistance to transit agencies in the area of transit security information systems.

6.1 ALTERNATIVE TRANSIT SECURITY INFORMATION SYSTEMS

The same principal transit police and security functions are performed in all of the cities visited in this study. The needs for transit security information are similar, therefore, in each city. The cities differ markedly, however, in how responsibility for transit security is divided between transit agencies and other state and local law enforcement agencies. At one extreme a transit police department has sole authority for law enforcement within the transit system and is supported by its own information system. At another extreme transit security is part of the general law enforcement responsibility of local police and is not distinguished as a set of specialized functions with its own information requirements.

The cities divide into five groups as indicated in Table 6.1. In Group I cities, the transit agency has a security department staffed with only one or two persons who are not sworn police officers. The security functions they perform are mainly in the area of community relations. In Group II cities, the transit security department has a larger staff which includes one or more unsworn security officers who perform some patrol functions (not including apprehension of suspects). In Group III cities the transit police department includes sworn law enforcement officers who are authorized to perform all the usual police functions within the transit system, and shares the department responsibility for transit security with the regular local police.

TABLE 6.1

ORGANIZATION OF TRANSIT SECURITY IN CITIES VISITED

Transit Agency Responsibility for Law Enforcement:	GROUP I	II	III	IV	V
Solely responsible				*	*
Shares responsibility with local police			*		
No responsibility -- local police solely responsible	*	*			

In Group IV and Group V cities, transit security is provided exclusively by a dedicated transit security unit and not merely as an undifferentiated part of the general law enforcement responsibilities of the local police. In Group IV cities,

the transit security department is part of the transit agency and controlled by transit management. In Group V cities, transit security is provided by a dedicated transit security unit of the local police. Because it is not controllable by transit management, this unit can be diverted to other non-transit police duties in an emergency. (On the other hand, it can also be supported by non-transit police units in a transit security emergency!)

The security information systems being used in the cities visited differ according to the different responsibilities of the five types of transit police and security departments. After analyzing these systems, the project team developed three alternative information systems appropriate to the operations of transit police and security departments. These three information systems are:

Security Monitoring System. This type of system is used to keep track of frequencies of security incidents that occur on the transit system so that management can be either assured that security problems are under control or alerted to developing problems that need attention. The data for this type of system are obtained from either incident reports forwardable by transit operating departments or local police. The security monitoring systems produce reports on the numbers of each type of incident and are needed by the transit agencies in Group I cities.

Security Management Information Systems. This type of system is used to support the transit security departments of Group II cities. It is based on incident reports supplied by transit operators, security and local

police officers and dispatch records (if the security department has a dispatcher). It is used to support incident analysis and assignment of patrols. It does not support suspect apprehension-related functions.

Transit Police Information Systems. This is a comprehensive information system which supports all transit security and law enforcement functions, including suspect apprehension. Thus, it includes files of signed crime reports, descriptions of suspects, arrest reports, records of charges and court disposition of prosecutions. It is used by the transit police departments in Group III and IV cities and by the local law enforcement transit police units in Group V cities.

The requirements of a department's reporting system depend on its size and security functions performed. It is often overlooked, however, that too much data may be collected. If resources are not adequate to process and analyze the data, then collection of data is wasting resources. Even if all collected data is analyzed, if it is not used in performing security functions, the data should not be collected. To ensure resources are being used effectively, security reporting systems should be reviewed periodically to determine whether the data collected are being used and whether additional data are needed.

6.2 NEED FOR LIAISON WITH LOCAL LAW ENFORCEMENT AGENCIES

Local law enforcement agencies in cities which have transit must address transit security. If there is no transit police department, the local law enforcement agency will have primary responsibility for providing transit security and apprehending the offenders who commit crimes on the transit system. In these circumstances, the transit security department, if there is one,

will need to develop a liaison with the local police. Even in cities where the transit police have sole responsibility for law enforcement within the transit system, other local law enforcement agencies are always involved to some degree. For example, an incident in the transit system may require apprehension of a suspect outside of the system, and vice versa. Liaison is needed:

To avoid duplication of effort in cases where the transit police or security department and the local police have overlapping responsibilities;

To ensure that the transit police or security department is informed of incidents involving transit security that are dealt with by the local police;

To ensure that reports on important incidents include relevant transit-related data (route, run number, etc.).

Although the local law enforcement agencies are involved with transit security, many do not collect transit related data nor do they necessarily provide such data to the transit police or security department. As a result, all incidents may not be reported, and those that are reported may not be analyzed as a single body of data. Additionally, a lack of cooperation and strong liaison between the local law enforcement agency and the transit police or security departments can impair performance of their security functions.

Because cooperation is essential to security operations and information collection, the project team recommends that transit police and security departments develop good working relationships with local law enforcement agencies. Where feasible, the transit police and security departments should encourage the local law enforcement agencies to indicate if an

incident was transit related and what route or line was involved and to provide that information to the transit departments. If the local law enforcement agency wants to collect data from the transit police or security department, making this data available will help all agencies to improve transit security.

All information systems require the use of management controls to prevent duplication and ensure all information is reported. When there is more than one agency providing information, it is even more important to emphasize the need for controls to prevent duplication. If the transit police or security department collects information from the local police, controls will be necessary to ensure that reports on the same incidents are kept together and the incident is not counted twice.

6.3 INCIDENT CLASSIFICATION SYSTEMS

All the transit police and security departments visited use some sort of incident classification system to assist in analysis and to structure periodic reports. However, there is a considerable diversity in the industry's choices of classification systems. Systems encountered in the cities visited included the FBI's Uniform Crime Reports system, SEMCOG's vandalism categories, systems based on applicable state penal codes, one-of-a-kind systems used by particular transit security departments, and some combinations of systems.

Since the data collected is needed to perform security functions, it is important that the classification scheme be useful for transit-related security functions. Some systems appeared to be more appropriate to transit crime than others. The UCR is very widely used, often in combination with another system. Its wide use gives it an advantage over other classification systems because it facilitates comparison of the incidence of transit and non-transit crime especially Part I,

the most serious, crime. However, transit police departments, like local not-transit law enforcement agencies, usually must also classify serious crimes in accordance with the applicable state penal code which may not be consistent with the UCR. Transit police and security departments that have low rates of Part I crimes tend not to use the UCR. Apparently security departments not having police powers are usually free to adopt any classification system they choose whereas the choice of a system by a transit police department is determined in many cases by the state or local law enforcement agencies.

Many transit police and security officials find the UCR's Part II classification system inadequate for transit crime because it does not differentiate between the various types of crimes and infringements of regulations that concern transit police and security departments such as vandalism outside the vehicle -- rocks thrown through windows -- and damage inside the vehicle like seat covers. For this reason some departments use the UCR for Part I and Part II crimes in conjunction with SEMCOG's or their own system for minor incidents and vandalism.

There seems to be limited advantage and no necessity for developing a new uniform transit incident classification system. The UCR Part I, Part II and the SEMCOG systems together seem to be adequate for the purposes of a uniform system: they permit a transit police or security department to compare the incidence of serious crime in its own transit system and in other transit and non-transit jurisdictions locally and nationally and to compare the incidence of less serious incidents in its own and other transit systems.

However, the advantages of the UCR Part I, Part II and the SEMCOG classification systems would be enhanced if they were more widely used by transit police and security departments. By making their information more easily comparable, wider usage

would facilitate more exchange of information about crime problems and countermeasures among departments. As well as directly assisting the departments themselves, wider use of the classification systems would assist UMTA in monitoring transit crime rates and assessing the impacts of crime in the transit industry; thus assisting it to provide the most appropriate and effective support to transit police and security departments.

Generally, the transit police and security officials met with in this study gave the opinion that a uniform transit security incident classification system would be useful but did not show strong support for developing one. This is a very reasonable attitude in view of the findings above.

6.4 OPERATOR REPORTING PRACTICES

Most crime-related incidents are first reported by operators. Unfortunately, operator reporting commonly suffers from serious deficiencies:

Incidents of which operators are aware are often not reported at all;

Incidents are sometimes reported orally (e.g. to a dispatcher) but a written report is never submitted;

Written reports that are submitted, are often delayed to the extent that they are of little use;

Written reports tend to be incomplete, lacking especially in important details that are known only to the operator.

The effect is to hamper efforts to maintain security and enforce the law in transit systems of every size.

The failures of operator reporting are attributed to several factors:

Operators sometimes do not report criminal incidents from fear of later retaliation by the perpetrators. This is said to be especially likely to occur in instances where the operator recognizes the perpetrator as a regular passenger and therefore expects that the perpetrator would be easily able to recognize and locate the operator;

It is reported that some operators are unaware that they are supposed to complete an incident report after they call in a request for service to the dispatcher;

Through a lack of reportability standards, or operator awareness or understanding of the standards, operators differ in their judgement as to whether or not a particular incident should be reported;

A recommendation may be to have operator report to dispatcher who writes the report. Many operators avoid reporting incidents because writing the narrative portion of a report is difficult for them;

Reports are usually written at the end of the operator's shift and then reviewed by a supervisor. If a report is not complete or clear, the supervisor may ask the operator to revise it and resubmit it later. This causes delay and may result in no report being submitted.

Several transit agencies pay their operators a flat amount, often equivalent to pay for 20 to 30 minutes, to fill out crime as well as non-crime incident reports, but this has not eliminated the problems. Apparently the payment is not a sufficient inducement for a person who finds great difficulty in writing reports, and very few operators have had the training in

writing reports which is standard for law enforcement officers. (A high degree of literacy is not as essential as safely operating a transit vehicle and is not usually a requirement when operators are being recruited.) If this explanation is correct, increasing the financial inducement would not likely bring much improvement.

An approach used in some larger security departments is for a security officer to interview the operator and write a report in addition to the operator's own report. This is believed to have resulted in a significant improvement in operator-originated incident reports. Other promising suggestions for improving operator reports are in the areas of training, improvements in the reporting forms, use of management controls to ensure compliance with reportability standards and improved accuracy, and improved relations between security and operating personnel.

Operator training should be designed to motivate operators to report conscientiously. It could be helpful to explain to operators the importance of operator reports in anticipating crime and deploying resources, as well as in dealing with each particular incident. It could also be helpful for the police or security department to inform the reporting operator of the final disposition of the reported incident.

An operator may feel that a particular report is unlikely to lead to a conviction. He should learn that obtaining a particular conviction is not the report's only useful purpose. The training should assist the operators by providing detailed instruction on standards of reportability to ensure that operators know whether or not each particular incident should be reported.

No practical amount of training obviates the need to provide easy-to-use forms. Narrative descriptions of incidents will remain difficult for many operators, but their reports will be more complete and clear if the forms prompt them with direct questions.

More police and security departments should introduce controls to ensure more timely, full and accurate operator reporting. These could include cross-checking the dispatch log and operator reports received, and requiring same-day written reports on all reportable incidents, with penalties for noncompliance.

6.5 RECOMMENDATIONS AND SUGGESTIONS FOR THE URBAN MASS TRANSPORTATION ADMINISTRATION

Security Information System Guidelines

This report shows how the requirements for a security information system relate to the particular functions and responsibilities of a transit police or security department. UMTA could assist transit police and security departments in adapting their information systems to their functions and responsibilities as these continually change. An effective way would be to develop guidelines for the development of information system components, which could be used by police and security departments after suitable modification to fit their particular needs.

Three basic kinds of components suggested are:

a) Reporting Procedures and Forms

A set of procedures and forms could be developed for each function, based on those presently in use, with documentation of reasons for particular features of each procedure or form to assist a department revising its procedures to choose those features it needed.

b) Information Processing Procedures

Guidelines could be developed to describe, in detail, recommended procedures for processing security information for various purposes.

c) Computer systems

As computer systems become less and less costly to purchase, they become the means of reducing information processing costs while improving the timeliness and usefulness of information. The downward trend in costs has already reached the point where there is probably no transit security department so small that it would not benefit from the acquisition of a computer of some kind. However, without computer expertise department personnel may hesitate to computerize their information system and could benefit from guidance tailored to the requirements of transit security. Departments that are already computerized could benefit from the experience of others in selecting and using available software and hardware in security applications.

UMTA could consider preparing guidelines describing the hardware and software requirements and options for each of the three types of information system identified earlier in this section: security monitoring systems, security management information systems and transit police information systems.

Operator Reporting Handbook

A need for better operating reporting has been identified. UMTA could assist transit police and security departments by preparing materials to assist in improving this important component of security information systems. Such materials could include:

- suggested standards for reportability;

- examples of reportable and non-reportable incidents for use in operator training;

- a model operator report form designed to elicit accurate detailed and complete information through check-offs, simple factual questions, and prompts for observational data;

- a supervisor guide to assist supervisors in reviewing operator's completed forms and eliciting additional information through interviews with reporting operators.

Exchange of Information

UMTA could facilitate the exchange of information on the incidence and modus operandi of transit crime, and information on proposed and tried countermeasures and their effectiveness.

As part of this effort UMTA could encourage adoption of a standard transit incident classification system. A suitable system would be based on the FBI's Uniform Crime Reports code for UCR Part I and II incidents, and SEMCOG's vandalism categories.

UMTA could request quarterly reports showing numbers of incidents classified as above and could compile and distribute quarterly reports showing how incident rates are distributed nationally, regionally and by mode. The requests for quarterly statistical information could be accompanied by a questionnaire asking for information on each transit system's experience relative to M.O.s of currently prevalent crimes, and the usage and effectiveness of particular countermeasures. Respondents should also be invited to supply information on M.O.s and countermeasures that are new or unique to their systems.

APPENDIX A

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APPENDIX B

CONTACT PERSONS AT TRANSIT AGENCIES AND HARDWARE AND SOFTWARE IN USE

HOUSTON METRO

Hardware: Univac 1100
Software: Mappers
Thomas C. Lambert - Chief of Police
Gary L. Hetrick -
Reba Anderson - Reports Officer

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

Hardware: IBM PC
Software: Lotus 1-2-3
James P. Burgess - Chief of Police
Lieutenant E. Sterling Putnam - Commander of Support Services

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

Hardware: IBM CRT Terminals 3278, 3276
Software: CICS/DMS (Development Management System)

Angus B. MacLean - Chief of Police
George McConnel - Transit Police Statistician

METROPOLITAN BOSTON TRANSIT AUTHORITY

Hardware: WANG
Software: Customized Package by Larry Moore Assoc.
William T. Bratton - Chief of Police
John O'Laughlin

DENVER REGIONAL TRANSPORTATION DISTRICT

Hardware: PRIME COMPUTER SYSTEM
Software: PRIME COMPUTER SYSTEM
Robert D. West - Manager of Security

KANSAS CITY AREA TRANSPORTATION AUTHORITY

Hardware: Provide by City Government

Software:

Steven A. Billings - Safety and Investigative Officer

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON (TRI-MET), PORTLAND)

Hardware: IBM PC

Software: Symphony

Steven Orr

COUNTY OF SANTA CLARA TRANSPORTATION AGENCY

Eugene F. Simmons - Chief of Security

John K. Lowe - Captain

MILWAUKEE COUNTY TRANSIT SYSTEM

Thomas Labs - Chief of Security

James Benge - Security Representative

Anita Gulotta-Connelly - Administrator

GOLDEN GATE BRIDGE, HIGHWAY AND TRANSPORTATION DISTRICT

William B. Rumford Jr. - Chief of Security

AC TRANSIT

Charles O. Lacy - Chief of Security

NEW JERSEY TRANSIT RAIL OPERATIONS, INC.

Warner Ropers - Superintendent of Police

Joseph Slawsky - Director of Security

Sgt. D.F. Toro - Records Officer

NEW JERSEY TRANSIT BUS OPERATIONS, INC.

Angelo Pezzino - Chief of Security

METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY

John L. Waters - Chief of Transit Police

NEW ORLEANS REGIONAL TRANSIT AUTHORITY

Robert G. Gostl - Sergeant, Transit Unit Commander

PORT AUTHORITY TRANS HUDSON

Hardware: CRT=IBM 3270 or TELEX terminals
Software: CICS/VS
Charles Ryan - Asst. General Support of Operations and General Services
Deloss Raymond - Lieutenant Executive Officer
Ed Langendorfer and Jerry Iovino - Statistical Unit

CAMDEN, NJ, PORT AUTHORITY CORPORATION

Captain James Hill - Chief of Police

PORT AUTHORITY OF ALLEGHENY COUNTY

Richard Ehland - Chief of Police

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT

Hardware: IBM 4341
Software: Program originated by Captain Mason Chalkley, Chesterfield County, VA, Police Department
Harold E. Taylor - Chief of Police
Larry I. Danner - Captain, Patrol Bureau Commander
Donald Tong - Administrative Lieutenant
John H. McKissick - Records Officer, Support Services

Bureau
Brian E. Newlon - Administrative Sergeant

SOUTHEASTERN PENNSYLVANIA TRANSPORTATION AUTHORITY

Tom Smith - Chief of Police
Howard Patton - Captain

TOLEDO AREA REGIONAL TRANSIT AUTHORITY

Manual System
Laura A. Koss - Director of Claims and Personnel.

NEW YORK CITY TRANSIT POLICE DEPARTMENT

Hardware: IBM Mainframe
Software: Custom programs by MCAUTO Systems Group, Inc.
James B. Meehan - Chief of Police
Lieutenant Joseph Godino - Data Processing Unit

SOUTHEAST MICHIGAN COUNCIL OF GOVERNMENTS/DETROIT DEPARTMENT OF TRANSPORTATION /SOUTHEAST MICHIGAN TRANSPORTATION AUTHORITY

Hardware: IBM Compatible/MSDOS/256K
Software: Customized using R-BASE 4000
Ann Nolan - Southeast Michigan Council of Governments

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