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Guidelines for Collecting, Analyzing, and Reporting Transit Crime Data

This TCRP digest provides the results of TCRP Project F-6A, "Developing Useful Transit-Related Crime and Incident Data," conducted by H. N. Ketola and D. Chia of Technology and Management Systems, Inc. This digest presents findings about current methods for collecting, analyzing, and using data on transit-related crime to make decisions on personnel deployment and on allocation of security resources. The findings are based on telephone interviews and on information collected from 21 transit agencies. These transit agencies use three distinct management approaches to transit policing and security operations: dedicated transit police departments, dedicated transit crime units within local police forces, and contracts with local enforcement or with private security companies. The final report, which describes the research approach and the analyses performed during the course of the project, is available as TCRP Web Document 18 on the Internet at http://www4.national-academies.org/trb/crp.nsf.

INTRODUCTION

Overview

This digest is based on research conducted to identify the problems that transit agencies face in collecting those transit crime and security incident data that are important in security operations. The information was collected to help establish methods that transit agencies could use to improve the use and accuracy of crime data through better collection, analysis, and reporting.

The research team carried out an assessment of methods for collecting, analyzing, and reporting transit-related crime data, as well as of the use of the data in making decisions on personnel deployment and on allocation of security resources. The assessment was based on telephone interviews and on technical information collected from 21 transit agencies.

There were two major objectives in conducting the research.

The first major objective was to develop an operational definition of "transit-related crime." This objective related to a perceived problem in transit policing, in which some crimes affecting transit passengers are not accounted for and, therefore, do not affect data that influence decision making. This problem was compounded by the lack of a standard definition for a "transit-related crime." Lacking this definition, local law enforcement personnel rarely specify if a crime is transit related.

The second major objective of the research was to develop a method for capturing, processing, and reporting transit-related crime data. Originally, the research plan called for methods that would work for transit-policing arrangements with any of the following parties:

- A dedicated transit police department,
- Contracted local law enforcement or private security companies, and
- A dedicated transit crime unit within a local police department.

The findings from Phase I of the research, which follow, caused the research team to revise the second objective, from developing a precisely defined methodology to providing guidance to transit agencies. The overall objective of these guidelines is to create some fundamental, long-term changes in the handling and processing of transit crime data. These changes should lead to a more consistent, comprehensive picture of the state of transit crime in the United States.

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Major Findings of Phase I

One of the most important findings of Phase I research follows:

There is no uniformity in the types of data collected about transit crime, in the names or terms used to describe transit crime, or in the methods used to present or report the data for internal or external use.

Transit agencies have developed their own unique approaches to transit crime data collection and reporting, partly because of the diversity of transit policing and security organizations. Transit agencies use three distinct approaches to provide police and security services for patrons, employees, and facilities:

- Maintain the agency's own transit police department,
- Receive police services from a dedicated transit crime unit that is a part of the local municipal police department, and
- Enter into contracts for police and security services with local law enforcement (that is, police or sheriff) agencies, private security companies, or both.

It is natural to expect that these diverse organizations would develop their own unique systems for recording and presenting transit crime data. A transit police chief's perspective differs from that of the head of a transit crime unit. Even agencies with the same organizational approach use different crimes-to-be-tracked listings, making it impossible to compare data on a one-to-one basis. The only area of commonality among transit agencies was the collection of crime data required for the Federal Transit Administration's (FTA's) National Transit Database (NTD) reporting program.

Even with this diversity of transit crime data collection and reporting, the research team made this second key finding:

The vast majority of transit agencies that were interviewed for this project were confident that they had an accurate measurement of crime at all locations where the transit police or other security organization would be able to act on the information.

Most transit agencies believed that they had all of the information needed to manage police and security resources. Because transit agencies depend on the voluntary cooperation of local municipal police departments, the most difficult situation in transit crime data collection occurs when the transit service extends far out into the suburbs and when no police or security is present. Most agencies were certain that local police would notify them about any serious crime or security incidents involving transit passengers and facilities.

Transit agencies can effectively use incident reports from employees and patrons as an additional source of crime data, particularly in communities outside the primary service area, where there is no formal agreement between the transit agency and local law enforcement.

This finding shows that transit agencies are not concerned about their ability to collect data on transit crime. Transit agencies should be taught new methods for organizing and presenting transit crime data so that the data are more useful to the agencies and to FTA.

The third major finding follows:

Among the transit agencies interviewed, there was no consensus on the need for, or application of, the concept of transit-related crime.

One of the major objectives of the research was to establish a definition of "transit-related crime" that would account for crimes that do not take place on transit vehicles or transit agency property, but that are still of concern to the transit agency. To develop a useful definition, transit agencies were asked to respond to proposed definitions of both "transit crime" and "transit-related crime." The responses clearly indicated that agencies held widely different opinions about the proposed definitions, as well as about whether the concept of transit-related crime was even needed at all.

The issue was resolved through a meeting with the research panel responsible for oversight and review of project progress. Panel members determined a need for adopting a definition of "transit-related crime," because a standard definition would be useful for many transit agencies and for national-level analysis by FTA. To encourage acceptance of the concept throughout the transit industry, the panel decided that reporting transit-related crime to FTA would be strictly voluntary. Transit agencies unable or unwilling to provide transit-related crime data would not be required to do so.

These findings from the research led to the conclusion that the best way to achieve the overall objective of improving the usefulness of transit crime data was to develop a guidelines document that offered a series of recommendations leading to more effective methods of data compilation, analysis, and reporting.

Reasons for and Goals of the Guidelines

One of the most remarkable findings from the Phase I research was the diversity of crime data collected by transit agencies and the diversity of methods used to present and report those data. There was no way to compare the security environment—in terms of the number or rate of crimes—of transit agencies. The only exception was for the eight serious crimes (that is, homicide, robbery, arson, and so forth) that are reported to the FBI and FTA under their crime data programs. These serious crimes, while obviously important, constitute only a small fraction of the total offenses committed at the site of each transit agency. Therefore, the transit industry and FTA cannot develop a comprehensive picture of the state of transit crime on an industrywide basis.

Most transit agencies have invested considerable time and resources to develop their current crime-tracking systems, including the names, terms, and codes used to describe specific crimes; the methods used to compile crime statistics; and the format for presenting the data. These methods and procedures are generally incorporated into specialized software programs. It would be impractical to expect any transit agency to change its software and data systems until there is a compelling reason for it to do so, such as an upgrade or modification of the existing computer system.

The guidelines in this digest were developed to change the way transit agencies present and report their crime data to other organizations, particularly the way they report crime data to the NTD reporting program. The guidelines are based on FTA's acceptance of several recommended changes in the Security Data section of the NTD reporting program. These changes have been designed to increase, at the national level, the usefulness of transit crime data.

The recommended changes in the Security Data section of the NTD reporting program will not affect a transit agency's internal reporting system because the data required for the NTD reporting form can be lifted directly from the agency's internal transit crime database.

The long-term goal for the guidelines is to create a consistent approach to the compilation, analysis, and reporting of transit crime data, as well as to eventually integrate this approach into the internal crime-reporting programs of all transit agencies. The research team believes that transit agencies will consider the recommended changes when buying computer upgrades or when otherwise changing their systems.

These guidelines define the terms "transit crime" and "transit-related crime" in the context of uniform reporting standards to be adopted by FTA as part of its NTD reporting program. The guidelines also define the types of crimes that are of major interest to transit police and security departments, on the basis of importance in day-to-day policing and security operations.

FTA'S NEW FORM FOR REPORTING TRANSIT SECURITY DATA

This section explains the new form that transit systems will use to report security data to the NTD reporting program.

Figure 1 presents a draft of an excerpt of the reporting form (that is, page 2 of Form 405). The two major differences between the current form and the new one are that

- The new form has three categories of offenses (that is, violent crime, property crime, and standard of conduct violation) and
- The new form has an additional column for transit-related incidents.

Although not shown in Figure 1, the new form will also have check boxes for transit agencies to report whether they use their own transit police departments, contracts with private security or local police, dedicated transit crime units of local police, or some combination of the three.

The remainder of this section uses a set of questions and answers to guide the reader through the new reporting form.

What is transit crime?

Transit crime consists of violations of state and local laws that take place on property owned or leased by a transit agency or on property for which the transit agency is otherwise responsible, including transit vehicles, stations, rights of way, facilities, and parking lots belonging to the agency.

What is transit-related crime?

Transit-related crime includes violations of state and local laws that directly affect transit employees or patrons and that occur on property not owned or leased by the transit agency but used to support transit service, including bus stops and shelters, transit stations in multi-use facilities, and parking lots.

Why is there a distinction between transit crime and transit-related crime?

The distinction is needed to standardize language in the industry. Terms are currently used in different ways by many transit agencies because there is no standardization in the industry. These differences create problems for national-level data collection because there is no comparability between transit agencies.

Will all transit agencies be able or willing to provide data on transit-related crime?

No. Many transit agencies depend on local police departments to provide most of the crime data. In many cases, the data collection and reporting system used by the local police does not distinguish between a location that would identify a transit-related crime and one that would identify a transit crime. The reporting system would have to be revamped to provide such data.

Some transit agencies that have their own police departments are reluctant to report transit-related crimes because the locations involved (for example, bus stops, shelters, and parking lots) are owned and maintained by the local municipality and, therefore, are under the primary jurisdiction of the municipal police.

Transit agencies that are willing and able to report transit-related crimes should be recognized as exemplary. The hallmark of an exemplary transit agency is a willingness to develop a good understanding of all security factors that affect the safety of their employees and passengers, even if the security factors involve locations "off" the transit

Security Items			Incidents			
(a)			(b)	(c)	(d)	(e)
			In Vehicle	**In Station**	**Other Transit Property**	**Transit-Related**
Line No.						
VIOLENT CRIME						
1	Homicide	Patrons				
2		Employees				
3		Others				
4	Forcible rape	Patrons				
5		Employees				
6		Others				
7	Robbery	Patrons				
8		Employees				
9		Others				
10	Aggravated assault	Patrons				
11		Employees				
12		Others				
13	Other assaults	Patrons				
14		Employees				
15		Others				
16	Suicide/	Patrons				
17	attempted suicide	Employees				
18		Others				
19	Weapons violation					
PROPERTY CRIME						
20	Burglary					
21	Larceny/theft	Patrons				
22		Employees				
23		Others				
24	Motor vehicle theft	Patrons				
25		Employees				
26		Others				
27	Arson					
28	Vandalism					
STANDARD of CONDUCT VIOLATION						
29	Sex offenses					
30	Drug abuse violations					
31	Driving under the influence					
32	Drunkenness					
33	Disorderly conduct					
34	Trespassing					
35	Fare evasion					
36	Curfew & loitering laws					
37	**Total Transit Property Damage**	$				

Figure 1.   Crime data on the new Form 405.

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property. All transit agencies are encouraged to work toward a comprehensive level of security data and of information gathering.

How are these new definitions of transit and transit-related crime going to help in day-to-day, transit-policing operations?

Transit agencies already collecting crime incident data wherever transit passengers and employees can be found have all of the information needed to make day-to-day decisions, regardless of how they classify such crimes. Transit agencies operating without transit-related crime data will benefit from the availability of more comprehensive information that can be used to make more informed decisions. Such information may come from cooperation with the municipal police force when jurisdictional issues are involved.

What types of transit crime data reports have to be made to organizations outside the transit agency?

There is only one required transit crime data report. FTA collects safety and security data (along with financial and operations data) from all recipients or beneficiaries of Urbanized Area Formula Funds through the NTD reporting program. Only transit agencies serving urbanized areas with populations of 200,000 or more are required to report security (that is, transit crime) data.

Transit agencies with their own police departments typically provide data on transit crime to the FBI's Uniform Crime Reporting (UCR) program. Transit police departments, along with other police departments at the state, city, county, and campus levels, voluntarily take the time to translate crime data into the standardized UCR format and then submit the data to the FBI. Transit agencies without their own police departments do not usually get involved in the submission of data to the FBI.

What are some of the effects of the UCR program?

The UCR program has greatly affected FTA's NTD transit crime–reporting requirements. The NTD reporting form used for reporting security data (that is, Form 405) is based largely on definitions and instructions from the UCR program. In particular, the NTD reporting program has adopted the categorization of the UCR program's Part I for more serious (that is, crime index) crimes and Part II for less serious crimes.

Are there any problems with current transit crime–reporting systems?

There are two answers to this question. First, interviews with numerous transit agencies have made it clear that transit agencies collect much more crime data for their own

internal use than they need to report to external agencies such as FTA and the FBI. Therefore, from the transit agency perspective, there is no problem in reporting crime data as long as there is no difficulty in extracting the required data from available records or the internal crime database.

At the national level, use of the UCR program guidelines is a problem for FTA. The UCR program places most emphasis on Part I crimes, because serious crime is more important for municipal police operations. While for Part I offences, police departments are asked to submit data on both reported incidents and arrests, for Part II offenses, they are only asked to report the number of arrests. Therefore, even though they have the information available and use it in their own internal reports, transit agencies are not reporting complete information on the number of less serious crimes and violations. FTA does not have a complete picture of Part II crime at the national level, yet Part II crimes are actually the top management priority for most transit-policing organizations because they consume the vast majority of police resources.

What can be done to improve transit crime reporting at the national level?

The recommendations from the TCRP F-6A research project call for a complete decoupling of NTD reporting from UCR reporting. The new NTD reporting structure will be based on a transit-policing framework to include all reported crimes, regardless of whether an arrest was made. The terms "Part I crime" and "Part II crime" will no longer be used.

Furthermore, the recommendations call for a reorganization of all transit crimes into three major categories, as follows:

- Violent crime (that is, lines 1–19 on the new NTD reporting form),
- Property crime (that is, lines 20–28 on the new NTD reporting form), and
- Standard of conduct violation (that is, lines 29–36 on the new NTD reporting form).

What transit crimes are included in the three new major categories, and how do they compare with the current NTD crime categories?

Each transit agency has a different way of categorizing crime for its own internal reporting purposes. The reporting systems of transit agencies with their own police departments tend to conform somewhat to the UCR guidelines, particularly on Part I (that is, violent) crimes. Transit agencies dependent on local police departments generally receive only the Part I crime data, because local police focus more on collecting these data than on collecting Part II crime data.

From a broad perspective, there are some similarities between the new major categories and the crime categories

used in the current UCR and NTD reporting guidelines. These similarities stem from using the terms "violent crime" and "property crime" for defining two of the new major categories. These terms are also used on the NTD program's current Form 405 to distinguish among the Part I crimes listed in Figure 2.

The eight crimes in Part I of the new NTD reporting form comprise all of the Part I "Crime Index" offenses in the UCR program. The crimes listed under "Violent Crime" in the new NTD form are known as "Crimes Against Persons" in the UCR program, and those listed under "Property Crime" in the new NTD form are identified as "Crimes Against Property" in the UCR program. "Crimes Against Persons" and "Crimes Against Property" are not used in the new NTD reporting form.

The Violent Crime category on the new NTD reporting form will be expanded to include three additional types of crimes, as shown in Figure 3.

The Violent Crime category contains all of the crimes that constitute an actual or potential source of violence or harm to people using or working for the transit system.

The Property Crime category on the new NTD reporting form will be expanded to include one additional type of crime, as shown in Figure 4.

Crime	Line Number On New Form 405
Violent Crime	
Homicide	1–3
Forcible rape	4–6
Robbery	7–9
Aggravated assault	10–12
Property Crime	
Burglary	20
Larceny/theft	21–23
Motor vehicle theft	24–26
Arson	27

Figure 2. Part 1 crimes on the current Form 405 among which the terms "violent crime" and "property crime" distinguish.

Other assaults	lines 13–15
Suicide/attempted suicide	lines 16–18
Weapons violation	line 19

Figure 3. New Violent Crime listings on Form 405.

Vandalism	line 28

Figure 4. New Property Crime listing on Form 405.

The Property Crime category contains all of the crimes that directly affect the personal property of passengers and employees and the real property and physical assets of the transit agency.

The third major category on the new NTD reporting form has a new name: "Standard of Conduct Violation." This name illustrates how all of the crimes in the category represent behaviors that are offensive (and potentially dangerous) to the traveling public and to the employees of the transit agency. The crime types in this category, as presented in Figure 5, were selected using the current NTD reporting structure.

How will the new NTD reporting guidelines affect transit agencies?

Interviews conducted with numerous transit agencies have shown that transit agencies have to extract and specially compute the crime data required by the NTD reporting program from a larger data set or database that transit agencies maintain for their own internal use. One reason for special processing is the current NTD requirement that all crimes must be identified as taking place in either a vehicle, a station, or on other transit property.

The new NTD reporting guidelines retain these location designations (that is, vehicle, station, and other transit property) and add one more for identifying transit-related crimes: property not owned or leased by the transit agency, but used to support transit services. Because some transit agencies have stated that they are unable or unwilling to provide data on transit-related crime, the submission of these data will be voluntary. It is not anticipated that the submission of transit-related crime data will adversely affect transit agencies.

The current NTD reporting program requires transit agencies to state whether crimes involve a patron (that is, a passenger), an employee, or some other person. This requirement applies to homicide, forcible rape, robbery, aggravated assault, other assault, larceny or theft, and motor vehicle theft. The new reporting structure retains this requirement.

The "suicide/attempted suicide" crime listing (that is, lines 16–18 on the new NTD reporting form) has been shifted from page 1 of the current Form 405 (that is, safety incidents) to page 2 of the revised form. The only additional information that transit agencies must provide is the location of the suicide or attempted suicide.

There is only one addition to the listing of specific crimes on the new NTD reporting form: "weapons violation" (that is, line 19 on the new NTD reporting form). Data on this crime are already being collected by transit agencies and local police departments. Overall, the new NTD reporting requirements will minimally affect the data collection and processing activities of transit agencies.

Are there any crimes that have not been included on the new NTD reporting form?

As noted previously, all of the crimes that are currently reported to the NTD reporting program have been retained in the new form, along with one addition (that is, weapons violation) to the Violent Crime category.

Crime	Line Number On New Form 405
Standard of Conduct Violation	
Sex offenses	29
Drug abuse violations	30
Driving under the influence	31
Drunkenness	32
Disorderly conduct	33
Trespassing	34
Fare evasion	35
Curfew & loitering laws	36

Figure 5. New Standard of Conduct Violation listings on Form 405.

Many types of crimes are reported by municipal police under the UCR program, but are not included on the new NTD reporting form because they do not particularly apply to the transit environment. In deciding on the specific crimes to include on the new NTD reporting form, the general approach has been to minimize changes unless there is a compelling reason to change.

For example, the crimes of kidnapping; forgery; counterfeiting; fraud; embezzlement; and buying, receiving, or possessing stolen property have not been included. Although these crimes may occur in the transit environment, their low frequency of occurrence does not warrant expanding the NTD reporting form.

Many other crimes and violations were considered, but not included, for reporting under the "Standard of Conduct Violation" category. For example, some transit agencies issue citations for local (or state) ordinance violations involving urinating in public, smoking, eating, playing loud music, and spitting. Although all of these offenses affect the quality of life on the transit system, they were not included in the NTD reporting form because transit agencies do not apply such local or state regulations consistently and, consequently, do not report violations consistently.

Another example of the reluctance to change the reporting form unless there is a compelling reason is with crime associated with liquor law violations, such as having an open container or being a minor in possession of alcohol. There is some logic to incorporating liquor law violations, because "drunkenness" has already been included; however, this incorporation could lead to confusion if transit agencies do not report violations consistently.

How will a transit agency recognize when a crime description fits one of the seven types of Violent Crime?

In most cases, it will be obvious which of the major crime types a crime description fits. At times, however, the category of a particular crime may not be evident. The following paragraphs define each type of crime and list sample crime terms and descriptions from the reporting systems used by various transit agencies.

The Violent Crime category includes all crimes that passengers and employees generally consider a potential threat to their own personal safety (see Figure 6). Six major types of crimes in this category involve either a direct or attempted attack on a passenger, employee, or other person. The seventh type of crime in this category, weapons violation, involves an implied threat of violence. Each type of crime is defined in accordance with standard definitions in FTA's *NTD Reporting Manual* and modified to incorporate additional crime descriptions used by transit agencies.

Homicide (lines 1–3)

"The killing of one or more human beings by another,

including murder, non-negligent manslaughter, and manslaughter by negligence."

This definition includes all of the crime descriptions usually reported under homicide.

Forcible rape (lines 4–6)

"The carnal knowledge of a female forcibly and against her will, including rape and attempt to rape."

The following term has been used to specifically describe forcible rape:

- Criminal sexual conduct.

Robbery (lines 7–9)

"The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or by putting the victim in fear. The use or threat of force includes firearms, knives or other cutting instruments, other dangerous weapons (for example, clubs, acid, and explosives), and strong-arm techniques (for example, hands, fists, and feet)."

Some of the specific terms used to describe robbery include

- Robbery—weapon,
- Robbery—strong arm,
- Aggravated robbery, and
- Simple robbery (including purse snatching when force is used).

Aggravated assault (lines 10–12)

"An unlawful attack by one person on another for the purpose of inflicting severe or aggravated bodily injury. This type of assault is usually accompanied by the use of a weapon or by means likely to produce death or great bodily harm."

Some of the specific terms used to describe aggravated assault include

- Assault on a police officer;
- Felonious assault;
- 1st, 2nd, and 3rd degree assault; and
- Aggravated battery.

Other assaults (lines 13–15)

"An unlawful attack or attempt by one or more persons on another person(s) in which no weapon is used or that does not result in serious or aggravated injury to the victim(s). This definition includes simple assault, minor assault, assault and battery, injury by culpable negligence, menacing, intimidation, coercion, hazing, and attempts to commit these offenses."

Security Items			Incidents			
(a)			**(b)**	**(c)**	**(d)**	**(e)**
			In Vehicle	**In Station**	**Other Transit Property**	**Transit-Related**
Line No.						
VIOLENT CRIME						
1	Homicide	Patrons				
2		Employees				
3		Others				
4	Forcible rape	Patrons				
5		Employees				
6		Others				
7	Robbery	Patrons				
8		Employees				
9		Others				
10	Aggravated	Patrons				
11	assault	Employees				
12		Others				
VIOLENT CRIME						
13	Other assaults	Patrons				
14		Employees				
15		Others				
16	Suicide/	Patrons				
17	attempted	Employees				
18	suicide	Others				
19	Weapons violation					

Figure 6.   Violent Crime listings on the new Form 405.

Some of the specific terms used to describe other assaults include

- 4th and 5th degree assault,
- Battery, and
- Stalking.

Suicide/attempted suicide (lines 16–18)

FTA does not define suicide in the *NTD Reporting Manual*. Some transit agencies use definitions similar to the following:

"The act or instance of taking one's own life voluntarily and intentionally." [Webster's New Collegiate Dictionary]

Weapons violation (line 19)

"Violation of regulations or statutes controlling the carrying, use, possession, furnishing, and manufacturing of deadly weapons, including firearms, silencers, bombs, and biological weapons. Attempts and threats of use are included."

Many different specific crime descriptions are used for weapons violation, including

- Weapons—gun involved,
- Weapons—bomb/bomb threat,
- Weapons offense,
- Weapons possession,
- Carrying concealed weapon,

- Firearms violation,
- Prohibited offensive weapon, and
- Terrorist threat.

How will a transit agency recognize when a crime description fits one of the five types of Property Crime?

The Property Crime category includes all crimes that involve the property of the transit agency or the personal property of passengers and employees (see Figure 7). For transit-related crimes, this category may also involve the property of other people who are victims at a transit-related location, such as a bus stop or commuter parking lot that is not owned or leased by the transit agency.

The types of crimes listed in this category are the same as those on the current Form 405, except for vandalism, which has been added because many vandalism crimes result in serious damage to transit property. In the new NTD reporting form, all vandalism crimes, even relatively minor ones, should be tabulated under this category. All of the crime types in this category are defined in accordance with the standard definitions provided in the *NTD Reporting Manual*, with modifications as required to incorporate additional crime descriptions used by transit agencies.

Burglary (line 20)

"The unlawful entrance into a structure to commit a felony or a theft, including offenses known locally as burglary (any degree), unlawful entry with intent to commit larceny or a felony, breaking and entering (or tampering) with intent to commit larceny, housebreaking, safe-cracking, and attempts at these offenses."

Some of the specific terms used to describe burglary include

- Breaking and entering and
- Tampering with coin machines.

Larceny/theft (lines 21–23)

"The unlawful taking, carrying, leading, or riding away of property from the possession or constructive possession of another, including pocket picking, purse snatching when no force is used, shoplifting, theft from motor vehicles, theft of motor vehicle parts and accessories, theft of bicycles, theft from buildings, theft from coin-operated devices or machines, and all other theft not specifically classified."

Some of the specific descriptions for larceny or theft include

- Theft of property (over $500),
- Grand theft,
- Petit theft,
- Theft—computer fraud—automated fare collection (AFC), and
- Theft—vending—AFC.

Security Items			Incidents			
(a)			(b)	(c)	(d)	(e)
			In Vehicle	In Station	Other Transit Property	Transit-Related
Line No.						
PROPERTY CRIME						
20	Burglary					
21	Larceny/theft	Patrons				
22		Employees				
23		Others				
24	Motor vehicle	Patrons				
25	theft	Employees				
26		Others				
27	Arson					
28	Vandalism					

Figure 7.   Property Crime listings on the new Form 405.

Motor vehicle theft (lines 24–26)

"The theft or attempted theft of a motor vehicle. A motor vehicle is a self-propelled vehicle that runs on the surface of land and not on rails. Examples of motor vehicles are automobiles, trucks, buses, motorcycles, and motor scooters."

This definition includes all of the typical descriptions of motor vehicle theft.

Arson (line 27)

"The unlawful and intentional damage of, or attempt to damage, any real or personal property by fire or incendiary device. "

"Arson" is a clearly defined term used by all transit agencies.

Vandalism (line 28)

"The willful or malicious destruction, injury, disfigurement, or defacement of any public or private property, real or personal, without consent of the owner or person having custody or control, by cutting, tearing, breaking, marking, painting, drawing, covering with filth, or any other such means as may be specified by local law."

Some transit agencies provide a detailed description of the property or circumstances involved in vandalism incidents, using descriptive terms, such as "train," "seat slash," "graffiti," "debris on track," and "malicious burning." Other terms used to specifically describe vandalism include

- Criminal damaging,
- Criminal mischief,
- Rock throwers/missiles, and
- Criminal damage to property.

How will a transit agency recognize when a crime description fits one of the eight types of Standard of Conduct Violation?

The Standard of Conduct Violation category includes crimes that are less serious, but that profoundly affect passengers' perceptions of security and that consume a disproportionate amount of time and resources available to transit police and security forces.

The types of crimes in this category are in the same order as in the current Form 405 (see Figure 8).

Sex offenses (line 29)

"Any sexual offenses except forcible rape, including offenses against chastity, common decency, morals, and so forth, such as adultery, fornication, buggery, incest, indecent exposure, indecent liberties, seduction, sodomy, crime against nature, statutory rape without force, and attempts to commit any of the above. This definition also includes prostitution and commercialized vice."

Some of the specific terms used by transit agencies to describe sex offenses include

- Sexual imposition,
- Gross sexual imposition,

Security Items	Incidents			
(a)	**(b)**	**(c)**	**(d)**	**(e)**
	In Vehicle	**In Station**	**Other Transit Property**	**Transit-Related**
Line No.				
STANDARD OF CONDUCT VIOLATION				
29 Sex offenses				
30 Drug abuse violations				
31 Driving under the influence				
32 Drunkenness				
33 Disorderly conduct				
34 Trespassing				
35 Fare evasion				
36 Curfew & loitering laws				

Figure 8.   Standard of Conduct Violation listings on the new Form 405.

- Public lewdness,
- Molesting passengers,
- Crimes against family and children,
- Nudity,
- Possessing/disseminating indecent literature,
- Indecent assault, and
- Open lewdness.

Drug abuse violations (line 30)

"Violations of state and local laws pertaining to the unlawful possession, sale, use, growth, manufacturing, and making of narcotic drugs or dangerous non-narcotic drugs."

The following terms are typical specific descriptions of drug abuse violations:

- Narcotics possession,
- Drug trafficking,
- Drug abuse,
- Violation of state drug laws,
- Drug offenses,
- Drugs and devices, and
- Glue sniffing.

Driving under the influence (line 31)

"The driving or operation of any vehicle or common carrier while drunk or under the influence of liquor or narcotics."

Typical specific descriptions of driving under the influence include

- Drunk driving,
- DUI (alcohol/narcotics), and
- Driving while intoxicated (DWI).

Drunkenness (line 32)

"Offenses involving the consumption of alcoholic beverages to the extent that one's mental faculties and physical coordination are substantially impaired, including drunkenness, being drunk and disorderly, being a common or habitual drunkard, and intoxication. This definition excludes driving under the influence."

Terms used to specifically describe drunkenness include

- Public intoxication,
- Covered drinking, and
- Public drunkenness.

Disorderly conduct (line 33)

"Charges of committing a breach of the peace, including affray; unlawful assembly; disturbing the peace; disturbing meetings; disorderly conduct in state institutions, at court, at fairs, on trains, or on public conveyances; blasphemy, profanity, and other obscene language; desecration of the flag; refusal to assist an officer; and attempts to commit any of the above."

Some of the terms used by transit agencies to specifically describe disorderly conduct include

- Disturbing others,
- Aggravated disorderly conduct,
- Disorderly conduct—intoxicated,
- Disruptive behavior aboard bus/at bus stop/at shelter,
- Misconduct,
- Harassment, and
- Public urination.

Trespassing (line 34)

"The unlawful entrance onto land, into a dwelling, or onto other real property."

Specific terms used to describe trespassing include

- Criminal trespassing,
- Trespassing on tracks/property, and
- Dangerous trespass.

Fare evasion (line 35)

"The unlawful use of transit facilities by riding without paying the applicable fare."

Terms used by transit agencies to specifically describe fare evasion include

- Misuse of tickets,
- Fare dispute/evasion, and
- Counterfeiting and forgery of fare media.

Curfew and loitering laws (line 36)

"Violations of local curfew or loitering ordinances where such laws exist."

Some of the typical terms used by transit agencies to specifically describe violations of curfew and loitering laws include

- Curfew violations,
- Juvenile curfew, and
- Loitering violation.

EFFECTIVE PRESENTATION OF TRANSIT CRIME DATA

Transit police departments understand that they can take proactive measures to reduce crime, rather than reacting to isolated events or to inevitable cycles of crime. Police

management has seen the value of looking at past crimes to try to prepare for future crimes. As a result, in the fight to reduce crime by modifying how resources are spent and which strategies are taken, crime tracking and data-driven management have become universal tools.

With the new approaches to law enforcement, transit police departments need the proper data for law enforcement decision making and strategy development. Information, particularly crime data, is essential to assess the success of resource deployment in reducing crime, to support community policing, to solve problems, and to prevent and reduce crime.

The presentation of information (that is, how information is conveyed to its intended audience) is a critical factor that is sometimes overlooked in analyzing data. When police departments, external organizations, and transit agency personnel can easily and accurately interpret crime data and their implications, more effective solutions are possible.

Background

Ways that Transit Agencies Use Data to Address Crime

Police departments use data for many purposes. It is important to consider these purposes, because they largely determine how the data will be presented. The uses for crime data may be divided, generally, into three categories:

- **Tactical.** Tactical analysis of crime data is used to assist law enforcement personnel in identifying specific and immediate crime trends, types, patterns, problem areas, and high-occurrence times of day.
- **Strategic.** Strategic analysis of crime data addresses long-range problems and can be used to project long-term increases or decreases in crime (that is, crime trends).
- **Administrative.** Administrative analysis of crime data is used to show police accomplishments to other agencies and to the public.

As an example of how police use crime data for different purposes, consider the following: although information regarding the recent locations of criminal offenses may be especially useful in targeting the deployment of officers, information depicting historical and projected overall crime rates may be more suited to department budgetary planning purposes.

Introduction to Ways that Transit Agencies Present Data

One can divide the specific graphical and tabular methods of presenting information into four categories:

- Patterns and cycles,
- Trends,

- Comparisons, and
- Efficiency and effectiveness measures.

The following subsections present some examples of data presentation "best practices" observed in the transit industry. Although these examples are not the only ways to convey information, they show how transit agencies can more effectively collect and present their information. The methods shown are especially suited to small and medium-size transit systems, though the agencies of such systems may not experience enough crime to collect and display data in traditional ways.

Patterns and Cycles

Understanding Crime Patterns and Cycles

Police departments can analyze data to detect crime patterns and cycles, as data may reveal geographical and temporal crime "hot spots." By providing clues to optimal resource allocation, including patrol scheduling and beat configuration, the presentation of crime information by location and by time helps to display patterns and cycles and to address ongoing problems.

Information can be used to identify unusual crime activities over certain levels or at different seasonal times and to identify unusual community conditions. As a result, a transit system can provide police service more effectively and efficiently (by matching demands for service with service delivery), reduce or eliminate recurring problems, and assist in community policing or problem-oriented policing.

Displaying Crime Data over Time

Data graphed over time can help police or security departments make short-term decisions about allocating people, equipment, and technology. Understanding when crime occurs—by hour, by day, by week, or by month—is the first step in optimizing this allocation.

Figure 9 shows the hypothetical distribution of a particular incident or crime by percentage and by time of day.

Similarly, Figure 10 shows how many incidents occur throughout the week. Law enforcement officials can use this information to allocate resources appropriately to address these incidents.

Displaying Crime Data by Location

A transit police department can use basic mapping to tie criminal activity to location or transit routes, as shown in Figure 11.

Analyzing crime data by location provides a straightforward way to present the amount and distribution of crime that occurs throughout a transit system, which is important for resource allocation. With the help of this information,
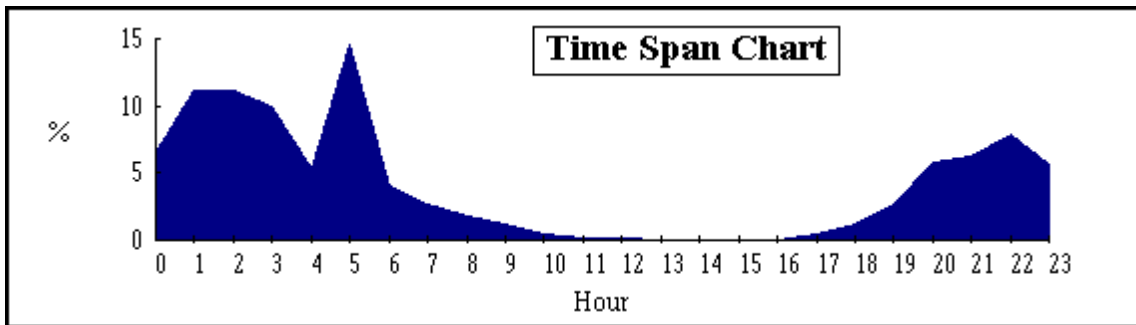
Figure 9.   Hypothetical distribution of a particular crime by percentage and by time of day.
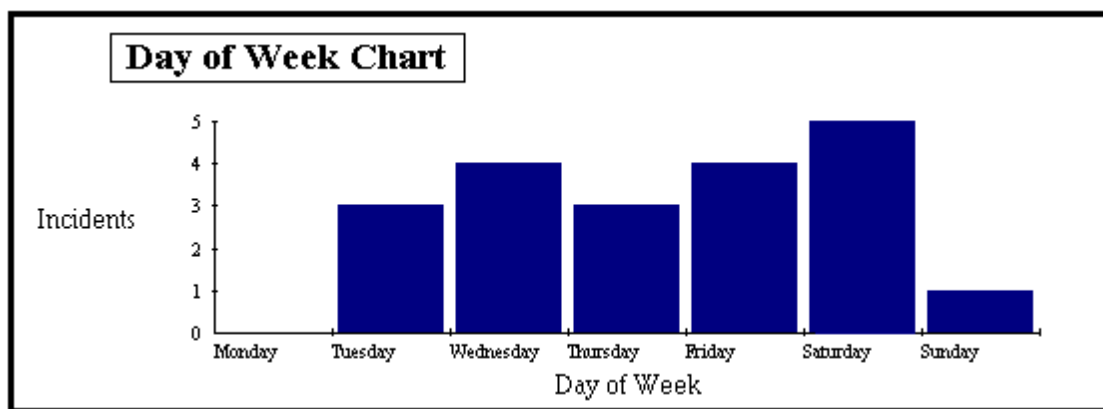

Figure 10.   Number of incidents of a particular crime throughout the week.

the most resources—or the most appropriate resources—may be assigned to crime "hot spots." This type of information display is especially powerful, as it is natural and understandable to many users. It can also be used for budget requests, annual reports, or many wide-ranging purposes.

Trends

Perhaps the most common way to display data within transit police or security units is by trend. The graphical display of either summary data (for example, total crime and type of crime) or specific crime data over time is often used for longer-term purposes, such as determining future needs for personnel, vehicles, or other resources.

Examples of reports that benefit from trend information include the following:

- Monthly offenses (see Figure 12),
- Crime trend data from one period to the next (that is, the percentage of change in crime since a prior equivalent period), and

- Reports of specific offenses by month (for example, graphs of offense totals, clearances, and arrests; see Figure 13).

Comparisons

Comparative data are most often used to evaluate particular crime programs or strategies. Comparative data can be based on either internal comparisons (for example, by district or transit line or among categories of offenses) or external comparisons (for example, comparisons with other transit agencies).

A simple presentation of information, such as Figure 14, is a powerful tool for understanding the demand for resources.

Similarly, graphics may be used to show the demands on a police or security force and the success of current programs. By describing the number of events that occur within a given population (in this case, crimes per passenger trip), crime rates lend themselves to comparison with other systems. Figures 15–18 show examples of how comparative
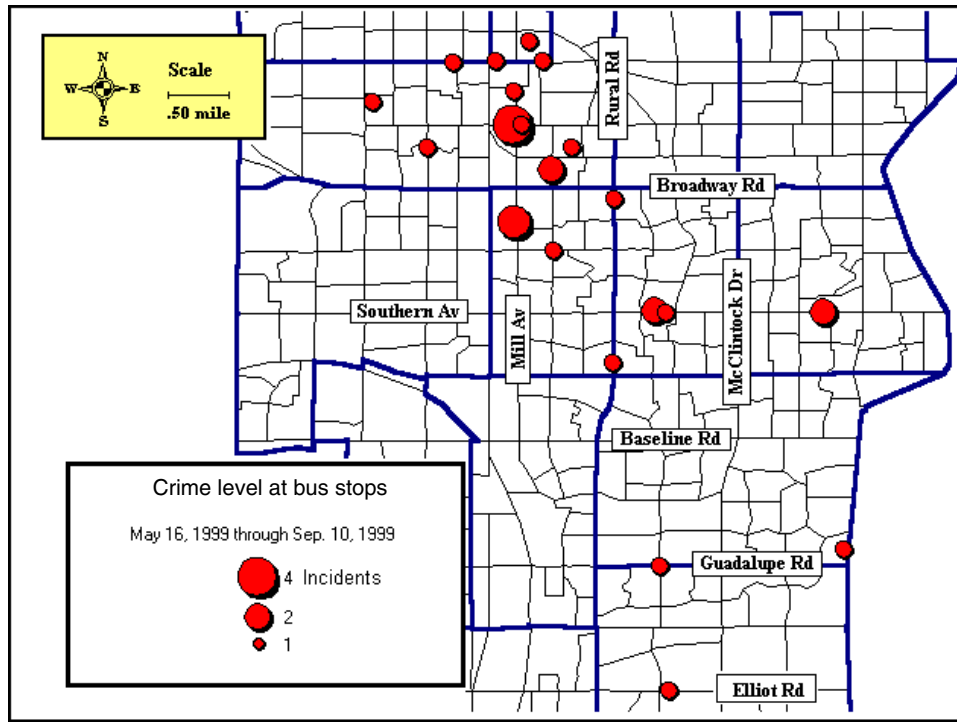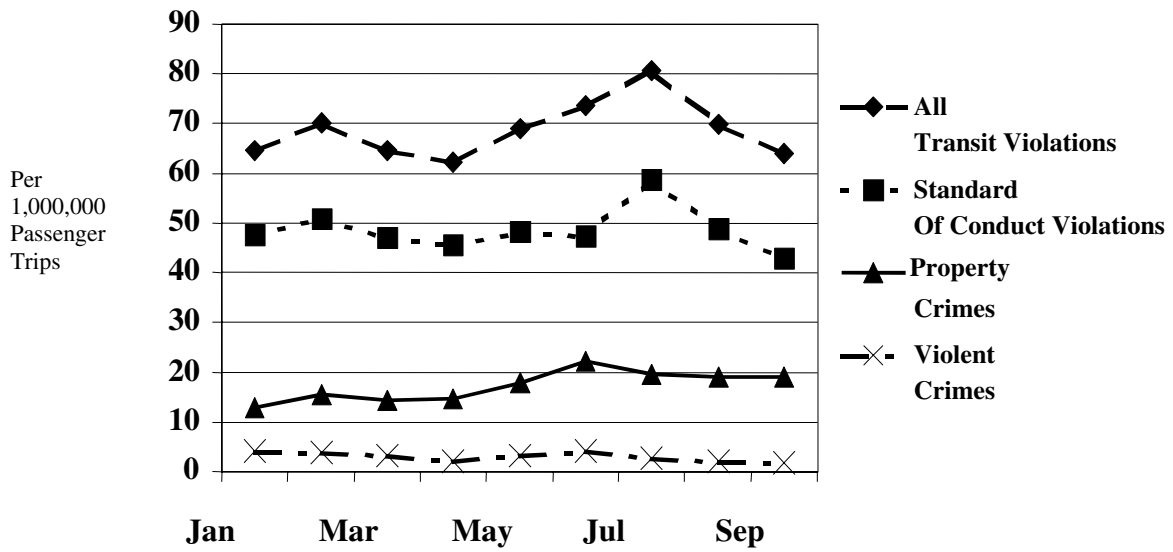
Figure 11.   Basic mapping.

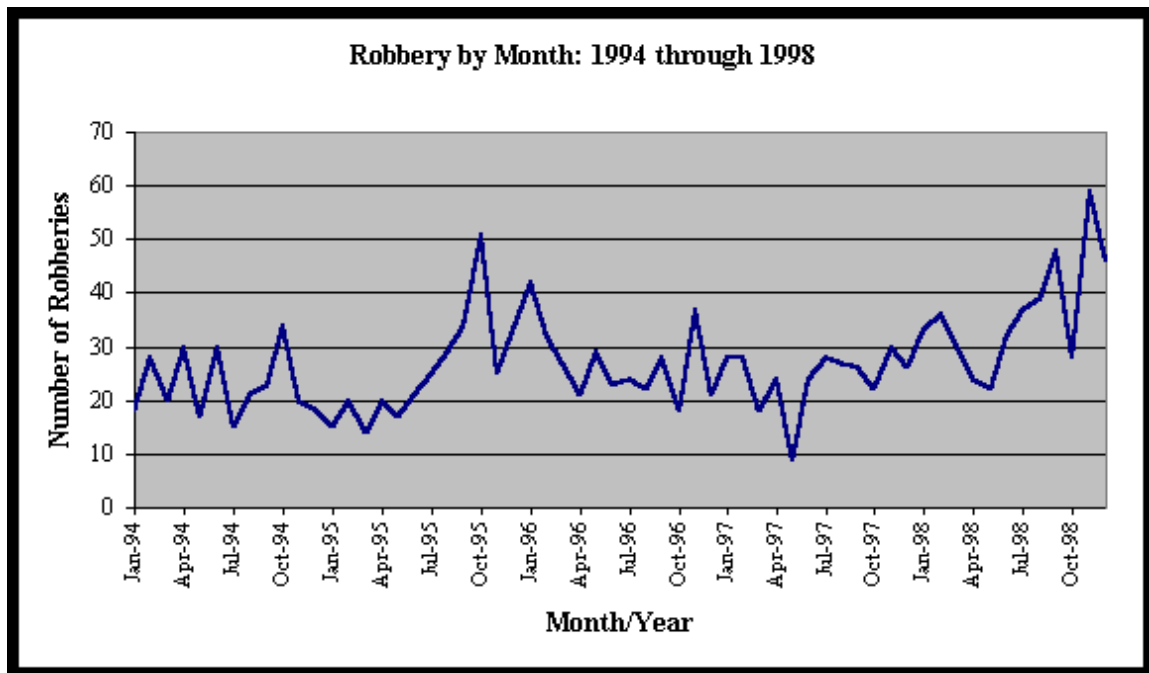*Figure 12.   Monthly offenses report.*

Robbery by Month: 1994 through 1998

Figure 13.   Report of a specific offense by month.

Calls for Service and Crime By Beat: 1998				
Beat	Calls For Service	Percent	Crime	Percent
11	6,888	5.8%	1,495	5.7%
12	6,480	5.4%	1,204	4.6%
13	11,948	10.0%	2,361	9.0%
15	10,632	8.9%	2,597	9.8%
16	12,837	10.7%	2,718	10.3%
17	6,340	5.3%	1,343	5.1%
18	4,899	4.1%	1,098	4.2%
19	6,980	5.8%	1,638	6.2%
20	8,853	7.4%	1,988	7.5%
21	5,253	4.4%	1038	3.9%
22	8,041	6.7%	1,822	6.9%
23	6,357	5.3%	1,272	4.8%
24	8,943	7.5%	2,077	7.9%
25	7,976	6.7%	2,164	8.2%
DT	7,082	5.9%	1,555	5.9%
Total	119,509	100.0%	26,370	100.0%

Figure 14.   Simple comparative presentation.

crime rate information may be presented in summary and by type of offense.

Efficiency and Effectiveness Measures

An *efficiency measure* indicates some activity per unit of resource. This resource is often financial (that is, dollars), but other common resources include labor (for example, work-hours and full-time equivalents) and capital resources (for example, squad cars and closed-circuit television monitors). Combined with an activity, such as number of arrests or number of offenses, the resulting measure indicates the efficiency of the police or security staff.

In contrast, an *effectiveness measure* indicates achievement relative to a specific goal and without regard to the resources used. For example, a transit police department's monthly goal may be to conduct 100 patrols of each commuter parking lot. The effectiveness measure would be the actual number of patrols conducted relative to this goal.
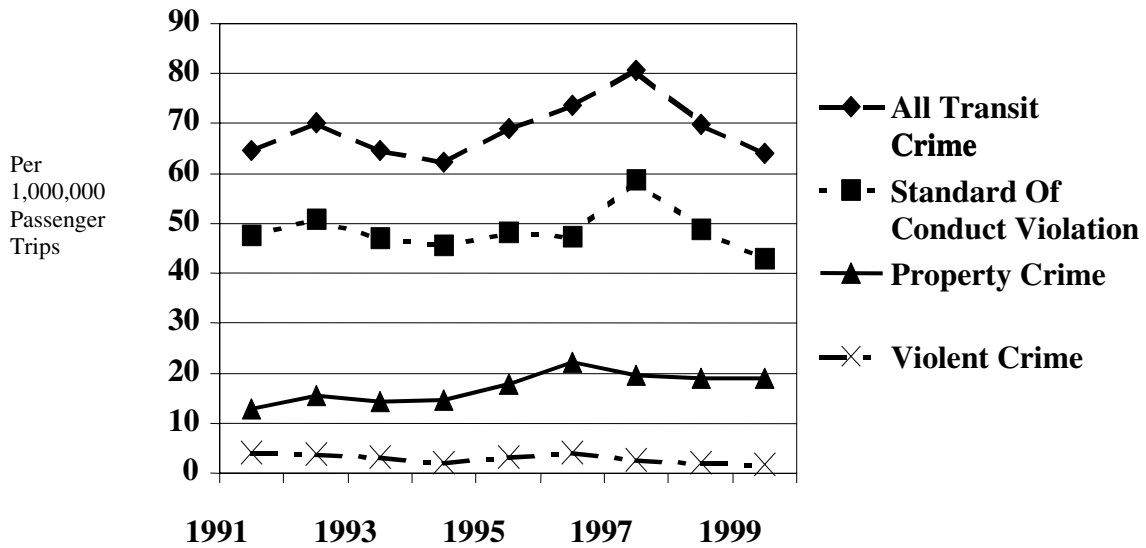
Figure 19 plots arrests per full-time equivalent on an

Figure 15. Transit crime trends for System X.

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total Transit Crime	64.6	70.1	64.5	62.2	69.1	73.7	80.7	69.9	63.9
Standard of Conduct Violation	47.5	50.8	46.9	45.6	48.1	47.2	58.6	48.9	43.1
Property Crime	12.9	15.6	14.3	14.6	17.9	22.3	19.5	18.9	19.1
Violent Crime	4.2	3.7	3.3	2.0	3.1	4.2	2.6	2.1	1.7

Figure 16. Annual crime rates per million passenger trips for System X.

	System A	System B	System C	System D
Violent Crime	1.7	9.2	8.5	2.3
Property Crime	4.3	28.4	51.3	3.9
Standard of Conduct Violation	15.3	4.4	226.3	8.5
Total Transit Crime	21.3	42.0	286.1	14.7

Figure 17.   Crime rates at large urban transit systems (1998).
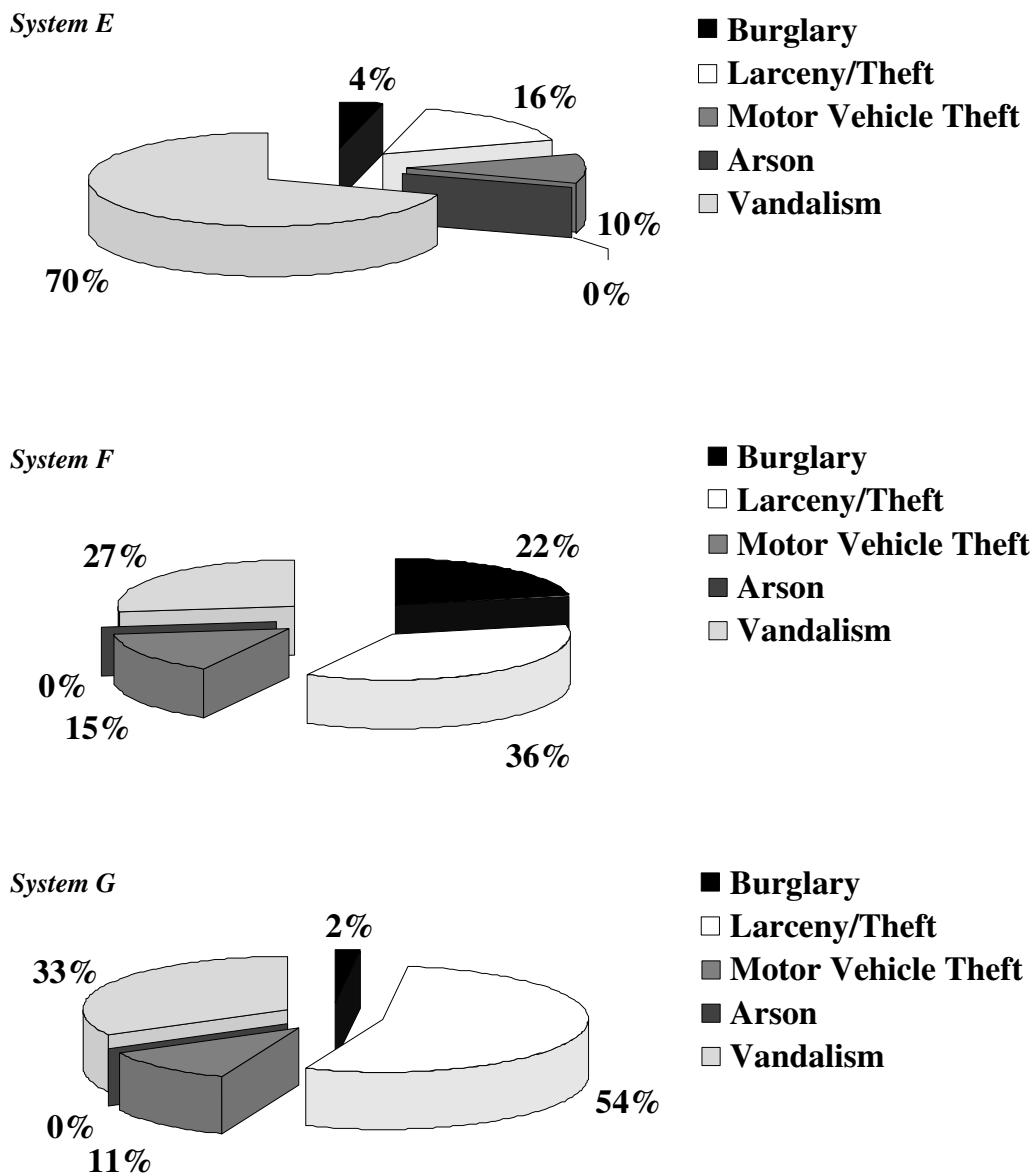

Figure 18.   Comparison of relative proportions of types of property crimes for three transit systems.

20

700

600

500

Arrests per
full-time
equivalent

400

300

200

100

0

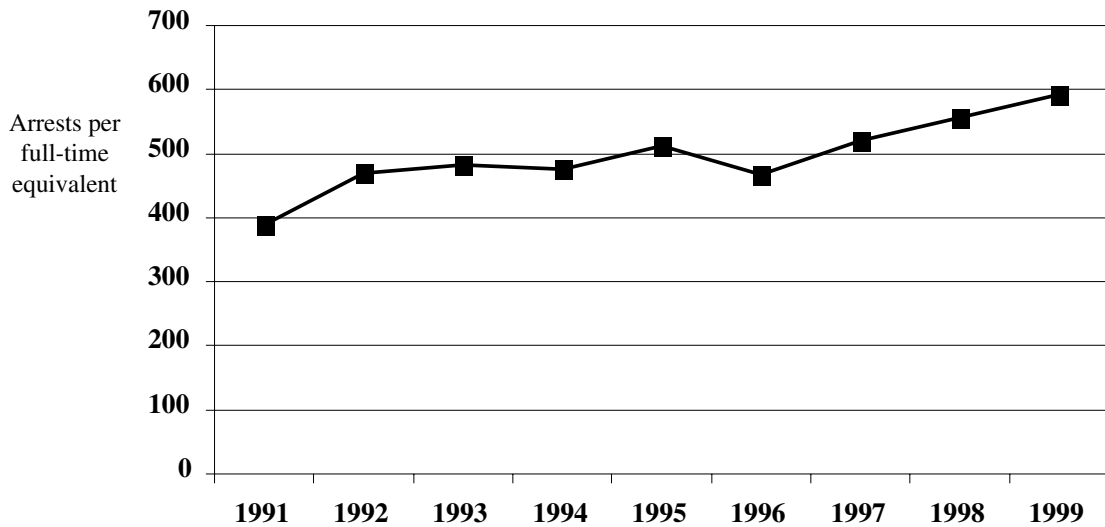1991   1992   1993   1994   1995   1996   1997   1998   1999

Figure 19.   Arrests per full-time equivalent on an annual basis.

annual basis. The trend of this plot seems to indicate that, given the department's staffing, the police force is becoming more efficient in terms of making arrests. One could prepare a similar graph to display the absolute change in the number of annual arrests.

Conclusion

The accurate and understandable presentation of crime data is of prime importance to transit police departments, as vital decisions are made on the basis of crime data analysis. From day-to-day operations to long-range planning, crime data analysis provides crucial insights into the how, where, and when of criminal behavior.

Presentation involves conveying information in an easily understood fashion to the end user for tactical, strategic, and administrative purposes. To maximize the effectiveness of information feedback, transit agencies should tailor the display of information to suit these purposes, using graphs that relate the following: patterns and cycles, trends, comparisons, and efficiency and effectiveness measures. The presentation of accurate and comprehensible crime data helps law enforcement professionals make informed decisions about law enforcement strategies.